

1.0 INTRODUCTION

The United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil, in 1992 highlighted the urgency of multilateral action in order to address the problems of environmental degradation with its impacts on socio-economic development. Delegations from 178 countries, including over 100 Heads of State, who attended this Earth Summit endorsed their commitment to environmental conservation and sustainable development by: signing the Convention on Climate Change and the Convention on Biological Diversity, endorsing the Rio Declaration and the Forest Principles, and adopting Agenda 21, a plan for achieving sustainable development in the 21st Century.

Sri Lanka too made commitments to environmental protection and sustainable development by adopting the main instruments at the Earth Summit. Moreover Sri Lanka is a party to 38 multilateral environmental agreements including several which pre-date the Rio Summit. These include: International Plant Protection Convention (IPPC), Convention on Wetlands of International Importance (Ramsar Convention), Convention in International Trade in Endangered Species (CITES), Vienna Convention for the protection of the ozone layer, and the Montreal Protocol.

Recognizing the critical role of capacity development for implementing multilateral environmental agreements (MEAs), UNDP and GEF undertook a Capacity Development Initiative (CDI) with a focus on biodiversity, climate change, and desertification/ land degradation. Arising from the conclusions of the CDI, the national capacity self assessment process was launched to assist developing countries identify the capacity needs to implement the Rio Conventions dealing with biodiversity, climate change, and desertification/ land degradation.

Sri Lanka ratified the UN Conventions on Biological Diversity, Climate Change, and the Convention to Combat Desertification in 1993, 1994, and 1998 respectively. Sri Lanka is also a party to the Kyoto Protocol under the Framework Convention on Climate Change, and the Biosafety Protocol under the Biodiversity Convention.

2.0 COUNTRY FRAMEWORK

Sri Lanka is a tropical island in the Indian Ocean with an area of about 65,610 square kilometers. It lies between 6°N and 10°N latitude and between 80°E and 82°E longitude. The 1585 km coast line comprises sandy beaches, extensive lagoons and estuaries, mangroves, coastal marshes and dunes. The country's Exclusive Economic Zone extends 200 nautical miles beyond the coastline.

The country's total population is around 20 million and its population density of 314 persons per sq km is one of the highest in the world. Over 40% of the people are engaged in activities directly dependent on the environment and about 25% people live in urban or semi urban areas. The development efforts of successive governments during the last five decades have led to an increase in the standard of living of its people. Sri Lanka's GDP per capita is US\$ 1197 which is ahead of some South Asian countries. The high population density and sustained efforts to improve living standards have created tremendous pressure on the natural environment of the country.

Economic context

Sri Lanka's macroeconomic policies are pro-growth and pro-poor, while continuing to uphold market based economic policies. The country's economic growth and poverty alleviation programmes focus on regionally balanced growth with rural and small and medium sector development; with the medium-term objective of macroeconomic stability and a regionally balanced economic growth rate of about 6-8 percent.

Sri Lanka has been gradually changing from an agricultural based economy to an industrial based one over the last few decades and presently follows a liberalised industrial policy. At present industry comprises 27% of the GDP. The service sector (including electricity and water) presently contributes 56% of the Gross Domestic Product (GDP) and has the highest labour productivity. In contrast, the agriculture sector comprising agriculture, forestry and fishing collectively contribute 17 % of the total GDP. Despite this, export agriculture based on the island's bioresources make a substantial contribution to the economy, particularly tea, rubber and several other minor export crops.

The thrust of industrial policy in Sri Lanka has been the development of private sector-led, export-oriented industries with sufficient diversification in relation to both products and

geographical location. However, relatively little attention has been paid in the past to ensure environmentally sustainable development in the sector. A positive factor has been that Sri Lanka's early industrial expansion was in the garment industry - which is relatively non-polluting - and in the tourist industry - which is low-polluting and dependant on a high quality environment for sustenance. The current economic policy envisages prominent roles for both public and private sectors. It also aims for modernisation of the rural economy by enhancing science and technology in rural areas, and by providing credit for small and medium enterprises to increase productivity.

Sri Lanka's diverse bio resources serve to maintain a range of economic activities within the island. Foremost among these are agriculture, the marine and brackish water fishery and tourism. Agriculture, forestry, and fisheries contributed 14%, 1.7%, and 1.3% respectively, and a total of 17% of the GDP at Constant (1996) Prices. Both agriculture and fisheries continue to be important sources of foreign exchange. The marine fishery provided approximately 88% of the total fish production in Sri Lanka in 2004. Prior to the tsunami which struck the coast of Sri Lanka in December 2004, the fisheries sector provided direct employment to about 150,000 people, and sustenance to at least a million. Fish also constitutes the top source of animal protein for Sri Lankans.

Tourism is a top income earner in Sri Lanka. The gross earnings amounted to US\$ 416 million during 2004 from peak tourist arrivals of 566,200. The industry faced a setback in 2005 as a result of the tsunami devastation with 20% lower earnings from 3% lesser arrivals. Sri Lanka's rich biodiversity offers ample potential to support the government's current tourism related policy aimed at maximising potential for nature-based tourism and cultural tourism. Both ecotourism and culture tourism have the capacity to provide conducive employment opportunities to rural youth, and thereby motivate communities to protect the natural environment that provides their livelihood, and also serve the dual purposes of environmental protection and employment generation.

The economic policies of the country encourage foreign investments as it provides foreign exchange and employment opportunities, and catalyses the development process. Public-private partnerships or arrangements are encouraged to promote large-scale infrastructure projects.

Social context

Sri Lanka has relatively high standards of health care, and the national health indicators are comparable with those of developed countries. This has considerably helped to increase life expectancy at birth for both males and females, which are respectively 71.7 and 76.4 years (2001). The present Death rate is 6.5 per '000, and Infant mortality rate 11.1 per '000 (2003).

Sri Lanka has a high adult literacy rate of 92.5%. Gender wise the literacy rate is 94.5% for males and 90.6% for females. The participation of boys and girls in general education is now similar, but there is lower literacy among females in the older age groups. District wise literacy rates range between 82.6 and 94.7% (except in the north and east where the 2001 census was not completed) indicating that literacy is high even in rural and more sparsely populated areas.

Per capita income in Sri Lanka passed the US\$1000 value in 2004, but regional disparities remain. The Western Province claims 51% of the GDP, while all the other provinces have individual shares of less than 10%, three of which are under 5% of GDP. Lifestyles are changing with increased household income, and household consumption is shifting from food to communication, education, recreation, housing and utilities. About 70% of households now own a radio or TV and 30% own a refrigerator. Household access to motorized transport and telephone facilities stand at 22% and 25% of households respectively. With a Human Development Index of 0.740 (2002) Sri Lanka is ranked 96 among 177 countries.

Environmental context

The commitment by the State for environment conservation is demonstrated by the Constitution of the Democratic Socialist Republic of Sri Lanka, which was adopted in 1978. Article 27(14) of the Constitution decrees that "The State shall protect, preserve and improve the environment for the benefit of the community". Article 28f states "The exercise and engagement of rights and freedom is inseparable from the performance of duties and obligations, and, accordingly, it is the duty of every person in Sri Lanka to protect nature and conserve its riches."

A major shift in government policy to decentralise and devolve many functions of the Central Government to the Provinces was effected with the passing by Parliament in 1987 of the 13th Amendment to the Constitution. This introduced Provincial Councils as a new level of governance between the Central Government and Local Government. Provincial Councils are empowered with legislative and executive powers over several subject areas including the

environment, and for intra-provincial projects relating to irrigation, land development, road development, transport, agricultural services, health and education. A Provincial Council may, thus, enact laws pertaining to the environment within the area under its control, provided this does not supersede or conflict with laws passed by Parliament.

Sri Lanka is committed to ensuring environmental sustainability by 2015 as part of its commitment to achieving the Millennium Development Goals. The National Environmental Policy enunciated in 2003, with the aim of ensuring sound environmental management within a framework of sustainable development, provides the direction for the necessary measures to conserve and manage Sri Lanka's environment. The objectives of the policy are

- ☞ To promote the sound management of Sri Lanka's environment in its entirety without compromise, balancing the needs for social and economic development and environmental integrity, to the maximum extent possible while restricting inimical activities;
- ☞ To manage the environment by linking together the activities, interests and perspectives of all groups, including the people, non-government organizations and government at both the central and the local levels;
- ☞ To assure environmental accountability.

The major environmental issues faced include land degradation, deforestation, loss of biodiversity, air pollution, declining availability of fresh water, degradation of marine and coastal habitats, and inadequacy in solid waste disposal measures. Notwithstanding these environmental challenges, it is noteworthy that a recent assessment of environmental performance based on computation of an Environmental Performance Index (EPI) has ranked Sri Lanka at 67 out of 133 countries, ahead of other South Asian countries.

3.0 NATIONAL PRIORITIES FOR IMPLEMENTING THE THREE CONVENTIONS

Since the Rio Summit in 1992 the Government of Sri Lanka pursued a more focused and comprehensive policy towards sustainable development. The entire Government system was made aware of the need for environmental conservation particularly of natural resources, leading to the launch of many activities and programmes in this regard.

The National Environmental Policy has as a key objective:

To promote the sound management of Sri Lanka's environment in its entirety without compromise, balancing the needs for social and economic development and environmental integrity, to the maximum extent possible while restricting inimical activities.

The policy declares that 'International commitments will be honoured as part of our responsibility to the national and global community' (Statement 12). Policy Statement 7 - 'The institutional framework for sound environmental management will be strengthened through capacity building, legislative instruments and improved inter-institutional coordination and linkages' – also affords priority for implementing the environmental conventions with respect to the required institutional, policy and legal framework, and capacity building.

The need to take action to implement Sri Lanka's obligations under environment related international conventions is confirmed in the current national environmental action plan, titled 'Caring for the Environment 2003-2007: Path to Sustainable Development'. A number of programmes of action directly relevant to implementation of the conventions dealing with biodiversity, climate change, and land degradation have been listed in this plan.

The Government is already in the process of implementing a programme for the monitoring of the Millennium Development Goals at national level.

3.1 Institutional arrangements for implementing the Rio Conventions

The Ministry in charge of the subject of Environment is assigned the responsibility of providing guidance and policy direction in relation to activities concerning the protection and management of the environment. The Ministry dealing with Policy Planning and Implementation, however, is the key agency responsible for formulation of national development policies. The National

Planning Department which functions under this Ministry deals with policy planning and implementation, and also plays a strong role in the development of the medium-term macroeconomic framework and sectoral programmes.

The Ministry of Environment is the focal point for several multi-lateral environmental agreements including the Rio Conventions dealing with biodiversity (UNCBD), climate change (UNFCCC), and land degradation (UNCCD). The responsibility for programmes under the three conventions is assigned to the Biodiversity Division, Environmental Economics & Global Affairs Division, and Natural Resources Division of the Ministry, respectively – Annex 1: Organization Chart. Each Division is headed by a Director. There is no formal mechanism for coordination between the three divisions for developing common programmes or addressing cross cutting issues. However, the same Ministry being the focal point for UNCBD, UNFCCC, and UNCCD is a positive factor in addressing Sri Lanka's obligations to the Rio conventions.

Most of the natural resources sectors have steering committees, coordinating committees, advisory bodies or expert committees that are intended to obtain technical inputs and also ensure the participation of all those concerned in land management activities. Such important committees include, the Forestry Sector Steering Committee, National Committee for Organic Product Promotion, National Coordinating Committee on Climate Change, and the EIA Coordinating Committee.

An important forum for political leaders to discuss environmental matters and take decisions to resolve such issues at local level is the Parliamentary Consultative Committee on Environment chaired by the Minister in charge of environment. Members of the opposition are also included in the committee.

The Committees on Environment Policy and Management (CEPOM) established in 1999 is one of the major coordinating mechanisms, aimed at integrating environment concerns into the development agenda at the national level (see Box 1).

Climate Change

In order to coordinate the implementation of provisions of the UNFCCC, and to pursue the decisions made at COPs and its Subsidiary Bodies, a Climate Change Secretariat has been established in the Environmental Economics and Global Affairs Division of the Ministry. The CCS works through the Climate Change Coordinating Committee and the CDM Expert Committee. Though Sri Lanka has no commitment under the Kyoto Protocol, being a low greenhouse gas-emitting country, participation in the Clean Development Mechanism (CDM) is mutually beneficial both to Sri Lanka and the global community. The Ministry of Environment, specifically the Global Affairs Division, is the Designated National Authority for CDM. Two national Clean Development Mechanism (CDM) Centres have been set up at the Universities of Moratuwa and Peradeniya, but the rules and modalities of operation of these centres have not yet been finalized. In anticipation of forthcoming international support through CDM, a National CDM Policy has been prepared (the policy awaits approval of the Cabinet).

Biodiversity

The implementation of the Biodiversity Convention and connected activities is coordinated by the Biodiversity Secretariat established in 1999 in the Ministry of Environment. Various committees and Task Forces have been established to advise and/or monitor the implementation of the Convention. Presently (Feb 2006) the following are functional:

- ✍ National Experts Committee on Biodiversity set-up to review, monitor and advise the Government on matters relating to biodiversity conservation and implementation of the CBD.
- ✍ National Species Conservation Advisory Group - for the development of the National Species Conservation Strategy.
- ✍ Committee on Environment Policy Management for Biodiversity (CEPOM – Biodiversity) for the purpose of coordinating biodiversity related policy matters, reconstituted as the CEPOM for Wildlife & Forestry.
- ✍ Sub Committee on Alien Invasive Species Management

Land Degradation

The implementation of the Convention to Combat Desertification is coordinated by the Division of Natural Resources Management of the Ministry. For this purpose a National Experts Committee on Land Degradation and Drought was appointed in 2000. The integration of land

degradation issues into the development agenda at the national level is expected to be achieved through the CEPOM on Agriculture, Plantations, Land Development & Mining.

Box 1.

Integrating Environment and Development in Decision Making – the CEPOM Mechanism

The Ministry of Environment is charged with the responsibility of facilitating sustainable development through promotion of sound environmental management, and specifically to coordinate and monitor the implementation of national environmental action plans (NEAPs).

The implementation of NEAPs involves various sectoral line agencies and decentralized authorities. In order to streamline the decision making process in this context, a new structure of Committees on Environmental Policy and Management (CEPOMs) and the Committee for Integration of Environment and Development Process (CIEDP) were established in 1998. Initially nine CEPOMs were formed for Land, Water resources, Biological diversity, Coastal resources, Industry, Minerals, Energy, Built environment, and Environmental health. These committees consisted of all relevant State sector agencies, NGOs, private sector, and specialists in the field. The CEPOM was to be chaired by the Secretary of the relevant sectoral Ministry with the Secretary of the Environment Ministry as the Co-Chair. Any complex policy matter that could not be resolved by a CEPOM could be referred to the CIEDP. The CIEDP was composed of Secretaries of line Ministries and was chaired by the Secretary of the Ministry of Finance.

This structure should have facilitated a transparent and effective decision making process. But, while there are a few cases of useful outcomes through the operation of CEPOMs, by and large the system has not worked well at all in practice. Lack of ownership by the sectoral Ministry, uncertainty in the mandate and specific terms of reference of CEPOMs, and the collapse of the system of placement of Environmental Management Officers (EMOs)¹ in line Ministries are possible reasons for the failure of CEPOMs/CIEDP.

The current NEAP prepared in 2003² has recommended a reconstitution of the CEPOMs into six sectoral groups – Forestry & Wild life Conservation; Agriculture, Plantations, Land Development & Mining; Fisheries & Coastal/Marine area Management; Industry & Tourism; Energy & Transport; and Health, Sanitation & Urban Development. The rationale for this is that the CEPOMs are based on *sectoral* clusters rather than on *natural resources*. However it is important that the issues mentioned above are addressed in order for the re-structured mechanism to perform. The Ministry of Environment will have to play a critical role to activate and maintain the momentum of operation of the CEPOMs and CIEDP.

Meanwhile the 'new' Government in 2004 has established a National Council for Economic Development (NCED) to bring together private and public stakeholders to jointly develop national economic policies and plans. Over 20 cluster committees have been created under NCED. One of these is specifically tasked with monitoring progress towards achieving the Millennium Development Goals. A related development is the current proposal of the Ministry of Environment for the creation of a National Council for Sustainable Development to monitor the implementation of the national sustainable development strategy. There is a need for an objective review of CEPOMs and other attempts at inter-sectoral coordination before arriving at a 'best option' for a coordinating mechanism for integrating environment and development.

Notes:

1. *In 2000, EMOs were recruited on contract basis under the EA1P project and assigned to different Ministries. One of their functions was to liaise with the Environment Ministry for convening of CEPOMs. It was envisaged that they would eventually be absorbed into the permanent cadre of the line Ministries. This did not happen.*
2. *Caring for the Environment 2003-2007: Path to Sustainable Development. Ministry of Environment.*

Information for this Box is based on an internal report prepared by Padmini Batuwitige, Director – Environment, Ministry of Environment, May 2006.

Decentralisation of environmental governance

A major shift in the policy was made in 1987 by the passing by Parliament of the 13th Amendment to the Constitution of Sri Lanka which introduced Provincial Councils as a new level of governance between the Central Government and Local Government. This resulted in provisions for the decentralisation and devolution of many functions in respect of environmental management and governance from the Central Government to the Provinces.

There are no formalized mechanisms for coordination between the national level agencies and the provincial and local level agencies to discuss environmental issues. Meetings and discussions for this purpose are held between the Ministries and provincial agencies on matters of interest from time to time depending on the urgency.

However, there are a large number of coordination committees at the Provincial and District levels to deal with subjects such as forestry, environment, planning, and for monitoring purposes. These are: Provincial Planning Steering Committee (PPSC), Provincial Environmental Committee; District Law Enforcement Committee (DELEC), District Coordinating Committee (DCC); Divisional Coordinating Committee (DICC), Divisional Environmental Steering Committee, Divisional Timber Committee. In addition there are Local Authority level committees such as the Environmental Protection Committee (EPC), and the Local Authority Planning Committee. Issues relating to a particular subject are discussed at these meetings and they are usually resolved. If more clarity is needed on an issue, it is generally referred to the national level agency concerned.

The **Ministry of Environment** has no structures for environmental governance at the decentralized level except for some district and provincial level committees represented by the Ministry. However, Provincial Ministries of Environment could play an important role in biodiversity matters at the regional/local levels. Also the Ministry works on some projects with Local Authorities (e.g. solid waste management and control).

The **Central Environmental Authority** has devolved its activities via eight regional offices in Kandy, Matara, Weerawila, Ampara, Trincomalee, Kegalle, Jaffna and Anuradhapura. These Regional Offices have authority to award Environment Protection Licenses, and to carry out CEA's monitoring functions in these regions. Where relevant they also attend to the EIA

procedures of prescribed projects with less complexity and magnitude such as small housing projects, land clearing, etc. The CEA has also positioned environmental officers in the Divisional Secretariats to help better address environmental matters at the local levels. These officers are expected to advise the Divisional Secretaries on environmental matters, such as awarding permits for sand mining and awarding of minor permits within the Coastal Zone on behalf of the Coast Conservation Department, and to carry out environmental awareness at the local level Under the Environmental Pioneer Programme of the CEA, school children are trained to provide leadership to the community on environmental matters. Selected teachers are appointed as District and Zonal Pioneer Commissioners. This programme, expected to build environmental consciousness of citizens, is being implemented in more than 5000 schools throughout the country. Training for the teachers and student leaders is conducted at District and Divisional levels.

The **Wayamba Environmental Authority**, set up by a Provincial statute under the 13th Amendment to the Constitution, covers all aspects of the protection, management and enhancement of the environment in the North-Western Province. It is administratively independent of the CEA. A **Solid Waste Management Authority** has been established in the Western Province with the objective of keeping the environment of urban and rural areas in the province clean for the well being of the people as well as for the flora and fauna of the province.

The **Forest Department** decentralizes its operations of conservation and management through a cadre of Divisional Forest Officers, Range Forest Officers, Beat Forest Officers and Field Assistants. Four regional offices have been set up to cover Southern & Sabaragamuwa, Uva & Central, North & North Central, and Western & North Western provinces.

The **Department of Wildlife Conservation** has a strong field presence of wildlife officers and veterinary surgeons functioning through seven regional offices to manage the wildlife reserves under its jurisdiction amounting to 13% of the total land area of the country. Arrangements are currently being made to delegate more administrative and financial authority to the regions.

The **Coast Conservation Department** devolves responsibilities of the Director Coast Conservation to the coastal Divisional Secretaries (or their authorized officers) for minor permits given in the coastal zone. Examples of minor permits are for dwelling houses with floor area

below 161.6 m² and commercial structures below 37.7 m² in the coastal zone, and for sand mining permits in the coastal zone up to 2 cubes. The Coastguard Services Division, formed in 2005, is operational at the provincial, district and divisional levels. Officers of the CCD are also active in the Western, South western, and Southern Provincial Councils to help in engineering aspects of coastal protection and monitoring.

The **Marine Pollution Prevention Authority** envisages delegation of various functions at the time of an oil spill contingency to various agencies, such as the Ports Authority, Navy, Coast Conservation Department, Meteorology Department, Local Authorities, to work at both on-shore and off-shore levels. It has one regional office in Galle.

The **Urban Development Authority**, the principal institution responsible for the planned development of urban centres in the country, is also responsible for conserving the urban environment. The UDA has six regional offices, and another tier of regional offices headed by Deputy Directors in Urban Councils. Local Authorities have been delegated limited powers in land use planning and zoning for issuing building permits by the UDA.

The **Department of Fisheries and Aquatic Resources** is mandated with conservation and sustainable use of marine biodiversity through the Fisheries Act No. 2 of 1996. Regional District Fisheries Offices of the Department operate in 14 coastal districts.

The development of the livestock sector including research and conservation of indigenous livestock species and germplasm is under the purview of the **Department of Animal Production and Health**. The Department is responsible for both devolved and non-devolved services. Management of the livestock sector is decentralized through Provincial Departments of Animal Production and Health, which are funded by the Provincial Councils. There are also several regional Animal Quarantine Centres.

3.2 Status of implementation of the Conventions

Several measures have been taken to implement the Conventions. The major reporting obligations have been met in all three thematic areas. The progress towards meeting country obligations has been reviewed in detail in the baseline appraisal reports on biodiversity, climate change, and land degradation.

Biodiversity

Since the early 1980s, there has been the evolution of a body of legislation and policies and a consequent series of high-level initiatives to deal with the protection of Sri Lanka's environment. These initiatives form the background to the promotion of Biodiversity conservation in Sri Lanka. While the concept of biodiversity conservation was introduced to Sri Lanka in the late 1980s, the country has a history of environmental conservation initiatives dating back to centuries before the colonial era.

The articles of the CBD were analysed and grouped into eight categories: (1) Resource conservation (*via in-situ* and *ex-situ* conservation), management and sustainable use of biodiversity; (2) Equitable sharing of benefits arising from use of biodiversity; (3) Enabling research and training; (4) Enabling information management; (5) Enhancing education, awareness and communication to promote biodiversity conservation; (6) Integration of biodiversity concerns; (7) Policy and plan formulation, and EIAs; (8) Financial and economic aspects and valuation.

The Biodiversity Conservation Action Plan (BCAP) was prepared to meet national obligations under Article 6 of the CBD and to promote greater commitment in the country for conservation and sustainable use of biodiversity. The BCAP was prepared by the Ministry dealing with Environment with substantial input from IUCN - the World Conservation Union and the USAID funded Natural Resources Policy Project (NAREPP). This process was the first in a series of direct implementation actions for fulfilling Sri Lanka's obligations to the CBD, and was supported by the Global Environment Facility (GEF), with a grant through the World Bank. The BCAP was approved by the Cabinet of Ministers on 27 August, 1998.

While the BCAP was never implemented in a holistic manner, due to financial and technical inadequacies, there has been some follow-up action by the by the relevant state departments and

the Biodiversity Division of the Ministry of Environment for compliance with BCAP recommendations. Among the activities of the Biodiversity Division are: (a) the setting up of a Legal Task Force to draft a suitable framework for regulating access to genetic resources and benefit sharing which can be translated into national legislation; (b) preparation of a code of ethics for biodiversity related research that involves the transfer of genetic material, or metabolites and other extracts of indigenous organisms out of the country; (c) preparation of national Biosafety Guidelines and a biosafety project; (d) initiating measures for the preparation of Action Plans for Combating Alien Invasive Species in selected protected areas, and (e) an Action Plan to conserve the biodiversity of domesticated indigenous species. In addition, several studies have been carried out to help the formulation of biodiversity related policy in the country.

Progress to fulfill the CBD requirements in certain areas, such as facilitating access to genetic resources while ensuring benefit sharing, biosafety, use of traditional knowledge for sustainable use of bio-resources and the problem of invasive alien species (i.e. Articles 8(h) & (j), 10(c) & (d), 15, 16 and 19) have been slow. These issues have not been discussed at length in the BCAP as they were at a very incipient stage in the global arena and considerably new at the national level at that time. Further, the lack of a coherent communication plan to promote and disseminate the BCAP among its stakeholders can be partly held responsible for its non-implementation in the manner envisaged.

An addendum to the BCAP has been prepared (2006) by the Biodiversity Division via the National Experts Committee on Biodiversity with funds from the ADB-funded Protected Area Management and Wildlife Conservation (PAM&WC) Project. The Biodiversity Division has also currently initiated the preparation of Provincial Biodiversity Conservation Action Plans. In view of the importance awarded to biodiversity conservation, many other related institutions have also addressed the conservation of biodiversity in their sectoral plans and programmes, especially in the forestry, wildlife, coastal and marine, and agricultural sectors.

Foremost among the many government institutions responsible for biodiversity related policies is the Biodiversity Division of the Ministry of Environment. The National Biosafety Framework Project funded by UNEP was executed by the Biodiversity Division. Capacity building for biosafety is to be undertaken through Phase II of this project. Among the major actions taken by the Division are, the preparation of the following:

- ✍ Directory of Biodiversity Information Management
- ✍ Code of Ethics for researchers
- ✍ Recovery Plans for conservation of endangered species, through the National Species Conservation Advisory Group
- ✍ Draft Act for Access to Genetic Resources and benefit sharing
- ✍ Draft Material Transfer Agreement for use in collaborative research
- ✍ Policy on Biosafety (approved by Cabinet in November 2005)
- ✍ Conservation Profiles for threatened species (260 flora and 123 fauna)
- ✍ Protected Area Gap Analysis study (under PAM&WC Project)
- ✍ Draft Policy on Traditional Knowledge and practices.

In addition, a large number of institutions administer and conserve biological resources in the country. Among them, the three departments with a mandate weighted towards biodiversity conservation in natural areas are the Forest Department, the Department of Wildlife Conservation and the Department of Coast Conservation. The Central Environmental Authority and the National Aquatic Resources Research and Development Agency (NARA), with responsibility for regulatory aspects and for research in the coastal/marine/ inland wetland areas respectively, are also important in this sphere.

The other institutions that have a mandate for some aspects of biodiversity conservation and use are the Ministries dealing with agriculture and livestock and the agencies under them. These include the Department of Agriculture, and the institutions under its purview. The Department of Animal Production and Health (DAPH), the Zoological Gardens (though this too houses mainly exotic species as yet) and the National Museums Department have definite roles to play in biodiversity conservation. The Ministry of Fisheries and Oceanic Resources (MFOR) and its line agencies, which include the Department of Fisheries and Aquatic Resources (DFAR) and NARA, also have responsibility for biodiversity conservation. The Biodiversity Conservation Unit established in the Sri Lanka Customs Department has also played an important role in preventing illegal export of bio-resources from Sri Lanka, but has been drastically reduced in strength and technical capacity in recent months. The provincial Ministries of Environment and agriculture also should play a significant role in conserving biological diversity. In addition, universities play a major role in terms of research that provides data for conservation and management of biodiversity at the national level.

Many NGOs were active in the sphere of biodiversity conservation, especially in terms of awareness creation and research, at both national and grassroots level. In contrast, involvement of the private sector has been minimal, in terms of funding research or other initiatives for biodiversity conservation.

The crucial role of implementing the BCAP as a whole, and the relevant recommendations in the Addendum however, rests with the Biodiversity Division of the Ministry dealing with environment. This is mainly in terms of (a) initiating the necessary activities and co-ordination mechanisms that will serve to ensure that all individual recommendations (i.e. sectoral and cross-sectoral) in the BCAP and addendum are implemented by the relevant institutions that bear responsibility to do so, and (b) carrying out the co-ordination, monitoring and evaluation activities that are required for this process.

Capacity development constraints and needs identified through the baseline appraisal are include: Overcoming problems of overlaps in mandate among key institutions dealing with all aspects of biodiversity and policy, via a more overarching coordination system. More effective mechanisms to integrate and coordinate the various activities of these institutions are required.

- ✍ Progress has been slow to address some Articles and objectives of the of the CBD in the areas of regulating access to genetic diversity and establishing benefit sharing mechanisms, biosafety, use of traditional knowledge for sustainable use of bio-resources, and preventing entry and establishment of alien invasive species.
- ✍ Identify a rational set of protected areas jointly by DWLC, FD, CCD and CEA using departmental data on fauna and flora, and a set of criteria based on biodiversity as well as other aspects such as cultural value, habitats for charismatic/ flagship species, value for tourism etc.
- ✍ Capacity building of the provincial and local administration bodies and officers to balance the biodiversity and environmental concerns with development activities in implementing programmes at the decentralized level.
- ✍ Capacity building of identified NGOs to better understand the concepts of environmental communication and wildlife management, to create awareness on specific issues relevant for biodiversity conservation and sustainable use, and for advocacy and negotiation skills.

