Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium

3.1 INTRODUCTION

Biodiversity plays a crucial role in functioning of the ecosystems, on which mankind depends on all sorts of ecosystem services. Conservation of biodiversity at the national level requires inputs from several Ministries/Departments at the Central and Provincial levels, thereby reiterating the need for mainstreaming of biodiversity concerns in the development planning processes.

The second generation of the National Biodiversity Strategies and Action Plan (NBSAP) for Sri Lanka is yet to be prepared in light of the CBD Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets adopted in 2010. It is noted that BCAP 1998 does not specify concrete national biodiversity targets, indicators and the baseline for the performance assessment. These aspects will have to be incorporated into the revision of the next generation NBSAP. Through this revision, national targets on biodiversity will be developed, implementing agencies will be determined and a resource mobilization plan will be prepared.

Since the last reporting period, Sri Lanka has made progress in the development of biodiversity related policies, growth in legislative frameworks and the undertaking of biodiversity related initiatives. The subsequent sections describe the progress made by Sri Lanka towards achieving the 20 Aichi Biodiversity Targets and contributions to the relevant 2015 targets of the Millennium Development Goals, by referring briefly to the relevant programmes and initiatives.

3.2 PROGRESS MADE TOWARDS THE IMPLEMENTATION OF THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020 AND ITS AICHI BIODIVERSITY TARGETS

In the tenth meeting of the Conference of Parties, held from 18 -29 October 2010, in Nagoya, Aichi Prefecture, Japan, adopted a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the 2011 – 2020 period.

The Strategic Plan provides an overarching framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system and all other partners engaged in biodiversity management and policy development. Parties agreed to translate this overarching international framework into revised and updated national biodiversity strategies and action plans. Additionally, in decision X/10, the Conference of Parties decided that the fifth national reports, due

by 31 March 2014, should focus on the implementation of the 2011 – 2020 Strategic Plan and progress achieved towards the Aichi Biodiversity Targets.

This section analyses the progress made towards each of the 2020 targets of the Strategic Plan for Biodiversity 2011-2020 by using the information from part I, status and trends in biodiversity, and main threats, and part II, the national biodiversity strategy and action plan and the mainstreaming of biodiversity.

The twenty (20) Aichi Biodiversity targets cross-cut all sectors of the national economy and affect ecology and human well- being. The policies, programmes and projects of different ministries/ Departments of the Government of Sri Lanka, which are directly or indirectly related to biodiversity conservation, are vital for achieving progress towards Aichi Biodiversity Targets.

Although there is no updated common action plan for biodiversity conservation, many actions have been achieved or are ongoing in different sectors which are in line with biodiversity conservation. Therefore, the evaluation of the progress of national achievements towards implementation of CBD 2020 Aichi targets has been done by estimating the level of relevant sectoral achievements. A rough estimation on the progress in the achievement of those specific actions executed in different sectors has been highlighted with regard to each Aichi target, as presented in the Table 3.1 in the final part of this section.

3.2.1 Strategic Goal A: Address the underline causes of biodiversity loss by mainstreaming biodiversity across government and society

Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably

Addressing the direct and underline drivers of biodiversity loss will ultimately require behavioral change by individuals, organizations and governments. Understanding, awareness and application of the divers values of biodiversity, underpin the willingness of individuals to make the necessary changes and actions and to create a "political will" for governments to act. Given this, actions taken towards this target will greatly facilitate the implementation of the Strategic Plan and the fulfillment of other 19 Aichi Targets, particularly Target 2.

The Ministry of Environment and Renewable Energy (MoERE), along with several other sectoral ministries implement policies and programmes relating to conservation of the country's environment and natural resources. Environmental education, awareness and training are key tools used in this endeavor for enhancing the understanding of people at all levels about the relationships between human beings and the environment and to develop capabilities/skills to improve and protect the environment in collaboration with them.

Many Communicational, Educational and Public Awareness (CEPA) activities in relation to the awareness of biodiversity values, its conservation and sustainable use have been initiated and are ongoing. Following are some of the key initiatives undertaken;

- Biodiversity conservation has been included in the curricula of secondary schools, basic degrees as well as university postgraduate courses.
- Public awareness being carried out through mass media awareness programs (TV, Radio, Newspapers).
- Awareness being created by relevant departments, as well as by secondary and higher education institutions.
- Efficient communication and outreach tools on environmental management have been developed (websites, newspapers, brochures, leaflets, manuals, etc.)
- International Biodiversity day commemorated every year and focuses on public awareness on nature and biodiversity.
- Several other international days (ex. Environment Day, Mountain Day, Weather Day, Water Day, International Day of Forests etc.) are commemorated with attention paid to biodiversity conservation as well.
- The Central Environmental Authority (CEA) individually and with the aid of NGOs is carrying out several environmental awareness programs for various target groups.
- Several Corporate Social Responsibility (CSR) Projects are being implemented by private sector/NGO/government projects focusing environment, where biodiversity aspects also being integrated.
- Provincial programs are held in parallel with national programs taking school children, local government stakeholders and the community as target groups.

Continued efforts to increase public awareness (and particularly that of youngsters) of the importance and value of biological diversity are expected to help Sri Lanka to reach this target.

Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems

The values of biodiversity are not widely reflected in decision-making. This is true in the context of development and poverty reduction strategies. Integrating and reflecting the contribution of biodiversity, the ecosystem services it provides, the relevant strategies, policies, programs and reporting systems is an important element in ensuring that the diverse values of biodiversity and the opportunities derived from its conservation and sustainable use are recognized and reflected in decision-making. Similarly accounting for biodiversity in decision-making is necessary to limit the unintended negative impacts of development strategies.

As mentioned in the Development Policy Framework of the Government of Sri Lanka; Mahinda Chintana Vision for the Future; the government of Sri Lankan aims to promote sustainable development in close liaison with the land, fauna and flora and to bestow countries natural heritage to the future generations. It proposes concerted efforts to overcome the major environmental issues of the country, such as gradual depletion of the green cover, increasing trends in the human –wildlife conflicts due to degradation of natural habitats, environment pollution etc.

In 2010, the government developed the National Action Plan for Haritha Lanka (Green Lanka) programme through an interactive process involving all the key ministries. Its missions focused on addressing the critical issues, including the conservation of fauna, flora and ecosystems, meeting the challenges of climate change, wise use of the coastal belt and marine resources etc.

Although the environment and biodiversity values have been incorporated into national policies and planning processes, biodiversity valuation has not been properly incorporated into accounting or reporting. In this context, no adequate valuation has been done as yet in Sri Lanka.

The legal, policy and administrative measures adopted in Sri Lanka which contribute to the achievement of Aichi Biodiversity Target 2, can be summarized as follows.

- Protected areas and environmentally sensitive areas have been included in national/ provincial development and land use planning.
- Ecotourism is being recognized in national development plans
- National physical policy and planning process of the National Planning Department has recognized protected areas.
- An innovative project titled 'Pricing the Biodiversity of the Island' has been started in 2011 by the MoERE with the aim of valuing country's biodiversity and ecosystem services relative to the livelihood context. The project expects to integrate such values into national planning process for sustainable development.
- Ministry of Environment and Renewable Energy along with the Department of Agriculture conducted two workshops for awareness and information gathering on biodiversity valuation.
- A Special Task force dealt with biodiversity valuation and mainstreaming economics of conservation during preparation of the Addendum to the Biodiversity Conservation Action Plan (BCAP) in 2007.

Target 3 - By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Incentives including subsidies are often justified in the presence of positive externalities and for redistribution objectives. Financing of subsidies however induces its own cost and over subsidization can adversely affect allocation of resources and environment.

Substantial and widespread changes to subsidies and other incentives that are harmful to biodiversity are required to ensure its sustainability. Ending or reforming harmful incentives is a critical and necessary step that would also generate net socio-economic benefits. The creation or further development of positive incentives for the conservation and sustainable use of biodiversity, provided that such incentives are in harmony with the Convention and other relevant international obligations, could also help in the implementation of the Strategic Plan by providing financial resources or other motives to encourage actors to undertake actions which would benefit the biodiversity.

Sri Lanka has been providing subsidies in several sectors including agriculture, energy and industry as a means of providing livelihood security to the underprivileged sections of the society. However, the country is yet to take significant measures to promote positive incentives that encourage activities beneficial to biodiversity

Some of the subsidies provided in agriculture sector (e.g. chemical fertilizer and pesticides) are likely to have adverse impacts on biodiversity. However, it is encouraging to note that there is a positive trend to popularize organic farming to reduce pesticide and chemical fertilizer use. It is a major constituent of the island wide home garden development program called Divineguma conducted by the Ministry of Economic Development. The horticulture division of the Department of Agriculture also encourages organic farming and use of traditional varieties of vegetables for home gardening,

Promotion of composting technologies incorporated into subsidized animal production and health programs (i.e. free cattle sheds, loan schemes) will promote the use of organic fertilizers to replace harmful chemical fertilizers in order to minimize or avoid negative impacts to soil fertility and human well-being.

Several departments including Forest Department, Export Agriculture Department, and Department of Ayurveda have their own programs to issue plants free of charge or at a subsidized rate to the rural farmers for the development of home gardens.

Target 4 - By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits

The unsustainable use or over exploitation of resources is one of the main threats to biodiversity. Currently many individuals, businesses and countries are making efforts to substantially reduce their use of fossil fuels, with a view to mitigating climate change. Similar efforts are needed to ensure that the use of other natural resources is within sustainable limits.

Sustainable use of natural resources is emphasized through various policy and legislative statements of the Government of Sri Lanka including *Mahinda Chintana Vision for the Future* and *Haritha Lanka* (Green Lanka) Programme. Actions taken to achieve the above target by different sectors are summarized below;

- The National Council for Sustainable Development is established under the Chairmanship of the H.E. the President of Sri Lanka and includes the Ministers in charge of major economic development programs. The council is in charged with responsibility for producing an integrated policy, and overseeing and guiding the implementation of the Haritha Lanka Programme to ensure the sustainability of social and economic development programmes.
- Preparation of management plans for all forests managed by the FD and the DWLC are now a mandatory requirement under the revised Forest Ordinance and Fauna and Flora Protection Ordinances. Accordingly, Forest Department (FD) and Department of Wildlife Conservation (DWLC) are engaged with the preparation of Management Plans with the objective of achieving sustainable forest management.
- Meeting the timber demand of the country through non forest tree resources are continuing. Enhanced home garden development programs of the Forest Department aiming the development of tree resources outside forests (TROF) will further reduce the pressure on forests for timber supply.
- The concept of Special Area Management (SAM), which involves a collaborative, adaptive and flexible approach to sustainable resource management within a defined geographic area, is now an integral component of national coastal zone management policy.
- Several legal measures taken for the control of destructive fishing methods such as banning the use of monofilament nets as well as intensified monitoring of illegal fishing.
- National Aquatic Resources Research and Development Agency (NARA) is conducting surveys on lagoon systems in order to make conclusions on the levels of sustainable utilization.
- As reported in the 4th National Report, traditional Sri Lankan home gardens and rice fields are sustainable agro-ecosystems. One of the government's major livelihood development programs called Divineguma, invests heavily on development of home gardens by providing various incentives to the rural households including planting material, fertilizers, as well as extension services. Creating a separate department for Divineguma will inevitably help to institutionalize the sustainability of this program.
- The tourism related policy adopted by the government promotes development of sustainable tourism as a key sector of the economy to increase tourist arrivals and earnings. In Sri Lanka, tourism became the 5th largest foreign exchange earner in 2012, and contributed 5.2% to the total country foreign exchange earnings while generating employment for 162,869 people (SLTDA, 2012). In this regard ecotourism is being given special emphasis. A positive trend is observed especially among private sector to invest more on ecotourism based enterprises as opposed to the conventional tourism (Refer to section 1.2.5.1 of the report for more details).

3.2.2 Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use

Target 5 - By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Habitat loss, including degradation and fragmentation, is the most important cause of biodiversity loss globally. Natural habitats in most parts of the world continue to decline in extent and integrity, although there has been significant progress to reduce this trend in some regions and habitats. In Sri Lanka too, habitat destruction has been identified as a major threat for biodiversity in all three zones (dry zone, wet zone and montane zone) of the country.

Following section describes the current status and measure taken to combat habitat destruction in major ecosystems of Sri Lanka.

Forests:

As reported in Part 1, overall, the total forest cover in the country has decreased from 31.2 % of the island in 1999 to 29.7% in 2010. But the actual total forest loss is estimated as 48,900 ha from 1999-2010 which is approximately a loss of 0.23% of forest area or 4445 ha of forest loss annually. This is a positive feature when compared with 40,000 ha of forest loss annually between 1956 and 1992, and the predictions made in the Forestry Sector Master Plan of 1995 for a reduction of the 23.9% closed canopy natural forest cover in 1992 to about 17% in 2020.

Following measure are being taken to minimize deforestation and forest degradation

- Forest Ordinance (FO) and Fauna and Flora Protection Ordinance (FFPO) were revised in 2009 to strengthen the forest and wildlife protection law.
- Institutional capacity of the Forest Department (FD) and the Department of Wildlife Conservation (DWLC) developed by improving manpower as well as providing technological improvements such as Geographical Information Systems (GIS) and Remote Sensing (RS).
- Large extents of forest areas were surveyed, demarcated and proclaimed as reserved or conservation forests with special attention paid to more vulnerable forest ecosystems
- National Policy on Elephant Conservation developed.
- Participatory approaches for forest management have been tested and implemented throughout the country.
- Public awareness on the importance of forests and need for conservation is increased.

Wetlands:

Several positive features have occurred for conservation of wetlands in the past few years but wetlands continue to be lost, degraded and their resource exploited beyond sustainable levels. Most wetlands in Sri Lanka face compound threats that are mainly of anthropogenic origin.

Some progress has been made in terms of managing wetland ecosystems in the country. Among these, following are the key achievements;

- Establishment of a special Wetland Unit at the Central Environmental Authority to oversee the interests of wetlands and to implement the National Wetlands Policy of 2006, which is now due for revision.
- National Wetlands Directory was developed by the Central Environmental Authority (CEA), in collaboration with IUCN and International Water Management Institute (IWMI).
- The Strategic Environmental Assessment carried out for the Northern Province identified wetlands as a critical habitat. Also, Wetland mapping carried out for Ampara district in the Eastern Province.
- Conversion of rice fields into other uses is banned in the Western Province.

- Preparation of management plans for wetlands (Management Plan for Bolgoda Wetlands is completed, while the preparation of that for Thalangama Wetland is ongoing).
- Awareness activities were carried out targeting communities living in close proximity to the important wetlands.

Coastal and Marine ecosystems:

While no major changes have taken place in areas covered by these systems, loss of quality in most coastal systems have continued since the last reporting period.

However, following positive feature are also observed.

- Coast Conservation (Amendment) Act No 49 of 2011 has increased the coastal zone to cover 100 meters of riparian land on either side of the 2 km water source perpendicular to a river mouth in the coastal zone.
- The Amendment No 49 of 2011 introduced to the Coast conservation Act (CCA) paves the way for more positive coastal zone management activities.
- People's perceptions were changed after 2004 tsunami, towards realizing the value of coral reefs to minimize coastal damage from events such as tsunami and sea erosion. Similar attitudinal change observed with regards to mangrove vegetation too.
- Government imposed a ban on using lime based paint for government buildings. As a result coral mining for lime production has significantly reduced during the recent past.
- Coast Conservation Act was strictly enforced, particularly with regard to transportation of coral to lime kilns.
- Coast protection structures were established along the vulnerable areas of the coastline to stem the coastal erosion.
- Significant reduction in large scale clearing of mangroves for aquaculture observed due to the white spot disease that affected most prawn farms.
- Mapping of sea grass beds were carried out using GIS techniques.
- Illegal sand mining on the south west coast was controlled through strict law enforcement.

Target 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits

Overexploitation is a severe pressure on marine ecosystems globally, and had led to the loss of biodiversity and ecosystem structure. Harvests of global marine capture fisheries have been reduced from the unsustainable levels of a decade or more ago. However, overfishing still occurs in many areas, and fisheries could contribute more to the global economy and food security with more universal commitment to sustainable management policies.

Being an island nation, Sri Lanka has a great potential to develop fishery. It has a vast marine area, representing different types of ecosystems. Fisheries in the coastal zone determine the livelihood of a large number of fishermen, who are economically more vulnerable to changes in the environment.

As reported in Part I, the marine and inland fishery are yet not fully sustainable. The coastal fishery has been over exploited, while the offshore fishery is not fully exploited by local fishermen.

Following are the summary of positive actions taken by relevant authorities towards achieving sustainability in fishery.