Climate Change

As the first step towards implementing the UNFCCC, the Initial National Communication was prepared in 2000 by the Ministry dealing with Environment in accordance with Article 4(3) of the Convention. The national Greenhouse Gas Inventory has also been prepared (1994) and included in the Initial National Communication. The Global Affairs Division of the Ministry also took action to prepare a National Action Plan for Climate Change through 10 sectoral core teams. However its implementation has not been pursued.

Initiatives have been taken by some sectors, such as agriculture, plantation and land use, which are more vulnerable to the impacts of climate change. However other sectors, eg water resources, human health, tourism, human settlement, and forestry, have only recently embarked on assessing their degree of vulnerability to consider adaptation measures.

The baseline appraisal done under the NCSA project has revealed that while capacity building to address specific convention obligations has been done to some extent, the following requirements of the convention have been neglected with respect to capacity development.

1. Preparing national communications
2. Developing national climate change programmes
3. Preparing and managing greenhouse gas inventories, including emission database management
4. Assessing mitigation options
5. Developing and transferring technology
6. Improved decision-making, including assistance for participation in international negotiations
7. Institutional capacity-building, notably through secretariats or focal points
8. Enhancement of the enabling environment

The impacts of capacity development efforts for *Clean Development Mechanism (CDM)* projects, mainly through awareness seminars, seem to be minimal. Several awareness raising programmes on climate change have been conducted for different target groups, but *Education, and Training* on climate change issues has been given less attention. While database development and management has been done by relevant institutions, no efforts appear to have been employed in networking in order to share and exchange information. Thus the requirement for *Information and networking including databases* should be addressed. Being a developing nation where the GHG emissions are very minimal, more attention should be paid to develop adaptation measures than the mitigation measures of climate change. Therefore *assessing vulnerability and adaptation & developing and implementing adaptation plans and measures* should be given highest priority.

Land Degradation

Land degradation has emerged as a serious problem in Sri Lanka. Several measures have been adopted over the past few decades to address this environmental problem, which however remains a serious issue. There are a number of policies, strategies and plans prepared by different agencies to address the land degradation issue. The lack of proper coordination among these institutes could hinder the realization of the overall objective of controlling land degradation in the country.

In fulfillment of the requirements of the UNCCD, a National Action Programme for Combating Land Degradation was prepared by the Ministry dealing with the subject of Environment in 2002. The Ministry has also been actively involved in the Action programme for the South Asian region (SA-SRAP).

Some of the general obligations of the UNCCD have been foreseen even before the ratification of the Convention. Thus, within the prevailing legal framework there are a number of Ordinances, Acts and Laws that address the land degradation issue. The baseline appraisal shows that the requirement for promoting education and public awareness appears to have been met to a great extent by the relevant agencies. Systems for research and development as well as joint research programmes for development of appropriate technologies are being addressed to some extent within the different agencies. However international cooperation in joint research programmes is lacking.

The following aspects of the UNCCD requirements have not been addressed adequately:

1. Use of relevant traditional and local technologies to combat land degradation, and, training and development of relevant local and national capacities.
2. Assessing capacity at systemic, institutional and individual levels to satisfactorily deal with the issue of land degradation.

The following aspects of the UNCCD requirements have not been met:

1. Establishing effective early warning and advance planning for periods of adverse climatic variation.
2. Integration in the coordination and collecting, analyzing, and exchanging of information; technical and scientific cooperation; and, ensuring an enabling international environment.

4.0 PROJECT DEVELOPMENT AND IMPLEMENTATION

Initial dialogue between the Ministry of Environment and Natural Resources and UNDP started in June 2003 to explore opportunities for improved coordination and harmonization of MEAs. Discussions and consultations ensued with a view to formulating a National Capacity Needs Self Assessment project according to the needs of the country. It was decided to focus on the three Rio Conventions in the capacity needs assessment process. The National Capacity Needs Self Assessment for Global Environmental Management (NCSA) Project was developed in early 2004 and officially signed in October 2004.

The goal of the project is to identify country level priorities and needs for capacity building to address global environmental issues, in particular biological diversity, climate change, and land degradation, with the aim of catalyzing domestic and/or externally assisted action to meet those needs in a coordinated and planned manner. While these three areas are central to the exercise, it is recognized that the project will need to explore the synergies among them, as well as linkages with wider concerns of environmental management and sustainable development.

Box 2

Indicators for Quality of Outcomes and Impacts of the NCSA Capacity Building Action Plan

Contribution to socio-economic development
NCSA action plan proposes measures to improve management of environmental uses and contributes to national development priorities.

Improved negotiation skills

The NCSA final report and action plan are used to negotiate with donors for technical cooperation and capacity development

Enhanced cross-sectoral coordination

NCSA helps to build a more cooperative relationship between ministries and agencies

Involvement of non-governmental organisations

NCSA strengthens the NGO roles and contributes to capacity development and environmental management.

Established culture of self-evaluation

NCSA helps establish culture of self-evaluation and problem solving.

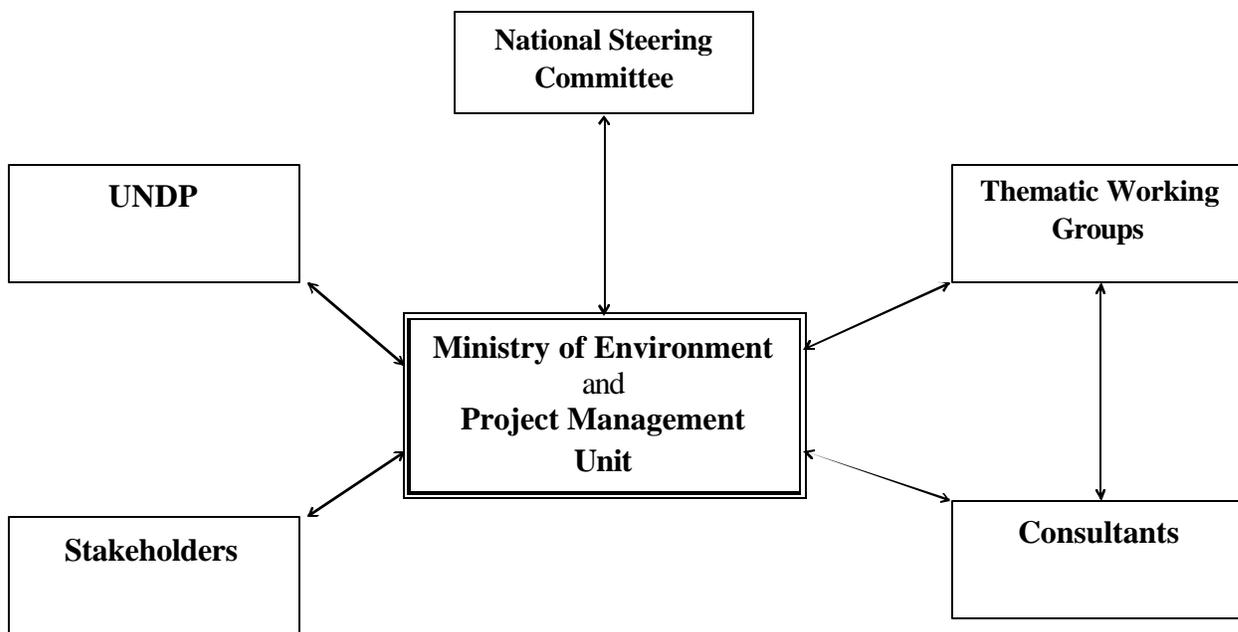
The NCSA process is expected to produce a prioritized Capacity Development Action Plan and resource mobilization strategy which would provide a basis for mobilization of domestic and external funding for managing the environment with respect to biodiversity, climate change, and land degradation.

Following initialization activities and designation of the National Project Director and National Project Coordinator from the Ministry of Environment & Natural Resources, the project got off the ground in February 2005 with the recruitment of project staff.

4.1 Implementation arrangements

The project was based in the Environmental Economics & Global Affairs Division of the Ministry of Environment & Natural Resources, where space was allocated to house the Project Management Unit.

A National Steering Committee (NSC) was appointed for overall project oversight, coordination and monitoring (Annex 1). The Secretary of the Ministry, who was also the National Project Director functioned as the Chairman of the NSC. Three Thematic Working Groups (TWGs) were appointed by the NSC for Biodiversity, Climate Change and Land Degradation respectively. The TWGs were headed by the Directors of Biodiversity, Global Affairs, and Natural Resources of the Ministry who were the respective Convention Contact Points, and comprised of 8-12 members from various disciplines and organizations. The TWGs provided guidance to the consultants and expert inputs to the preparation of the thematic assessment reports and action plan. Thematic Consultants for the three areas, a Capacity Development Expert, and a Legal & Policy Expert were appointed (Annex 2). The organizational structure is shown below.



Timetable

	2005				2006			
	Q1	Q2	Q3	Q4	Q1	Q2		
1. Establishment of Project Oversight and Management mechanism								
2. Establishment of Technical Operational process								
3. Thematic and Cross thematic profiles: 3.1 Baseline appraisal and Basic thematic profile								
3.2 Final Thematic assessment and cross thematic assessment								
4. NCSA Document and Capacity Development Action Plan								
5. Monitoring and evaluation								

4.2 Finances

The total project budget was USD 220 750, which consisted of an in-kind contribution of USD 20 750 from the Government and financial allocation of USD 200 000 from GEF through its Implementing Agency, UNDP. Financial requests and utilization of funds were done according to standard procedures of the Government in handling donor funds. However, during the first few months funds were directly disbursed by the UNDP, until the arrangements to receive and disburse funds through the Ministry were formalized.

4.3 Monitoring arrangements

The progress of the project was monitored by the NSC at its quarterly meetings. The work of the consultants was monitored by the PMU and TWGs through regular meetings. The project adhered to the reporting and monitoring system within the Ministry, which is handled by its Planning Division, under a Director/Planning who reports to the Secretary of the Ministry. Physical and financial reports were submitted to UNDP on quarterly basis for monitoring and fund disbursement. Annual and terminal reports were submitted to the Department of External Resources and the Department of National Planning.

4.4 The NCSA process vis-à-vis GEF principles for NCSA

Taking into account the experience gained in countries with regard to effective project and programme development and implementation, nine guiding principles have been drawn up by GEF for national NCSA efforts – see NCSA Resource Kit (October 2004). The extent to which these principles have been satisfied in the NCSA process is indicated in the Table below.

	GEF Principle	Comment
1.	Nationally owned and nationally led	High level support developed and maintained through NSC and national launching event; National experts used as consultants and in TWGs.
2.	Draw on existing structures and mechanisms for coordination	Project was based in the Ministry of Environment which is the focal point for all 3 conventions; Existing linkages with other Ministries and agencies was used in the process; Members of expert groups and other committees of the Ministry were considered when establishing TWGs.
3.	Pay due attention to provisions and decisions of the Conventions	The requirements of each convention were reviewed and analysed by the Thematic Consultants; Requirements arising from decisions of COPs also considered in detail (biodiversity).

4.	Multi-stakeholder participation, consultation and decision making	Key stakeholders represented in the NSC and TWGs: 21 stakeholders in NSC and 18 stakeholders represented in three TWGs.
5.	Build on existing related work	This principle was largely satisfied through the baseline appraisal (stocktake) which looked at the existing plans and policies, progress towards meeting national obligations, and previous capacity building efforts.
6.	Holistic approach to capacity development	Stakeholders were identified and engaged in the NCSA process.
7.	Mainstreamed into the context of sustainable development in the country	The NCSA process attempted to address this by inviting representation from development sectors as well as cross sectoral fields, such as finance & planning, for consultative meetings.
8.	Focus on cross cutting issues	The need to focus on cross cutting issues was recognized from the outset. The approach to cross cutting issues was decided by discussions with thematic consultants, Capacity Expert and Chairs of TWGs.
9.	Special attention on capacity assessment at systemic level	Capacity constraints at systemic level were given due attention in all three thematic assessments as well as the cross cutting assessment.

4.5 Stakeholder Analysis

Stakeholders were initially identified jointly by the three Convention Contact Points of the Ministry of Environment. Subsequently a stakeholder analysis was carried out at the National Launching cum workshop at which stakeholders were classified into primary and secondary stakeholders.

Twenty one stakeholders were represented in the National Steering Committee, and 18 stakeholders were more closely involved through the entire NCSA process as members of the three Thematic Working Groups.

Biodiversity: Government Ministries dealing with the subject of environment, agriculture, livestock, land, fisheries, indigenous medicine, and foreign affairs were identified as primary stakeholders; those responsible for power and energy, finance, science and technology, tourism, urban development, health, trade, education, transport, and provincial councils were deemed to have a significant role in implementing the CBD though not having a direct mandate for

conservation and sustainable use of biodiversity. Twenty one and 27 State agencies were identified as having primary and secondary roles respectively. In addition, the private sector, NGOs, academic sector, and media were recognized as important stakeholders.

Climate Change: The stakeholder Ministries included the following – environment, agriculture, livestock, land, irrigation, fisheries, power & energy, industries, finance, science & technology, tourism, housing, Mahaweli, urban development, health, education, transport, and foreign affairs. From the State agency category, 36 institutions were identified as stakeholders. Other stakeholders were from NGOs, private sector, academic sector, and donor agencies.

Land Degradation: Among the Ministries, those with responsibility for environment, agriculture, livestock, land, irrigation, fisheries, Mahaweli, and housing were identified as primary stakeholders. Ministries dealing with power & energy, industries, tourism, urban development, highways, finance, foreign affairs, indigenous medicine, health, science & technology, and plantations were classified as secondary stakeholders with major role in land degradation issues. Thirty six State agencies were identified as stakeholders, 22 primary and 14 secondary. Other stakeholders were from NGOs, the academic sector and private sector.

The identified stakeholders in the three thematic areas were involved in the NCSA process in several ways. All were included in the questionnaire surveys carried out, many were consulted through roundtables, mini-workshops, and workshops and 39 were represented in the TWGs and NSC – Refer Annex 2 for details.

5.0 THE NCSA PRODUCTS

5.1 Thematic Profiles

Stocktaking or the baseline appraisal process was the first step to identification of capacity needs. This process resulted in Basic Thematic Profiles for the three thematic areas of biodiversity, climate change, and land degradation. The tools used by the thematic consultants for the baseline appraisal were desk study, questionnaire survey, personal visits and interviews. The conclusions and findings of the baseline appraisal with regard to the status of implementation of the conventions have been given in Section 3.2 of this report. The basic thematic profiles also deal with the national obligations under the conventions, and the plans, policies, legal framework, and institutional mechanisms to address the thematic areas of biodiversity, climate change and land degradation. These aspects are reported in Chapters 6, 7, and 8.

In the next stage of the NCSA process, *viz*, the thematic assessment, the country performance in addressing convention requirements, and, the priority capacity needs and opportunities for capacity development for each thematic area, at the systemic, institutional and individual levels were identified.

In the thematic assessments for climate change and for land degradation, the prioritization of the issues, ie, the national obligations as a Party to the convention, was initially done using an Issue Prioritization Matrix¹, followed by a root cause analysis to identify the capacity constraints and opportunities for capacity development. In the case of biodiversity, the priority areas were initially selected based on the responses to the questionnaires, interviews and desk research. Prioritization was then done through a subjective qualitative analysis of capacity for a range of overall capacities required to fulfill obligations under each of the CBD articles, followed by a prioritization matrix. The priority areas were further confirmed at the workshops held to identify specific capacity needs in the priority areas.

In all three thematic areas the identification of priority capacity constraints and needs was done through a consultative process and participation of stakeholders. The tools used were – questionnaire survey, roundtables, mini-workshops, workshops, and focus group discussions. The methods and tools used and the identified capacity constraints, needs and capacity development

¹ A Guide for Self-Assessment of Country Capacity Needs for Global Environmental Management, GEF & UNITAR, September 2001.

interventions are detailed in the respective thematic assessment reports. The findings of the thematic assessments are summarized in Chapters 6 (biodiversity), 7 (climate change), and 8 (land degradation).

5.2 Cross Cutting Issues

The NCSA process, while focusing on the capacity needs for the thematic areas of biodiversity (UNCBD), climate change (UNFCCC), and land degradation (UNCCD), recognizes as a matter of importance (a) the need to analyze capacity needs and opportunities that are common to the three conventions, and (b) the need to explore the synergies among these areas as well as linkages with the wider concerns of environmental management and sustainable development.

The approach adopted for the cross cutting assessment in this project was to identify the capacity needs and interventions that cut across the thematic areas, based on the results of the three thematic assessments. Addressing these capacity needs is expected to achieve synergies in the implementation of UNCBD, UNFCCC and UNCCD. The cross cutting capacity needs and interventions are given in Chapter 9.

5.3 Capacity Development Action Plan

The action plan for capacity development is the end product of the NCSA process. The purpose of the action plan is to mobilize resources (domestic and international) and implement the capacity development actions identified as necessary for sound environmental management according to national priorities while meeting international commitments. The consolidated action plan is given in Chapter 10.

5.4 Other Outputs from NCSA

Apart from the main outputs stated above, the following reports have been prepared:

1. Report of the Roundtable Meeting on capacity development in Sri Lanka for Modern Biotechnology using indigenous genetic resources.
2. Report of the Roundtable on the participation of the Private Sector in the conservation and sustainable use of Biodiversity.
3. Report of the Workshop on Information management and exchange in relation to biodiversity.

4. Report of the Workshop on capacity building needs to ensure Benefits from providing Access to Genetic Resources.
5. Convention on Climate Change: Policy and Legal Issues – Report by Jagath Gunawardana.
6. Convention on Biological Diversity: Legal and Policy Issues – Report by Jagath Gunawardana.
7. Desertification Convention: Legal Issues – Report by Jagath Gunawardana.
8. Paper on Developing Capacity to facilitate Access to Genetic resources under Article 15 of the CBD to enable Benefit Sharing – by Ruana Rajepakse, Shalini Ratwatte, Jagath Gunawardane, Jinie Dela, & Mahen Watson, with contributions by Senaka de Saram, Geethani Wijesinghe and Govinda Jayasinghe, edited by Jinie Dela (Outcome of the deliberations of the legal group)

The project also resulted in several other benefits. Experts in the specific areas addressed by roundtable meetings and mini-workshops, particularly in the biodiversity thematic area, were invited to brief the participants on existing capacity and to “seed” the discussions. Thus the thematic assessment meetings also built capacity among participants so that they could participate meaningfully in the identification of capacity needs and to achieve the expected outputs from the meetings.

The outcomes of the consultative workshops have been made available to agencies for their use. For instance, the recommendations of the workshop on access to genetic resources and benefit sharing and the paper on legal framework for providing access and ensuring benefits have been communicated to the Biodiversity Division of the Ministry of Environment, so that follow up action may be started. The report of the workshop on Information Management and Exchange, and the Roundtable Meeting on capacity development in Sri Lanka for Biotechnology Using Indigenous Genetic Resources, and the results of the two consultative meetings on adopting the ecosystem approach, organized jointly with the NSF as a potential partner organization to carry forward the recommendations, have been passed on to the NSF. The Report of the Roundtable on

the Participation of the Private Sector in the Conservation and Sustainable Use of Biodiversity was circulated to the participants.

NGOs were invited to participate in the process, and contributed actively during the consultative meetings. The business sector was also engaged fruitfully in some of the discussions.

The capacity of the project staff was built through on-the-job training in organizing events with the involvement of diverse stakeholders. A training workshop in environmental communication was conducted by the Biodiversity Consultant for project staff and staff of the Ministry of Environment. Training in environmental communication was also arranged for an NGO and two government institutions at their request.

Several benefits accrued to the Global Affairs Division of the Ministry of Environment as a result of the PMU being housed in the GA Division. These include the reorganization of the office space, provision of air conditioning, internet facility, and intercom system. The infrastructure of the Division will be further built by the transfer of the equipment (computers, photocopier etc) purchased for the project to the Ministry of Environment.

6.0 THEMATIC ASSESSMENT OF BIODIVERSITY IN RELATION TO CAPACITY DEVELOPMENT

6.1 Convention Requirements

The Convention on Biological Diversity was opened for signature on 5 June 1992, and entered into force on 29 December 1993. Currently 188 countries have ratified it, making it one of the most widely adopted environmental treaties of all time. Sri Lanka ratified the CBD on 23 March 1994.

The CBD, is a legally binding treaty which seeks to address global biodiversity loss by preserving the diversity of life forms through conservation and sustainable use. It also contributes to the overall objective of sustainable development and supporting the achievement of the Millennium Development Goals. In doing so the CBD takes particular note of the difficulties of developing countries to conserve biodiversity and obtain equitable benefits from its components.

The three explicit objectives of the CBD are: (1) conservation of biodiversity, (2) sustainable use of its components, and (3) fair and equitable sharing of benefits arising out of the utilization of genetic diversity, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies.

Overall, Sri Lanka is obliged to fulfill all the CBD Articles from 1 – 20.

However the responsibility for implementing some sub-articles of the CBD (example: Articles 9(e) and 12(b)) involve responsibility only as a beneficiary (*i.e. the responsibility for these lies with developed countries to assist developing countries*). Overall, within the broad framework of the CBD. it leaves a certain degree of flexibility to the individual Parties to determine how its provisions--set out as goals and policies--are implemented.

Sri Lanka's commitments to the CBD *include the* following:

1. To prepare or adapt national strategies, plans or programmes for biodiversity conservation and sustainable use. [Article 6a]
2. To identify and monitor components of biodiversity for conservation and sustainable use, with emphasis on threatened components of biodiversity, processes having adverse impacts; and maintaining data obtained through monitoring [Article 7]

3. Integrating conservation and sustainable use into sectoral & cross sectoral plans, programmes, policies. [Article 6b] and into national decision making. [Article 10a]
4. To promote *in situ* conservation with emphasis on conservation and management of ecosystems and wild species in or outside Protected Areas; restoring degraded areas; promoting recovery of threatened species; controlling alien species; addressing biosafety issues; conserving indigenous and local knowledge, innovations and practices and developing and maintaining required legislation for conservation of threatened species. [Article 8]
5. To promote ex-situ conservation of biodiversity to complement in-situ measures; adopting measures for recovery and rehabilitation of threatened species and their reintroduction to natural habitats and regulating and managing collection for ex-situ conservation without affecting in-situ measures [Article 9]
6. To promote sustainable use, including encouraging cooperation between government and private sector to attain sustainable use of biodiversity. [Article 10e]
7. Developing and introducing economically and socially sound incentives. to promote conservation and sustainable use of biodiversity [Article 11]
8. To promote capacity building for scientific and technical education and training to conserve and sustainably use components of biological diversity [Article 12a], and promoting research and using scientific advances for conservation & sustainable use. [Article 12b]
9. Promotes research and training by establishing programmes, encourages research, and promotes use of scientific advances in biological diversity research to develop methods for SU and conservation of Biodiversity.
10. Raising understanding and awareness about biodiversity and measures for conservation. [Article 13]
11. Promoting the use and compliance with environmental impact assessment (at national level and between Parties) for biodiversity conservation. [Article 14]
12. Ensuring equitable sharing of benefits derived from the use of genetic resources to which other country parties are provided access, with “prior informed consent” of the source country and on “mutually agreed terms” between the two parties (governments are accorded authority to determine access to genetic resources).
13. To facilitate the exchange of publicly held information important for conservation of biological diversity, particularly to address the information gap between developed and developing countries. (Article 17)

14. Promoting biosafety [Article 19]
15. Facilitating access to and transfer of technologies for conservation and sustainable use of biological diversity [Article 16], including technologies using genetic resources. [Articles 16, 19]
16. Promoting technical & scientific cooperation among contracting parties. [Article 18]
17. Accessing financial resources **for biodiversity conservation**. [Article 20, 21]

Although the CBD is a legally binding treaty, the legal aspects of the obligations under Articles 15, 16 and 19 remain grey areas as the Convention also strives to address the intellectual property rights concerns of its developed country parties. Hence the actual situation with regard to the transfer of modern biotechnologies by users of biological resources to countries providing such bio-resources remains vague and ambiguous and open to varied interpretations. Further, Sri Lanka is more a ‘provider’ than a ‘user’ of genetic resources at present. As such the responsibility of fulfilling Sub-articles 15(6) & (7) fall more on the ‘users’ to whom Sri Lanka will be providing genetic resources under the CBD. These sub-articles will become relevant as the country becomes a user of genetic resources in the future. Sub-articles 16(2), (3) & (4), and 19(1) & (2) similarly imply the responsibilities of parties that are users of genetic resources when the provider is a developing country.

A noteworthy feature of the CBD is that it goes beyond a commitment for biodiversity conservation *per se* and sustainable use of its components, and covers issues such as equitable sharing of benefits from the use of biological diversity, **including benefit sharing from genetic resources, and access to information and technology**.

The ecosystem approach has been adopted as the primary framework of action to be taken to facilitate achieving the objectives of the CBD (COP 2, COP 5). This approach is in essence a generic strategy for integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable manner.

Parties to the CBD have also agreed (COP 6) to the “2010 Biodiversity Target”, that is, to achieve a significant reduction of the current rate of biodiversity loss at the global, regional and national levels as a contribution to poverty alleviation and to the benefit of all life on earth. This target was confirmed by the World Summit on Sustainable Development held in 2002.

6.2 Institutional Framework

The Ministry in charge of the subject of Environment is the focal point for the CBD. Within the Ministry of Environment, the implementation of the Biodiversity Convention and connected activities is coordinated by the Biodiversity Secretariat established in 1999. The Biodiversity Division carries out the functions of the Secretariat. The Division is specifically responsible for facilitating and formulating policies and plans for biodiversity conservation, carrying out specific responsibilities assigned to it in the BCAP and its Addendum, ensuring that national obligations under the CBD and the Cartagena Protocol are met with, and any benefits (training, funding for COP determined activities, etc) under these Agreements are received.

Various committees and Task Forces have been established to advice and/or monitor the implementation of the Convention. Presently the following are functional:

- ✍ National Experts Committee on Biodiversity set-up to review, monitor and advice the Government on matters relating to biodiversity conservation and implementation of the CBD.
- ✍ National Species Conservation Advisory Group - for the development of the National Species Conservation Strategy.
- ✍ Committee on Environment Policy Management for Biodiversity (CEPOM – Biodiversity) for the purpose of coordinating biodiversity related policy matters, reconstituted as the CEPOM for Wildlife & Forestry.
- ✍ Sub Committee on Alien Invasive Species Management.

In view of the importance awarded to biodiversity conservation, many other related institutions have also addressed the conservation of biodiversity in their sectoral plans and programmes, especially in the forestry, wildlife, coastal and marine, and agricultural sectors. A large number of institutions administer and conserve biological resources in the country. Among them, the three departments with a mandate weighted towards biodiversity conservation in natural areas are the Forest Department, the Department of Wildlife Conservation and the Department of Coast Conservation. The Central Environmental Authority with responsibility for regulatory aspects, and the National Aquatic Resources Research and Development Agency (NARA) with a mandate for research in the coastal/marine/ inland wetland areas respectively, are also important in this sphere.

The following institutions also have a mandate for some aspects of biodiversity conservation and use: Ministries dealing with agriculture and livestock and the agencies under them; Department of Agriculture, and the institutions under its purview; The Department of Animal Production and Health (DAPH); the Zoological Gardens (though this too houses mainly exotic species as yet); **The Botanic Gardens**, National Museums Department; Ministry of Fisheries and Oceanic Resources (MFOR) and its line agencies, which include the Department of Fisheries and Aquatic Resources (DFAR) and NARA. The Biodiversity Conservation Unit established in the Sri Lanka Customs Department has also played an important role in preventing illegal export of bio-resources from Sri Lanka, but has been drastically reduced in strength and technical capacity in recent months. The provincial Ministries of Environment and Agriculture also should play a significant role in conserving biological diversity.

In addition, universities play a major role in terms of research that provides data for conservation and management of biodiversity at the national level.

Many NGOs were active in the sphere of biodiversity conservation, especially in terms of awareness creation and research, at both national and grassroots level. In contrast, involvement of the private sector has been minimal, in terms of funding research or other initiatives for biodiversity conservation.

6.3 Progress towards meeting the national obligations

Since the early 1980s, there has been the evolution of a body of legislation and policies and a consequent series of high-level initiatives to deal with the protection of Sri Lanka's environment. These initiatives form the background to the promotion of Biodiversity Conservation in Sri Lanka.

The Biodiversity Conservation Action Plan, prepared to meet national obligations under Article 6 of the CBD, was the first in a series of direct implementation actions for fulfilling Sri Lanka's obligations to the CBD. The BCAP was prepared by the Ministry dealing with Environment with substantial input from IUCN - the World Conservation Union and the USAID funded Natural Resources Policy Project (NAREPP). This process was supported by the Global Environment Facility (GEF) with a grant through the World Bank. The BCAP was approved by the Cabinet of Ministers on 27 August, 1998.

While the BCAP was never implemented in a holistic manner, due to financial and technical inadequacies, there has been some follow-up action by the Biodiversity Division of the Ministry of Environment for compliance with BCAP recommendations. Among these activities are:

- (a) the setting up of a Legal Task Force to draft a suitable framework for regulating access to genetic resources and benefit sharing which can be translated into national legislation;
- (b) preparation of a code of ethics for biodiversity related research that involves the transfer of genetic material, or metabolites and other extracts of indigenous organisms out of the country;
- (c) preparation of national Biosafety Guidelines and a biosafety project;
- (d) initiating measures for the preparation of Action Plans for Combating Alien Invasive Species in selected protected areas; and
- (e) preparation of an Action Plan to conserve the biodiversity of domesticated indigenous species. In addition, several studies have been carried out to help the formulation of biodiversity related policy in the country.

Progress to fulfill the CBD requirements in certain areas, such as setting up a mechanism to facilitate access to genetic resources that would ensure benefit sharing, biosafety, use of traditional knowledge for sustainable use of bio-resources and the problem of invasive alien species (i.e. Articles 8(h) & (j), 10(c) & (d), 15, 16 and 19) have been slow. These issues have not been discussed at length in the BCAP as they were at a very incipient stage in the global arena and considerably new at the national level at that time. Further, the lack of a coherent communication plan to promote and disseminate the BCAP among its stakeholders can be partly held responsible for its non-implementation in the manner envisaged.

An addendum to the BCAP has been prepared (2006) via the National Experts Committee on Biodiversity with funds from the ADB-funded Protected Area Management and Wildlife Conservation (PAM&WC) Project. The Biodiversity Division has also currently initiated the preparation of Provincial Biodiversity Conservation Action Plans.

The National Biosafety Framework Project funded by UNEP was completed in 2005. Capacity building for biosafety is to be undertaken through Phase II of this project.

Among the other actions taken by the Division, the preparation of the following are significant:

- ✍ Directory of Biodiversity Information Management
- ✍ Code of Ethics for researchers
- ✍ Recovery Plans for conservation of endangered species, through the National Species Conservation Advisory Group
- ✍ Draft Act for Access to Genetic Resources and benefit sharing
- ✍ Draft Material Transfer Agreement for use in collaborative research
- ✍ Policy on Biosafety (approved by Cabinet in November 2005)
- ✍ Conservation Profiles for threatened species (260 flora and 123 fauna)
- ✍ Protected Area Gap Analysis study (under PAM&WC Project)
- ✍ Draft Policy on Traditional Knowledge and practices.

In view of the importance awarded to biodiversity conservation, many other related institutions have also addressed the conservation of biodiversity in their sectoral plans and programmes, especially in the forestry, wildlife, coastal and marine, and agricultural sectors.

The crucial role of implementing the BCAP as a whole, and the relevant recommendations in the Addendum however, rests with the Biodiversity Division of the Ministry dealing with environment. This is mainly in terms of (a) initiating the necessary activities and co-ordination mechanisms that will serve to ensure that all individual recommendations (i.e. sectoral and cross-sectoral) in the BCAP and addendum are implemented by the relevant institutions that bear responsibility to do so, and (b) carrying out the co-ordination, monitoring and evaluation activities that are required for this process.

6.4 Action plans and policies for implementing UNCBD

While the concept of biodiversity conservation was introduced to Sri Lanka in the late 1980s, it is noteworthy that the country has a long-reaching history of environmental conservation initiatives, especially during pre-colonial times.

The policies and plans formulated specifically for implementation of the CBD and other policies/plans related to biodiversity conservation and sustainable use are described below.

Policies and plans	
National Conservation Strategy (NCS) in 1988	Sri Lanka was one of the first countries in Asia to prepare a National Conservation Strategy. This comprised a preliminary strategy to deal with problems of environmental degradation in the country.
National Environmental Action Plan (NEAP)	The first NEAP was formulated in 1991. Since then, there have been several revisions of the NEAP as warranted by the NEA. The current NEAP is termed “Caring for The Environment: National Agenda for Sustainable Development 2003-2007” (CFE). The CFE contains the National Environmental Policy, development linked environmental strategies for implementing the policy, and a comprehensive set of actions for managing the environment so as to make the development process sustainable. Development is perceived with the active involvement of NGOs, business sector with the government sector at both national and provincial level. The main sector based environmental action programmes from 1990-2001 are listed in the CFE in terms of forestry and wildlife conservation; agriculture, plantations, land development and mining; fisheries and coastal and marine area management, industry and tourism; energy and transport; and health sanitation and urban development. Conservation of biological diversity is conceived as cross-sectoral action for overall natural resource management. This conforms with the CBD and for integrating biodiversity considerations into cross-sectoral plans and programmes.
National Forest Policy	First National Forest Policy in 1929 - to emphasize the importance of soil and water conservation and the preservation of indigenous fauna and flora. The Forest Policy has since then been updated and amended; the most recent being the Forest Policy of 1995.
Forestry Sector Master Plan	The FSMP prepared in 1995 (for the period 1995 to 2020) addresses management of areas under the Forest Department and the Department of Wildlife Conservation (although this is now followed only by the FD).
Wildlife Policy	Sri Lanka’s first Wildlife Policy was developed in 1990, and revised again in 2000. The National Wildlife Policy of 2000 emphasizes state commitment to conserve wildlife resources for the benefit of present and future generations.
National Biodiversity Conservation Action Plan (BCAP) and Addendum	The BCAP preparation started in 1996; and approved in 1998. An Addendum to the BCAP was finalized in 2006.
National Coastal Zone Management Plan (CZMP)	The policies, strategies and actions to address issues in the coastal areas are addressed by the CZMP. This is periodically

	<p>updated and revised by the Coast Conservation Department (CCD), as mandated under the Coast Conservation Act (CCA) of 1981. The first CZMP was approved in 1990. The latest is the CZMP of 2004. It addresses the various issues of coastal resources management comprehensively. Special Area Management (SAM) at selected coastal sites is promoted through the CZMP.</p>
<p>Fisheries: Until the mid 1990s, the fisheries sector policies traditionally sought to increase fish yields by paying scant attention to conservation and sustainable use of its fisheries resources. Due to the heavy decline of near-shore fish yields, however, there have been many projects to promote sustainable fishery and conservation of aquatic resources. Concepts of sustainable fishery and conservation of aquatic resources are now addressed in the Fisheries Act and in fishery sector institutional plans and policies. These are based on recommendations made by the National Aquatic Resources Development Agency (NARA), and more recently from the concluding Coastal Resources Management Project (CRMP).</p>	
<p>Agriculture: In the past the government policy for the agricultural sector was to move towards self sufficiency in essential food items (e.g. rice, fish sugar, pulses and milk), due to the attempt to raise the productivity of tree crops and promote diversification of crops to increase rural agricultural employment. The National Agriculture, Food and Nutrition Strategy of 1984 aimed at assessing Sri Lanka's agriculture and food situation along with the establishment of priorities for future sectoral development. This recognised that the proper management of the land resource was crucial for future agricultural development of the country. In 1995, the then Ministry of Agriculture, Lands and Forestry released a fairly comprehensive National Policy Framework for Agriculture, Lands and Forestry. While it does not intend to spell out an overall policy perspective for agricultural development, it does articulate key policy issues relevant for special commodities and crops - in terms of rice, and other crops considered under domestic agriculture, export agriculture and plantation agriculture - as well as for forestry, livestock and fisheries.</p> <p>The present agricultural research policy is based on demand driven research on the food crop sector which will be productive, eco-friendly, sustainable, economically viable and socially acceptable. In the context of this policy framework for agricultural development, a comprehensive National Agricultural Research Plan was developed in 1999 by CARP to instigate a coherent national level programme of action for the National Agricultural Research System (NARS). NARS covers the Department of agriculture and the institutions under it, plantation crops research institutes, and the agricultural faculty of the University of Peradeniya.</p> <p>Although a detailed Agriculture Research Plan for rice and other food crops (for the period 2000-2008) was prepared for NARS, <u>this has not been holistically implemented due to the shortage of resources.</u> However, some aspects of it have been addressed by individual institutions within NARS. The future research trends are expected to give weight to a greater understanding of natural resources, the environment and resource sustainability, soil and land management and developing appropriate partnerships both nationally and internationally.</p> <p>After the amalgamation of agriculture, irrigation, environment and Mahaweli development under one ministry in November 2005, arrangements have been made to draft a new agricultural policy that will give greater focus towards poverty alleviation through agricultural development.</p>	
<p>Livestock:</p>	

<p>The livestock development policy and research policy for the livestock sector deal with: characterisation (using morphological traits) of crop-livestock systems; optimising the use of resources; studying collection and marketing patterns of animals and produce in relation to economics of farmers and farming systems; determining the potential of non-traditional livestock species and their suitability for local farming systems; studying diseases that could be transmitted to humans; determining the environmental effects of livestock farming; and developing methods to use animal wastes. There is a National Agricultural Research Policy (NARP), and a national breeding policy to which all animal breeders have to adhere to and is revised periodically on an annual or biannual basis.</p> <p>Notably, the policies of this sector do not consider the requirements for conservation and sustainable use of indigenous animal resources. However, the DAPH and VRI are both aware that local genetic resources can be used for livestock improvement.</p>	
<p>National Wetlands Policy</p>	<p>Policy in the wetlands sector has been lagging, probably due to the absence of an institution that dealt specifically with wetland issues until recently. The wetlands policy which had been in draft form since the mid 1990s, was finalized and approved in 2005. The National Wetlands Act has been in draft form since 1989. However amendments to the NEA are currently being prepared to enable the necessary regulations to be framed for conservation and management of wetlands. Land reclamation policies have been prepared to help stop the conversion of wetlands to other uses. A special unit now has been created in the CEA to coordinate implementation of the National Wetland Policy.</p> <p>The Ministry dealing with environment is finalising a national sand policy with regards to inland sand mining, which has considerable bearing on wetland biodiversity as well as coastal biodiversity.</p>
<p>National Biosafety Policy</p>	<p>The MOE has prepared a national policy on biosafety through the National Biosafety Framework Project, and this has been granted Cabinet approval. In compliance with the Cartagena Protocol on biosafety, the main goals of the national biosafety policy are to: (1). Ensure the highest possible level of biosafety in transfer, handling and use of genetically modified organisms on the basis of precautionary approach, and (2). Develop the national biosafety framework and all its components. The biosafety policy includes the identification of centres of excellence for testing of Genetically Modified organisms (GM testing), their accreditation and support. The national biosafety framework is expected to be implemented by the MOE under Phase II of the National Biosafety Framework Project.</p>

Major gaps in policy:

Sri Lanka has no policy on providing Access to Genetic Resources (and biochemical substances produced by genes of indigenous species) in the context of gaining fair and equitable benefits from such provision. This policy is essential to guide officials in the “exercise of their statutory discretion” as and when such access is provided. At present, the exchange of genetic resources is happening within many institutions as part of their institutional research mandates or institutional policies (e.g. DOA, DAPH, ITI), for taxonomic identification or for various research purposes where whole specimens or parts of organisms are sent to overseas to partner institutions. The DWLC (assisted by the FD) has the authority to provide permits for export of wild bioresources. **However, there are no institutional policies for ‘benefit sharing’ in these instances, and it is not clear** whether the exchange is facilitated through material transfer agreements (MTAs). A policy on Access to Genetic Resources is also essential to indicate national requirements to potential external partners with whom collaboration is likely (or is already happening) for research on Sri Lanka’s genetic resources. There are also no national policies to: (a) govern biodiversity information exchange; (b) biotechnology using indigenous (and exotic) genetic resources – especially when there is foreign collaboration; (c) identify a national network of areas for Protection; and (d) promote *ex-situ* conservation and captive breeding of threatened or commercially important protected species.

6.5 Legal instruments and regulatory mechanisms

Overall, there are over 80 laws enacted to conserve Sri Lanka’s environment. The Fauna and Flora Protection Ordinance (FFPO) amendment Act No. 49 of 1993 and the Forest Ordinance (FO) amendment Act No, 23 of 1995 are the main legal instruments that govern biodiversity conservation, including genetic resources, as at present. There have been periodic revisions of the Flora and Fauna Protection Ordinance (FFPO) and the Forest Ordinance (FO) to enhance protection of wild biodiversity. The FFPO besides protecting animal and plant life within the six categories of national reserves that it recognizes has provision to protect certain identified categories of animals and plants (Protected Species) wherever they are found. The FFPO also states the penalties for violation of the law. Both the FFPO and the FO provide measures to control the export of wild biodiversity. The Fauna & Flora Amendment Act No 49 of 1993 by having in its mandate the words “protection against commercial exploitation” covers commercial access to indigenous genetic resources.

Several other acts enacted for fisheries management, plant protection and animal husbandry are also of relevance for conservation of indigenous fish, crop and livestock diversity and genetic resources. The main laws governing environmental management have a major impact on biodiversity conservation are given below.

Legislation
The National Environmental Act No. 47 of 1980 and the amendment No. 56 of 1988.
The Forest Ordinance No. 16 of 1907, and its subsequent amendments
The Fauna and Flora Protection Ordinance No. 2 of 1937, and subsequent amendments including Act No. 49 of 1993.
Felling of Trees Control Act No. 9 of 1951.
The National Heritage Wilderness Area Act No. 3 of 1988.
Coast Conservation Act No. 57 of 1981, and the amendment No.64 of 1988.
The Fisheries and Aquatic Resources Act No. 2 of 1996.
Marine Pollution Prevention Act No. 59 of 1981.
National Aquatic Resources and Development Agency Act No. 54 of 1981 National Aquatic Resources and Development Agency Act No. 54 of 1981
Soil Conservation Act, No. 25 of 1951; amended in 1996.
Agrarian Services Act No. 58 of 1979, and its subsequent amendments
Agrarian Research and Training Institute Act No 5 of 1972
Tea Small Holdings Development Act No 35 of 1975
Plant Protection Act No. 35 of 1999 (replacing Plant Protection Ordinance No.10 of 1924).
Water Hyacinth Ordinance No 09 of 1909
The Botanic Gardens Ordinance No. 31 of 1928
Control of Pesticides Act, No. 33 of 1980, as amended by No. 6 of 1994
National Zoological Gardens Act No 48 of 1981
Animal Disease Act No 59 of 1992
Flood Protection Ordinance No. 4 of 1924. Flood Protection Ordinance No. 4 of 1924.
The State Lands Ordinance No. 8 of 1947 and its two amendments.
Land Development Ordinance No.19 of 1935; and its subsequent amendments.
Colombo District (Low Lying Areas) Reclamation and Development Board Act of 1968, and the Amendment - Sri Lanka Land Reclamation and Development Corporation Act No. 52 of 1982.
Town and Country Planning Ordinance No.13 of 1946.
Housing and Town Improvement Ordinance, No.19 of 1950.
Urban Development Authority Law No 37 (?) of 1978, as amended by subsequent Acts, the recent ones being Act No. 44 of 1984 and Act No. 4 of 1992.
Mahaweli Authority of Sri Lanka Act No. 23 of 1979; and amendment 59 of 1993.
Mines and Minerals Act No. 33 of 1992.
Water Resources Board Act No.29 of 1964.
National Water Supply and Drainage Board Act No. 12 of 1974.

Legislation
Customs Ordinance No. 17 of 1981
Antiquities (Amendment) Act, No. 24 of 1998.
National Museums Ordinance No. 31 of 1942.
The Intellectual Property Act No. 36 of 2003
Science and Technology Development Act No. 11 of 1994.

The overall policy in the country for environmental management is greatly influenced by the National Environmental Act (NEA) No. 47 of 1980 which was the first comprehensive piece of legislation on environmental management in Sri Lanka. Subsequent to this, Environmental Impact Assessments (EIAs) to all development projects were introduced in 1984 through a Cabinet decision. The concept of inter-generational justice and the principle that natural resources should be used in a sustainable manner for the continued enjoyment by present and future generations is recognised in the NEA. The NEA of 1980 also served to establish the Central Environmental Authority (CEA).

The NEA amendment Act No. 56 of 1988 makes legal provision for regulatory control of environmental pollution and to mitigate the adverse impacts of development activities through legally binding EIA procedures. It is therefore mandatory for all industries (including service facilities such as vehicle service stations) that are classified as low, medium or high polluting to obtain an Environmental Protection Licence (EPL) from the CEA. Part of this work has been devolved to the LAs. The NEA under section 24(c) permits environmentally sensitive areas to be declared. Developers in these areas should consult the CEA on the development plan for this area which specifies the types of development permissible in these areas. These plans have to be gazetted to be effective. The NEA, the FFPO and FO are equal in status, but these override other laws such as the CCA, the UDA Law and the Fisheries Act.

The Coast Conservation Act No. 57 of 1981 and the Amended Act No. 3 of 1988 comprise the main legislation which governs the coastal zone and development within this area. Apart from the CCA, the Coastal Zone Management Plan (which is empowered by the CCA) is the main instrument which influences implementation of programmes and enforcements in the Coastal Zone. According to the CCA of 1981 the Minister (in charge of the subject) may on the recommendation of the Coast Conservation Advisory Council make regulations to give effect to any provisions of the CZMP, including those which regulate use of the foreshore by the general public. Thus the CZMP is an important legal instrument once it comes into operation when

gazetted after receiving Cabinet approval.

The Fisheries Act No. 2 of 1996 addresses measures for "protection of fish and other aquatic resources" (i.e. the Fisheries Act covers all aquatic organisms (which include inland, coastal and marine animals and plants which are collectively defined as "fish"). The Fisheries and Aquatic Resources Act deals with ownership marine and inland aquatic resources, but does not override the provision of the FFPO and the FO.

The Marine Pollution Prevention Act No.59 of 1981 provides for the prevention, reduction and control of pollution in Sri Lankan waters, and for giving effect to international conventions to which Sri Lanka is a signatory to for the prevention of pollution of the sea.

The Urban Development Authority Law No. 41 of 1978 and its amendments amongst other matters covered in it, promotes the integrated planning and implementation of social, economic and physical development of areas declared as "Urban Development Areas". This Act also provides for the development of environmental standards and schemes for environmental improvement in areas identified as UDA areas.

Although it has been felt that the introduction of alien invasive species and biosafety are not adequately covered by national law, legal interpretations suggest that this aspect is covered with the existing laws (e.g. The Plant Protection Act, the Water Hyacinth Ordinance and the Animals Disease Act). Biosafety can in addition be addressed through the Control of Pesticides Act, Consumer Affairs Authority Act No. 9 of 2003, and the Food Act, No 26 1980 amended by Act No 20 of 1991.

Sri Lanka has also enacted the Intellectual Property Act No. 36 of 2003. This law relates to all the different types of intellectual property rights in Sri Lanka and provides the procedures of registration, control and administration of such rights. It is also relevant for granting IPR protection in the use of genetic resources and for genetic engineering techniques and their products.

Legal aspects governing Environmental Impact Assessments

The NEA amendment Act No. 56 of 1988 empowered the CEA as the regulatory authority with legal provisions to control environmental pollution and to mitigate the adverse impacts of

development activities through legally binding EIA procedures for certain prescribed projects. Under the NEA, prescribed development activities within 100 m from the boundary of any protected area requires an EIA. Similarly, the DWLC can request an EIA for developmental activities in areas within one mile from the boundary of any National Reserve declared under section 2 of the FFPO. Under the Coast Conservation Act No. 57 of 1981 (the CCA), the Director Coast Conservation has the discretion to call for an EIA from both private and state agencies, and for any development activity that falls entirely within the Coastal Zone, although most EIAs requested by the Director are only for prescribed projects listed in the NEA of 1988. Once a developer submits an EIA to the CCD, the CCA requires that the EIA be referred to the Coast Conservation Advisory Council for comment during a 60-day period. Once a developer submits an EIA to the CEA or the DWLC, these agencies call for public comment during a 30-day period. Under the NEA, the CCD (for any prescribed development project in the coastal zone), UDA, FD and DWLC are named as project approving agencies (PAAs).

Legal aspects governing ownership of natural resources

“Sovereign rights” over natural resources (including genetic resources) is enshrined in the Constitution of the Democratic Socialist Republic of Sri Lanka in both Articles 27 (Directive Principles of State Policy) and 28 (Fundamental Duties). But though sovereignty is given to the State in this regard, it is vested in the hands of the people and the state cannot contravene the interests of citizens of the country. This means that the “State shall hold all Natural Resources in guardianship for the people and ensure that it be used in a cautionary manner.”

The Fauna and Flora Protection Ordinance (FFPO) amendment Act No. 49 of 1993 and the Forest Ordinance (FO) amendment Act No, 23 of 1995 form the main legal framework pertaining to biological resources, including issues of ownership and providing access to genetic resources. The FFPO implies that the State holds responsibility over all natural resources and holds ownership of these resources.

Gaps in the legal framework:

There are adequate legal instruments, policies and/or non-regulatory mechanisms to address the requirements of the CBD bar a few gaps. While some laws do overlap, this is not an insurmountable problem and there are no contradictions that will seriously preclude conservation of biological diversity. On the other hand, there are serious lapses in the interpretation of laws by

various individuals and projects relating to biodiversity conservation, particularly in respect of genetic resources.

The main gap is the absence of legal measures to enable equitable benefits to the holders of traditional knowledge when such information is used in combination with genetic resources or for sustainable use of other components of biodiversity by others – including both in- country or external Parties. There is no law or mechanism to protect ownership of such traditional knowledge in the first place, which is essential to facilitate benefit sharing as requested by the CBD. It should, however, be noted that ownership of traditional knowledge at the individual level is very difficult to address and is compounded by the fact that any information in the public domain cannot be claimed by any particular individual or county. However, the issue of individuals' rights over traditional knowledge and ensuring benefits from the use of such knowledge by others is not addressed by the existing legal framework. Possible *sui generis* systems have not been explored or attempted as yet.

6.6 Capacity needs and interventions

The thematic assessment identified 11 priority areas for capacity building to meet convention obligations and benefit from Convention provisions. The priority areas and the capacity needs and possible interventions at the systemic, institutional and individual levels with respect to each of these areas are given below.

1. Capacity to reach sectoral and cross-sectoral support to mainstream biodiversity conservation and sustainable use in accordance with the ecosystem approach. (Thematic Assessment Report: item 5.1.2 & 5.1.4)
2. Capacity to communicate, educate and create public awareness on the importance of biodiversity for sustainable development to mobilize commitment and participation for biodiversity conservation.* (Thematic Assessment Report: item 5.11)
3. Capacity to develop and introduce measures and mechanisms for a national Access (to genetic resources) and Benefit Sharing (ABS) regime which ensures fair and equitable benefit-sharing from such use, including benefits to traditional knowledge holders. (Thematic Assessment Report: item 5.3.1)
4. Capacity to negotiate to fulfill national needs for biodiversity conservation and sustainable use at CBD COP and other global fora.* (Thematic Assessment Report: item 5.10)

5. Capacity to develop and implement national policy frameworks, plans and programmes on biodiversity conservation and sustainable use with cross-sectoral support.* (Thematic Assessment Report: item 5.1.1)
6. Capacity to establish an effective inter-institutional coordination for identification and monitoring of critical components of biodiversity and threats to biodiversity.* (Thematic Assessment Report: item 5.5)
7. Capacity to implement a multi-institutional coordinated effort to identify, design and establish a rational network of areas needing protection in accordance with the ecosystem approach to biodiversity conservation.* (Thematic Assessment Report: item 5.7)
8. Capacity to design, develop and implement multi-stakeholder participation for species specific *in-situ* and *ex-situ* conservation measures to promote conservation, management and recovery of threatened species and sustainable use of commercially important species as consonant with the ecosystem approach.** (Thematic Assessment Report: item 5.9)
9. Capacity for agencies responsible for *in-situ* conservation to institutionalise participatory and integrated management of ecosystems and their bio-resources as consonant with the ecosystem approach and poverty eradication.* (Thematic Assessment Report: item 5.8)
10. Capacity to design, develop, share, maintain and manage relevant information and data management systems to support biodiversity conservation action within the country and to access biodiversity information from external sources.* (Thematic Assessment Report: item 5.6)
11. Capacity to develop and introduce measures to enhance national capacity for biotechnology using genetic resources.* (Thematic Assessment Report: item 5.4)

Other important areas for capacity building:

12. Capacity to develop and enforce legal and regulatory frameworks to promote biodiversity conservation and related activities.* (Thematic Assessment Report: item 5.2)
13. Capacity to develop and introduce measures and mechanisms for conservation and use of traditional knowledge to permit fair and equitable sharing of benefits to the knowledge holders.* (Thematic Assessment Report: item 5.3.2)
14. Capacity to access relevant financial support systems (through budgetary provisions and external funds) and to design and implement relevant incentive systems and valuation mechanisms.* (Thematic Assessment Report: item 5.1.3)

* These are cross-sectoral capacity requirements for all three conventions

** relevant for the CBD and UNFCCC.

Priority Area 1:

Reaching sectoral and cross-sectoral support for effective national planning and coordination to mainstream biodiversity conservation and sustainable use in accordance with the ecosystem approach.

<p>(A) Capacity to reach sectoral and cross-sectoral support to mainstream biodiversity conservation and sustainable use in accordance with the ecosystem approach.</p> <p>(B) Capacity to develop and implement national policy frameworks, plans and programmes on biodiversity conservation and sustainable use with cross-sectoral support.</p> <p>(C) Capacity to enhance business sector involvement in biodiversity conservation and sustainable use of bio-resources.</p>	
Capacity constraints/needs	Possible interventions
<ul style="list-style-type: none"> ✍ Need to build political will and support for biodiversity conservation and sustainable use. ✍ Need for an overall holistic approach to national planning and budgeting which addresses biodiversity (and other environmental) issues and valuation adequately. ✍ Inadequate awareness and commitment in the economic and development sectors about biodiversity conservation in the context of national development and poverty eradication. ✍ Low capability in agencies responsible for <i>in-situ</i> and <i>ex-situ</i> conservation for communication, education and public awareness to better market their activities to financial and development sector organisations and funding agencies. ✍ Low capacity for project proposal and budget preparation (i.e. to access both national and donor funding). ✍ There is no mechanism to promote accountability among all levels of stakeholders responsible for biodiversity conservation, including institutions with major impacts on biodiversity. ✍ Low capacity to consider tax concessions and other incentives for the local private sector for biodiversity conservation and sustainable use as consonant with national interests. 	<ul style="list-style-type: none"> ● A major national biodiversity (or environmental) communication initiative by the BDS/MOE. Re-establishing the mid-professional level biodiversity networks to better mainstream biodiversity conservation into sectoral and cross-sectoral action. ● Enhancing capacity for biodiversity valuation, bio-economic modelling and providing incentives to promote conservation (<i>awareness of the importance of biodiversity valuation should precede such action</i>). ● Capacity building within the BDS to obtain sectoral and cross-sectoral support for implementing national biodiversity plans and strategies and for an effective coordinating mechanism to facilitate implementing the BCAP (<i>the blue print has been prepared for enhancing coordination by the BDS – this could be built on</i>). ● Enhancing biodiversity planning skills in state agencies with a major responsibility for biodiversity conservation and sustainable use. ● Bringing together researchers, scientists and the local private sector through awareness creation among the business community on biodiversity conservation needs and possible business opportunities for sustainable use of bio-resources.

Priority Area 2:

Communication, education and public awareness on the importance of biodiversity for sustainable development to mobilize commitment and participation for biodiversity conservation

Capacity needs and Possible interventions

- A comprehensive biodiversity communication, education and public awareness plan should be prepared for the country and implemented by the MOE. This should cover :
 - ✍ Skills building for biodiversity planning to be supported by a more effective consultative process to build firm commitments among stakeholders who have to implement recommendations in the relevant plans and programmes.
 - ✍ Training state sector extension/education officers and NGOs working with schools on activity based participatory education methods.
 - ✍ Strengthening capacity for non-formal biodiversity education within state and NGO agencies
 - ✍ Establishing a regular mechanism for awareness creation among policymakers.
 - ✍ Capacity building among media personnel for effective and quality environmental reporting and public education, by:
 - initiating accredited training courses/degree courses on environmental journalism for media personnel.
 - Providing incentives for quality environmental reporting (award schemes)
 - establishing effective mechanisms to enlist the support of media institutions for more responsible reporting on biodiversity issues.
 - ✍ Inculcating participatory activity based environmental education into the teacher training curricula and training appropriate teacher trainers to impart these skills.
 - ✍ Setting up a mobile biodiversity education and communication unit at the BDS/MOE to provide customised awareness programmes for different stakeholders.
 - The BDS should formulate links with the CBD/IUCN-CEC initiative on Communication, Education and Public Awareness (CEPA).
- [Suggested: NSF/MAB could support this process].*
- Enhancing overall written communication skills, letter writing for consultative meetings, report preparation, editing and proposal writing.

**Priority Area 3:
Measures and mechanisms for a National Access to genetic resources and Benefit Sharing (ABS) regime which ensures fair and equitable benefit-sharing from such use, including benefits to traditional knowledge holders.**

(A) Establishing a national access (to genetic resources) and benefit sharing (ABS) regime.