- Fisheries and Aquatic Resources (Amendment) Act No 35 of 2013, strengthens the legal authority of the Department of fisheries in controlling the use of destructive fishing implements.

- Reduced use of destructive fishing methods were observed due to actions taken (such as raiding of shops that sell such equipment) by National Aquatic Resources Research and Development Agency (NARA).
- Several management measures were adopted under regulations incorporated into the Fisheries and Aquatic Resources Act No.2 of 1996. (eg. Lobster Fishery Management Regulations, Chank Fishery Management Regulations, Beach–de-mer Management Regulations, Export & Import of Live Fish Regulation, Export of Cultured Marine Organisms on Artificial Substrate Regulation, Prohibition of Catching Thresher Shark Regulation).
- 15 Marine Fisheries Management Areas have been declared since 1998 under the Fisheries Act, of which 13 have been declared after 2000.
- Management plans have been prepared and implemented to manage depleting fish species district vise based on abundance.
- A National Plan on Shark Management is being prepared under the assistance of BOBLME Project.
- Exotic fish breeding and culture trials are being carried out by National Aquatic Resources Research and Development Agency (NARA) to enhance the production harvest.
- Integrated fish culture program of NARA is introducing food fish species aiming sustainable aquaculture and poverty reduction.
- Fish feeds development program of NARA is introducing low cost high nutrient fish feeds to increase the fresh water fish production as well as to reduce the production cost.

Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity

The increasing demand for food, fiber and fuel will lead to increasing losses of biodiversity and ecosystem services if issues related to sustainable management are not addressed. On the other hand, sustainable management not only contributes to biodiversity conservation but can also deliver benefits to production systems in terms of services such as soil fertility, erosion control, enhanced carbon sequestration, and minimize the vulnerability to climate change, enhance pollination and reduce pest outbreaks, as well as contributing to the well-being and sustainable livelihoods of local communities engaged in the management of local natural resources.

Some of the measures adopted in Sri Lanka for sustainable management of agriculture, aquaculture and forestry are summarized below;

- The revised National Policy on Agriculture (2007) emphasizes the need for sustainable management. The sustainable growth is one of the main objectives of the national policy.
- Increased attention and focus has been paid to sustainable agriculture during the recent past as a result of clear evidences observed with unsustainable practices. (Ex. Significant increase of kidney diseases reported in the North-Central province is being debated for its possible association with the water contaminated by agrochemicals). Government departments and environmental NGOs are encouraging farmers to move towards more sustainable forms of agriculture.
- Department of Agriculture (DoA) has banned several pesticides in Sri Lanka from 2010, namely Carbaril, Chlorophyriphos, Carbofuran and Propanil and the weedicide Glyphosate, due to their propensity to contaminate soil and water and toxicity when applied in large quantities. These measures are expected to improve sustainable management of agricultural systems.
- Soil Conservation Act is now in force which has created a situation where conservation of soil and prevention of soil erosion from cultivated lands is a mandatory requirement by law.
- There is a significant improvement of sustainable agricultural practices in the export agriculture, tea, rubber and coconut sectors in which soil conservation is highly emphasized and has become an integral part of the planting designs.

- During the recent times, the promotion of organic tea farming has been widely accepted as a panacea for emerging environmental problems such as land degradation and surface water pollution and negative impacts on biodiversity. Tea itself contributes to 13% of export earnings in Sri Lanka with around 180,000 ha of land area presently under tea cultivation. Conventional tea cultivation practice that uses a massive amount of synthetic chemicals which has raped the natural environment in the tea growing up country and is reported to have affected the health of human beings and other living organisms. Considering these adverse effects organic tea cultivation has been introduced which uses zero level of inorganic chemicals.
- The demand for organic food is continue to increase both in the local as well as in the world market. Several private companies are operating in Sri Lanka purely to supply the world market with organic agricultural products including spices. They readily purchase certified organic products from the farmers at significantly higher prices, thus attracting more farmers to their certification schemes.
- Several measures were taken to facilitate optimum utilization of aquatic resources through eco- friendly aquaculture practices. They include;
  - Aquaculture fish production increase has been targeted from selected fish species.
  - Identification of potential productive systems for aquaculture. (Ex: Seasonal Tanks).
  - Conservation of natural breeding habitats.
  - Conducting breeding programs for stock enhancement of indigenous fish species in order to increase fish production (both food fish and ornamental fish).
- Awareness programs carried out to enhance different aspects of sustainable aquaculture. (ex. application of crop calendars for aquaculture)
- Co-management practices have been introduced into inland fisheries, so that those engaged in fishing will on their initiative, adopt responsible fishing practices and protect the resources.
- Preparation of management plans for all forests managed by the FD and the DWLC are now a mandatory requirement under the revised Forest Ordinance (2009), and Fauna and Flora Protection Ordinance (2009). Accordingly, Forest Department and Department of Wildlife Conservation are engaged in preparation of management plans with the objective of achieving sustainable forest management.
- Community forestry initiatives are being strengthened under the Australian Aid funded Sri Lanka Community Forestry Program which is currently being implemented in the dry and intermediate zones of Sri Lanka. The project is focusing at mainstreaming community forestry concept into the forestry sector and to make it a main strategy for the sustainable management of forest resources which are subjected to increased anthropogenic pressure.
- Meeting the timber demand of the country through non forest tree resources is continuing. A massive national tree planting campaign *(Deyata Sevena)* is currently being implemented with the government sponsorship.
- Enhanced home garden development programs of the Forest Department aiming the development of Non Forest Tree Resources (NFTR) will further reduce the pressure on forests for timber supply.

Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity

Pollution refers to chemical contaminants that are introduced to the environment resulting instability or harm. Pollution can take numerous forms as a variety of chemical compounds can cause environmental damage depending on their properties and concentration.

Various sources of pollution, both point and non-point sources, pose threat to biodiversity in Sri Lanka. In particular nutrient loading, primarily of nitrogen and phosphorous, is a major and increasing cause of biodiversity loss and ecosystem dysfunction, especially in wetland and

coastal areas. Other major threats include improper disposal of municipal solid wastes, improper/ inadequate sewerage disposal, excessive use of chemical pesticides as well as hazardous chemicals, and dumping of untreated industrial wastes and solid waste. The release of ballast water and waste oil and tar from ships adds to coastal pollution, whereas the major source of air pollution is accounted for vehicular traffic.

The measures taken to control pollution are summarized below;

- In terms of industrial pollution, the Central Environmental Authority (CEA) enforces Environmental Impact Assessment (EIA) procedures and an Environmental Pollution Licensing (EPL) scheme. Both are mandatory under the National Environmental Act of 1988.
- The Central Environmental Authority (CEA) prepares guidelines and the Sri Lanka Standards Institute (SLSI) sets standards for industrial effluents, vehicle emissions, ambient air and water quality (for both inland and coastal waters).
- The Coast Conservation Department (CCD) has continued to deal with coastal zone management, including pollution, in the coastal zone under the provisions of the Coast Conservation Act of 1981.
- Central Environmental Authority (CEA) is setting standards for bathing in coastal waters.
- Monitoring of waters at 5 coastal sites (Mount Lavinia, Hikkaduwa, Unawatuna, Polhena, Nilaweli and Arugam Bay) is currently being carried out.
- Pollution caused by the chemical compounds released from shrimp farms in coastal areas has automatically reduced to a greater extent as a result of majority of shrimp farms being abandoned due to a fungal disease.
- In addition to CEA and CCD, many other government organizations such as Mahaweli Authority, Board of Investment (BOI), National Aquatic Resources Research and Development Agency (NARA), Irrigation Department, Water Resource Board, National Water Supply & Drainage Board (NWSDB), which are vested with legal powers for water quality monitoring continued and intensified their activities to control water pollution. At the same time, institutes such as Industrial Technology Institute (ITI), National Building Research Organization (NBRO), Institute of Fundamental Studies (IFS), also carry out independent water quality studies.
- The Marine Environment Protection Authority (MEPA) is mandated to deal with marine pollution under the Marine Pollution Prevention Amendment Act No.35 of 2008. The MEPA is responsible for warning and promoting prompt remedial action in the event of a major oil spill in the Sri Lankan waters, or in adjacent waters that could affect the country's marine environment.
- Ministry of Environment and Renewable Energy is implementing a program termed as Pavithra Ganga (Clean River) Programme, to deal with the wide spread problem of river pollution.
- The National Water Supply and Drainage Board is engaged in the control of pollution in the city canal system under the Colombo Environment Improvement Project (CEIP).
- Strict enforcement of the vehicle emission testing system has contributed significantly to reduce vehicular air pollution. This was further strengthened by the use of unleaded petrol and recent positive action taken by the Ceylon Petroleum Corporation (CPC) to replace 95-Octane petrol with 98-Octane petrol without any price increase.
- Improvement of road network to control vehicular traffic congestion has been continued. Government continued to invest heavily on road improvements covering the entire island. Introduction of three new expressways to the road network is a significant achievement during the reporting period, considerably easing the traffic congestions on some of the islands' busiest roads. This will significantly contribute to the reduction of air pollution by way of decreasing emissions from vehicles.
- Of the 12 chemicals known as Persistent Organic Pollutants (POPS), eight are banned from use as pesticides in Sri Lanka.

- As reported under Target 3, reduction of inorganic fertilizer use is being promoted by the Department of Agriculture (DoA). Fertilizer subsidy has been minimized encouraging farmers to move towards organic farming.
- Programs conducted by the Department of Animal Production and Health (DAPH) for efficiency development in livestock breeds and improved waste management in livestock, helped to curb the pollution from livestock farming.

Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment

Invasive Alien Species (IAS) is one of the main direct drivers of biodiversity loss at the global level. In some ecosystems, such as many island ecosystems, invasive alien species are the leading cause of biodiversity decline. Invasive alien species primarily affect biodiversity by preying on native species or competing with them for resources. In addition to their environmental impacts, invasive alien species can pose a threat to food security, human health and economic development. Increasing travel, trade, and tourism have facilitated the movement of species beyond natural bio-geographical borders by creating new pathways for their introduction. With increasing globalization, the occurrence of invasive alien species is likely to increase unless additional measures are taken.

The accidental or intentional introduction and spread of Invasive Alien Species (IAS) is a growing concern in Sri Lanka, with several species of exotic fauna and flora well established in wild habitats over the past two decades, and threatening native biodiversity. About 20 species of invasive alien fauna and 39 species of invasive alien flora have been documented from natural and semi-natural ecosystems in the different bioclimatic zones of Sri Lanka (Bambaradeniya, 2002), and several new species of IAS have been discovered over the past few years.

Following measures were undertaken and the mechanisms are in place for the prevention of entry, establishment, as well as eradication of IAS in Sri Lanka.

- The Plant Protection Division of the Department of Agriculture is responsible for the prevention of invasive alien species entering the country under the legal provisions of The Plant Protection Act No. 35 of 1999. All imported plants and animals, or their parts, are thus required to be declared at the point of entry to the country and should be subject to quarantine regulations.
- All imported seeds should be certified by the National Plant Quarantine Service and the Seed Certification and Plant Protection Centre of the Department of Agriculture prior to release or use within the country. Species (or parts of species) that are perceived as probable sources of potential invasive species have been listed.
- Highly threatening IAS for agricultural systems such as Parthenium weed *(Parthenium hysterophorus)* have been identified by the Department of Agriculture and legal measures are in place for prohibiting them being grown in farmlands.
- Database on Invasive Alien Species (Flora & Fauna) was established in 2013. Information related to the priority IAS species have been collected and published.
- Invasive Species Specialist Group has been established by the Ministry of Environment and Renewable Energy.
- Various awareness and education programs were conducted by different agencies on IAS and the capacity of stakeholders to eradicate invasive species is being strengthened.
- The MoERE is currently implementing a project for 'Strengthening Capacity to Control the Introduction and Spread of Invasive Alien Species (IAS) in Sri Lanka', with funding from the Global Environmental Facility (GEF). The project will support the development of an enabling policy and legal environment for effective IAS control. The preparation of National IAS Policy, National IAS Control Act, and the National IAS Strategy and Action Plan are currently underway through stakeholder participation and technical assistance. The project will also enhance integrated management planning and action, with corresponding budgetary and technical support for the prevention, detection and management of IAS. It will also build

capacities of the National Focal Point for IAS and other stakeholders, especially those involved in enforcement and local communities, to encourage their support for IAS control activities. Information related to IAS will be assembled and managed through a national database that will be made widely accessible through the internet.

- A FAO funded project for the control of Forest Invasive Alien Species is currently in the pipeline. The project is expected to concentrate on establishing demonstration plots depicting IAS control mechanisms in selected locations associated with forest invasive species.
- Control of IAS had been conducted in Protected Areas (PAs) under the DWLC where considerable areas have been affected. Special programs of IAS management were conducted in 06 PAs managed by the DWLC on a pilot scale under the recently concluded PAM&WC Project.
- The CEA has conducted several programs with the participation of communities for the removal of invasive alien species (mainly Mimosa pigra –Giant Mimosa) in Thalangama Environment Protection Area (wetland).

Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning

The effects of climate change and ocean acidification have the potential to have a particularly negative effect on those ecosystems which are sensitive to temperature fluctuations and/or depend on the availability of carbonate minerals. For the marine environment this includes warm water and deep ocean coral reefs as well as shellfish beds which will be greatly impacted by the combined effects of climate change and ocean acidification. For the terrestrial environment those ecosystems already at the extreme of their ranges will be particularly vulnerable.

In addition to climate change and ocean acidification, there are a variety of other human pressures affecting ecosystems. Reducing anthropogenic pressure on those ecosystems affected by climate change or ocean acidification will give them greater opportunities to adapt. Where multiple drivers are combining to weaken ecosystems, aggressive action to reduce those pressures most amenable to rapid intervention should be prioritized. Many of these drivers can be addressed more easily than climate change or ocean acidification.

Key actions taken by Sri Lanka to reduce the anthropogenic pressure on vulnerable ecosystems can be summarized as follows;

- Amendments introduced to the Coast Conservation Act in 2011, paves the way for more positive coastal zone management. It enables the declaration of (a) affected areas in the coast in which no development, dumping of waste or damaging activity can be carried out, (b) beach parks for preservation of scenic beauty and biodiversity, and (c) conservation areas for the protection of the coastal and aquatic eco-system, with no development activity to be permitted other than research and study.
- All mining activities in the Coastal Zone will need the concurrence of the CCD. As a result, the Coast Conservation Department has recorded a decrease in beach sand mining in coastal areas.
- Coral mining for lime production has stopped after the 2004 Tsunami as people realized the value of the reefs to minimize coastal damage from events such as Tsunami and sea erosion.
- Coupled with the government ban on using lime based paint for government buildings and strict enforcement of the Coast Conservation Act, particularly with regard to transportation of coral to lime kilns, has served to halt the rampant coral mining that exited in the past (CCD, 2014).
- The Coastal Zone and Coastal Resources Management Plan is currently being prepared in accordance with the requirements of the CCA.
- Sea coral removal has declined in the coastal stretch due to intensive law enforcement.

- Programs are being carried out for coral replanting with the involvement of NGOs as well as community organizations.
- Setting up shrimp farms observed to be significantly decreased due to white spot disease which was prevalent on the north-west coast.
- Fifteen (15) mangrove areas have been declared as conservation forests by the Forest Department.
- National capacity needs and technologies have been identified by the National Capacity Needs Assessment Project for Climate Change to minimize marine pollution and control to damaged resources.
- Forest Department commenced the implementation of REDD+ Readiness preparation activities under the Sri Lanka UN-REDD Programme in 2012. The unique value of Sri Lanka's forests, and the nature of the threat they face, makes the country a strong candidate for an effective REDD+ Programme.
- The vulnerability of tropical Wet Zone forests of Sri Lanka has been recognized. Boundary redefinition and demarcation of most of these forests with concrete posts has been completed. This has significantly halted further encroachments into these valuable natural ecosystems.
- A pilot project covering two Divisional Secretary (DS) Divisions (Walapane and Medirigiriya) to address the climate change impacts on rural livelihoods is being implemented by the Climate Change Secretariat of the MoERE, with the participation of all stakeholders.

3.2.3 Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.

Target 11: By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape

Well-governed and efficiently managed protected areas are a proven method for safeguarding both habitats and populations of species and for delivering important ecosystem services. Particular emphasis is needed to protect critical ecosystems such as tropical forests, tropical coral reefs, see-grass beds, coastal wetlands and fresh water ecosystems. Additionally, there is a need for increased attention to the representation, connectivity and management effectiveness of protected areas.