Capacity constraints/needs	Possible interventions
<p>Systemic:</p> <ul style="list-style-type: none"> ✍ There is no national policy on Access and Benefit Sharing (ABS) and clear operational targets for a national regime on ABS. 	<ul style="list-style-type: none"> ● A major multi-institutional capacity building initiative for establishing an ABS regime in Sri Lanka, including an institutionalized mechanism (i.e. a Focal Point, ABS units in ADAs

<p>✍ There are no guidelines on (a) what should be addressed when providing access to indigenous genetic resources for commercial or other use by external country parties, and (b) for negotiating benefit sharing when collaborating with other countries for research or commercial products development.</p> <p>Institutional:</p> <p>✍ There is no national ABS regime to coordinate institutions currently having the required mandate to regulate access to genetic resources (ie, Access Determining Authorities).</p> <p>✍ There is no formal institutionalized mechanism (i.e. a Focal Point, ABS units in ADAs [permit awarding authorities], advisory networks, etc.) to coordinate and facilitate a national ABS regime which ensures that access to genetic resources is regulated and illegal access is precluded.</p>	<p>[permit awarding authorities], advisory networks, etc.) to coordinate and facilitate a national ABS regime.</p>
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<p>Priority Area 3: Access to genetic resources and Benefit Sharing (ABS) regime. (contd.)</p>	
<p>(B) Ensuring fair and equitable benefits from traditional knowledge associated with genetic resources</p>	
<p>Capacity constraints/needs</p>	<p>Possible interventions</p>
<p>Systemic:</p> <p>✍ There is no policy on benefit sharing with traditional knowledge holders (this should be addressed in a policy on ABS under a national ABS regime).</p> <p>✍ The legal rights of traditional knowledge holders and the type of information that can be documented and archived to preserve IPR have not been correctly identified. There appears to be very little remedial measures to protect IPR on traditional knowledge, but this should be investigated.</p> <p>✍ Poor understanding about sharing of benefits from traditional knowledge that is already in the public domain in</p>	<p>● Investigate (using expert networks) the issue of benefit sharing from traditional knowledge with the relevant knowledge holders: whether a <i>sui generis</i> system can be adopted, and whether benefits could be channelled to local communities through the normal regional administrative systems (e.g. Divisional Secretaries).</p> <p><i>[the sub-committee comprising members of the legal team which developed the legal position paper for the NCSA ABS workshop and other relevant persons could look into the possibility of developing a sui generis systems. This should be done prior to preparation of a policy on ABS].</i></p>

<p>Sri Lanka – particularly as the concept of what is in the public domain information is not clear to many.</p> <p>Institutional:</p> <ul style="list-style-type: none"> ✍ There is no institution or a centre within an existing institution to deal with this aspect. ✍ There is no meta-database of genuine traditional knowledge holders. ✍ Poor capacity among civil society organisations and environmental NGOs to play a prominent watch dog function and to apprise traditional knowledge holders about their rights within an ABS regime and about IPR issues. <p>Individual:</p> <ul style="list-style-type: none"> ● There is inadequate knowledge among managers of existing databases on traditional knowledge on IPR issues. 	<ul style="list-style-type: none"> ● Investigate alternative methods for protecting traditional knowledge associated with genetic resources (along with traditional knowledge on other technologies relating to sustainable use) rather than archiving them in electronic databases which may not have the desired results. eg, assisting traditional knowledge holders to pass down their knowledge through the oral tradition to a pupil of their choice. ● A Training of Trainers activity to apprise traditional knowledge holders of their rights within an ABS regime and IPR issues. This could be through empowering civil society organisations and environmental NGOs to play a prominent watch dog function and to create awareness among traditional knowledge holders about their rights within an ABS regime and about IPR issues.
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<p>Priority Area 4: Negotiating to fulfill national needs for biodiversity conservation and sustainable use at CBD COP and other global fora.</p>	
<p>Capacity constraints/needs</p>	<p>Possible interventions</p>
<ul style="list-style-type: none"> ● Dissemination of outcomes from CBD COP is limited to the National Experts Committee and this information does not go beyond a limited number of people. The BDS lacks capacity at present to make this information more widely available due to the lack of (a) funds for organising a wider forum, and (b) skilled junior and mid level staff capable of preparing customized communication materials and reports. ● Sri Lanka benefits little through the Clearing House Mechanism established under the CBD, and very few local scientists and others (at best) benefit 	<ul style="list-style-type: none"> ● In view of constraints in terms of funds and human resources in the BDS, partnerships should be explored for expanding the clearing house mechanism within the country. The International Liaison Division (ILD) of the NSF can assist the BDS to in this regard (<i>source: outcome of roundtable meeting on in-situ and ex-situ conservation</i>). The NSF could assist the Sri Lanka representative to be better prepared for negotiation at CBD COP meetings (by organising pre-departure briefings from relevant experts) and help with dissemination of COP decisions and deliberations to the

<p>through it. Although the CHM is operational through the web, this is not freely accessible for most individual Sri Lankans due to the high cost of surfing the net.</p> <ul style="list-style-type: none"> ● Individuals who represent Sri Lanka at CBD COP meetings would greatly benefit from skills building for advocacy and to negotiate beneficial terms at COPs. 	<p>wider scientific community and the general public.</p> <ul style="list-style-type: none"> ● Through the NSF/ILD and the MOE Global Affairs/BDS partnership there should be the development of fora to involve and build capacity among relevant stakeholders and to get their participation at the national level for fulfilling obligations under the CBD. ● External Resources and the Foreign Ministry are represented in the ILD of NSF, so that the problem of funds for Sri Lanka's participation at COPs could also be addressed at this level. The MOE/Global Affairs Division is already represented in the ILD. Where possible funding could be sought for a second person with expertise in key topics for discussion to attend the meetings with the MOE representative (<i>especially relevant when matters of top national interest which needs specific technical expertise such as legal, biotechnology, etc. are to be deliberated at the COP</i>). ● The opportunities for side events at COP meetings should be made known more widely and in particular to the scientific and NGO community to enable them to seek funds and attend these fora. <i>[Suggested: A relevant mechanism should be set up by MOE GA/BDS in partnership with NSF/ILD. This can be expanded to cover all three Rio conventions.]</i>
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<p>Priority Area 5: Establishing an effective inter-institutional coordinated mechanism for identification and monitoring of critical components of biodiversity and threats to biodiversity</p>	
<p>Capacity constraints/needs</p>	<p>Possible interventions</p>
<p>Systemic ✍ A coordination mechanism is required</p>	<ul style="list-style-type: none"> ● The BDS/MOE should address this issue via Task Force on <i>in-situ</i> and <i>ex-situ</i> conservation. ● FD, DWLC, CEA and DOA could take lead

<p>to report threats to biodiversity from the field to the FD, DWLC, MPPA and DOA/SCPPC.</p> <p>Institutional</p> <ul style="list-style-type: none"> ✍ Once a coordination mechanism is established, field and regional staff in the CCD (Coastguard division, regional and field staff), DFAR and MFAR (fisheries inspectors, fisheries coordinating committees), CEA (Divisional Environmental Officers), UDA (regional staff), Department of Ayurveda and other relevant institutions as well as NGOs with field presence can assist with monitoring threats to biodiversity. These departments could report threats to the DWLC, FD and DOA. 	<p>role to institutionalise a simple system of reporting perceived threats to biodiversity by the field staff in their departments. <i>[This does not need additional funds].</i></p> <p>Individual</p> <ul style="list-style-type: none"> ● Training field staff in FD, DWLC, CEA, and DOA and national NGOs with field presence to build skills for: <ul style="list-style-type: none"> ✍ identification of species to report critical and threatened components of biodiversity and perceived threats. ✍ identification of important/endemic and invasive plants by building para taxonomic skills. ✍ preserving species to be sent to the relevant institutions for further identification. ✍ obtaining spatial information using GPSs. ✍ Identification of alien species on a case by case basis. <p><i>[This needs additional funding for the training programmes. National NGOs – especially those with field presence could assist with organising the training but would need funds to prepare the training materials].</i></p> <ul style="list-style-type: none"> ○ FD, DWLC and National Museum staff should be specially trained in: Scientific field surveys, use of GPS, identification, data entry, database development, taxonomy, preservation of specimens, labeling, report writing, writing scientific papers, communication and education, proposal writing and monitoring and evaluation of activities and educational activities. <i>[BDS/MOE to facilitate action within the National Museums Department via Task Force on in-situ and ex-situ conservation].</i>
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<p>Priority Area 6: Implementing a multi-institutional coordinated effort to identify, design and establish a rational network of areas needing protection in accordance with the ecosystem approach.</p>	
<p>Capacity constraints/needs</p> <p>Systemic:</p> <ul style="list-style-type: none"> ✍ There is no policy to guide the declaration of areas for protection by the various agencies mandated to do so in accordance with the ecosystem approach. ✍ There are no policy guidelines for the 	<p>Possible interventions</p> <ul style="list-style-type: none"> ● A major project or programme is necessary to establish the necessary inter-institutional forum to identify a rational network of areas needing protection. This should address: <ul style="list-style-type: none"> ✍ The formulation of an overarching policy to govern the declaration of areas for protection by different

<p>FD to follow to declare urban forests.</p> <ul style="list-style-type: none"> ✍ There are no national criteria for identification of areas requiring protection by the various institutions that have a mandate to declare legally protected areas, other reserves and environmentally sensitive biodiversity rich sites. ✍ Protected areas are currently not declared with the concurrence of local people, which jeopardizes their subsequent management in accordance with the ecosystem approach. ✍ There is no nationally accepted approach for pragmatic zoning of areas with high conservation value for controlled resource use management, development and strict conservation. <p>Institutional:</p> <ul style="list-style-type: none"> ✍ There is no coordinating body to take the lead on identification and establishment of a network of areas that require protection of biodiversity. ✍ Except for the FD, DOA, and DWLC (capacity is now being built for the latter), the required capacity to effectively mobilise public participation for a major consultative process to declare areas for conservation and management (from grassroots to regional and central levels) is absent in most other institutions. ✍ FD and DWLC are constrained in identifying and managing protected areas because critically essential wildlife corridors between protected areas under their jurisdiction are owned by other intuitions (e.g. UDA, Plantations, LRC) or are under private ownership. ✍ Institutions and individuals managing protected areas are not in sufficient contact or exchanging knowledge and experiences with appropriate peers in other institutions. 	<p>institutions, under various ministries, that are governed by various environmental laws. This policy should identify the process for selection of such areas, the national forum for deciding on the areas/sites, and a coordinating agency to facilitate and coordinate the entire process.</p> <ul style="list-style-type: none"> ✍ A strong coordination mechanism (a formal forum) is required to drive the policy formulation and implementation process. This forum should bring all stakeholders together to identify an optimal network of areas for protection, and should have representation from scientists and institutions that would manage the areas identified for protection, as well as other stakeholders (regional and grassroots level) whose cooperation is vital to operationalise the network of areas for protection. ✍ The forum to be set up should establish the mechanism to: <ul style="list-style-type: none"> ○ identify criteria to be used for site selection, ○ receive and consider areas recommended for protection from provincial and local administrators and communities as well as from institutions (based on scientific data). ○ receive inputs from scientists/resource managers for zoning the selected areas and to identify areas for strict protection. <p><i>[It has been suggested that the BDS should be the coordinating body for this exercise , but as it lacks capacity (funds and human resources) to convene the forum, a partnership arrangement with other agencies is desired. The National MAB Committee can help facilitate the process by initiating the process by holding a preliminary meeting to identify:</i></p>
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<p>Individual:</p> <ul style="list-style-type: none"> ✍ Individuals at provincial, regional, and local levels (including communities) do not have adequate skills to adopt the ecosystem approach for identifying and managing areas of high biodiversity conservation and sustainable use. ✍ Individuals in most state institutions responsible for the management of protected areas do not have adequate skills to effectively mobilise provincial, regional and local level support for identification of areas for protection. ✍ Individuals in the BDS require assistance to coordinate a major national exercise for identification of a rational network of areas for protection in Sri Lanka. 	<ul style="list-style-type: none"> ○ all stakeholders (at provincial, regional and local levels) for a formal national forum to implement this process. ○ identify existing datasets that can be used for site selection.]
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<p>Priority Area 7: Enhancing institutional capacity to design, develop and implement multi-stakeholder participation for species specific <i>in-situ</i> and <i>ex-situ</i> conservation measures to promote conservation, management and recovery of threatened species and sustainable use of commercially important species.</p>	
<p>Capacity constraints/needs</p>	<p>Possible interventions</p>
<ul style="list-style-type: none"> ✍ Need for better communication and coordination between <i>in-situ</i> and <i>ex-situ</i> conservation institutions. Clear decisions on the species to be conserved by <i>ex-situ</i> means should be taken by institutions such as PGRC, NARA, National Botanical Gardens (NBG), and National Zoological Gardens (NZG) in collaboration with the relevant <i>in-situ</i> conservation institutions (FD and DWLC). ✍ The National Zoological Gardens (NZG) is unable to serve as a repository of indigenous wild animal species for <i>ex-situ</i> conservation as warranted by its mandate due to various capacity constraints (i.e. funds from the national budget, space, infrastructure and expertise to 	<ul style="list-style-type: none"> ● There should be a policy to promote <i>ex-situ</i> conservation of threatened species with multi-sectoral collaboration (including collaboration of the private sector with the required checks and balances). <i>[This could be facilitated by a Task Force for in-situ and ex-situ conservation set up by the BDS to implement the BCAP].</i> ● A multi-species expert/advisory committee for <i>ex-situ</i> conservation, captive breeding, rehabilitation and reintroduction should be convened under the NZG. This Committee should have persons with specific expertise on behaviour and ecology of threatened taxa in the national threatened list to help with captive rearing and breeding, and to provide advice on identification of sub-

<p>guide rehabilitation and where appropriate reintroduction of captive bred/reared protected species to their natural environments, expertise for species specific captive rearing and breeding). Acute space limitations preclude such critically important management practices.</p> <ul style="list-style-type: none"> ☞ There is haphazard release of sub-species of captive animals by institutions due to the lack of a formal mechanism to consult species specific experts. This can affect the wild populations. ☞ There is no state institution to serve as a repository of faunal germplasm with adequate infrastructure and equipment (although capacity building within the VRI has been proposed in the BCAP in 1999). On the other hand, existing facilities in research institutions (e.g. Agbiotech) are underutilized. ☞ NARA has inadequate capacity (i.e. special unit, infrastructure, staff with expertise and funds) for focused research on coastal and marine biodiversity (except for coral reef biodiversity) and captive breeding of threatened ornamental fish and aquatic plants. ☞ The relevant state institutions responsible for <i>in-situ</i> conservation of biodiversity do not have the required capacity (funds, trained people and expertise) to implement the species conservation strategies/plans and recovery plans now being prepared by the MOE/BDS and the National Species Conservation Advisory Group (NSCAG). ☞ Some species require collaboration from the local community for <i>in-situ</i> and ex-situ conservation. This requires training and social mobilisation. 	<p>species for reintroduction programmes.</p> <p><i>[This could be facilitated by a Task Force for in-situ and ex-situ conservation set up by the BDS to implement the BCAP].</i></p> <ul style="list-style-type: none"> ● Training courses should be provided on behavioural ecology for staff in the FD, DWLC and NZG at post graduate level and for other students at the degree level <i>[the Open University could establish short term professional courses]</i>. ● Curriculum development should be carried out for training on species conservation measures (with the help of species conservation experts) in the DWLC and FD training institutes and closer collaboration between the two departments in respect of future training in this area. The possibility of extending the training courses to NZG and NBS staff (and drawing resource persons from these institutions) should be explored. ● <i>Ex-situ</i> conservation and sustainable use could be promoted among the relevant state institutions, communities and the ornamental fish and aquatic plant exporters through a major project. The collectors could provide information on the environmental conditions for the species, the technology could be provided by NARA and the NZG, and reintroduction can be monitored by the DWLC. This way the exporters obtain an uninterrupted supply of the resource and communities (which comprise the collectors) are provided with the technology for breeding and support in marketing. This leads to sustainable use and conservation of the wild resources. <i>[This type of activity can also be built into a project for Training of Trainers (for livelihood development) in participatory management of natural resources]</i>
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<p>Individual:</p> <ul style="list-style-type: none"> ☞ NBG & NZG staff and FD and DWLC field staff need species specific training to contribute meaningfully towards <i>ex-situ</i> conservation of threatened species (both fauna and flora) identified under the species recovery plans and priority conservation strategies. ☞ There is inadequate coordination and exchange of expertise between the DWLC and FD for species conservation. Collaborative initiatives between the two departments should focus on species targeted in the species recovery plans and species conservation action plans developed by MOE/BDS. 	<p><i>under Priority Area 8J.</i></p>
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<p>Priority Area 8: Institutionalizing participatory and integrated <i>in-situ</i> conservation and management of ecosystems as consonant with the ecosystem approach and poverty eradication</p>	
<p>Capacity constraints/needs</p>	<p>Possible interventions</p>
<p>Systemic:</p> <ul style="list-style-type: none"> ☞ The NEA lacks the authority of the FO and FFPO for site protection in environmental Protection Areas declared by the CEA. <p>Institutional:</p> <ul style="list-style-type: none"> ☞ Both FD and DWLC have inadequate capacity (i.e. mainly funds for the FD, funds and trained staff for the DWLC) to institutionalise the piloted approaches by extending it to all areas under their jurisdiction. Other agencies such as the CCD, DFAR and CEA lack overall institutional capacity for habitat and resource management with the participation of local communities and local/district/regional administration. ☞ State institutions depend heavily on external donor funding for social mobilisation which is a requisite for adopting a participatory approach to protected area management. This is a 	<ul style="list-style-type: none"> ● A comprehensive integrated initiative is required to jointly train field officers in several institutions (e.g. DWLC, FD, CEA, CCD, DOA/HORDI, DFAR, NARA and possibility UDA) at various sites, with the final objective of conservation and sustainable use of biodiversity. Each site should be used to train more staff from the respective institutions: ☞ Funding is required to initiate a joint inter-institutional project for the FD to build capacity by extending the ongoing AusAID funded Training of Trainers programme to pilot sites managed by the DWLC, CCD, CEA, DFAR, DOA, and NARA (for community outreach areas where NARA is active), and for selected NGOs with grassroots presence.

<p>main impediment for limiting wider application of this approach in the FD.</p> <ul style="list-style-type: none"> ✍ Most institutions managing protected areas and resource management areas have not been able to adequately demonstrate tangible benefits to local people. This has curtailed community cooperation for the sustainability of these programmes and these areas. ✍ Divided institutional responsibilities preclude the application of integrated management of ecosystems and implementation of management plans due to poor institutional capacity for coordination. ✍ The experience gained by the FD for participatory management has not been utilized at the national level for capacity building in other state institutions. <p>Individual:</p> <ul style="list-style-type: none"> ✍ Resource managers (other than at the FD, and now possibly at DWLC) lack capacity for managing areas requiring protection. These capacity constraints are variously legal issues (i.e. lack of legal standing for CEA officials when compared with field staff of the FD and DWLC) and training for effective participatory resource management and community mobilisation (in the CCD, DFAR and CEA). ✍ Many stakeholders at the provincial, district and local levels associated with protected areas do not understand their value/importance and the management concepts. <i>This requires awareness programmes and social mobilization at provincial, district and local levels.</i> ✍ Capacity is lacking among staff of most institutions to build an environmentally sensitive constituency capable of pressurising political will to favour conservation and sustainable use of biodiversity. This is a major impediment as the application of participatory management techniques. ✍ Ecosystem managers (e.g. managers of protected areas, fisheries management reserves, SAM sites, etc.) need skills for effective social mobilisation to build ownership for conservation of these areas and their resources at grassroots levels. 	<ul style="list-style-type: none"> ✍ Divisional Secretaries and community members should be given opportunities for study tours overseas through the participatory management project. <i>(This has proved to be a successful method of obtaining the required awareness and cooperation from regional and local administrators and communities, as seen through the CRMP project (source: Stock take baseline survey). [The preparation of a multi-institutional capacity building programme could be initiated by the MOE in partnership with NSF-MAB Committee.]</i> ● Community outreach training should be incorporated into the institutional training programmes of the FD and DWLC for joint training programmes. Special courses could be offered to site managers in the CCD, DFAR, NARA, DOA through institutional arrangements by the FD and DWLC. <i>[This component does not need additional funds and human resources, but could be carried out with existing institutional allocations]</i>
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Box 3: Poverty Reduction Through Improved Natural Resources Management

The Sri Lanka Australia Natural Resources Management Project (SLANRMP) funded by AusAID aims to contribute to poverty reduction through improved natural resources management. The project, executed in close cooperation with the Forest Department, has been active in two dry zone areas in the Kurunegala and Matale districts since February 2003 to support communities improve the management of natural resources through a participatory and holistic approach by improving household income through improved use and integration of forest and agricultural resources.

Multiple use degraded 'islands' of natural forests (ie, forest reserves) in the dry zone that have been illegally encroached upon in the past by local people were selected for piloting this approach. Most sites have tank cascade systems and most forests at these sites are important catchments of rivers, streams and tanks. The project specially targets communities that are dependant to varying degrees on the adjacent forests for their livelihood, and are thus willing to accept responsibility for community management of forests in exchange for forest user rights.

By improving land use by local people, and by rehabilitation of catchments, the project has assured the communities a better water supply. Possible forest uses by local people are being tested, and management agreements have been drawn up between the FD and communities. The communities will benefit from enhanced household income due to improved land use and integration of forestry and agriculture. Women and disadvantaged members are given special attention. In some cases, providing fuelwood from the forest is explored on a sustainable basis. Timber harvesting from these forests for local use would also be a possibility if found to be sustainable. The project is testing different levels of usufruct rights. For instance, some payments will be made by the communities as a royalty to the FD; in other cases forest use would be free. A Training of Trainers course is being developed for the FD, CBO and NGO staff to ensure continuation of training and extension when the project ceases.

Stakeholders in the area, including State departments such as Wildlife, Agriculture and Irrigation and local NGOs are represented on the project coordinating committee. In each site, Awareness programmes targeting local administrative officers (*Grama niladharis* and Divisional Secretaries) and community mobilization are followed by a participatory planning process to prepare a community development plan by the local community.

Factors for success of the project:

- ✍ Extensive capacity building prior to project commencement by way of awareness for the district and local administrative officers to promote their cooperation.
- ✍ High commitment among Forest Department officers involved with the project and among the project staff.
- ✍ Appropriate choice of project location and communities.
- ✍ Considerable involvement of other state institutions in the project, enabling the FD to function as the facilitator.
- ✍ The modules offered for potential trainers have been field tested and adapted to suit local situations.
- ✍ The project is designed to be self-sustaining.

The SLANRMP is not a development project *per se*. It is a pilot research project to develop and apply models for improved and equitable natural resource management in the selected sites, which the Forest Department could implement through its institutional programmes on a routine basis, and to disseminate the results nationally. Although all selected sites are islands of *degraded natural forests in the dry and intermediate zone*, the approach being tested can be applied to *forest plantations* as well as *other ecosystems – both natural and modified* (eg. coastal and marine systems; important catchments for rivers, streams and tanks; agricultural systems associated with the tank systems).

Source:

Baseline Appraisal Report on Biodiversity by Jinie D S Dela, NCSA Project, 2005.

Priority Area 9: Promoting biodiversity information management and exchange	
Capacity constraints/needs	Possible interventions
<p>Systemic:</p> <ul style="list-style-type: none"> ✍ There is no national policy on biodiversity information management, and no national policy for access to GIS information in the country. ✍ Accessing biodiversity information in custodial institutions is difficult because custodial institutions are not sure whether the information is publicly held and could be given out freely. ✍ Information safety and IPR issues are poorly known and not adequately addressed at the national level. ✍ There is no central meta-database which provides information on where biodiversity data can be accessed. ✍ All publications and journals are not customarily sent to the national archives and the national library as there is no law or policy which makes this a mandatory requirement. ✍ Resource managers and policy makers do not get timely information on biodiversity in a useable form to make sound decisions for biodiversity management. <p>Institutional:</p> <ul style="list-style-type: none"> ✍ There is no central national body responsible to provide and distribute biodiversity information (particularly information from COPs of the CBD). ✍ Most custodial institutions lack human resources (in terms of numbers and personnel with skills) and funds to establish and maintain computerised databases, and have very limited means to collect information from original data sources/repositories. Some institutions lack relevant IT facilities (e.g. LAN). ✍ Databases in biodiversity information custodial institutions that have been developed through project funds are not regularly updated and managed after the projects end, due to insufficient funds and staffing (i.e. databases are often set up and managed by project staff who are not absorbed into the permanent cadre). 	<p>Systemic:</p> <ul style="list-style-type: none"> ● There should be a National Policy on access to biodiversity information (from both internal and external sources). ● A Steering Committee on Biodiversity Information should be established at the Biodiversity Secretariat to guide biodiversity data management to formulate the necessary policies, establish the required institutional networks and centres, monitor and strengthen capacity for biodiversity database management and dissemination within custodial institutions, and facilitate the CBD clearing house mechanism and improve access to biodiversity information from external country sources. This committee should have adequate mandate and power to address information retrieval from international databases. NSF, CARP, CEA and a legal expert should be part of this Committee. <p>Institutional</p> <ul style="list-style-type: none"> ● ‘Centres of Excellence’ should be set up for biodiversity information and to act as web portals/gateways [<i>Suggested: at NSF/CEA/CARP</i>] to enable local researchers/scientists to access biodiversity information through these gateways. ● Key custodial institutions should be identified as centres for various types of data (e.g. FD, DWLC, CCD, PGRC, CEA, CARP, NSF; CEA should have database on information relevant to environmental Acts/ laws etc.). Each institution should: <ul style="list-style-type: none"> ✍ develop an institutional policy for data sharing based on various client categories. ✍ formulate criteria to provide access to information for different categories of users. ✍ setup online nominal payment systems according to different categories of users.

<ul style="list-style-type: none"> ✍ Custodial institutions have data in various forms. (e.g. herbarium sheets, specimens, etc). ✍ NGOs lack funds to obtain up-to-date publications on biodiversity. They also lack funds, equipment and infrastructure for easy internet access. Many rely as yet on telephone calls for networking. ✍ There is no transparency for information sharing between the different divisions of a single institution. This is partly due to poor research ethics and the threat of data plagiarisation. ✍ There is no regular mechanism or institutional policy for sharing published information within custodial institutions. ✍ Sound procedures for database designing, management, upgrading and updating data are absent or deficient in many institutions. ✍ Capacity building through partnerships between organisations (between both inter and cross-sectoral institutions) is greatly under-utilised for dissemination of biodiversity information. <p>Individual:</p> <ul style="list-style-type: none"> ✍ The main problem for local scientists and biodiversity managers is accessing information that is not available in the public domain from external country sources. ✍ Infrastructure, equipment, IT facilities and funds are not adequate in most institutions (especially for NGOs) and for individual scientists to access information from external sources through the internet. ✍ The issue of restricted access to information is also not very well understood among institutions and individuals. ✍ Database managers in custodial institutions often do not get the required support from the top institutional management, partly because databases management is under-valued. ✍ The staff managing databases require 	<ul style="list-style-type: none"> ● All biodiversity related databases should be linked to a central biodiversity meta-database to be set up at the Biodiversity Secretariat of the MOE. <i>[This needs funds and human resources for the BDS].</i> ● Links should be established with the “Vidatha programme” and the CEA Regional and Sub-regional centres to form a network to enhance access to external (and internal) biodiversity related information at the remote regional levels. <i>[This needs collaboration by BDS/MOE with the Ministry of Science and Technology and NSF].</i> <p>Individual:</p> <ul style="list-style-type: none"> ● Staff training should be provided at institutional level for data collation techniques, developing questionnaires to extract specific information, entering different kinds of data that are specific to the individual institution (e.g. certain types of data are highly specialised and need special skills for entering into the database. e.g. herbarium sheets, specimens, etc). ● Database managers should be trained in public relations and communication skills, negotiation skills for benefit sharing, and IPR and legal aspects of information (patent rights – on information, disclosed and undisclosed information, etc.) and special software operating systems for database management.
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<p>training on data collation, management and dissemination in customised formats and for communication and writing.</p> <ul style="list-style-type: none"> ✍ Database managers have little knowledge of the legal aspects of information dissemination (patent rights, disclosed and undisclosed information, etc.). ✍ Officers in custodial institutions lack capacity to identify information in the public domain, and what is not. 	
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**Priority Area 10:
Measures to enhance national capacity for biotechnology using genetic resources for sustainable use of biodiversity**

Capacity constraints/needs	Possible interventions
<p>Systemic:</p> <ul style="list-style-type: none"> ✍ Policy makers and local business community (in general) are not aware about the scope for biotechnology using genetic resources in Sri Lanka, and the state of the art in this sphere. ✍ Lack of awareness within the local industrial sector on biotechnology work done nationally, and the available expertise in state research institutes & universities. ✍ Poor communication between the business community and the scientific community about the possibilities for business-state collaboration in biotechnology using genetic resources. <i>[NSF biotechnology Committee can build this link by working with the Chambers of Commerce].</i> ✍ There is no <u>specific</u> national policy to develop biotechnology using genetic resources. ✍ Poor coordination among biotechnology institutions for sharing equipment and expertise. ✍ There is no formally established forum for local experts in biotechnology using genetic resources to meet and exchange views and update knowledge (i.e. training projects, overseas exchange visits, etc.). ✍ Local scientists have few opportunities for interact with foreign scientists working on biotechnology using genetic resources. 	<ul style="list-style-type: none"> ● A policy for biotechnology using genetic resources - which takes note of the policy for an ABS regime and the policy for biotechnology - should be undertaken by the Ministry of Science and Technology and the NSF in collaboration with the MOE. The policy should allow the local private sector to participate in such collaborations. ✍ setting up of teams comprising biotechnologists with different expertise from different institutions. ✍ establishment of a formal forum where biotechnologists using genetic resources can meet, cooperate and collaborate. ✍ formulating formal arrangements (MOUs) for foreign collaborative work on biotechnology using genetic resources. <i>[suggested: NSF has the capacity to develop the policy, but a directive from the ministry is required as NSF is not a mandated policy making body. The actions to strengthen biotechnology using genetic resources should be identified in the policy].</i> ● The NSF could create awareness on the potential of biotechnology facilities using genetic resources among the business sector through its science popularisation programme. ● The biosafety database (prepared by the biosafety project) should be made available online by modifying it for web hosting. To support capacity of the BDS to carry this out, consider <i>linking up with NSF biotechnology committee, the AgBiotech to assist updating the website.</i> ● The biotechnology ‘centres’ that are presently