Actions taken in Sri Lanka to achieve this target are described below;

Forests:

The Protected Area (PA) network of forests has expanded over the years to cover all climatic zones, especially in the Wet Zone. Even so, as reported in the Fourth National Report, the declaration of new PAs lacks coordination between the two main stakeholders (i.e. FD and DWLC).

Thirty-three (33) forests covering a total extent of 74,239ha have been declared by the FD as conservation forests since 2009. This is a significant increase of Conservation Forests set aside for strict conservation with more valuable wet zone forests coming into the protected area network. Likewise, 286 forests with a total extent of 574,170ha declared as reserved forests during this period.

Inscription of Central Highland World Heritage is a significant achievement during the reporting period. The Knuckles Conservation Forest, Horton Plains National Park and the Peak Wilderness Protected Area were accepted by UNESCO as a Serial Natural World Heritage site designated as the Central Highlands World Heritage site in 2010. This brought the total area under this category from 8,864 to 118,884 ha thus providing international recognition and additional protection to some of the countries' most sensitive and important ecosystems

The extent (proposed and implemented) as Biosphere Reserves has been increased with the identification of Transition Zones for the Sinharaja and Hurulu Biosphere Reserves

There has been a perceptible increase in the Protected Area network under the Department of Wildlife Conservation as well.

Wetlands:

Degradation and conversion of wetlands is a continuing problem, especially with regard to urban wetlands, despite identification and listing of important wetlands in the country (see Chapter 3). The development of policy on wetland conservation and re-establishment of a special unit for wetland conservation in the Central Environment Authority are the major initiatives to address these issues.

Eight critically important wetland areas have been declared as Environmental Protection Areas under the National Environmental Act (NEA, 1980) and management plans were prepared for them. Activities within these sites are regulated through a legal instrument. Another 10 wetlands are identified for declaration as Environmental Protection Areas.

Three more critically important wetland sites were inscribed as Ramsar sites since 2009 increasing the total number of Ramsar sites in Sri Lanka to 06. That will count as 198,027 ha under RAMSAR sites at present from the previous figure of 8,377 ha.

Coastal and Marine systems:

Some positive steps have been taken in coastal and marine systems to conserve biodiversity rich habitats as given below;

- Enactment of the Coast Conservation (Amendment) Act No 49 of 2011, which has increased the coastal zone to cover 100 m of riparian land on either side of the 2 km water source perpendicular to a river mouth in the coastal zone. This area is also meant to be a no build zone for new projects.
- Two marine protected areas were added to the PA network managed by the Department of Wildlife Conservation during the reporting period making the total marine protected areas into four (04).
- Identification of Special Area Management (SAM) Sites and several large scale projects such as the Coastal Resources Management Project (CRMP) that dealt with identifying and monitoring coastal ecosystems and management of the fishery resources.
- Two fisheries management areas were set up at Great and Little Bases and Polhena, under the Fisheries and Aquatic Resources Act to regulate the fishery in them.
- Twenty (20) mangrove sites are been protected by the Forest Department along the southwest and north-west coast by declaring them as reserved or conservation forests.

Under the National Environmental Act (NEA), the Central Environmental Authority (CEA) has recently declared eight Environmental Protection Areas (EPAs). Although they are not PAs with legal protection, only identified development activities are allowed in them by the CEA.

Target 12: By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained

Though some extinction of threatened species is the result of natural process, human actions have been greatly contributed to the current increased extinction rates. Reducing the threat of human-induced extinction requires action to address the direct and indirect drivers of change and it can be long term processes. However, in many cases, imminent extinctions of known threatened species can be prevented by protecting important habitats or by addressing the specific direct causes of the decline of these species.

As reported in Part I, about 44% of all flowering plants and 46% of vertebrate species are threatened in Sri Lanka. In this regard, preventing further extinction as well as improving the conservation status of threatened species is equally important. Measures taken to achieve the above target are listed below;

- The rate of deforestation has been significantly reduced during the reporting period and the existing conservation sites have been strengthened with the expansion of Protected Area (PA) network as well as inscribing a new natural World Heritage Site. As shown in Table 1.5, since submission of the Fourth National Report, the extent under PAs have been increased by 84%.
- A new red list of threatened and endangered species has been prepared by MoERE with the assistance of IUCN in 2012. Consequently, several awareness and education programs were carried out to highlight the importance of conserving the threatened flora and fauna.
- As a response to the national Red List of 2012, there is fair understanding of threatened species and their needs at the national level, and the preparation of species profiles and species conservation action plans are underway. In addition, several recovery plans, reintroduction programs, translocation programs are also being prepared.
- Several institutionalized biodiversity surveys have been conducted to document wild and cultivated species to identify and monitor trends in species diversity.
- There has been a perceptible increase in taxonomic research on the faunal and floral groups of Sri Lanka, which has led to the discovery and scientific description of many new species during the reporting period.
- Capacity building for in-situ conservation of threatened fauna and flora is being carried out within the stakeholder institutions.
- Establishment of two new botanical gardens, establishment of four medicinal plant gardens, establishment of elephant holding ground in Horowpatana and the expanding the activities of Elephant Orphanage at Udawalawa, can be identified as significant achievements for ex-situ conservation during the reporting period. In addition, construction of another zoological garden in Pinnawala is also underway.
- The National Botanic Gardens is involved in propagation of many indigenous floral species; including orchids; many of which are identified as threatened.
- The National Aquatic Resources Research and Development Agency (NARA) is carrying out research on captive breeding of threatened species of brackish water food fish species, endemic ornamental fish species. It also engaged with the propagation of many aquatic plant species as well.
- Several actions have been taken for ex-situ conservation of traditional crop varieties through various projects and institutional programmes of the Department of Agriculture. Among them, conservation of genetic material in the Plant Genetic Resources Centre (PGRC); provision of seeds of traditional varieties to farmers for on-field propagation; and setting up demonstration plots and extension programs to promote organic farming.

Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity

The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives is in decline as in the genetic diversity of other socio-economically and culturally valuable species. The genetic diversity which remains needs to be maintained and strategies need to be developed and implemented to minimize its current trend of erosion, particularly as it offers options for increasing the resilience of agricultural systems and for adaptation to changing conditions (including the escalating impacts of climate change).

There are several programmes implemented in Sri Lanka for ex-situ conservation of genetic diversity of crops and their wild relatives with a potential for economic, food or medicinal use. In recent years there has been a positive trend to conserve and use the germplasm of indigenous crops and their wild relatives for varietal improvement in rice, vegetables, other field crops and export agricultural crops.

The actions taken to achieve the above target are summarized below;

- The collection of crop germplasm is increasing at the Plant Genetic Resources Centre (PGRC) of the Department of Agriculture (DoA). The wild relatives of crops are now being distributed to the relevant field research institutes for further research.
- All crop research and development institutes under the Department of Agriculture are engaged in research to characterize and investigate the properties of local varieties and wild relatives of crops for varietal improvements. As such, they maintain working collections of crops (including traditional varieties) and wild relatives of crops under their purview.
- The Plant Genetic Resource Centre (PRGC) and other research institutions of the Department of Agriculture also give out seeds of traditional varieties to farmers for on-field propagation. As a result, there are many farmers in the island who are cultivating traditional rice varieties as this fetches a higher price in the market due to better taste and nutritional value than the improved varieties.
- The DoA is also popularizing the use of organic fertilizer and the traditional varieties of vegetables for home garden growers as they need less intensive care, are more resilient to diseases, and need less fertilizer.
- The means of conserving wild relatives of crops; mainly *Oryza* spp and *Vigna* spp; have been addressed through a project for conservation of crop wild relatives. 22 locations have been identified for in-situ conservation of crop wild relatives in addition to the protected areas where they occur.
- The research institutes for plantation crops (i.e. tea, rubber, coconut and sugarcane) maintain live field collections of varieties, cultivars and clones of crops within their purview.
- The Department of Export Agriculture (DEA) maintains germplasm of species relevant for crop enhancement as per their mandate, while research institutions for minor export crops are also engaged in breeding new varieties with higher yield and beneficial traits. Wild types of crops are also being investigated for beneficial traits and for products such as essential oils, oleoresins and piperine of commercial value.
- The Department of Animal Production and Health (DAPH), and its research centre and the Veterinary Research Institute (VRI), is using germplasm of indigenous and local breeds of animals in their breeding programmes. Cattle breeding programmes are made available to cattle farmers island-wide to upgrade local breeds through artificial insemination programmes where local cattle are inseminated with imported high yielding germplasm. This has served to propagate the beneficial traits of locally adapted breeds that need less intensive care and are resistant to disease while increasing milk production.
- New Livestock Breeding Policy was developed in 2010, which deals with the *in-situ* and *ex-situ* conservation of indigenous livestock breeds includes the characterization, inventorying and monitoring of such breeds.
- Measures are being taken to conserve traditional knowledge associated with agriculture and livestock rearing, which is increasingly important for developing the agriculture sector in the face of climate change.
- In 2013, Sri Lanka became a contracting party to the International Treaty on Plant Genetic Resources of Food and Agriculture.