<p>Institutional:</p> <ul style="list-style-type: none"> ✍ Need for a central laboratory (or a few central laboratories with state of art equipment) that can be accessed by research institutions, universities and all biotechnology research workers. ✍ Delays in obtaining equipment and chemicals due to administrative and financial procedures are a severe constraint (i.e. especially because of government tender procedures). ✍ The AgBiotech Centre specifically needs help to continue functioning, as clients for biotechnological training and applications are infrequent. ✍ Greater awareness of the potential for biotechnology among the business sector and state incentives to promote such biotechnology applications is required. ✍ Biotechnological capacity at the VRI requires considerable strengthening for the VRI to act as the main centre for storage of animal germplasm. <p>Individual:</p> <ul style="list-style-type: none"> ✍ Scientists involved in biotechnology using genetic resources need enhancement of: <ul style="list-style-type: none"> ○ negotiation skills, ○ administrative skills (especially government tender procedures), ○ proposal writing skills, and ○ skills for conceptualizing the work at hand ✍ Attorneys handling patents lack: <ul style="list-style-type: none"> ○ Adequate knowledge on legal and IPR requirements for clients working with external country parties or their representatives. 	<p>functioning without any special help of the Government or Universities, and under extremely difficult conditions, should be assisted and developed as centres of excellence. There should be legal officers at the centres of excellence, or a panel of lawyers with the required expertise could be linked with these institutions.</p> <ul style="list-style-type: none"> ● There should be an apex body to coordinate the centres of excellence and for development, promotion and coordination of biotechnology. Through this Apex body, there should be a formal forum established for biotechnologists can meet, cooperate and collaborate. The forum could also discuss training projects, overseas exchange visits, other opportunities, etc.). <i>[MS&T could address this by incorporating it into their plans for biotechnology development].</i> ● The capacity of the VRI to act as a centre for storage of animal germplasm should be enhanced with the required infrastructure, equipment and staff training). <i>[MS&T to collaborate with the Ministry under which the DAPH operates]</i> ● All institutions engaged in biotechnology should be provided legal advice on IPR issues, patents and benefit sharing when there is foreign collaboration (e.g. The ITI prepares its own patent application documents, but would benefit with assistance from experienced IPR lawyers for filing international patents). <i>[The legal advisory panel for the centres of excellence could provide this expertise].</i> ● The Science and Technology Ministry should identify and strengthen selected centres of excellence for biotechnology using genetic material. ✍ The MS&T should: <ul style="list-style-type: none"> ○ make state of facilities facilities at these centres of excellence available for use by industry and other stakeholders. ○ strengthen existing biotech centres/institutes (especially those not funded by the state at present). ○ set up bioactivity testing facilities in more than one place (centres of excellence). ○ establish teams of biotechnologists with different expertise comprising individual scientists from different institutions and lawyers with skills in drafting MTAs, Patents, IPR . (e.g.
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	<p>India has an excellent arrangement for coordination in biotechnology in this regard).</p> <ul style="list-style-type: none"> ○ set up a legal team to offer legal advice to biotechnicians in centres of excellence and other research agencies, help draft MTAs (access agreements with external country parties) for collaborative biotechnology projects, and to deal with IPR issues, rights of inventors and assignees, and related aspects. <i>(This could be the same legal team set up for the ABS regime at the Focal Point).</i> ○ There should be a mechanism and guidance for other institutions to obtain the services of the centres of excellence with advanced technology, equipment, facilities, etc. <p>Individual:</p> <ul style="list-style-type: none"> ● There should be human resources development in biotechnology at all levels once the centres of excellence in biotechnology are established (e.g. graduate/ post graduate to technician/lab attendant level). Training should be provide for: <ul style="list-style-type: none"> ✍ legal officers at centres of excellence on the use of genetic resources in biotechnology. ✍ patent attorneys to address IPR issues and biotechnology products relating to genetic resources. <i>[suggested: FP with Partner organisation (e.g. EFL) can provide the training]</i> ✍ biotechnology workers in research institutions and centres of excellence on legal aspects/IPR, drafting MTA. ✍ relevant personnel on benefit sharing and negotiation skills.<i>[suggested: MOE/BDS/FP on ABS to collaborate with MS&T/NSF, EFL, individual experts on ABS].</i> ● Exchange visits for local scientists in biotechnology research should be organised with reputed foreign scientists. Scientists working in biotechnology using genetic resources should be provided with:(a) negotiation skills, (b) administrative skills and (c) proposal writing skills and skills for conceptualizing the work at hand. <i>[FP once set up for the ABS regime could carry out the training with partner</i>
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	<p><i>organisations (e.g. NSF biotechnology committee, MS&T and EFL can provide the training. Skills building for negotiation needs special expertise)].</i></p>
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<p>Priority Area 11: Effective enforcement of laws and regulations to promote biodiversity conservation and sustainable use</p>
<p>Capacity needs and possible interventions</p>
<ul style="list-style-type: none"> ● Training and awareness programmes are required for police officers to enhance their skills and knowledge on: (a) biodiversity related laws, (b) protected species, and (c) concepts of biodiversity conservation and sustainable use as relevant to enforce the relevant laws. This can be provided via the routine training programmes offered to police officers in the Police Department with support from <i>experts for training on legal issues and biodiversity, and with assistance from departments responsible for implementing environmental laws (e.g. FFPO, FO CCA, Mines and Minerals Act, etc.)</i>. ● Training on species identification is required for customs and quarantine officials for law enforcement [Visual aids/databases are important to assist capacity building in this regard. <i>[Selected NGOs could assist with the training if they are provided with funds to prepare such material]</i>]. ● Establishing a special force within the Police Department with trained officials competent to enforce environmental laws by regional/local level police officers.

7.0 THEMATIC ASSESSMENT OF CLIMATE CHANGE IN RELATION TO CAPACITY DEVELOPMENT

7.1 Convention Requirements

Sri Lanka ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 23rd November 1993; the Convention entered into force on the 21st March 1994. The main objective (Article 2) of this Convention is to stabilize the greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interferences with the climate system. Sri Lanka ratified the Kyoto protocol in September 2002. The protocol came into force on the 15th February 2005.

As a developing nation and being a Non-Annex 1 country, Sri Lanka is not bound to reduce emissions of Greenhouse gases to the atmosphere under the UNFCCC and the Kyoto Protocol. However it has obligations under Article 4 and can participate in CDM projects to its own benefit while contributing to global efforts at mitigating climate change.

Based on Article 4 of the UNFCCC, fourteen requirements were identified as nationally relevant. These commitments / requirements can be listed as;

- i. Preparing national communications
- ii. Developing national climate change programmes
- iii. Preparing and managing greenhouse gas inventories, including emission database management
- iv. Assessing vulnerability and adaptation
- v. Developing and implementing adaptation plans and measures
- vi. Assessing mitigation options
- vii. Research and systemic observation of climate and other functions
- viii. Developing and transferring technology
- ix. Improved decision-making, including assistance for participation in international negotiations
- x. Clean Development Mechanism (CDM)
- xi. Education, training and public awareness raising
- xii. Information and networking, including databases
- xiii. Institutional capacity-building, notably through secretariats or focal points
- xiv. Enhancement of the enabling environment.

7.2 Institutional Framework

The Ministry of Environment is the focal point for UNFCCC. The responsibility for programmes under this convention is assigned to the Environmental Economics & Global Affairs Division of the Ministry. In order to coordinate the implementation of provisions of the UNFCCC, and to pursue the decisions made at COPs and its Subsidiary Bodies, a Climate Change Secretariat has been established in the Environmental Economics and Global Affairs Division of the Ministry. Ministry of Environment took the lead coordinating role in preparing the Greenhouse gas inventory as a part of the preparation of the Initial National Communication.

The CCS works through the Climate Change Coordinating Committee and the CDM Expert Committee. Though Sri Lanka has no commitment under the Kyoto Protocol, being a low greenhouse gas-emitting country, participation in the Clean Development Mechanism (CDM) is mutually beneficial both to Sri Lanka and the global community. The Ministry of Environment, specifically the Global Affairs Division, is the Designated National Authority for CDM. Two national Clean Development Mechanism (CDM) Study Centres have been set up at the Universities of Moratuwa and Peradeniya, but the rules and modalities of operation of these centres have not yet been finalized. In anticipation of forthcoming international support through CDM, a National CDM Policy has been prepared (the policy awaits approval of the Cabinet).

The Department of Meteorology is mandated to do systematic observations of climate since its inception in 1861. It maintains about 20 main meteorological stations. There are 34 agro-meteorological stations, which are manned by other government departments and institutions. In addition, there are about 400 rain gauge stations, which are mainly maintained by the plantation companies, estates, schools and voluntary personnel. Several capacity building exercises were conducted, on meteorological measurements, for the personnel of other agencies involved in meteorological observations. The CLICOM database, distributed by the World Meteorological Organization (WMO), is used by the department to store and analyze meteorological and climatological data.

The Centre for Climate Change Studies (CCCS) was established in 2000 in the Department of Meteorology, to take the lead role in conducting research, training and awareness programmes on climate change, to monitor climate change, and to execute climate models. The Met Dept/CCCS is involved in education, training and public awareness on various aspects of climate change in cooperation with the Ministry of Environment and NGOs such as MIND. These programmes

have been conducted for policy makers, district level administrators, school children, university teachers, private sector and NGOs in different districts in Sri Lanka. The CCCS is currently engaged in a project on “climate change outreach in Sri Lanka” supported by the Asia Pacific Network (APN) for Global Change Research under the CAPaBLE programme. The department was actively involved in preparing greenhouse gas inventories in Sri Lanka.

Several other institutions, particularly in the agriculture, industry, water, coastal, and health sectors, which do not have a mandate for climate change *per se* are involved directly or indirectly in addressing the objectives of UNFCCC. Their main activities in relation to climate change are as follows.

Ministry of Agriculture and agencies under it:

DOA - assessing possible adaptation measures for salinity and drought conditions; introducing new technologies for the adaptation measures; systematic observation of atmospheric data such as rainfall, temperature, etc. since mid seventies; involved in preparing greenhouse gas inventories in Sri Lanka. The Export Agriculture Department (DEA) has also been involved in assessing vulnerability to climate change to some extent.

Plantation crop research institutes:

The TRI, RRI, CRI and SRI have been a part of the agro-meteorology network in the country taking systematic observations of atmospheric data such as rainfall, temperature, etc. since mid 1970s. These institutions are also engaged in some awareness-raising activities for their stakeholders.

TRI - assessing vulnerability of climate change and possible adaptation options for drought and pest and diseases, including socio-economic impacts, and growth and productivity impacts of climate change; introduce new technologies for the adaptation measures; developing suitable cultivars resistant to drought and pest and diseases; developing water management techniques for young and mature tea and improved shade management for tea plantations; also involved in preparing greenhouse gas inventories in Sri Lanka.

RRI - assessing the effect of climate change on rubber plantations; assessing rubber plantation as a system to mitigate climate change; economic assessments on carbon sequestration capabilities and timber production of the rubber plantation; developing drought resistant clones.

CRI - assessing vulnerability and impacts of climate change, and developing adaptation plans / measures to cope with these changes under the GEF funded project of AIACC (AS-12).

Industry sector:

Ministry of Industry - facilitated the National Cleaner Production Centre (NCPC) and Chambers of Commerce to carry out audits and surveys on GHG emissions; coordinated Asian Regional Research Programme in Energy, Environment and Climate (ARRPEEC) project with ISB and Chambers of Commerce; also been involved in developing new technology especially for mitigation measures, and in training and awareness programmes.

Federation of Chambers of Commerce and Industry of Sri Lanka (FCCISL) - conducted several projects / programmes to build capacities at individual as well as institutional levels: GERIAP and its extension, Cleaner production and energy efficiency, Green productivity and energy efficiency, and NENAN. FCCISL is currently establishing a mechanism for dissemination of information on climate change mitigation measures to the District Chambers and collecting required data from them.

Industrial Services Bureau (ISB) - developing new technology especially for mitigation measures for D/C mills and service stations; involved in preparing greenhouse gas inventories in Sri Lanka, and in training and awareness programmes.

Universities:

At the undergraduate level, climate change has been included as a subject in the field of climatology, and at the post graduate level environment, oceanography and climate change have been included as special subjects. The Universities of Moratuwa (University of Moratuwa), Sri Jayewardanapura (USJ), Peradenya (UOP) and Kelaniya have been involved in education, training and awareness programmes. The systematic observation of atmospheric data such as rainfall, temperature, etc. is being done at most universities. USJ and UOM were also involved in preparing greenhouse gas inventories in Sri Lanka.

The UOM has also been involved in developing new technology especially for mitigation measures. The CDM study centre, which is located at this university is mainly dealing with power and energy research. The CDM study centre at UOP, set up to cover the agriculture and forestry

sector, has been designated to conduct research on carbon sequestrations by the different species of plants, trees, in order to value the carbon credits in Sri Lanka.

Ministry of Finance and Planning (MFP):

The MFP is responsible for decision making with regard to financial resources and mechanisms for environmental management. The Department of External Resources (ERD) is accountable for obtaining external financing, while the Department of National Planning (DNP) is responsible for capital budget allocation, approval of public sector projects, national policy formulation and approval of foreign funded environment related projects. Under the DNP sectoral committees named RSL-Sub-committees have been established to select and approve sectoral projects. The Department of State Accounts (SAD) is in charge of releasing financial resources in time for smooth functioning of development projects.

Other institutions :

UDA - assessing the vulnerability to climate change in preparation of urban development plans; developed adaptation plans and measures by formulating appropriate zoning and regulations for the areas sensitive to climate change and developing urban greening programmes; also involved in education and awareness programmes. The UDA Geographical Information System (GIS) Division is one of the best in the country for mapping of environmentally sensitive areas in regional as well as urban structural planning.

Water Resources Board - maintaining a database on groundwater quality and quantity since 2000; is planning to set up a Research and Training centre in 2006; involved in education and awareness programmes.

NSF - providing financial support for conducting research, awareness and training programmes on climate change; involved in education, training and awareness programmes; conducted a workshop on “Global Environmental Change” in collaboration IGBP and LOICZ in 2005.

The National Institute of Education (NIE) has already taken steps to include climatology, basic concepts of meteorology, environment, biodiversity and climate change in their school level curriculum.

NARA and SLPA - measure the oceanographic data such as sea water levels, wave heights and other relevant data; Irrigation Department - systematic observation of atmospheric data such as rainfall, temperature, etc; DWLC - introduce new technologies for the adaptation measures, and conducting training and awareness programmes; NERD Centre - developing new technology especially for mitigation measures; training and awareness programmes; NBRO - assessing vulnerability and adaptation to climate change; also involved in education and awareness programmes; CEB - involved in preparing greenhouse gas inventories in Sri Lanka; CCD - involved in education and awareness programmes. Institutions in the Health, Forestry, Industry and Water Resources sectors have carried out some assessments of the vulnerability to climate change.

NGOs:

The Green Movement of Sri Lanka, MIND and Environmental Foundation Limited have been involved in carrying out a large number of programmes to create awareness on impacts and vulnerability to climate change in different sectors. In 2001, the Centre for Climate Change Studies (CCCS) and the MIND were jointly awarded a climate change awareness raising project by the Working Group III of the Intergovernmental Panel on Climate Change (IPCC) in Netherlands, under which a series of seminars were conducted for the policy makers, district level administrators, school children, university teachers, private sector and NGOs in different districts in Sri Lanka. These NGOs were also involved in preparing greenhouse gas inventories in Sri Lanka.

7.3 Progress towards meeting the national obligations

Sectors such as agriculture which are more vulnerable to climate change, have already taken initiatives in assessing and adapting to this phenomena. However other sectors, eg, coastal, water, health, which are also vulnerable to climate change, are only now taking steps in assessing their degree of vulnerability and thus engage in climate change activities. The reason for the slow involvement of the stakeholder sectors is mainly due to less awareness on the changes in climate and their consequences for these sectors. Though some awareness raising activities have already been conducted in the past, proper coordination within the sectors was not met. The information did not flow to the grass root level of the sector, where implementation of such adaptation measures is taking place.

The Ministry of Environment has pioneered many national programmes to meet various obligations under the UNFCCC with the financial support from various international donors, namely GEF, UNDP, USAID, AusAID, etc.

Steps taken towards meeting national obligations:

- ✍ The Initial National Communication of Sri Lanka was prepared and submitted to the UNFCCC Secretariat in October 2000.
- ✍ Greenhouse Gas Inventory (1993-1995) has been prepared and reviewed to quantify the sectoral emissions, which contribute significantly to global warming in the recent past. This report was published in the first National Communication in 2000.
- ✍ Impacts and vulnerability have been assessed with regard to the consequences of sea-level rise, temperature rise, droughts, high intense rainfall and increased thunder activity. The sectors affected by the anticipated changes of climate change, hazards and related phenomena have already been identified. (Ref: Initial National Communication, 2000)
- ✍ The Climate Change Secretariat (CCS) was established under the Ministry of Environment to coordinate climate change activities /programmes with other stakeholder organizations.
- ✍ The Centre for Climate Change Studies (CCCS) of the Department of Meteorology was established in 2000, to take the lead role of conducting research, training and awareness programmes on climate change and to monitor the climate change and also to execute climate models.
- ✍ Clean Development Mechanism (CDM): The Ministry of Environment is the DNA, and has taken action to establish two CDM Study Centres at the Universities of Peradeniya and Colombo. Some institutes have already assessed mitigation measures towards meeting this commitment.
- ✍ Some researches have been conducted at the CCCS especially in rubber, coconut and tea sectors with financial support from the NSF and GEF. In addition, individual State agencies have started to conduct research on climate change.
- ✍ The Department of Meteorology is mandated to do systematic observations. Departments of Agriculture and Irrigation and RRI, TRI, CRI, SRI, Universities and private sector plantation companies have also been taking systematic observation of atmospheric data such as rainfall, temperature, etc. since mid seventies. NARA and SLPA measure the oceanographic data such as sea water levels, wave heights and other relevant data.
- ✍ The Departments of Agriculture, Wildlife Conservation and TRI have been dealing with the introduction of new technologies for the adaptation measures. The Ministry of Industry, NERD Centre, ISB (for Desiccated Coconut mills and service stations) and University of Moratuwa have also been involved in developing new technology to support mitigation measures.

- ✍ The Ministry of Environment has actively been participating especially in international negotiations for over two decades.
- ✍ The school level curriculum has been changed to incorporate climatology, basic concepts of meteorology, environment, biodiversity and climate change. At the University undergraduate level climate change has been included as a subject in the field of climatology. Environment, oceanography and climate change have also been included as special subjects at the post graduate level during the last few years.
- ✍ Several awareness-raising campaigns / programmes on climate change and its impacts have been conducted by the Ministry of Environment, Centre for Climate Change Studies (CCCS) of Department of Meteorology, NGOs and respective organizations in collaboration with different institutes / organizations and their line Ministries.
- ✍ Databases have been developed by some individual organizations to share information and data. These are Departments of Meteorology, Irrigation, Agriculture, Wildlife Conservation, Coast Conservation and TRI, RRI, CRI, NARA, CEA, UDA, NBRO, Water Resources Board and some Universities. These databases have been developed mainly for their own activities and requirements
- ✍ The Climate Change Enabling activity – Phase I (1999-2001) and Climate Change Enabling Activity Phase – II (2002-2004) projects were launched by the Ministry of Environment with the support of GEF/UNDP to strengthen or build the capacities among researchers who are engaged with climate change and related issues. A series of climate vulnerability and adaptation studies were undertaken through these projects.

Projects on air quality management, use of renewable energy (solar and wind), and on solid waste management have been supported by USAID to improve the quality of the environment.

Adaptation strategies are yet to be developed in the Health, Forestry, Industry and Water Resources sectors though their vulnerability to climate change has been assessed to some extent.

7.4 Action plans, policies and legislation for implementing UNFCCC

A number of environmental action plans, policies, legislations and regulations have been developed in the past to implement national commitments to the international community and to achieve national goals for environmental sustainability. The main instruments with respect to climate change are listed below.

- ✍ National Environment Act (NEA) No. 47 of 1980 and amended by Act No. 56 of 1988 and No. 53 of 2000
- ✍ The Soil Conservation Act No. 25 of 1951 and amended by acts No. 59 of 1953 and 24 of 1996.
- ✍ Coast Conservation Act No. 57 of 1981, amended by act No. 64 in 1988.

- ✍ Motor Traffic Act
- ✍ Flood Protection Ordinance No. 04 of 1924 amended by act No. 22 of 1955.
- ✍ Urban Development Authority Law, No. 41 of 1978 as amended by acts No. 70 of, 1979, 4 of 1982, 44 of 1984, 49 of 1987 and 41 of 1988.
- ✍ National Environmental Action Plan (NEAP) of 1990, 1998; and Caring For Environment (CFE) 2003-2007 - Path to Sustainable Development.
- ✍ National Action Plan on Climate Change (NAPCC) formulated in 1999
- ✍ National Environmental Policy (NEP) 2003
- ✍ Draft National Policy on Clean Development Mechanism (CDM)
- ✍ Other Environmental legislation, policies, action plans and strategies
 - National Policy Framework (NPF) in 1995
 - National Forestry Policy (NFP) in 1995
 - Energy Policy of Sri Lanka in 1997
 - National Water Resources policy (NWRP) in 2000
 - National Wildlife Policy (NWP) in 2000
 - Draft National Land Use Policy (NLUP) in 2002
 - National Policy on Agriculture and Livestock (NPAL) in 2003
 - National Watershed Management Policy (NWMP) in 2004
 - National Cleaner Production Policy in 2005
 - National Conservation Strategy (NCS) in 1988
 - Forestry Sector Master Plan in 1995
 - National Strategy for Solid Waste Management in 2002
 - National Industrial Pollution management Strategy (NIPMS) in 1996
 - National Coastal Zone Management Plan in 1997
 - Natural Disaster Management Plan in 1999
 - National Status Report on Land Degradation in 2002
 - Biodiversity Conservation Action Plan in 1999
 - National Action Plan for the Protection of Marine Environment from Land Based Activities in 1999
 - National Disaster Management Action Plan in 1999
 - Coastal 2000 Action Plan (CAP) in 2000
 - Clean Air 2000 Action plan in 2002
 - The Forest Ordinance No. 16 of 1907, and its subsequent amendments.
 - National Disaster Management Act in 2005

7.5 Capacity needs and interventions

Being a non-Annex 1 country in the UNFCCC, Sri Lanka is not bound to reduce emissions of greenhouse gases to the atmosphere. As such, assessing vulnerability and developing and transferring technology for adaptation to climate change was considered important. From the fourteen convention requirements identified as nationally relevant, twelve requirements were selected through a prioritization process for capacity needs assessment. The capacity needs at systemic, institutional and individual levels for each requirement, determined through a consultative process with the stakeholders, are summarized below.

Requirement 1:		
Assessing Vulnerability and Adaptation		
1.1 Identification and mapping of vulnerable areas to Climate Change		
Sectors Affected: Agriculture, Plantation, Livestock, Forestry, Wildlife, Tourism, Water Resources, Health		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level
Infrastructure development & provision of required facilities, budgetary allocations & other requirements to relevant institutes. Awareness raising on climate change and their consequences for policy makers, Ministerial level officers, etc. Formulate policies and legislations to take up collaborative research within the sector through the CEPOMs/NCSD.	Skill development at institutional level to combat drought, flood, salinity, high temperature stress and sea level rise. Share data and information among relevant institutes. Encourage collaborative research within the sector among relevant institutes.	Skill development at personal level to combat drought, flood, salinity, high temperature stress and sea level rise.
1.2 Assessing sea level rise and climate change impact on flora and fauna in future		
Sectors Affected: Agriculture, Plantation, Livestock, Forestry, Wildlife, Tourism.		
Create inter-agency coordination mechanism among the relevant agencies: <i>Ministries of environment, agriculture, health, Mahaweli & irrigation, plantation, livestock, tourism; Institutions in the affected sectors.</i>	Increase no. of tide gauge stations to strengthen the data coverage <i>[NARA & Ports Authority]</i> .	Awareness raising on sea level rise and their consequences, coastal flooding, etc. <i>[CCD, NARA, UDA, SLTB, FD, DWLC, Local Authorities, etc]</i>
1.3 Assessment of ground water supplies for various sectors in drought affected areas.		
Sectors Affected: Water Resources		
.	Allocation of funds for expansion of Water Resources Board (WRB) activities on river basin level. Amendments to the present cadre to recruit more staff	Training of hydro-geologists on designing of monitoring networks, and watershed management with emphasis on ground water modeling.

	<p>(hydro-geologists) for relevant Institutions (Water Resources Board, Department of Irrigation, etc.).</p> <p>Improvement of ground water database towards national level, Procurement of hydro-geological equipments for ground water assessments (WRB, Department of Irrigation, etc.).</p>	
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1.4 Assessing adaptation measures

Sectors Affected: Agriculture, Plantation, Livestock, Forestry, Wildlife, Tourism, Water resources, Health

<p>Formulation of a long-term national Research policy. <i>[Ministries of environment, agriculture, health, Mahaweli & irrigation, plantation, livestock, tourism]</i>. Change in attitudes of policy makers & Ministerial level officers.</p>	<p>Formulation of institutional research agenda to address this issue. Capacity building at institutional level to conduct research. Amendments to the present cadre to increase number researchers in institutions in the affected sectors.</p>	<p>Change in attitudes, and Awareness raising on sector specific adaptive measures for individuals.</p>
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1.5 Co-ordination mechanism for effective programme development to assess climate change impacts

Sectors Affected: Agriculture, Plantation, Livestock, Forestry, Wildlife, Tourism, Water Resources, Health

<p>Advocacy & awareness seminars for Policy makers and senior managers at the Ministerial level. <i>[Ministries of environment, agriculture, Mahaweli & irrigation, plantation, livestock, tourism]</i>. Creation of new cadre positions at National & Sub national level or provincial level. Allocation of budget to carry out programmes,</p>	<p>Mandate the relevant institutions to carry out assessments with regard to climate change impacts. Create inter-institutional links to strengthen the related activities, create awareness on climate change and their consequences within and among the institutions. Incorporate training programmes to address climate change and allied issues. Develop basic training curricula to address environmental issues. Recruit necessary staff to carry out mandated activities related to climate change.</p>	<p>Change attitudes by conducting awareness seminars on climate change and their impacts. Training on conducting sector specific research, make available latest information and data to carry out research.</p>
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1.6 Failing to assess impacts on power generation requirement

Sectors Affected: Power and Energy

<p>Creation of enabling environment for undertaking relevant research: make available budgetary allocations, create new cadre in relevant institutions.</p> <p>Awareness raising at Ministerial level and policy making level on climate change issues.</p>	<p>Increase capacity in CEB, CEA, MOI, BOI, FCCISL, NCPC, and ISB to carry out relevant impact assessments in relation to climate change.</p>	<p>Change attitudes, Training to carry out research in assessing the impacts of climate change. Make available latest information and data.</p>
<p>1.7 Unable to assess/demarcate vulnerable areas due to sea level rise Sectors affected: Agriculture, Water resources, Tourism, Transportation, Plantation</p>		
<p>Take necessary action to identify as a priority task as it affects many sectors and the national economy. <i>[Ministries of land, environment, science & technology, disaster management]</i></p> <p>Establish inter-institutional coordination to address this issue.</p> <p><i>[DM, SD, DOA, CCD, NARA, SLPA, SLTB]</i></p> <p>Allocation of funds to carry out contouring around the country at 50 cm and 100 cm above the mean sea level.</p> <p>Increase cadre, if required, to carry out the above work.</p>	<p>Awareness raising on the consequences of the sea level rise in different sectors.</p> <p>Take necessary steps to increase cadre and necessary budgetary allocations, if required.</p>	<p>Change attitudes by conducting awareness programmes on sector specific issues with regard to sea level rise.</p> <p>Make available necessary information and data.</p>
<p>1.8 Failure to assess the impact of changes in wave characteristics on coastal zone Sectors Affected: Land Use and Land Development, Tourism, Coastal and Marine area Management</p>		
<p>Identify as an important issue in coastal and marine area management.</p> <p>Inter-institutional coordination to address this issue.</p> <p><i>[CCD, SLTB, NARA, SLPA, SD, DFAR, DM]</i></p> <p>Make available necessary budgetary allocations to carry out the tasks.</p>	<p>Enhance the capacity to prepare the project proposals in Coast Conservation Department.</p>	<p>Awareness raising on sea level rise and wave changes due to climate change among staff members of the relevant institutions.</p>

Requirement 2:		
Developing and implementing adaptation plans and measures		
2.1 Inadequate development & implementation of adaptation plans and measures		
Sectors Affected: Agriculture, Plantation, Livestock, Forestry, Wildlife, Tourism, Water resources, Health		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level
Formulation & implementation of long-term sustainable policies. Prioritization of existing policies & implementation programmes. Awareness creation at systemic level and legislative level. (Ministries of environment, agriculture, health, Mahaweli & irrigation, plantation, livestock, science & technology, tourism)	Creation of Institutional consultative decision-making process. Capacity building of relevant institutes & financial support for operational activities. Strengthening of existing Acts/mandates. Develop appropriate mechanisms to improve feedback.	Change attitudes, Develop appropriate mechanisms to improve feedback.
Budgetary allocation for relevant departments and institutions	[SRI, FD, TRI, DOA, ID, RRI, CRI, DEA, HARTI, CRI, DAPH, WRB, SLTB, DOH, HEB, AMC]	
2.2 Unable to develop ground water supply in coastal areas as an adaptive measure to sea level rise		
Sectors Affected: Water Resources		
Inter-Ministerial coordination. [Ministries of environment, irrigation, Mahaweli ..]	Allocation of funds for procurement of modeling tools (software and hardware), Improvement of hydrological database (hardware and software). [WRB]	Training of hydro-geologists on design of monitoring networks in coastal aquifers, ground water modeling to study fluctuation of saline water/ fresh water interface due to sea level rise.
2.3 Unable to provide water supplies using ground water for various sectors with required quality in vulnerable areas to climate change		
Sectors Affected: Water Resources		
Preparation of groundwater development and management plan with suitable water quality guidelines. [Ministry of Irrigation]	Allocation of funds for procurement of modeling tools (software and hardware), improvement of hydrological database (hardware and software).	Training of hydro-geologists on design of monitoring networks on ground water quality, watershed management with emphasis on ground water quality modeling. Training of hydro-geologists/

	Updating of WRB laboratory for analysis of water samples periodically.	hydro chemists on groundwater quality management.
<p>2.4 Community preparedness to adapt nutritional requirements in relation to changes in crop patterns and other food security issues.</p> <p>Sectors Affected: Health & Nutrition, Agriculture</p>		
Inter-Ministerial coordination among relevant Ministries, probably through CEPOMs / CIEDP or newly proposed NCSD, to address the issue. Necessary budget allocation to carry out training activities, awareness programmes, etc. <i>[Ministries of Health, Environment and Agriculture]</i>		Train Primary Healthcare workers and Health Education Officers in disseminating information. <i>[DOH, HEB, MOH offices]</i> Awareness raising on consequences of climate change to change attitudes of the staff members. Make available necessary information and data.

<p>Requirement 3: Developing and transferring technology</p>		
<p>3.1 Inadequate development and transferring of technology</p> <p>Sectors Affected: Agriculture, Forestry, Wildlife Conservation, Plantation, Health & Nutrition, Land development, Coastal and Marine Area Management, Industry, Tourism, Energy & Transport, Sanitation and Urban Development</p>		
<p>Capacity needs/interventions</p>		
Systemic level	Institutional level	Individual level
<p>Prioritization of policies & implementation of programmes through Committees on Environmental Policy and Management (CEPOM)s / Committee on Integrating Environment and Development Policy (CIEDP) or NCSD. Inter-Ministerial coordination. Make available necessary budgetary allocations. Increase cadre in relevant institutions. <i>[Ministries of Environment, Land, Mahaweli, Tourism, Irrigation, Power & Energy, Fisheries,</i></p>	<p>Establishment of inter and intra institutional linkages for sharing information and resources. Capacity building of each training institute. Take necessary actions to increase cadre. Search for new technology developed abroad for possible adaptation. <i>[SRI, FD, DWLC, TRI, DOA, ID, CCD, DFAR, RRI, CRI, DEA, HARTI, CRI, DAPH, WRB, SLTB, DOH, NERD, ISB, CDM Centres]</i></p>	<p>Capacity building of relevant personnel in institutes on new technology and transferring technology.</p>

<i>health, plantations, science & technology, disaster management, industry]</i>		
3.2 Failure to develop and transfer renewable energy, energy efficiency and productivity technologies Sectors Affected: Power and Energy		
Make available necessary funds and resources to acquire new technology from abroad.	Take necessary steps to acquire technology from overseas and enhance research and development in relevant institutions. [CEB, NERD, ISB, UOM/CDM Centre]	Train institutional staff to develop or adapt technologies.

Requirement 4: Research and systematic observation of climate and other functions		
4.1 Inadequate research and systematic observations Sectors Affected: Agriculture, Forestry, Wildlife Conservation, Plantation, Health & Nutrition, Land development, Coastal and Marine Area Management, Industry, Tourism, Energy & Transport, Sanitation and Urban Development		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level
Changes in financial policy at systemic level for promoting research and systematic observations. Take necessary steps to negotiate with foreign donors to increase foreign funds for research. Inter institutional coordination. [Ministries of environment, land, Mahaweli, Tourism, Irrigation, Power & Energy, Fisheries, Health, Plantations, Science & technology, Disaster Management, Industry]	Access and coordinate with the agencies involved in research and make available necessary data. Prepare project proposals to seek funds from donors. [SRI, FD, DWLC, DM, TRI, DOA, ID, CCD, DFAR, RRI, CRI, DEA, HARTI, DAPH, WRB, SLTB, DOH, NERD, ISB, CEA, NBRO, CDM Centres, Universities]	Appreciation of the service and the commitments. Training on conducting research, proposal writing (scientists). Build consensus on importance of quality of the observational data.
4.2 Applied research in the area of correlation of environmental issues and health impacts. Sectors Affected: Health and Nutrition		
Creation of an apex body to coordinate and rationalize research activities – in different sectors including health.	Allocation of funds for specific research (research areas to be identified by the health sector eg. Epidemiology, Vector Control).	Train institutional staff to develop or adapt technologies.

Develop a research policy, which will identify the scope and also the roles and responsibilities of different sectoral agencies like Post graduate Institutes, Department of Health, Universities, etc. <i>[Ministries of Health, and Environment]</i>	<i>[DOH, Epidemiology Unit, AMC]</i>	
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Requirement 5: Clean Development Mechanism (CDM)		
5.1 Lack of expertise in developing CDM project proposals for submission to the relevant agencies Sectors Affected: Power and Energy, Forestry, Plantation,		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level
Implement the draft National Policy on Clean Development Mechanism (CDM). Inter-Ministerial coordination among relevant Ministries. Make available budgetary allocations for relevant CDM study centres, Universities, institutions to conduct related research. Increase the awareness on CDM concepts to all senior policy makers. <i>[Ministries of environment, power & energy, plantations, finance]</i>	Developing projects to undertake research on CO ₂ sequestration data of potential candidate tree species. Conducting awareness programs for potential sectors. Capacity building of CDM study centers; Conduct training activities on preparing CDM proposals; Increase training activities in all relevant sectors (Energy, Waste, Forestry, Tourism, Health, Industry, transport). Increase awareness on CDM concepts to all senior officers. <i>[UOP/CDM Centre, UOM/CDM Centre, CEB, CEA, ISB, WEA, FCCISL, ECF, TRI, CRI, RRI, FD]</i>	Awareness raising on potential CDM projects areas among stakeholders (Plantation, forestry, energy, etc.). Training on baseline methodologies of proposal writing.
5.2 Inadequate facilitation for CDM Sectors Affected: Plantation, Agriculture, Power & Energy		
Streamline CDM process, establish units in ECF, FCCISL Constitute a Specific Project for implementing CDM. <i>[Ministries of Environment, Power & Energy, Plantations, Finance]</i>	Imparting CDM expertise to professionals. <i>[UOP/CDM Centre, UOM/CDM Centre, CEB, CEA, ISB, WEA, FCCISL, ECF, TRI, CRI, RRI, FD]</i>	Awareness raising on potential CDM project areas among stakeholders (Plantation, Forestry, Energy, etc.). Training on baseline methodologies of proposal writing.

Requirement 6: Preparing national communications		
6.1 Shortcomings of National Communications to UNFCCC Sectors Affected: Agriculture, Forestry, Wildlife Conservation, Plantation, Health & Nutrition, Land development, Water Resources, Coastal and Marine Area Management, Industry, Tourism, Energy & Transport, Sanitation and Urban Development, Human Settlement and Public Utilities.		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level
Awareness raising for higher level officers or Ministerial level on the importance of national communications to the UNFCCC. Inter-Ministerial level collaboration. Make available necessary budgetary allocation for awareness raising. <i>[Ministries of environment, land, Mahaweli, Tourism Irrigation, Power & Energy, Fisheries, Health, Plantations, Science & Technology, Disaster Management, Industry]</i>	Formation of inter and intra institutional information networks. Regular update of current situation on climate change issues. Capacity building on assessing and conducting research on vulnerability, impacts, adaptation and mitigation of climate change. <i>[SRI, FD, DWLC , DM, TRI, DOA, ID, CCD, DFAR, RRI, CRI, DAPH, WRB, SLTB, DOH, NERD, ISB, CDM Centres, CEA, NBRO, Universities]</i>	Change attitudes by conducting awareness on climate change issues . Long and short term training on assessing and conducting research on vulnerability, impacts, adaptation and mitigation of climate change.

Requirement 7: Preparing and managing Greenhouse gas inventories		
7.1 Shortcomings of national greenhouse gas inventories Sectors Affected: Agriculture, Industry, Power & Energy		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level
Provision of adequate funds to relevant institutions for purchasing equipments and create awareness programmes for the stakeholders. Prioritize the existing policies and regulations to enhance the activities.	Creating awareness on preparing GHG audits and surveys among institutional level. Capacity building on surveying methods, develop country specific emission factors. Incorporate a requirement to provide inventory data into EPL	Create awareness among personal level on GHG sources and evaluating methods.

Strengthening inter institutional collaboration. <i>[Ministries of Environment, Industry]</i>	process, and incorporate bulk fuel delivery data into inventory data. <i>[NCPC, FCCISL, ISB, DOA, DEA, DAPH, CEB]</i>	
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Requirement 8: Education, Training, and Public Awareness raising		
8.1 Lack of Education, training and public awareness raising		
Sectors Affected: All vulnerable sectors		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level
Changes in financial policies to allocate more budgets for relevant institutions. Awareness creation among policy makers on climate change issues. Prioritization of existing policies & implementation programmes. Make arrangements to strengthen and periodically update the school curriculum with the latest findings on climate change issues; make arrangements to incorporate climate change as a separate subject in university curriculum including science degree programmes. <i>[All relevant ministries including, Environment, Science & Technology, Disaster Management, Education, Agriculture, Plantations, Land, Health]</i>	Changes in institutional financial policies for conducting awareness programmes. Incorporate more training programmes in relation to climate change. Encourage climate change research in graduate and undergraduate levels. <i>[All relevant institutions including CCCS/DM, NIE]</i>	Awareness creation in the relevant institutions, government officers, policymakers & general public on climate change and their consequences. Make arrangements to train staff members on specific issues on climate change.

Requirement 9: Developing National Climate Change Programmes		
9.1 Lack of national climate change programmes		
Sectors Affected: All relevant sectors		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level

<p>Awareness creation among policy makers. Prioritization of existing policies & implementation programmes. Make available budgetary allocations for conducting and promoting national climate change programmes. Inter-Institutional coordination. <i>[Ministries of environment, agriculture, Health, Irrigation, Education]</i></p>	<p>Make available information and data through networking. Promote and encourage climate change programmes. <i>[CCS/MOE, CCCS/DM, DOA, DOH, ID, CDM Centres, CRI, TRI, RRI, FD, DWLC, universities]</i></p>	<p>Change attitudes through awareness raising on climate change issues. Provide long-term training for personnel in relevant institutes.</p>
<p>9.2 Lack of a Health promotion programme to address health issues due to climate change</p>		
<p>Sectors Affected: Health</p>		
<p>Awareness creation among policy makers. Prioritization of existing policies & implementation programmes. <i>[Ministry of health]</i></p>	<p>In service Training for primary healthcare workers (eg. PHI, PHM etc). Make available Information Education & Communication (IEC) material. <i>[DOH, HEB, MOH Offices]</i></p>	<p>Change attitudes through awareness raising on climate change issues. Make available latest information and data.</p>

<p>Requirement 10: Information and networking, including the establishment of databases</p>		
<p>10.1 Inadequate information and networking Sectors Affected: All relevant sectors</p>		
<p>Capacity needs/interventions</p>		
<p>Systemic level</p>	<p>Institutional level</p>	<p>Individual level</p>
<p>Formulation of a national policy on data sharing and networking. Changes in financial policies to facilitate networking: make available financial resources to facilitate networking and sharing data and information. <i>[Ministries of Environment, Science & Technology, Disaster Management, Land, Agriculture, Finance, Plantations, Health, Mahaweli]</i></p>	<p>Inter institutional collaboration among relevant institutes to have common platform for data and information networking and sharing. Increase IT facilities for all the institutions (Universities, Research Institute, Government Departments).</p>	<p>Training on technical know-how of database management. Change attitudes on the importance of data and information networking for national development.</p>

Requirement 11: Institutional capacity-building, including the strengthening or establishment, as appropriate, of national climate change secretariats or national focal points		
11.1 Lack of resources to fulfill mandated activities of the secretariat and relevant centres Sectors / Institutions Affected: CCS/MOE, CCCS/DM, CDM Study Centres at UOM & UOP.		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level
Awareness raising on climate change issues and their importance for policy makers and higher level officers. Necessary budgetary allocation to carry out mandated activities, inter-Ministerial coordination, etc. <i>[Ministries of Environment, Disaster Management, Finance]</i>	Inter-institutional coordination, budgetary allocation to implement mandated activities, organization and coordination of training programmes on specific research themes (CO ₂ sequestration on some plant species). Awareness raising on climate change, infrastructure development.	Not applicable

Requirement 12: Improved decision-making, including assistance for participation in international negotiations		
12.1 Unable to obtain optimum national benefits at International negotiations Sectors Affected: All sectors		
Capacity needs/interventions		
Systemic level	Institutional level	Individual level
Make necessary arrangements to include technical members in negotiation team. <i>[Ministries of Environment, Science & Technology, Disaster Management, Agriculture, Land, and Finance]</i>	Enhance Capacity building in legal skills amongst negotiating team. <i>[CCS/MOE, CCCS/DM, DOA, CDM Centres, and Universities]</i>	Create awareness on climate change issues and their consequences and coping mechanisms; make available latest information on current issues on climate change, enhance legal skills .

Box 4: Media and the Climate Change Discourse

The media play an important role in stimulating discussion on environmental issues in developing countries. Enabling the sustainable development aspirations of the poor in an atmosphere of accelerating climate change presents enormous challenges. It involves a wide range of stakeholders with different competencies and from varying backgrounds. Communications between them and the inclusion of the media specifically play an essential part in accelerating and facilitating this process. The media can encourage greater public participation in debates that shape policy.

Recommendations to improve involvement of media:

1. *There should be constant interaction between the people who have the information, the media and those affected by climate change to create awareness of the issues.*
2. *The media should be encouraged by all stakeholders to play a key role in the climate change debate.*
3. *Scientists and policy-makers must break down the jargon used in relation to climate change issues.*
4. *Policy-makers should make financial resources available for training programmes for journalists, including editors, to raise their awareness and understanding of the issues around climate change and the importance of their role in furthering the debate.*
5. *Policy-makers should invest in public media initiatives such as multi-stakeholder dialogues, which would provide space and resources for journalists who want to cover key environmental themes.*
6. *Information sources, such as websites need to be reliable and accessible. Important information should be made available in a variety of languages.*
7. *An online image bank would enable journalists to download and use images in stories on climate change. This would help combat low literacy levels in some countries.*
8. *There should be a deliberate effort on the part of the media to present people-centred climate change stories to make the issues real to the public and build understanding of the need to be involved in the debate.*

These recommendations were made by Panos¹ based on a survey of 47 journalists from Honduras, Jamaica, Sri Lanka and Zambia covering print, radio and TV media.

Findings with respect to Sri Lanka: Sri Lanka has a vibrant media community doing interesting and valuable work on the environment. While many journalists frequently cover environmental issues, the majority of media outlets prioritize political and social issues rather than environment. According to the journalists, the main obstacle to attracting media interest on climate change is the lack of understanding of the issue. This is connected to the lack of information, particularly accurate expert information on environmental trends. The journalists' main sources of information on climate change issues were international news agencies (BBC and Reuters), science magazines (*New Scientist*, *Down to Earth* and *Discover*), and NGOs.

1. Panos London is part of a worldwide network of independent NGOs working with the media to stimulate debate on global development.

Source: *Whatever the weather*. Panos London, 2006.

8.0 THEMATIC ASSESSMENT OF LAND DEGRADATION IN RELATION TO CAPACITY DEVELOPMENT

8.1 Convention Requirements

The United Nations Convention to Combat Desertification entered into force on 26 December 1996. Sri Lanka signed and ratified the convention in 1995 and 1998 respectively.

The objective of the UNCCD is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, within the framework of an integrated approach consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas. As at September 2005, 191 countries had joined the UNCCD.

Desertification is the degradation of land in arid, semi-arid and dry sub-humid areas. It is caused primarily by human activities and climatic variations. While Sri Lanka does not have “desert” areas, land degradation has been identified as one of the major environmental problems in the country.

The obligations described in the Convention have been summarized to 13 statements of obligations/requirements. Those obligations are as follows:

1. Establishing national strategies within the framework of sustainable development plans/ or policies [Article 5b].
2. Implementing National action programmes [Article 10,13].
3. Strengthening relevant legislation, enact new laws, and establishing long term policies and action programmes [Article 5e].
4. Promoting education and public awareness [Article19(3), 5d].
5. The transfer, acquisition, adaptation and development of economically, socially and environmentally appropriate technology [Article12, 18].
6. Training and technology regarding alternative, renewable energy sources, promoting alternative livelihoods, including training in new skills [Article18, 19(1)].
7. Training for collection and analysis of data for disseminating and using early warning

- information systems, covering drought and food production [Article19(1)].
8. Systems to collect, analyze and exchange information and technical and scientific corporation [Article 16, 12].
 9. Establishing effective early warning and advance planning for periods of adverse climatic variation [Article10].
 10. Systems for research and development [Article17, 12].
 11. Joint research programmes for development of appropriate technologies [Article 17].
 12. Involving in capacity assessment activities [Article 19(2)].
 13. Regional and international cooperation [Article11, 12, 14, 19(4), Annex II (Art.5,6)].

8.2 Institutional framework

The Ministry of Environment as the national focal point for the Convention to Combat Desertification has designated the Division of Natural Resources Management of the Ministry to coordinate the implementation of UNCCD.

A National Experts Committee on Land Degradation and Drought was appointed in 2000 for this purpose, and to advise the government on matters relating to land degradation and droughts. The committee, which comprises of experts on land resources, state sector officials and representatives of NGOs, is expected to provide guidance and direction in resolving land degradation issues in a comprehensive manner. The integration of land degradation issues into the development agenda at the national level is expected to be achieved through the CEPOM on Agriculture, Plantations, Land Development and Mining.

The task of land management is shared by a number of state institutions and non-state institutions including the private sector and non-governmental agencies. Land degradation and related issues come under the purview of several Ministries and their agencies, notably the line Ministries dealing with agriculture, forestry, lands and land use, irrigation, water resources. The main institutions dealing with land are the Land Commissioner's Department, the Land Settlement Department and the Land Reform Commission. At the provincial level several agencies deal with land related subjects while these subjects are handled by the Pradeshiya Sabhas at the local level. The powers and functions of the Land Commissioner are delegated to the Divisional Secretaries and District Secretaries.

Other key national level institutions that deal with land related issues are the Department of Agriculture(DOA), Forest Department(FD), Department of Wildlife Conservation (DWLC), Central Environmental Authority (CEA), National Water Supply and Drainage Board (NWDB), Tea, Rubber and Coconut Research Institutes, the Natural Resources Management Centre (NRMC) of the Department of Agriculture, National Building Research Organization, Agrarian Services Department, and the Land Use Division of the Irrigation Department. These institutions, amongst other functions, are involved in research, development, and implementation of activities related to the rehabilitation of degraded land.

The Land Use Policy Planning Division (LUPPD) was established in 1979 under the Ministry of Lands & Land Development, to promote systematic land use planning in the country. However, the widespread misuse of land, accelerated land degradation, deforestation and the slow adoption of land use planning seem to indicate that the early efforts to reduce land degradation have not been entirely successful. The newly created National Physical Planning Department is empowered to carry out land use planning and zoning throughout the country. The Urban Development Authority (UDA) has the power to engage in the preparation of development plans for areas declared for urban development under the UDA Act.

The National Disaster Management Centre within the Ministry of Social Services has been established to enable the management of natural disasters more efficiently.

The main Universities in the country are involved in conducting education programmes in natural resources management, and research and capacity building to deal with issues related to land management in the country. The Council for Agricultural Research Policy (CARP) facilitates the coordination of agricultural research undertaken by various Ministries and institutions and sets policies and priorities in this sphere. However research studies on aspects related to land degradation financed by CARP are limited.

Coordinating Mechanisms: Most of the natural resources sectors have steering committees, coordinating committees, advisory bodies or expert committees that are intended to obtain technical inputs and also the participation of all those concerned in land management activities. Such important committees include, the Forestry Sector Steering Committee, National Committee for Organic Product Promotion, National Coordinating Committee on Climate Change, and the EIA Coordinating Committee.

Although there are coordination mechanisms at the national level, which are fairly well established, there are no formalized coordination mechanisms between the national level agencies and the provincial and local level agencies to discuss environmental related issues. Meetings and discussions for this purpose are held between the Ministries and provincial agencies on matters of interest from time to time depending on the urgency. Recently Divisional Environmental Officers have been appointed to each Divisional Secretariat by the CEA. This is an important step in linking the local level with the national level and also in ensuring environmental protection.

In order to obtain the maximum benefits of participation in soil conservation efforts, it is necessary that all stakeholders are involved in the planning of such activities and in their implementation and evaluation. Over the years efforts have been made by the government to promote participatory processes in land management. Most of the policies formulated and plans prepared have paid particular attention to this factor as a means of increasing performance, when implementing various conservation oriented activities.

Community participation in policy and planning activities has been very marginal to date. On the other hand communities have become increasingly involved in implementation activities. This process was initiated with the Rural Development Societies and NGOs like *Sarvodaya*, which organized communities to participate in the development activities at village level. The activities covered by the NGOs and CBOs have diversified over the years. In recent years natural resource management aspects have also been included.

The involvement of schools in environmental activities has increased over the years. The Environmental Pioneer Brigades formed in schools around the country are made aware of environmental problems; provided with opportunities to carry out environmental projects and; made to participate in competitions aimed at increasing their knowledge on environmental aspects. It is expected that capacity building and awareness creation at a younger age will enhance their role in environmental management in the future.

8.3 Progress towards meeting the national obligations

The Ministry of Environment as the national focal point for UNCCD has taken several steps towards meeting the national obligations to the convention. The setting up of a National Experts

Committee is the main action by the Ministry in establishing a coordinating and advisory mechanism for efforts to combat land degradation.

Steps taken towards meeting national obligations:

- ✍ **First National Awareness Seminar on the "Prevention of Land Degradation and Combating Desertification in Sri Lanka"** was held on 01st October 1999, in Colombo, Sri Lanka. This seminar was organized in association with the United Nations' Development Programme (UNDP) in Sri Lanka.

The main objective of the seminar was to develop a National Action Programme (NAP) to mitigate the effects of drought and to prevent land degradation, within the policy framework of sustainable development in Sri Lanka. The seminar came up with a set of recommendations to be incorporated into the National Action Plan for the prevention of land degradation, the mitigation of the effects of droughts, and to combat desertification.

Prevention of Land Degradation and Combating Desertification in Sri Lanka : Recommendations of the First National Awareness Seminar held on 1st October 1999 in Colombo

1. A major obstacle in the way of combating land degradation is the absence of a National Land Use Policy. A draft Land Use Policy was prepared sometime ago. The Ministry of Forestry and Environment should take the lead role in preparing the final policy.
2. There are serious land degradation problems in Sri Lanka. An expert group should be appointed by the Ministry of Forestry and Environment to examine these problems and recommend short-term solutions.
3. There is a large extent of degraded land in the country. An expert group should be appointed by the Ministry of Forestry and Environment to recommend silvicultural strategies for degraded lands.
4. Detailed information on soils is limited. The available information is also scattered amongst several agencies. There is a need to collate all the available data on soils and identify data gaps that have to be filled so that a good soil database could be prepared for the country. The Ministry of Forestry and Environment should provide the necessary assistance to achieve this objective.
5. The Ministry of Forestry and Environment should take steps to appoint an expert group to examine strategies currently adopted to mitigate the effects of drought in Sri Lanka and to formulate national policies in consultation with representatives of the victims to mitigate the effects of droughts.
6. The reduced land productivity due to land degradation has substantial economic costs. The Ministry of Forestry and Environment through its economics affairs unit should initiate action to examine and quantify these costs.
7. The Ministry of Forestry and Environment should prepare and disseminate suitable programmes to make school children aware of the socio-economic and environmental implications of land degradation.
8. The Ministry of Forestry and Environment should take necessary steps to make community leaders including politicians aware of the importance of preserving and sustaining the productive capacity of both utilized and unutilized lands.

While these recommendations have been addressed to some extent during the past several years, it is evident from the assessments carried out under the NCSA Project that much has still to be done in addressing the basic issues that have been identified.

Reference: Thematic Assessment Report on Land Degradation by K A Nandasena.

✍ **National Status Reports on Land Degradation**

The First National Status Report on land degradation in relation to the implementation of the UNCCD was submitted to the UNCCD Secretariat by the Ministry of Forestry & Environment in 2000.

The report reviewed the country's status on land degradation at that time. Nature and magnitude of the land degradation, national policies, strategies and plans prepared to address the land degradation issue, institutional framework for addressing land degradation, legislations enacted to address the issue, and foreign assistance, ongoing projects and participation of different stake holders in addressing land degradation have been highlighted in the report. Notably, report indicated the measures adopted for capacity development in relation to combat/control and prevent land degradation in Sri Lanka.

The Second National Status Report on land degradation was prepared in 2002 by the Ministry of Environment & Natural Resources. Financial assistance was given by UNDP Office in Sri Lanka and UNCCD Secretariat. The report elaborates the present status of land degradation and measures taken to control and arrest land degradation. The report also describes the policies and strategies taken by the Government of Sri Lanka and the legal and institutional frameworks which address the land degradation problem in the country. Projects and programmes on land resources management; resource mobilization, etc. have also been highlighted. Significantly, the report also made a series of recommendations on an integrated approach to land resources management.

✍ **National Action Programme (NAP)**

Sri Lanka formulated the National Action Programme to Combat Land Degradation and Mitigate the Impacts of Droughts in 2002. According to the article 9, 10 & 11, each contracting party should formulate the National Action Programme to combat land degradation and to mitigate the effect of drought. .

The process of formulating the National Action Programme was initiated by the then Ministry of Environment and Forestry in 2000 with the appointment of a National Experts Committee on Land Degradation and Drought (NEC). The Ministry identified about 50 resource persons/

experts drawn from Universities and other key Departments and Institutions to prepare a series of position papers on fields related to land degradation and droughts that provided sufficient information for the preparation of NAP.

The objective of the NAP is to reduce land degradation and mitigate the effect of drought with the participation of affected communities, public sector agencies, CBO's, NGO's, and the Private Sector.

✍ **National workshop on UNCCD Implementation in Sri Lanka and Identification of Synergies of Environmental Conventions**

This workshop organized by the Ministry of Environment and Natural Resources with the financial support of the UNCCD Secretariat, was held in Randenigala from 31st July to 2nd August 2003.

The outcomes of the workshop include the recommendations, projects for synergistic implementation of environmental conventions, constraints and limitations of existing policies, institutional arrangements and solutions for further activities.

✍ **International Workshop on the Development of the Sub-Regional Action Programme for Combating Desertification and Promoting Sustainable Land Management.**

The sub-regional workshop to prepare the Sub-Regional Action Programme (SA-SRAP) for combating desertification and promoting sustainable land management in the South Asian Region was held at Colombo, Sri Lanka from 5th to 7th July 2004. The Ministry of Environment and Natural Resources organized this three day workshop with the financial support from UNCCD Secretariat, and Global Mechanism, and support from UNDP Colombo office, South Asia Cooperative Environment Programme (SACEP) and World Conservation Union (IUCN).

✎ International Workshop on UNCCD/NAP Implementation and Partnership Building in Sri Lanka

This workshop was organized in Colombo from 8 - 9 July 2004 in order to facilitate the implementation of the UNCCD/NAP in Sri Lanka. The following focus was identified for implementation of UNCCD/NAP:

- (1) Preventing the decline in the forest cover,
- (2) Restoring degraded forests,
- (3) Conserving and improve grasslands,
- (4) Establishment of a drought early warning system,
- (5) Strengthening drought relief systems,
- (6) Strengthening rainwater harvesting systems,
- (7) Promoting sustainable agriculture practices, and
- (8) Providing alternative income generating opportunities

In the implementation process, it was proposed to give special consideration to the policy framework, land related laws, institutional capacity, technology transfer, data collection and information management, education/awareness-raising, and the linkages of land management with forestry, wildlife, eco-tourism and watershed management.

It is also intended to promote the implementation of the UNCCD/NAP in Sri Lanka by building upon its linkages and interactions with Asia - Pacific UNCCD Thematic Programme Networks (TPNs) as well as the South Asia Sub-Regional Action Programme to Combat Desertification and Promote Sustainable Land Management.

✎ National Workshop on SRAP/NAP implementation

The follow up workshop on implementation of SRAP in South Asian Region was held at the Centre for Housing, Planning and Building (CHPB), Pelawatte, Battaramulla, Sri Lanka from 24th to 25th November 2004. The workshop was organized by the Ministry of Environment and Natural Resources with the financial assistance provided by UNCCD Secretariat.

The outcomes of this workshop and preparatory documents will be made available to the other SRAP member countries in the form of suggestions thereby providing further stimulus

for initiatives, interactions and participations to be undertaken at the sub-regional level in Asia.

The following order of priority for program areas of NAP was agreed upon at the workshop:

1. Rehabilitation, restoration and conservation of degraded agricultural lands in Mahaweli watershed.
2. Promote data collection and information sharing.
3. Promote ecosystem approaches in sustainable land management.

8.4 Plans and policies for implementing UNCCD

The responses of the state in dealing with land degradation issues in the country are reflected in the plans developed to cover areas such as environment, forestry, biodiversity, coastal, water, agriculture and disaster management. These planning exercises have translated into action the various policies pertaining to land management and have addressed land degradation issues in detail.