3.2.4 Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable

All terrestrial, freshwater and marine ecosystems provide multiple ecosystem services. However, some ecosystems are particularly important as they provide services that directly contribute to human wellbeing by providing services and goods to fulfill daily needs. Actions taken to protect and restore such ecosystems will have benefits for biodiversity as well as for human wellbeing.

In this regard, ecosystems which provide services related to the provision of food, fiber, medicines and fresh water, pollination of crops, filtration of pollutants and protecting from natural disasters are primarily important. As such, it is important to safeguard and restore those ecosystems while ensuring the needs of women, indigenous and local communities, and the poor and vulnerable sections of the society, when setting policies or undertaking certain types of action.

Some of the key measures undertaken in this regard are summarized below;

- Through judicious management, the rate of deforestation has been significantly reduced, and the *Mahinda Chintana* vision for the future policy framework has set a target of increasing the forest cover to 35% of the island's land area by 2020.
- The most important forest product used by villagers in fringes of Wet Zone forests is water for domestic use as well as for agricultural purposes. Significant efforts have been undertaken during the reporting period to conserve and protect these sensitive ecosystems through different measures such as survey and boundary demarcation, declaring them as Conservation Forests and including them in the protected area network as well as effective law enforcement.
- Water catchments (watersheds) that are located in isolation are being identified for declaration for the protection of water sources. A cabinet subcommittee appointed in 2013 for this purpose and a draft policy document was submitted to the cabinet through the Ministry of Lands.
- Considerable extents of the central hill country were declared as sensitive areas under the National Environmental Act (NEA) to ensure the sustainability of their environmental services. Most of those areas are covered with the Soil Conservation Act as well, to provide an added protection.
- Forests in the central hills provides freshwater for hydro-electricity which is a major source of energy in the country. Large numbers of hydroelectricity generation programs including micro and mini-hydropower projects aimed at rural electrification were established while maintaining the environmental protection guidelines.
- A large quantity of non-timber forest products (NTFPS) for subsistence and commercial use such as; ornamental plants, food items, medicinal plants, roof thatching material, raw materials for traditional craft based industries, oils and resins etc., have been issued to rural households under subsidized (royalty) rate. Whereas dead firewood collection from forests was allowed free of charge among the local communities.
- Mineral resources such as sand, clay, gravel, limestone, metal quarrying and quartz within the environmentally less sensitive Dry Zone forests were dispensed to the rural communities as well as state-driven rehabilitation programs with minimum damage caused to the environment.
- Ecotourism activities that strengthen the conservation of forests, wetlands and coastal and marine resources are being promoted.
- Large extents of grasslands and thorn scrub forests of the Dry Zone which are the main habitats for large charismatic species such as the elephant, deer, bear and leopard are continued to be maintained as National Parks for the attraction of visitors and nature lovers.

Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks have been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification

Deforestation, wetland drainage and other types of habitat change and degradation lead to the emission of carbon dioxide, methane, and other greenhouse gases. The reversal of these processes, through ecosystem restoration, represents an immense opportunity for both biodiversity restoration and carbon sequestration. Restored landscapes and seascapes can improve resilience including adaptive capacity of ecosystems and societies, and can contribute to climate change adaptation and generate additional benefits to people, in particular indigenous and local communities and the rural poor.

Sri Lanka's contribution to the above target is summarized below;

- Sri Lanka, as a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) of 1992, has commenced several important initiatives to address climate change. Since ratification of the UNFCCC and acceding to the Kyoto Protocol, most of the requirements of the UNFCCC have been addressed by Sri Lanka to a considerable extent. So far, Sri Lanka has submitted two National Communications including greenhouse gas inventories to the UNFCCC, in year 2000 and 2012 respectively.
- Sri Lanka is currently implementing the Sri Lanka UN-REDD Programme with the objective of building capacities to implement the REDD+ activities towards the end of the programme period.
- The annual forest restoration program of the Forest Department has intensified with government allocating special annual allocation of Rs.500 million (US $ 4 million) from 2014 onwards, towards the achievement of the national target of 35 percent forest cover set by the Mahinda Chintana Vision for the Future. Large extents of degraded forest areas (especially located in the Dry Zone) are expected to be restored primarily using assisted natural regeneration (ANR).
- The Climate Change Secretariat (CCS) was established within the MoERE to serve as a node for the implementation of UNFCCC decisions and to formulate and implement projects and programmes at national level with regard to climate change.
- Designated National Authority (DNA) was established by the Ministry of Environment to deal with the CDM under the Kyoto Protocol (KP).
- The Centre for Climate Change Studies (CCCS) was established within the Meteorological Department (MD) for undertaking research on climate change including analysis of data collected by the Meteorological Department.
- Two Clean Development Mechanism (CDM) Centers were established in University of Moratuwa and University of Peradeniya to promote CDM activities in Sri Lanka.
- National Capacity Needs Self Assessment on Climate Change (2007) and the Technology Needs Assessment (TNA) for climate change (2012) were completed as a significant contribution to climate change mitigation and adaptation.
- A pilot Project covering two DS Divisions (Walapane and Medirigiriya) to address the climate change impacts on rural livelihoods is being implemented by the Climate Change Secretariat of the MoERE, with the participation of all stakeholders. The project aims to convert and restore human induced and degraded landscapes in the two DS Divisions into more sustainable land uses.
- New technologies for climate change adaptation were introduced by the Departments of Agriculture, Tea Research Institute, and several other institutions and universities that are developing new technologies for mitigation measures.
- Effective measures were undertaken to rehabilitate and conserve aquatic resources devastated by poor aquaculture practices. In this regard, a sound policy decision has been taken to conduct shrimp farming based on a zonal plan. Monitoring and extension activities

of shrimp farming have been strengthened (ex. issuing of licenses, monitoring and control of disease outbreaks etc.)

- MoERE is implementing a special program for the rehabilitation of mangrove areas by implementing replanting programs in several locations.

Target 16: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation

The fair and equitable sharing of the benefits arising out of the utilization of genetic resources is one of three objectives of the Convention on Biological Diversity. The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity was adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting of Nagoya, Japan.

The Nagoya Protocol provides a transparent legal framework for the effective implementation of the objective of fair and equitable sharing of benefits arising out of the utilization of genetic resources. The protocol covers genetic resources and traditional knowledge associated with genetic resources, as well as the benefits arising from their utilization by setting out core obligations for its contracting parties to take necessary measures in relation to access, benefit-sharing and compliance.

The operationalization of the Nagoya Protocol requires that it be implemented effectively at the national level. Countries will need, depending on their specific circumstances, to revise legislation, administrative or policy measures already in place or develop new measures in order to meet the obligations set out under the Protocol. Countries will also need to determine the institutional structure needed for implementing the Protocol.

Sri Lanka has not yet ratified the Nagoya Protocol. However, the country has realized the difficulty to stop the over exploitation and export of biological resources without a proper legislative support in the country. In order to address this issue MoERE has prepared a Draft Material Transfer Agreement. But since a Material Transfer Agreement cannot contain the rules, principles, and procedure by which it is to be developed and administered, a need of a clear policy on access to biological resources and benefit sharing emerged.

In 2013, MoERE has formulated a National Policy on Access to Biological Resources, Sustainable Use and Benefit Sharing with the objective of conserving the biological resources of the country for the benefit of the present and future generations, while assuring the sustainable use of these resources in a transparent manner. The national policy is expected to bind all relevant parties concerned with the conservation and sustainable use of the biological resources and to act as an umbrella policy in managing access and benefit sharing of those resources.

3.2.5 Strategic Goal E: Enhance implementation through participatory planning knowledge management and capacity building

Target 17: By 2015, each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan

National biodiversity strategies and action plans (NBSAPs) are the key instrument for translating the Convention and decisions of the Conference of the Parties into national actions. For this reason it will be essential that parties have developed, adopted and commenced implementing an updated NBSAP as a policy instrument which is in line with the goals and targets set out in the Strategic Plan by 2015.