Policies and plans	
National Forest Policy	<p>The first National Forest Policy was adopted in 1929 - to emphasize the importance of soil and water conservation and the preservation of indigenous fauna and flora. The Forest Policy has since then been updated and amended; the most recent being the Forest Policy of 1995.</p> <p>The policy acknowledges that the natural forests are heavily depleted, and expresses concern for safeguarding the remaining natural forests for posterity in order to conserve biodiversity, soil and water resources. Several of the objectives and strategies outlined in the policy clearly have a bearing on combating land degradation.</p>
National Policy Framework - Ministry of Agriculture Lands and Forests-1995	<p>The National Policy Framework was prepared to realize policy objectives spelt out in the election manifesto of the People's Alliance prior to the General Election held in 1994.</p> <p>Eight management issues pertaining to land were identified, i.e. land use, land administration, land tenure, land allocation, land alienation, encroachments under utilized agricultural land and land deposition, and policy recommendations, and an implementation strategy was also included.</p> <p>The main land use issue that was addressed was the degradation of land resources due to overuse, mismanagement and their negative impacts on sustaining agriculture. It was felt that this issue should be addressed through a National Land Use Policy which must provide a framework for land use to meet the country's social' and economic needs.</p>

<p>National Land Use Policy (draft) – 2002</p>	<p>This Draft policy was prepared by the Land Use Policy Planning Division. The goal of the policy is the rational utilization of lands as a resource, in the national interest, while ensuring a high quality of life, equity and ecological sustainability. The draft policy is presented under three broad themes; agriculture and food security, land and people, and land and nature.</p> <p>The policy is quite comprehensive, and when adopted and implemented would have a great impact on land resources management and in resolving land degradation problems in the country.</p>
<p>National Water Resources Policy - 2000</p>	<p>The National Water Resources Policy is a statement of the government's intentions regarding the management of the country's inland water. The policy adopts an "integrated" approach which recognizes natural linkages. Emphasis is placed on water resource management within river basins and aquifers, including both upstream and downstream water users, government and other stakeholders.</p>
<p>National Environmental Policy and Strategies - 2003</p>	<p>The National Environmental Policy endorses the commitment of government, in partnership with the people, to effectively manage the environment for the benefit of present and future generations. The aim of this policy is to ensure sound environmental management within a framework of sustainable development in Sri Lanka. This Policy is supported by many other policies and strategies developed for other sectors.</p> <p>The National Environmental Policy provides the direction and framework for managing and caring for the environment.</p>
<p>National Watershed Management Policy – 2004</p>	<p>The NWMP was formulated by the Ministry of Environment & Natural Resources. The goal of the policy is accruing sustained and equitable economic and social benefits to the people and other life forms within the watersheds ... while ensuring the long term protection of the natural functions of the watersheds. Its policy statements address all aspects of watershed management including land and water management in critical watersheds.</p>
<p>National Policy on Agriculture and Livestock - 2003</p>	<p>National Policy on Agriculture and Livestock was formulated and presented in 2003 by the Ministry of Agriculture and Livestock for the period of 2003 to 2010. The policy was basically formulated to provide appropriate policy directions to mobilize investments and guide human efforts to use the full potential of the agricultural resource base for achieving national goals.</p> <p>Of the eighteen policy statements, the policy statement No 10 outlined the policy for land, water and inputs. The major part of the policy in relation to the land degradation issue is to mobilize resources to conserve highlands and catchments, making soil</p>

	conservation on cultivated highlands and slopes compulsory, mobilizing farmers for conservation and protection. The policy also highlights the judicious use of chemical fertilizer and agro chemicals for agriculture, and use of biological and bio-technical methods as far as possible to protect soil fertility.
National Agricultural Research Plan (NARP)- 1999	The NARP was prepared in 1988 with the intention of promoting agricultural sustainability and increasing efficiency in food production. This was followed by a second plan, which covered the period 2000-2008. This plan has proposed many research initiatives that would promote sustainable agriculture in the country. The future research trends are expected to give weight to a greater understanding of natural resources, the environment and resource sustainability, soil and land management and developing appropriate partnerships both nationally and internationally.
National Conservation Strategy (NCS) in 1988	Sri Lanka was one of the first countries in Asia to prepare a National Conservation Strategy. This comprised a preliminary strategy to deal with problems of environmental degradation in the country.
National Environmental Action Plans	The first NEAP was prepared in 1991. Since then, there have been several revisions of the NEAP as warranted by the NEA. The current NEAP is termed “Caring for The Environment: National Agenda for Sustainable Development 2003-2007” (CFE). It gives priority, among others, towards resolving land degradation issues in the country. It recommends legislative and institutional support, and provincial level interventions in resolving land degradation. The CFE contains the National Environmental Policy.
Forestry Sector Master Plan	The FSMP of 1995 emphasizes on forest management, soil and water conservation, conservation of environmentally sensitive areas and peoples participation in forestry development activities.
National Coastal Zone Management Plan	The policies, strategies and actions to address issues in the coastal areas are addressed by the CZMP. This is periodically updated and revised by the Coast Conservation Department (CCD), as mandated under the Coast Conservation Act (CCA) of 1981. The first CZMP was approved in 1990. The latest is the CZMP of 2004. The CZMP outlines interventions to reduce coastal erosion, minimize depletion and degradation of coastal habitats.
National Biodiversity Conservation Action Plan - 1998	The BCAP outlines the principles in biodiversity conservation, and includes proposed action in areas such as forests, wetlands, coastal and marine areas and agricultural systems.
Natural Disaster Management Action Plan	The NDMAP of 1999 provides for effective disaster management, which includes mitigation, preparedness,

	response, and recovery.
Wildlife Policy	Sri Lanka's first Wildlife Policy was developed in 1990, and revised again in 2000. The National Wildlife Policy of 2000 emphasizes state commitment to conserve wildlife resources for the benefit of present and future generations.
National Physical Planning Policy	A policy has been prepared and is awaiting government approval.

A major deficiency in the planning exercises carried out so far, is that they have not adopted an integrated approach. All natural resources sectors have strong biological as well as socio-economic links, which need to be considered in land management. The recent ADB assisted Technical Assistance Programme on Sustainable Natural Resources Management and Development emphasizes the need to follow an integrated approach in land resources management.

8.5 Legislation enacted to address land degradation

The government has adopted two strategic ways to address the land degradation issue in Sri Lanka. The first is to introduce legislation specifically intended to prevent or mitigate soil erosion/land degradation, such as in the Soil Conservation Act. The other way is to incorporate environmental safeguards in legislative enactments pertaining to land and water resources development.

Legislation
Soil Conservation Act, No. 25 of 1951; amended in 1996.
Land Development Ordinance No.19 of 1935; and its subsequent amendments.
The State Lands Ordinance No. 8 of 1947 and its subsequent amendments.
Land Grants (Special Provisions) Act of 1979
Water Resources Board Act No.29 of 1964.
Agrarian Services Act No. 58 of 1979, and its subsequent amendments
Mahaweli Authority of Sri Lanka Act No. 23 of 1979; and amendment 59 of 1993.
National Environmental Act No. 47 of 1980 and the amendment No. 56 of 1988.
Title Registration Act of 1998
The Forest Ordinance No. 16 of 1907, and its subsequent amendments
The Fauna and Flora Protection Ordinance No. 2 of 1937, and subsequent amendments including Act No. 49 of 1993.
The National Heritage Wilderness Area Act No. 3 of 1988.
Urban Development Authority Law No 41 of 1978, as amended by subsequent Acts, the recent ones being Act No. 41 of 1988 and Act No. 4 of 1992.

Legislation

Mines and Minerals Act No. 33 of 1992.

The **Soil Conservation Act**: Recognising soil erosion as a serious environmental problem in the country, the Government took the important step to formulate legislation to address this issue, and enacted this law in 1951. The Act provides for the conservation of soil resources, for the prevention or mitigation of soil erosion and for the protection of land against damage by floods and droughts. An amendment to the Act was introduced in 1996 to extend the concept of addressing 'soil erosion' to the broader issue of 'land degradation'. A revision of the Act was initially prepared in 2004 and it is currently with the Legal Draftsman for final touches. The new Act has provisions for the enhancement and sustenance of the productive capacity of the land through conservation of soil; restoration of land degraded by soil erosion; protection and /or restoration of land against damage caused by salinity, alkalinity, water logging and fire. These provisions will apply over the entire country. (See Box 5)

The **Land Development Ordinance** of 1935 empowers the Government Agents (GA) to carry out the systematic allocation of state lands for various purposes based on the suitability of land and the needs of the community. The reduction and prevention of soil erosion could be achieved through systematic land allocation under the Ordinance.

The **State Lands Ordinance** of 1947 had provisions for the grant, and disposition of state lands in the country and for the management and control of such lands, and contained provisions pertaining to the control of soil erosion and protection of water resources. The Act also stipulated that no grant, lease or other dispositions shall be made of any state land situated at an elevation exceeding 5000 feet except in such cases and for such purposes as may be prescribed.

The **Land Grants (Special Provisions) Act** -1979, was enacted in order to facilitate the transfer of agricultural or estate lands vested in the Land Reform Commission under the Land Reform Law to the landless peoples in the country free of charge. One of the conditions in the land transfer was that the transferee was bound to carry out soil conservation measures as stipulated from time to time by the Government Agent of the area.

The **Water Resources Board Act** of 1964 provided for the establishment of a Water Resources Board which was expected to advise the Minister on a number of matters pertaining to the control, regulation and development of water resources including the conservation and utilization

of the water resources of the country. Significant among the duties of the Board were the promotion of afforestation and the control of soil erosion.

Box 5: Sri Lanka's Soil Conservation Act

Undoubtedly a key piece of legislation to minimize land degradation, the Soil Conservation Act was passed as far back as 1951¹. It has been subsequently amended in 1953 and 1996². The purpose of the Act is to take necessary action for the enhancement of productive capacity of the soil, to restore degraded land for the prevention/ mitigation of soil erosion, for the conservation of soil resources, and protection of land against damage by floods, salinity, alkalinizing, water logging and drought.

The implementation of the Soil Conservation Act was initially entrusted to the Soil Conservation Division (SCD) of the Department of Agriculture. However it took ten years to gazette the necessary regulations. Then, in the early 1970s following a policy decision that soil conservation work should be handled by the extension staff in the districts, the trained staff of the SCD were transferred out and the Division ceased to exist as a separate unit. Responsibility for implementing the Act now rests with the Natural Resources Management Centre in the Agriculture Department.

Some of the drawbacks to implementation of the provisions of the Act and regulations by the DOA include: the problem of combining regulatory functions with extension activities of the normal extension staff of DOA, the divided responsibility for management of land among several Ministries, and inadequate institutional support made available under the Act.

The amendments made in 1996 provided for the establishment of a Soil Conservation Board and a Soil Conservation Fund, while covering several aspects of land degradation including soil erosion, damage by floods, stream bank erosion, salinity, alkalinity and water logging. The Board consists of 19 members including 12 Ministry Secretaries, heads of BOI, UDA and CEA, and two subject specialists.

The functions of the Board are

- (1) Proposing measures and coordinating programmes and research relating to the following:
 - enhancement of productive capacity of the soil
 - protection of land vulnerable to degradation
 - restoration of the productive capacity of land degraded due to lack of soil conservation
 - conservation of water and watersheds for maintenance of productivity
- (2) Prevention of soil erosion from non-agricultural activities that lead to siltation or degradation of agricultural land of a degree likely to affect its productivity; and siltation of water bodies and irrigation systems capable of supporting agricultural productivity.
- (3) Administration and management of the Soil Conservation Fund.
- (4) Advising the Minister on the implementation of the provisions of the Act.

The Act, however, remains 'grounded' due to the inability to convene the Soil Conservation Board! A new Soil Conservation Act has been prepared taking into account the weaknesses in the prevailing legislation. This is currently with the Legal Draftsman.

A study of the formulation and implementation of the Soil Conservation Act would provide useful generic lessons for conceptualizing, formulating, and implementing environmental legislation in Sri Lanka.

1. *Soil Conservation Act No. 25 of 1951*

2. *Act No. 59 of 1953, and Act No. 24 of 1996*

References:

National Science Foundation, 2000. Natural Resources of Sri Lanka 2000, 306 pp.

Report provided to NCSA Project by Jagath Gunawardana, 2005.

Baseline Appraisal Report of the NCSA project by K A Nandasena, 2005.

The purpose of the **Agrarian Services Act** of 1979 was, amongst other things, to provide (a) security of tenure to tenant cultivators of paddy lands, and (b) to ensure the maximum productivity of paddy and other agricultural lands through the proper use and other management of agricultural crops and livestock. The proper maintenance of land to ensure the maximum conservation of soil and water is specified as one of the duties of the owner cultivators or occupiers of the land.

The Mahaweli Authority of Sri Lanka Act of 1979 provided for the establishment of the Mahaweli Authority of Sri Lanka for the implementation of the Mahaweli Ganga Development Scheme. The Act empowered the Minister to declare any area which can be developed with the water resources of the Mahaweli Ganga or of any major river as a "Special Area". Two of the functions of the Authority in any Special Area were (a) to foster and secure the full and integrated development of the area, and (b) to conserve and maintain the physical environment within the area. The Authority was also conferred with the powers to take measures necessary for watershed management and control of soil erosion in any Special Area.

In 1980, a wide-ranging piece of legislation for the protection, management and enhancement of the environment and the regulation, maintenance and control of the quality of the environment *viz*, the **National Environment Act**, was enacted.

This legislation provided for the establishment of the Central Environment Authority. The scope of the CEA included the formulation of a land use scheme (a) to provide a rational, orderly and efficient system for the acquisition, utilization and the disposition of land and its resources in order to derive maximum benefits therefrom, and (b) to encourage the prudent use and conservation of land resources in order to prevent an imbalance between the needs of the nation and such resources. Recommending soil conservation programs including the identification and protection of critical watershed areas, encouragement of scientific farming techniques, physical and biological means of soil conservation, and research and technology for effective soil conservation was also within its scope.

The **Title Registration Act** of 1998 deals with the registration of Deeds and provides title security and ownership of property. The Registration of Title is expected to streamline land transactions in the country, reduce inadequacies in legislation and also minimize litigation, thereby leading to a better management of land resources.

The Forest Ordinance of 1907 is the foundation of the present law pertaining to forest protection. It has been amended many times but the original scheme and structure have remained unchanged. The Ordinance has provision to protect the forests, as well as their produce, under the jurisdiction of the Forest Department. Acts prohibited in Reserve Forests include (a) making of fresh clearings (b) setting fire to forests and (c) clearing or breaking up of land for cultivation or any other purpose or cultivating any land already cleared.

The **Fauna and Flora Protection Ordinance** of 1937 (and subsequent amendments) provides for the protection of six categories of forests coming under the jurisdiction of the Department of Wildlife Conservation: strict natural reserves, national parks, nature reserves, jungle corridors, intermediate zones and sanctuaries. The acts prohibited in the reserves and sanctuaries include (a) the clearing or break up of any land for cultivation, mining or any other purposes and (b) making of any fresh clearing.

The **National Heritage Wilderness Act** was enacted in 1988 to "preserve in their natural state unique ecosystems and genetic resources and habitats of threatened species of animals, and for enhancing the natural beauty of the wilderness of Sri Lanka". Under the provisions of this Act any area of state forest which has unique ecosystems, genetic resources or any outstanding natural features can be declared a National Heritage Wilderness Area. As in the case of Forest Reserves and Wildlife Reserves the Act prohibits the making of any fresh clearings and the clearing and break up of land for cultivation or any other purposes in Heritage Wilderness Areas.

8.6 Capacity needs and interventions

From the Articles of the UNCCD, seven requirements were identified for the assessment of capacity constraints and needs by applying the Issue Prioritization Matrix tool:

- (1) Establishing national strategies within the framework of sustainable development plans/ or policies.
- (2) Implementing National Action Programmes.
- (3) The transfer, acquisition, adaptation and development of economically, socially and environmentally appropriate technology.
- (4) Regional and international cooperation.
- (5) Systems for research and development.

- (6) Establishing effective early warning and advance planning for periods of adverse climatic variation.
- (7) Training and technology regarding alternative, renewable energy sources, promoting alternative livelihoods, including training in new skills.

The identification of capacity constraints and possible opportunities (needs) in relation to these requirements was done through consultative meetings and workshops. Using the “Root Cause Analysis” and “Capacity Constraints Matrix”, capacity constraints were assessed at the systemic, institutional and individual levels. The results are given below.

Priority Requirement 1: Establishing national strategies within the framework of sustainable development plans/ or policies		
Capacity constraints/needs		
Systemic level	Institutional level	Individual level
<ul style="list-style-type: none"> 1. Weak link between the central government and the provincial authorities. 2. Absence of a nationally responsible authority to address land degradation issues. 3. Lack of a strong and consistent policy on land use. 4. Lack of political interest or political will, changing of political situation and political manifestoes. 5. Implementation of development programs/projects without adequate concern on environment. 6. Weak implementation of the Soil Conservation Act. 7. Low priority given by developing countries for combating land degradation in. 	<ul style="list-style-type: none"> 1. Overlapping mandates of different institutions. 2. All relevant stakeholders are not consulted and the views of some stakeholders are not respected. 3. Fragmented nature of responsibilities. 4. Limited natural resources and negligence of some agencies that control those resources. 5. Inability to fully implement existing policies. 6. Lack of accessibility to new technologies. 7. Inadequate appreciation on gravity of land degradation problem in Sri Lanka by policy planners and decision makers. 8. Complex nature of information and scattered available data among different agencies. 	<ul style="list-style-type: none"> 1. No immediate benefits to the farmer. 2. No causes and impact accountability. 3. Negative attitudes of stakeholders and their general lack of awareness. 4. Complexity of land ownership and land tenure. 5. Treatment of land as an unlimited resource. 6. Lack of knowledge on new farming systems and lack of accessibility to new technologies. 7. Low priority given to land resources management.

Priority Requirement 2: Implementation of National Action Programme (NAP).		
Capacity constraints/needs		
Systemic level	Institutional level	Individual level
<p>1. Insufficient rules and regulations to implement NAP.</p> <p>2. Frequent changes in a). allocation of Ministerial portfolio and b). Change of subject functions, areas, compositions and institutions.</p> <p>3. Lack of financial resources.</p>	<p>1. Weak coordination and communication among institutions/agencies.</p> <p>2. Overlapping mandates and priorities of different institutions.</p> <p>3. Weak relationship between NAP and priorities of the institutions.</p> <p>4. Lack of proper coordination mechanism and a coordination body.</p> <p>5. Inadequate involvement by local government authorities.</p> <p>6. Poor private sector involvement in implementing NAP activities.</p>	<p>1. Inability to formulate project proposals.</p> <p>2. Inability of farmers to perceive potential economic gains.</p> <p>3. Inadequate concern on land degradation issues by the community.</p>

Priority Requirement 3: 3.1 Acquisition, adaptation and transfer of appropriate technology. 3.2 Development of economically, socially and environmentally appropriate technology.		
Capacity constraints/needs		
Systemic level	Institutional level	Individual level
<p>1. Weak linkages with parties in other counties on technology transfer.</p> <p>2. Weak bilateral agreement on the technical cooperation.</p> <p>3. Lack of consistent political support.</p> <p>4. Weak resource flow from center to peripheral areas.</p>	<p>1. Inadequate mechanism in missions abroad to promote technology transfer.</p> <p>2. Weak extension service.</p> <p>3. Insufficient coordination between provincial councils and line agencies.</p> <p>4. Irrational resource allocation among institutions.</p>	<p>1. Lack of incentives for adaptation.</p> <p>2. Lack of recognition of research initiatives.</p> <p>3. Inadequate farmer training and education.</p> <p>4. Inadequate funds and the lack of competent officers.</p>

Priority Requirement 4: Regional and international cooperation.		
Capacity constraints/needs		
Systemic level	Institutional level	Individual level
1. Insufficient international and regional cooperation.	1. Slow and inadequate flow of funds from developed countries to Sri Lanka on combating land degradation. 2. Inadequate focus given by South Asian countries on land degradation issues. 3. Limited resources availability within the region.	1. Shortage of competent skilled officers in relevant subjects. 2. Lack of opportunities to enhance the skills of technical personnel addressing land degradation issues.

Priority Requirement 5: Systems for research and development		
Capacity constraints/needs		
Systemic level	Institutional level	Individual level
1. Low priority given by the government to research and development on land degradation issues.	1. Low priority given at the institutional level to research and development on land degradation issues. 2. Shortage of physical and human resources. 3. Weak cooperation among research institutes, and other relevant agencies.	1. Low priority given by research workers to land degradation issues of Sri Lanka.

Priority Requirement 6: Establishing and strengthening effective early warning and preparing advanced planning for periods of adverse climatic variation.		
Capacity constraints/needs		
Systemic level	Institutional level	Individual level
1. Weak and inadequate access to appropriate technologies.	1. Inadequate physical and human resources. 2. Inadequate new technologies	1. Inadequate trained personnel on forecasting climate changes and on formulating plans for periods of adverse climatic

	<p>and shortage of skilled personnel on forecasting climate changes.</p> <p>3. Failure to consider and use traditional and indigenous knowledge.</p> <p>4. Weak coordination between different institutions.</p>	variation.(i.e. contingency plans).
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Priority Requirement 7:		
(a) Training and technology regarding alternative, renewable energy sources, and		
(b) promoting alternative livelihoods, including training in new skills		
Capacity constraints/needs		
Systemic level	Institutional level	Individual level
<p>(a) 1. Weak technology transfer mechanism for alternative, renewable energy sources.</p> <p>2. Lack of sustainable fuel wood plantations.</p> <p>3. Lack of commercial scale technologies.</p>	<p>(a) 1. Lack of training and skills development to establish sustainable fuel wood plantations.</p> <p>2. Inadequate research and development programmes on commercial scale technology.</p> <p>(b) 1. Inadequacy of promoting off farm employment opportunities.</p> <p>2. Inadequate training and awareness programmes on sustainable agricultural practices and post harvesting technologies.</p>	<p>(a) 1. Lack of training and skills development to establish sustainable fuel wood plantations.</p> <p>(b) 1. Absence of alternative livelihoods for farmer communities.</p>

Recommendations :

The interventions that have to be made at the three capacity levels in order to overcome the bottlenecks and constraints in relation to the implementation of UNCCD activities in Sri Lanka are summarized below.

Systemic level:

1. Establish a national level high-powered body to coordinate the activities related to combating land degradation in Sri Lanka. For this purpose necessary laws and regulations should be enacted.

2. Formulate appropriate strategies and programmes to promote firm links and coordination between government line agencies and Provincial Councils to implement the activities related to combating land degradation under UNCCD.
3. Enforce laws to safeguard the environment during the planning and implementation of development programmes.
4. Formulate and implement a sound land use policy with proper emphasis on the land degradation issues.
5. Create an enabling environment to implement the Soil Conservation Act.
6. Strengthen the linkages with other country parties for the acquisition of funds and new technologies, human resource development and the exchange of experts in relation to the combating of land degradation.

Institutional level:

7. Strengthen CEPOM's, establishing environmental cells/divisions in relevant ministries and appointing environmental officers to implement NAP activities in the country.
8. Strengthen the capacity and authority of district environmental and land use committees.
9. Develop the capacity of high-level officers involved in decision making and policy planning at the relevant ministries pertaining to the addressing of land degradation issues with required scientific background.
10. Formulate the policies to accommodate programmes and projects of NAP as action plans in the development programmes of different institutions that have the mandate to address land degradation issues in Sri Lanka.
11. Strengthen the institutional capacity in terms of both physical and human resources for

research and development on combating land degradation in the country.

12. Strengthen the extension service and promote off farm employment opportunities for farmers.

Individual level:

13. Develop capacity of the officers in the different subject areas related to land degradation.
14. Formulate and implement strategies and programmes for creation of awareness and the skills development of field level officers as well as farmers.

9.0 ASSESSMENT OF CROSS CUTTING ISSUES FOR CAPACITY DEVELOPMENT

9.1 Cross Cutting Issues

Over the past several decades the international community has established a range of Multi-lateral Environmental Agreements (MEAs) designed to deal with the world's most serious environmental challenges. While each of these MEAs focuses on a specific environmental problem (eg, climate change, loss of biodiversity, desertification, hazardous wastes) common features among the MEAs are – they all promote sustainable development and they use similar principles and processes to achieve their goals. Besides, there are also several requirements and obligations such as , for instance, education and public awareness, research and technology transfer, national strategies and action plans that are common to two or more conventions.

The NCSA process, while focusing on the capacity needs for the thematic areas of biodiversity (UNCBD), climate change (UNFCCC), and land degradation (UNCCD), recognizes as a matter of importance (a) the need to analyze capacity needs and opportunities that are common to the three conventions, and (b) the need to explore the synergies among these areas as well as linkages with the wider concerns of environmental management and sustainable development.

The requirements that are common to all three Conventions are shown in the Table below.

Table 1. Requirements common to UNCBD, UNFCCC and UNCCD

	Biodiversity	Climate Change	Land Degradation
1. National strategies & action plans	National strategies, plans or programmes for conservation and sustainable use of biodiversity [Art. 6]	Developing national climate change programmes [Art.4]	National action programmes [Art. 10, 13, Annex II(Art. 4)]; National strategies within sustainable development plans/policies framework [Art. 5b]
2. Education, training & public awareness	Providing scientific and technical education and training [Art. 12a]; Raising understanding and awareness [Art. 13]	Education, training and public awareness raising [Art. 6, 4.1i]	Education and public awareness [Art. 19(3), 5d]; Training and technology regarding alternative, renewable energy resources [Art. 19(1)]; Training for collection

	Biodiversity	Climate Change	Land Degradation
			and analysis of data for disseminating and using early warning information systems, covering drought and food production [Art. 19(1)]
3. Exchange of information	Facilitating biodiversity information exchange [Art. 17]	Information and networking, including databases [Art. 4.1h, 5b]	Systems to collect, analyze and exchange information [Art. 16, 12]
5. Research & development	Promoting research and using scientific advances for conservation & sustainable use [Art. 12b,c]	Research and systematic observation of climate and other functions [Art 5, 4.1g]	Systems for research and development [Art. 17, 12]
6. Technology acquisition, generation & transfer	Facilitating access to and transfer of technologies, including benefits from biotechnologies [Art. 16, 19]	Developing and transferring technology in all relevant sectors – energy, transport, industry, forestry, waste management [Art. 4.1c]	The transfer, acquisition, adaptation and development of economically, socially and environmentally appropriate technology [Art. 18, 12]
7. National reporting	Reporting to Conference of Parties [Art. 26]	Communication to Conference of Parties [Art. 12]	Communication to Conference of Parties [Art. 26]
8. Regional & international cooperation	Cooperation with other contracting parties for conservation and sustainable use of BD [Art. 5, 13b]	International cooperation on financial resources, transfer of technology etc. [Art. 5b, 11.5, 12]	Regional and international cooperation [Art. 11, 12, 3, 14, 18, 19(4), Annex II (Art. 5, 6)]

Cross cutting issues may also be considered from a broader generic perspective such as legal and regulatory frameworks, or institutional mandate and performance. Specific issues such as Alien Invasive Species or Forestry and Land Use could also be taken as cross cutting. Another dimension to “cross cutting” is that the issue cuts across and reaches into the broader sustainable

development framework and into sectors that are not an integral part of environmental management.

The approach adopted for the cross cutting assessment in this project was to identify the capacity needs and interventions that cut across the thematic areas, through analysis of the results of the three thematic assessments. Addressing these capacity needs is expected to achieve synergies in the implementation of UNCBD, UNFCCC and UNCCD. In this way the capacity issues that cut across both global and national environmental management are addressed.

9.2 Cross Cutting Capacity Needs

The analysis of the findings of the thematic assessments led to the identification of the following capacity development needs that cut across all three thematic areas.

1. Formulate and institute national policies, as required, through a wide consultative process.
2. Capacity for communication, education and public awareness on conservation and sustainable use of resources to mobilize commitment and participation of all stakeholders.
3. Capacity to integrate (mainstream) environment concerns into sectoral and cross- sectoral policies and programmes of public agencies.
4. Capacity to obtain adequate national budgetary allocations (and external funds, as necessary) and capacity to use funds efficiently.
5. Adopt measures to engage the business sector effectively in conservation and sustainable use.
6. Strengthen enforcement of laws and regulations to promote conservation and sustainable use.
7. Strengthen system and capacity for information management and information sharing.

8. Capacity to negotiate effectively at COPs and other global forums to fulfil national needs and interests.
9. Harmonize authority and responsibility for policy determination and implementation between the central and provincial authorities
10. Strengthen capacity of institutions to carry out research on relevant areas of biodiversity, climate change and land degradation.
11. Establish national centre (focal point) for a thematic area, with a net work of institutions organized sectorally for effective planning and implementation of work programmes.

1. Formulate and institute national policies, as required, through a wide consultative process

The creation of an enabling environment for implementing MEAs requires specific policies and plans, in association with the necessary legal framework and institutional structure. If there are deficiencies or inadequacies in any of these, the institutions (and personnel) will be constrained and unable to perform their functions effectively and in an efficient and sustainable manner. There are over 20 national policies, plans and strategies which directly or indirectly address environmental issues. The existing policies and policies related to biodiversity, climate change and land degradation are described in Sections 6.4, 7.4, and 8.4 respectively. The thematic assessments identified several policy gaps as constraints to implementing the Rio conventions.

Policy needs :

In the sphere of biodiversity, Sri Lanka has no policy on providing Access to Genetic Resources (and biochemical substances produced by genes of indigenous species) in the context of gaining fair and equitable benefits from such provision. This policy is essential to guide officials in the “exercise of their statutory discretion” as and when such access is provided. At present, the exchange of genetic resources is happening within many institutions as part of their institutional research mandates or institutional policies (e.g. DOA, DAPH, ITI), for taxonomic identification or for various research purposes where whole specimens or parts of organisms are sent overseas to partner institutions. The DWLC (assisted by the FD) has the authority to provide permits for export of wild bio-resources. However, it is not clear what the institutional policies are for

'benefit sharing' in these instances, and whether the exchange is facilitated through material transfer agreements (MTAs). A policy on access to genetic resources, which must also provide for benefit sharing with traditional knowledge holders, will be required to indicate national requirements to potential external partners with whom collaboration is likely (or is already happening) for research on Sri Lanka's genetic resources.

There are also no national policies to: (a) govern biodiversity information exchange; (b) biotechnology using indigenous (and exotic) genetic resources – especially when there is foreign collaboration; (c) identify a national network of areas for Protection; and (d) promote *ex-situ* conservation and captive breeding of threatened or commercially important protected species. The current livestock development policies do not adequately address conservation and sustainable use of livestock biodiversity. Considerations of the conservation of agrobiodiversity should be brought in to the new policy to be developed for the agriculture sector.

With regard to climate change, strategies and measures for adaptation to impacts of climate change are yet to be developed in the health, forestry, industry and water resource sectors. There is no policy mechanism to address this issue at the systemic level. Lack of a policy directive was one of the main capacity constraints that need to be overcome to address the issue of inadequate research and systematic observations. A draft CDM policy has been formulated and submitted to Cabinet by MOE. The implementation of this policy will facilitate and increase the participation in the CDM process by CDM project proponents. Changes in financial policies to allocate more financial resources to the relevant institutions are needed to enable effective education, training and public awareness programmes, facilitate networking of data & information, and address other climate change issues. There is also no national policy on data sharing and networking with respect to climate change related information.

Not having a proper land use policy in force is a serious constraint to establish national strategies on land degradation within the framework of sustainable development. A comprehensive draft land use policy has been prepared. It should be ensured that the policy gives due emphasis on land degradation so that its implementation would have a great impact in resolving land degradation problems in the country.

2. Communication, education and public awareness

Communication, education and public awareness is an issue that is addressed by specific Articles in all three Conventions. Programmes and activities on the environment in general, and on biodiversity, climate change and land degradation, have been carried out to some extent. Several State organizations concerned with biodiversity conservation provide non formal education through their education and extension programmes. The FD has been quite successful in developing greater conservation awareness among communities living adjacent to forests where their participatory management pilot projects are in operation. Among the NGOs engaged in public awareness are EFL, SLEJF, and several others among whom are NGOs such as GMSL, TCP, and ORDE who work at grassroots level to foster public awareness. The YZA and YES working in partnership with the NZG and RBG respectively are active in this regard among youth.

Climate change awareness raising programmes have been conducted since the early 1990s mainly for school children. Administrators, private sector and NGOs have also been made aware of climate change and its impacts through seminars and workshops. These programmes were launched by the Ministry of Environment and the CCCS of DM. The CCCS and the NGO MIND conducted a series of awareness programmes under a joint project awarded by the IPCC in 2001.

Several Ministries and their agencies have been engaged in education and public awareness on soil conservation, improvement of lands degraded due to declining soil fertility, water logging, soil compaction etc, for farmers, officers, school children, NGOs and CBOs. These are - Ministries of Agriculture, Plantations, Environment, DOA, Hadabima Authority, plantation crop research institutes, CEA, Mahaweli Authority and DEA. NGOs also play an important role in educating the public on the protection of the forests and conservation of soil resources.

With respect to formal education, successful pilot teacher training programmes have been carried out in the late 1980s/early 1990s through initiatives by NGOs and the State. The NIE, as the main institution concerned with curriculum development within the school system, incorporated environmental topics in Primary and Secondary school curricula during the late 1970s. Environmental topics, including biodiversity, basic concepts of meteorology and climate change,

are addressed through subjects of science, social science and health education from Years 6-11, and as a separate subject from Years 1-5.

At the tertiary education level, several universities offer undergraduate courses with environmental subjects as a component, and some offer as a complete course unit. Postgraduate programmes have also been developed during the last few years on related topics eg, wildlife ecology and management, environmental law, industrial environmental pollution.

Although the need for education and public awareness on environmental issues has been addressed to some extent, the capacity to develop and sustain these programmes is inadequate, and there are many weaknesses and deficiencies in the system.

- ✍ Most programmes implemented through State agencies are sporadic, mainly because much of the activities are carried out with project funds and are not continued after the project ends.
- ✍ Strategically planned communication is not used. There is a need for greater use of audio-visual material and field based programmes that are strategically planned to reach specific target groups and goals.
- ✍ Most NGOs, as well as State agencies are severely constrained for funds even when they have skills and human resources.
- ✍ There are no national level teacher training programmes at the Teacher Training Colleges on participatory methods of environmental education; there is a dearth of trainers who are skilled in these methods.
- ✍ In the professional sector, topics covering environmental considerations are not included in the courses that cater to the business sector such as accountancy, banking, business management etc.
- ✍ A major gap is that environmental education or sensitisation is not an essential part of technical education such as civil engineering or economic degree programmes, although such professionals have major impacts on the environment.
- ✍ The potential to use the mass media as a vibrant tool for public education on environmental issues is low; the medium of TV is severely under-used as a tool for environmental communication. This is mainly due to lack of understanding of the scope and breadth of environmental issues particularly with respect to biodiversity and climate change. (See Box 4: Media and the Climate Change Discourse)

3. Mainstreaming environment concerns into sectoral and cross- sectoral policies and programmes of public agencies.

The creation of the Ministry of Environment in 1990 to formulate and coordinate all policy matters related to environmental conservation was a significant step towards integration of environmental concerns into sectoral and cross sectoral plans. The requirement for EIA for development projects was introduced in 1984. According to prevailing EIA regulations it is mandatory for all industries (including service facilities such as vehicle service stations) that are classified as low, medium or high polluting to obtain an Environmental Protection Licence (EPL) from the CEA. Part of this work has been devolved to the Local Authorities. However there is inadequate capacity to (a) integrate conservation and sustainable use of biodiversity into sectoral (specially development agencies) and cross sectoral plans, programmes and policies, and, (b) prepare and implement biodiversity plans and policies with the required cross sectoral support.

With regard to climate change, the need for developing and implementing adaptation plans and measures (Article 4.1(e) of UNFCCC), of necessity involves integration of climate change concerns into plans and policies of the most vulnerable sectors of agriculture and plantations, water resources and health. This has been done to some extent in the agriculture and plantation sector, largely in the development of drought resistant varieties of crops. Adaptation strategies are yet to be developed in the health, forestry, industry and water resource sectors. There is no policy mechanism to address this issue at the systemic level.

In the case of land degradation the problem is that, while there are a number of policies, strategies and plans prepared by different sectoral ministries and agencies to address land degradation, there is no proper coordination between the different agencies. Moreover, not having a proper land use policy is a serious constraint to establish national strategies on land degradation within the framework of sustainable development (Article 5(b) of UNCCD).

Several constraints to mainstreaming environmental concerns have to be addressed:

- ✍ Poor awareness and understanding among non-conservation sectors, State as well as private industry, about BCAP, CFE and other environmental plans and policies. Local Authorities are particularly unaware of the existence of national level environmental plans and policies.

- ✍ High level officials in development agencies lack knowledge on technical aspects to include biodiversity considerations into their plans and programmes (eg, energy, irrigation and civil, mining engineers, geologists, financial planners, BOI officials).
- ✍ Inadequate awareness and capacity in the business sector to assess impacts of climate change on the power generation requirement.
- ✍ Poor communication between State, business community and scientists regarding biodiversity issues. There is hardly any dialogue between business and State sectors for possible collaboration in conservation intervention and sustainable use of bio-resources.
- ✍ Lack of an institutional consultative process, poor inter-ministerial coordination among relevant ministries, and lack of financial resources for developing adaptation measures for climate change.

4. Securing adequate national budgetary allocations (and external funds, as necessary) and ensure efficient use of funds.

Organisations in the State sector with mandates and major responsibilities to fulfill national obligations under the Rio conventions are often constrained due to inadequate national budgetary allocations to carry out programmes in the thematic areas of biodiversity, climate change and land degradation. These agencies consequently depend heavily on project funding from external sources. Such activities generally come to an abrupt halt after the project ceases, due to lack of institutional funding from the national budget, and are not sustained in the long term. Budgetary limitations have been identified as an underlying cause for non-compliance in almost every issue arising from the UNFCCC requirements, as well as the implementation of the National Action Programme and other obligations of the UNCCD in relation to land degradation.

Barriers to obtaining adequate funding for programmes directly linked to the obligations under the conventions on biodiversity, climate change and land degradation are:

- ✍ Poor perception of the economic importance/value of sound environmental management (eg, *via* in situ and ex situ conservation, and preparedness for climate change impacts, in the agencies concerned with budget planning and allocation and national development). Important aspects of the objectives that the conservation agencies seek to achieve, and measures adopted in meeting these objectives are vital

for national development; they are either not understood, or not communicated convincingly to these agencies.

- ✍ Organisations that play a major role in using and ‘impacting’ on biodiversity do not allocate adequate financial resources through institutional budgets to address biodiversity considerations.
- ✍ In the context of the paucity of national funding, there is a lack of capacity in some agencies to access external funding to meet their mandates.
- ✍ Several agencies lack the capacity to monitor and evaluate the technical assistance received, and poor performance reduces the chances of securing further external funding.
- ✍ Lack of skills in communication, negotiation and marketing, project proposal preparation, and project management.

5. Engaging the business sector effectively in conservation and sustainable use of natural resources

The efforts of the business sector are directed to the production of goods and services for profit. However, with the concept of corporate social responsibility becoming internalized in the business sector, there is now greater acceptance of the need for their involvement in the conservation of the environment. There is also greater acceptance among conservationists about corporate sector participation in biodiversity conservation, and increasing understanding that they can contribute considerably towards this end in partnership with the State sector. Despite this positive trend there is relatively little contribution from the business sector to promote environmental sustainability, apart from compliance with the regulatory requirements regarding discharge of effluents.

By participation in CDM projects the private sector can contribute to global climate change mitigation while directly benefiting through carbon credits obtained. Establishing and managing sustainable energy plantations is another area in which the private sector should be engaged. This has the dual benefit of mitigating GHGs through reducing use of fossil fuel for energy generation as well as restoration of degraded land.

The constraints to engaging the business sector more effectively in promoting environment sustainability are:

- ✍ Poor perception of the links between biodiversity conservation and its business potential among the business sector. (The tourism industry and ornamental species trade are possible exceptions).
- ✍ Poor communication between government, business and scientific communities regarding biodiversity issues; hardly any dialogue about possible collaborations for conservation interventions and sustainable use of bio-resources.
- ✍ Poor understanding of business potential and industrial development opportunities in biotechnology using indigenous genetic resources.
- ✍ The private sector should also make a positive effort to win the confidence of the regulatory authorities.
- ✍ Lack of expertise and training on baseline methodologies of proposal preparation for CDM.
- ✍ Low capacity of the private sector to carry out GHG surveys and audits to support CDM activities. Capacity of enterprises in energy and transportation, manufacturing and construction, livestock, agriculture, forestry and land use, and waste management should be enhanced.
- ✍ Fiscal incentives should be considered to better involve the private sector in conservation and ventures such as sustainable energy plantations.

6. Enforcement of laws and regulations to promote conservation and sustainable use.

There are about 80 laws enacted to conserve Sri Lanka's environment (Ref Sections 6.5, 7.4 & 8.5). The overall policy in the country for environmental management is greatly influenced by the National Environmental Act (NEA) No. 47 of 1980 which was the first comprehensive piece of legislation on environmental management in Sri Lanka. It is under this law that the main national regulatory body, the CEA, was created, and regulations for EIA were formulated.

In general, there are adequate environmental policies and laws to promote conservation and sustainable use of natural resources. Many of these are of direct relevance to biological diversity and land degradation, and to a lesser extent to climate change. The enforcement of the laws, however, remains poor. One of the reasons for this situation is the inadequate support from the

Police, Customs Department etc due to various constraints. In some cases eg, the Soil Conservation Act, it is due to inherent weaknesses in the proposed implementation structure. The weak implementation of this Act is a capacity constraint for establishing national strategies for mitigation of land degradation within the framework of sustainable development plans and policies. (See Box 5: Sri Lanka's Soil Conservation Act).

The Police Department often does not have the necessary collaboration from the relevant agencies to enforce environmental laws. Some of the constraints faced by the Police at regional and village level when enforcing FO and FFPO are – (a) inadequate manpower to investigate complaints, (b) inadequate logistical support (fuel, vehicles) to respond to complaints, and (c) political interference. In some cases eg, Mines and Minerals Act, their powers are restricted. They cannot arrest offenders for sand mining although the sand can be detained; they cannot question or disregard trade licenses that may not be valid; licensing agencies issue mining licenses in an *ad hoc* manner. Police officers also do not have adequate knowledge about environmental laws and basic concepts of conservation. For instance they should be familiar with the protected species that have to be confiscated, under the FFPO, from private collectors.

Among the constraints of the conservation agencies are the following: The FD and DWLC do not have a cadre of legal officers, and have to depend on the Attorney General's Department for legal advice. This hampers law enforcement when emergency decisions requiring legal advice have to be taken. Field officers of these departments are constrained by inadequate manpower, fuel and vehicles; they also have to face political interference and even threats from gangs with influential backing. The field officers of the CEA are constrained due to inadequate delegated authority, as they can only report back offences to Head Office; also they do not have power to apprehend anyone carrying out illegal activities that contravene the NEA.

7. Information management and sharing

Managing information and dissemination at in-country level as well as enhancing access for Sri Lankan scientists and the public to external information sources for conservation and sustainable use of biodiversity, mitigation and adaptation to climate change, and the control of land degradation, requires capacity building at systemic, institutional and individual levels.

A number of line agencies have established, and are in the process of developing, databases on biodiversity and related aspects (Table 2).

Table 2. Significant databases in institutions

Database	Institution
EIMS database. Comprehensive data on woody plants and some vertebrate and invertebrate groups, through the NCR.	FD
Digital database on Wetlands	CEA
Database on Environmentally Sensitive Marine Areas	MPPA
Database on Coastal Habitats. With GIS/GPS facilities.	CCD
Metadata base on coral reefs, and databases on various aspects of coastal biodiversity.	NARA
National Biodiversity Database. being developed with information from baseline surveys and habitat mapping under PAM-WC project.	DWLC
Database on Genetic Resources for Food and Agriculture (including medicinal plants)	PGRC/DOA
Biotechnology database. Developed under the NBF Project. [Information from the comprehensive survey carried out under the NAREPP project in the mid 1990s could be used as a base to establish a Biodiversity Metadata base]	BDS/MOE

In addition the following institutions have databases on aspects related to climate change and land degradation: DM, ID, DOA, TRI, RRI, CRI, UDA, WRB, NBRO, and some universities. The WRB maintains a database on groundwater quality and quantity. The GIS Division of the UDA is well equipped for mapping of environmentally sensitive areas in regional as well as urban structural planning.

The CEA, CARP and NSF function as focal points for information exchange and networks. The 'Envinet' and 'Agrinet' information networks are coordinated by the CEA and CARP respectively. The National Science Library and Resource Centre of the NSF is the focal point for dissemination of science and technology information and has set up the SLSTINET, with a membership of over 100 libraries for this purpose.

The main constraints to the functioning of an efficient system for information management and exchange are given below.

- ✍ There is no national policy on information management with respect to biodiversity and access to GIS information.
- ✍ There is no national policy on data sharing and networking with respect to climate change related information.
- ✍ Accessing information in custodial institutions is difficult as there are no clear guidelines, laws and regulations at systemic and institutional level on access to such information.
- ✍ There is no national agency or body to coordinate information gathering and data collection among relevant stakeholders for biodiversity, climate change and land degradation; there is no central metadata base which provides data on where relevant data can be accessed.
- ✍ Most custodial institutions lack human resources, IT facilities and funds to establish and maintain computerized databases; funds and staff for maintaining and updating databases set up under special projects are usually not made available.
- ✍ At the individual level, database managers require training on data collection, management and dissemination in customized formats, and on legal aspects (copyright etc) of information dissemination.
- ✍ Infrastructure facilities are not adequate in most institutions, especially for NGOs, and for individual scientists, to access information from external sources through the internet.

8. Effective participation at COPs and other global fora to fulfil national needs and interests.

As a developing country with limited resources Sri Lanka should contribute and benefit from the deliberations of the COP and related meetings, and avail itself of opportunities provided through the Convention mechanisms.

The lack of legal skills among the negotiating team and non representation in the delegation by relevant technical personnel were identified as underlying causes for the inability to obtain

optimum national benefits from international negotiations. Skills building in advocacy and on negotiating beneficial terms are required for the national delegations.

A mechanism to obtain prior national consensus on Sri Lanka's position, which should also provide for a de-briefing of the COP outcomes to the relevant stakeholder groups, must be established. This is especially important with regard to contentious issues to be addressed by the COP.

Due to the fact that Sri Lanka's per capita income has exceeded US\$ 1000, assistance for participation at COP meetings are not being met by Convention secretariats. Hence funding is a major constraint for participation at these global fora.

9. Harmonise authority and responsibility for policy determination and implementation between central and provincial authorities.

The provincial administration has an important role in both environmental management and development activities within its area of authority. Provincial Councils are empowered with legislative and executive powers over several subject areas including the environment, and for intra-provincial projects relating to irrigation, land development, road development, transport, agricultural services, health and education.

There is a serious capacity inadequacy in the provincial administration to enable them to strike a balance between environmental concerns and development activities in implementing their regional programmes. The main constraints to streamlining the authority and responsibility between central and provincial authorities in environmental management were identified as:

- ✍ The lack of cooperation between the line agencies (central government) and provincial administration is one of the capacity constraints that prevent the successful implementation of the UNCCD with respect to establishing national strategies within the framework of sustainable development plans and policies. This lack of coordination and cooperation is also a constraint to developing economically, socially and environmentally appropriate technologies for control of land degradation.

- ✍ There is a lack of understanding of the importance of protected areas and their management among many stakeholders at the provincial, district and local levels associated with protected areas.
- ✍ Problems of resource mobilisation at the district level.
- ✍ The capacity and authority of the district level environmental and land use committees should be strengthened.

10. Capacity to carry out research on relevant areas of biodiversity, climate change and land degradation.

Promoting research and systematic observations and systems for research and development is one of the requirements that is common to the three Rio Conventions. While the research needs for biodiversity, climate change and land degradation are subject specific, increasing research capacity and infrastructure would have a synergistic impact on all three areas.

Research and development is carried out in Sri Lanka primarily in State research institutes and in universities. Some NGOs also carry out research activities on environment and social aspects. In recent years there has been a greater involvement of the private sector, which remained an insignificant player in the national research system, including the establishment of a wholly private biotechnology laboratory for research and diagnostic services. The number of organisations involved in R&D is around 130. Within the national framework for R&D there is a well defined national agricultural research system (NARS) consisting of 25 institutes. The policy and funding support organisations are NASTEC, NSF, CARP, and NRC, together with line Ministries and external donor agencies. The gross national expenditure on R&D has remained at the low figure of 0.18 – 0.20% of GDP for several decades. In 1996 the highest proportion of the expenditure on R&D was towards meeting socio-economic objectives for development of agriculture (23.5%), while the share of expenditure for forestry and environment was less than 1%.

In the area of climate change, the DM has been carrying out systematic observations on weather phenomena since its establishment in 1861. The CCCS was established in the DM in 2000 for the purpose of conducting research on climate change and allied issues, monitoring of climate change, and creating public awareness. Assessment of impacts and adaptation to climate change,

and research on related aspects have also been carried out and/or coordinated by MOE, DOA, crop research institutes, SLAAS, NBRO etc.

The DOA, FD, DEA, DM, crop research institutes, LUPPD, NBRO and universities are the major institutes that carry out research to address land degradation in the country.

Biodiversity related research, including taxonomic and ecological studies, are largely carried out by universities, FD, DWLC, CEA, CCD, RBG/DOA, PGRC/DOA, National Museum, DFAR, DAPH, VRI, and NARA. Except for NARA and VRI, research is not the primary mandate of these institutions.

The main capacity constraints that need to be overcome to address the issue of inadequate research and systematic observation are: lack of policy directive, low priority in budget allocation, poor coordination among relevant institutions involved in research, inadequate human and financial resources, lack of scientific equipment, and, lack of training.

Enhancing the capacity for biotechnology is particularly important for Sri Lanka to make best use of the indigenous genetic resources. It will also provide considerable opportunities for economically viable sustained use of Sri Lanka's rich genetic diversity as an added incentive for biodiversity conservation. There have been many initiatives to develop biotechnology capacity in the country. The NRC, CARP, and NSF have identified priority areas for research in biotechnology. The Ministry of S&T and the Ministry of Agriculture have instituted programmes for training at various levels and for provision of equipment. Despite these initiatives biotechnology based on the use of indigenous genetic resources has been very inadequately explored and developed.

The capacity needs for biotechnology: There is no specific national policy for biotechnology using genetic resources, neither is it addressed in the general biotechnology policy. The policy should promote private sector participation in collaborative ventures. There is no forum for biotechnology experts to meet and exchange views; opportunities for interaction with foreign scientists are poor. There is a need to establish high-tech facilities with trained R&D and technical staff to help produce value added products.

The AgBC specifically needs help to sustain its operations. The biotechnology capacity of the VRI requires considerable strengthening, among other measures, the retention of trained staff and enhancement of infrastructure to serve as the national centre for storage of animal germplasm.

10.0 CONSOLIDATED ACTION PLAN FOR DEVELOPING CAPACITY FOR ENVIRONMENTAL MANAGEMENT

The action plan for building capacity to implement the Conventions on biodiversity, climate change and desertification is based on the capacity needs assessment for the three thematic areas and the cross cutting issues described in Chapters 6 through 9. Action Plans for capacity enhancement in the thematic areas of land degradation, climate change and bio diversity conservation and the cross cutting capacity needs were prepared separately, and then integrated into a consolidated action plan. This was done through a consultative process of workshops and meetings of Thematic Working Groups. Thirteen cross cutting capacity interventions and 12 interventions specific to the thematic areas were identified. Indicators for capacity development for each of the interventions are given in Annex 5.

The capacity needs and plan of action is presented separately, under headings:
Part I- Cross Cutting Capacity Development Needs
Part II- Thematic Area Capacity Development Needs

10.1 Capacity Enhancement Needs

The capacity enhancement needs identified in the three thematic areas fall into three broad groups, *viz.*

- A - Cross cutting Institutional /management related.
- B1 - Research and biotechnology development related.
- B2 - Biodiversity (excluding biotechnology), land degradation and climate change - Technical capacity related.

The need to (i) strengthen the legal frame and law enforcement capacity, and (ii) develop and maintain data/ information system with wide in-country and external linkages are included in A.

Groups B1 and B2 relate to capacity building for land degradation, climate change and bio diversity. Capacity development activity in these areas may, however, overlap with the A category.

The main capacity needs addressed in each group are:-

A1. Institutional /Management Related Capacity Development.

- Develop awareness and political will.
- Develop and adopt policy as required.
- Promote active participation of all stakeholders including the community in the process of planning, implementing and M and E.
- Strengthen the legal frame and law enforcement capacity.
- Institute measures to make implementing policy mandatory by all agencies related to conservation.
- Establish a national centre (focal point) for a thematic area, with net work of institutions organized sectorally for effective planning and implementing work programmes.
- Harmonize authority and responsibility for policy determination and implementation between the central and provincial authorities
- Enhance capacity to acquire, transfer, adapt and develop technology, and share benefits equitably.
- Strengthen capacity of institutions to do research. Identify national R and D needs and priorities. Establish focal research points. Facilitate in- country and regional/ global collaborative research and research support.
- Develop and maintain data/ information systems with wide in-country and external linkages.
- Adopt holistic and integrated approach to planning and managing eco-systems.
- Facilitate external technical cooperation and assistance. Identify external (resource) sources. Develop competence to interact with external agencies.
- Facilitate regional cooperation. Enhance capacity for management and extension services.
- Required human resources development.
- Provide required funds regularly, and strengthen capacity for preparation of financial plans for budgetary provisions.

B1. Capacity for Research and Biotechnology Development.

- Develop policy.
- Develop awareness in those interested in biotechnology development and application.
- Institute systems and measures for institutional collaboration.
- Develop / establish Research (lab) centres and biotech service centres.
- Develop HR and provide other resources.

B2. Enhancing Technical Capacity (mostly related to land degradation, climate change and biodiversity)

- Cost effective farming and land management systems for conservation and to get optimum returns.
- Enhance capacity of institutions to map sea level rise, monitor level and quality of ground water, change in wave force on the coast, effect of climate change on flora and fauna, crops, health, and hydro power generation capacity.
- Enhance national climatological, meteorological and hydrological capacity and means to provide early warning of drought.
- Capacity to systematically monitor green house gas emissions and disseminate data.

- Make an inventory of traditional knowledge relating to mitigation of land degradation, and use of genetic uses.
- Establish a regime for access to genetic resources and benefit sharing.
- Identify and monitor critical components of biodiversity and threats in field situations.
- Determine a rational network of protected areas.
- Participatory and integrated in situ conservation.
- Measures to conserve, manage and recover threatened species, including the sustainable use of commercially important species.

10.2 Institutional Structure

The necessity of an institutional structure to plan and manage all activities in the thematic areas emerged during the process of assessing capacity needs. The structure that emerged as most appropriate is a four-tier cross institutional structure consisting of, upwards: (i) single institutions sectorised and apexed by sectoral focal point/s (e.g. CCCS/MD and NRM/DOA could be sectoral focal points); (ii) Three Secretariats in the MOE to coordinate and facilitate sectoral focal points in the fields of land conservation, climate change and biodiversity. These are Divisions existing in the MOE. The role of the Secretariats is to be 'leader among equal partners'; (iii) The three Secretariats jointly form a Technical Secretariat on Environment (TSE), coordinated by an inter-ministerial committee headed by the Secretary/MOE; and (iv) at the highest level, the National Council on Environment, which will be responsible for national policy and directions.

The three Rio conventions in fact cover the entire field of environment. Hence the proposed structure is well suited to address the nationally important environmental issues while ensuring compliance with the Rio conventions. Instituting such a national structure which integrates all public institutions concerned with environment, and, to a certain extent, the non governmental and private sector, is vital and long overdue. This is not an entirely new structure as much of the proposed institutional structure already exists in some form. The prevailing system needs to be strengthened with the establishment of new coordinating bodies as required.

10.3 Strategy for Capacity Development

The consolidated action plan for capacity development (Section 10.4) has identified the key tasks/actions, the responsible agencies and partner agencies, the time frame, and resource mobilization ie, source of funds and indicative budgets. It should be noted that the budgets given are meant to give an indication of the resources required. To take the plan forward into the implementation

phase it is essential to have a strategy for implementation of the plan. The overall resource mobilization for the initial two years is expected to be 60% - external sources, 30% - government, and 10% - private sector and NGOs. External resources and assistance will be required for many of the capacity development activities, but there are also a number of capacity building actions which must be supported by in-country funding. The latter includes actions which do not need any substantial injection of funds. The capacity development interventions that do not need external funding must be acted upon without delay.

A large number of stakeholders have been identified who have roles ranging from primary initiator, partner in implementation, and participating or beneficiary organisations. Many of these organisations have been involved in the NCSA consultative process. Yet, it is vital that the plan is communicated to the relevant stakeholders in order to create a sense of ownership and mobilise their support and cooperation.

The following may be used as guidelines for developing a strategy to implement the action plan for capacity development:

1. Immediately set up a committee of senior officers and experts to develop detailed strategies to implement the action plan.
2. Communicate the capacity development plan to key stakeholders using a **strategic communication plan**.
3. Obtain concurrence of policy makers for the proposed institutional system to manage the environment.
4. Establish the four tiered institutional structure. Base capacity development programmes to fit into that structure.
5. Adopt measures to strengthen capacity of the national focal points (MOE) and sectoral focal points.
6. Develop and obtain approval for policies identified in the Action Plan.
7. Based on the action plan, prepare an overall programme for capacity development, and within that, prepare detailed implementation programmes, institution-wise, sectorally, and at national level. (Detail work steps, time frame, resource allocation and institutional linkages and method to track progress/issues for each activity).
8. Prepare separate work programmes and/or project proposals for the capacity development needs and identified tasks in the action plan through a participatory process. In doing this, review ongoing work programmes and the resources available (in ongoing and

- programmes awaiting implementation) in the many institutions related to environment and integrate with them, as appropriate, to enable realizing best collective use of institutional capacities available.
9. Many components and many institutions are involved. Therefore, the work may require a long term plan (3-5 years) to make substantial contribution to capacity building in all institutions, at national and sub national levels within and across institutions. In view of the long period, phase activities as time framed in the Action Plan.
 10. Seek external assistance as required from many external sources. Integrate with objectives and resources available in current and approved future projects in the environment sector. Bring them within the fold of the proposed overall programme to strengthen institutions managing the environment.
 11. Programme and implement capacity development programmes in areas where external assistance is not immediately required.
 12. Develop indicative mid term and long term budgetary requirements for the environment sector.
 13. Through a consultative process adopt immediate measures to strengthen capacity of the staff and other resource required in the following key areas. (Action required is given in the Action Plan):
 - Policy analysis and development.
 - Planning and monitoring of action programmes.
 - Management/ implementation capability.
 - Budgetary planning.
 - Skills to negotiate with external authorities.
 - Capacity for public awareness, community organization and training.
 14. Strengthen and engage NGOs and CBOs, as appropriate, as much as possible.
 15. Strengthen and engage in country research and technical services and the private sector, as much as possible.