The second generation of the National Biodiversity Strategies and Action Plan (NBSAP) for Sri Lanka is yet to be prepared in light of the CBD Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets adopted in 2010.

It is revealed that the Biodiversity Conservation Action Plan (BCAP) 1999 as well as its addendum of 2007 does not specify concrete national biodiversity targets, indicators and baseline. This aspect will have to be incorporated into the revision of the next generation NBSAP. The new NBSAP will reflect how Sri Lanka intends to fulfill the objectives of the Convention in light of specific national circumstances, and a related action plan which outlines the sequence of steps to be taken to meet these objectives. The preparation of the new NBSAP will be done as a matter of urgency through a participatory process involving all relevant stakeholders.

Once developed, the NBSAP will have to be adopted into government policy, so that it can be effectively implemented. This is to ensure that it is mainstreamed into the planning and programs of those sectors which could have an impact on biodiversity.

Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

There is a close and traditional dependence of many indigenous and local communities on biological resources. Traditional knowledge can contribute to both the conservation and the sustainable use of biological diversity. This target aims to ensure that traditional knowledge is respected and reflected in the implementation of the Convention, subject to national legislation and relevant international obligations, with the effective participation of indigenous and local communities.

Sri Lanka's achievements in regard to this target are summarized as follows;

- Importance of traditional knowledge is being increasingly acknowledged, especially in the agriculture and health sectors.
- Final Draft of the Traditional Knowledge Policy has been prepared.
- Traditional knowledge compendium is completed in three volumes.
- A legal framework for the protection of traditional knowledge in Sri Lanka was developed in 2009. (visit http://www.wipo.int)
- A symposium on traditional knowledge is organized annually focusing intensely on pre-Buddhist knowledge and practices.
- A compendium on historically important trees is published. It is proposed to provide a special protection to those trees by legally declaring them under the Flora and Fauna Protection Ordinance.
- The Ministry of Indigenous Medicine is the national focal institution in place to promote and safeguard traditional healing. 62 Ayurvedic Hospitals, 208 Central Dispensaries, 1424 Ayurveda Medical Practitioners employed by the Government. In addition, there is a National Institute of Traditional Medicine, Sri Lanka Ayurveda Drugs Corporation, Sri Lanka Ayurveda Medical Council, Ayurveda Department, a Research Institute and Herbal Gardens operated under the Ministry (N De Silva, 2013, http://www.saarcculture.org/)

Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied

Information is needed to identify threats to biodiversity and to determine priorities for conservation and sustainable use. Absence or difficulty in accessing information is an obstacle to the implementation of the goals of the Convention.

Therefore, it is important to increase knowledge, the scientific base and technologies relating to biodiversity. This target should be regarded as a general commitment to increase the amount and quality of biodiversity relevant information and technologies as well as to make better use of it in decision making as well as to share it as widely as possible.

In this regard, a national clearing-house mechanism was designed by the Biodiversity Secretariat of the MoERE with the objective of providing effective global information service to facilitate the implementation of the national biodiversity strategies and action plans. However, the implementation of the mechanism was delayed due to the dearth of capacity as well as human resources.

Target 20: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the strategy for resource mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties.

Limited capacity, both financial and human, is a major obstacle for most countries to the implementation of the Convention. The capacity which currently exists in countries needs to be safeguarded and increased from current levels, in line with the process laid out in the Strategy for Resource Mobilization, in order to enable countries to meet the challenges of implementing the Strategic Plan for Biodiversity 2011-2020. The fulfillment of this target will have implications on the feasibility of achieving the other 19 targets contained in the Strategic Plan.

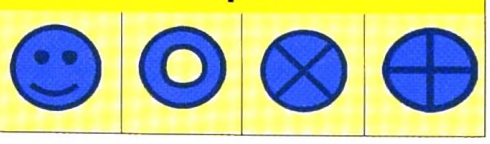
Although the government funding in Sri Lanka for biodiversity conservation per se has not significantly improved, funding for some specific sectors related to biodiversity conservation has been improved. Increased funding for forest restoration activities and home garden improvements through Dvineguma Program are some of the key indicators in this regard. Recent decision of the government to pay special allowances for the researchers working in government institutions who are involved with applied research programs will also likely to produce new inventions in biodiversity sector as well.

Table 3.1: Progress of implementation of Aichi Biodiversity Targets

	Aichi Target	Headline Indicators used to assess progress	Assessment of change since 4th National Report			
Strategic Goal A: Address the underline causes of biodiversity loss by mainstreaming biodiversity across government and society						
1.	**Awareness Increased -** *By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably*	• Trends in awareness, attitudes and public engagement in support of biological diversity conservation.				
2.	**Biodiversity values integrated -** *By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems*	• Trends in integration of biodiversity and ecosystem service values into national development policies.				

	Aichi Target	Headline Indicators used to assess progress	Assessment of change since 4th National Report			
3.	**Incentives reformed -** *By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.*	• Trends in identification, assessment and establishment and strengthening of incentives that reward positive contribution to biodiversity and ecosystem services and penalize adverse impacts.				
4.	**Sustainable consumption and production -** *By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.*	• Trends in population and extinction risk of utilized species, including species in trade				
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use						
5.	**Habitat loss halved or reduced -** *By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.*	• Trends in extent of selected ecosystems and habitats • Trends in fragmentation of natural habitats				

	Aichi Target	Headline Indicators used to assess progress	Assessment of change since 4th National Report			
6.	**Sustainable management of marine living resources -** *By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits*	• Trends in area frequency and/ or intensity of destructive fishing practices • Trends in extinction risk of target and by catch aquatic species				
7.	**Sustainable agriculture, aquaculture and forestry -** *By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity*	• Trends in area of forest, agriculture and aquaculture ecosystems under sustainable management • Trends in proportion of products derived from sustainable sources				
8.	**Pollution reduced -** *By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity*	• Trends in emission to the environment of pollutants relevant for biodiversity • Trends in water quality in aquatic ecosystems				
9.	**Invasive alien species prevented and controlled -** *By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment*	• Trends in number of invasive alien species • Trends in invasive alien species pathways management • Trends in policy responses, legislation and management plans to control and prevent spread of invasive alien species				

	Aichi Target	Headline Indicators used to assess progress	Assessment of change since 4th National Report			
						
10.	**Pressures on vulnerable ecosystems reduced -** *By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning*	• Trends ion extinction risks of coral and reef fish • Trends in extent, and rate of shifts of boundaries of vulnerable ecosystems				
Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity						
11.	**Protected areas increased and improved -** *By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.*	• Trends in representative coverage of protected areas and other area based approaches, including sites of particular importance for biodiversity, and of terrestrial, marine and inland water systems • Trends in protected area condition and/ or management effectiveness				
12.	**Extinction prevented -** *By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.*	• Trends in abundance and distribution of threatened species • Trends in extinction risk of species				
13.	**Genetic diversity maintained -** *By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity*	• Trends in number of effective policy mechanisms implemented to reduce genetic erosion and safeguard genetic diversity related to plant and animal genetic resources				

	Aichi Target	Headline Indicators used to assess progress	Assessment of change since 4th National Report			
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services						
14.	**Ecosystems and essential services safeguarded -** *By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable*	• Trends in benefits that humans derive from selected ecosystem services				
15.	**Ecosystem restored and resilience enhanced -** *By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks have been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification*	• Trends in area of degraded ecosystems restored or being restored				
16.	**Nagoya protocol in force and operational -** *By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation*	• Not applicable -				
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building						
17.	**NBSAPs adopted as policy instrument -** *By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan*	• Trends in implementation of NBSAPs, including development, comprehensiveness, adoption and implementation				

	Aichi Target	Headline Indicators used to assess progress	Assessment of change since 4th National Report			
18.	**Traditional knowledge respected-** *By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.*	• Trends in degree to which traditional knowledge and practices are respected				
19.	**Knowledge improved, shared and applied –** *By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied*	• Trends in biodiversity related capacity building, knowledge transfer, plus trends in uptake into policy				
20.	**Financial resources from all sources increased –** *By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties*	• Trends in mobilization of financial resources for biodiversity conservation efforts				

- Improving -
- Little or no overall change
- Deteriorating
- Insufficient or no comparable data

Scale 0-20% 20 – 40%
40 -60% 60 -80%
80 -100%

3.3 The Contribution of Actions to Implement the Convention towards the Achievement of the relevant 2015 Targets of the Millennium Development Goals (MDGs) in Sri Lanka

At the UN General Assembly in New York in year 2000, the world leaders decided on the Millennium Development Goals (MDGs) as a strategy to sustainable development. The MDGs are comprised of eight time bound goals, 18 reachable targets and 48 measurable indicators, with year 1990 taken as a baseline and year 2015 as the deadline to achieve the goals. Incidence and magnitude of poverty, illiteracy, child malnutrition, gender inequality, infant child and maternal mortality, environment pollution, access to basic amenities, access to health facilities and access to IT and communication facilities are some of the dimensions captured by the MDGs. The overall objective is to improve the living conditions of the people, raise economic and social empowerment at community level and ultimately bring about sustainable social and economic development of the country.

Sri Lanka has become a signatory to the Millennium Declaration by signing it with 190 other countries in year 2000. By including the MDGs into the Governments ten year development plan "Mahinda Chintana vision for the future" which extends from 2006 to 2016, the Sri Lankan Government has accorded high priority to achieving them and shown its determination to meet the set targets within the stipulated time frame.

As a result, Sri Lanka is in the forefront of the Millennium Development Goals. It has already achieved several of them, especially in the health and education sectors. Sri Lanka has also made great strides in poverty alleviation, child and maternal mortality rates and gender and equality. It is also on track to achieve the targets for most of the indicators by 2015.

The role of biodiversity in ensuring the achievement of MDGs is well recognized. However, the links between biodiversity and the path to achieving the MDGs have not been made explicit.

Among the eight Goals, the most relevant Millennium Development Goal for biodiversity is Goal 7, which focuses on ensuring environmental sustainability. However, attempts are being made to mainstream biodiversity not only into MDG 7, but also across other MDGs, as achieving the targets of the MDGs will directly or indirectly impinge on the status and use of biodiversity.

The most biodiversity-oriented targets under Goal 7 are:

- Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.
- Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.

Sri Lanka's efforts towards achieving the twenty (20) Aichi Biodiversity Targets are also relevant to the fulfillment of the Millennium Development Goals. Delivering on the Aichi Biodiversity Targets will contribute not only to MDG 7 of ensuring environmental sustainability, but also both directly and indirectly to the other seven MDGs.

The Department of Census and Statistics (DCS) as the authority on official statistics in Sri Lanka published a mid-term review in 2010 in which MDG indicators for Sri Lanka has been identified. With regard to Goal 7, it has identified eight indicators to be measured for the purpose of achieving environmental sustainability. Table 3.2 indicates the assessment of progress in relation to the four targets and eight indicators listed under Goal 7.

Table 3.2: The progress of achieving the relevant 2015 Targets of the Millennium Development Goals (MDGs) in Sri Lanka

Goal, Target	Indicators	Assessment of Progress
Goal 7: Ensure Environmental Sustainability		
7a. *Integrate the principals of sustainable development into country policies and programmes and reverse the loss of environmental resources*	Proportion of land area covered by forest	29.7 percent of the land area is under forest cover in Sri Lanka. Overall, the total forest cover in the country has decreased from 31.2 % of the island in 1999 to 29.7% in 2010. But the deforestation rate has significantly reduced. (Please refer Part I of the report for details)
	Ratio of area protected to maintain biological diversity to surface area	The area under protection managed by the Forest Department and the Department of Wildlife Conservation has increased from 2008 to present (Please refer Part 1 for details) The expansion of international Protected Areas, Conservation Forests, Reserved Forests, National Parks and Sanctuaries has contributed largely for this achievement
7b. *reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss*	Energy use (kg oil equivalent) per$1 GDP	Energy use (petroleum in kg) per $ GDP has followed a declining trend since 1990, with the highest value of 0.21 reported for 1990 and the lowest value of 0.05 reported for 2005[50]
	Carbon dioxide emissions per capita and consumption of ozone- depleting CFCs (ODP tons)	Sri Lanka ratified the United Nations Framework Convention for Climate Change in November 1993. The per capita Carbon Dioxide emissions per year have recorded a threefold rise from 0.20 MT to 0.64 MT between 1990 and 2005. However reports indicate that in 2010 it remains around 0.6MT[51].
		Sri Lanka partnered with Montreal Protocol in 1989, and introduced rigorous measures to phase out ozone-depleting substances (ODSs). As per the phase out schedule, by 2015there should be 10% reduction in the use of HDFCs and in 2030 it will be completely phased out[52].
	Proportion of population using solid fuels	Overall, the proportion of households using solid fuels has registered a marked decline of 10 percentage points between 1994 and 2006/07. However, still four households out of every five households in the island use fire wood, saw dust or paddy husk for cooking purposes

50 Department of Census and Statistics
51 Data.worldbank.org/country/sri-lanka
52 www.noulanka.lk

Goal, Target	Indicators	Assessment of Progress
Goal 7: Ensure Environmental Sustainability		
***7c**. halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation*	Proportion of population with sustainable access to an improved water source	The proportion of households with access to safe drinking water has increased over the decade and has reached the MDG target of 86 percent, by year 2006. In 2011 it has further improved and reached 92.6[53].
	Proportion of population with access to improved sanitation	The proportion of population with access to improved sanitation stands at 94 percent in 2006/07 and has exceeded the MDG target of 93%.
***7d.** achieve, by 2020, a significant improvement in the lives of at least 100 million slum dwellers*	Proportion of households with access to secure tenure	Overall, 15 percent of the Sri Lankan population lives in urban areas. Apparently 5 percent of the urban dwellers live in slums or shanties. The National Housing Development Authority is implementing a special program called *"Sahasra Lanka"* targeting housing facilities to low income households in urban areas.

3.4 Lessons learned from the implementation of CBD in Sri Lanka

In general, biodiversity conservation and management in Sri Lanka have met with many successes particularly in the development of policies, legislative frameworks, as well as institutional structures that provides delivery and implementation of the country's biodiversity agenda.

However, there are several areas in need for improvements and effectiveness. In this respect, the formulation of the second generation NBSAP offers a great opportunity to address some of the shortcomings. The lessons learnt from the implementation of the Convention should form an integral part of the process of formulating the new NBSAP.

Following are the key lessons learned and issues to be addressed in the formulation of the next NBSAP

- The Biodiversity Conservation Action Plan (BCAP) which was developed in 1998 does not prescribe specific targets as well as timeline by which certain objectives are to be met. It was to function as a broad based and umbrella policy framework for biodiversity conservation. The scheduled review is expected to provide implementation timelines for critical biodiversity targets and actions.
- There is a need to improve the capacity and resources to implement biodiversity conservation legislation, policies and programmes. While the requisite laws, policies and programs are broadly in place, there is a significant gap in the actual implementation of recommended actions.
- Biodiversity conservation actions are adversely affected in some sectors due to inadequate coordinated functioning mechanisms, insufficient funds and human resources to implement them in a holistic manner.
- Although biodiversity concerns are adequately integrated into the plans, policies and programmes of the agencies of environmental and related sectors, the cross sectoral integration is inadequate in the agencies of the development sectors.
- There is a need to formulate an effective mechanism for the collection, analysis and sharing of biodiversity information. Furthermore, scientific and research capacity in the field of biodiversity should be enhanced.
- The application of economic instruments in biodiversity has not been fully realized for the integration of biodiversity values and ecosystems services into development planning and resource allocation.
- The lack of cohesive and comprehensive monitoring mechanisms has posed some challenges towards measuring actual progress in certain conservation areas.

53 www.unicef.org/infobycountry/sri_lanka

INFORMATION CONCERNING THE REPORTING PARTY AND PREPARATION OF THE FIFTH NATIONAL REPORT

INFORMATION CONCERNING THE REPORTING PARTY	
Contracting Party	Sri Lanka
NATIONAL FOCAL POINT	
Full name of the institution	Ministry of Environment and Renewable Energy, Democratic Socialist Republic of Sri Lanka
Name and title of contact officer	Mr. B.M.U.D. Basnayake, Secretary, Ministry of Environment and Renewable Energy
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CONTACT OFFICER FOR NATIONAL REPORT (IF DIFFERENT FROM ABOVE)	
Full name of the institution	Ministry of Environment and Renewable Energy, Democratic Socialist Republic of Sri Lanka
Name and title of contact officer	Ms. R.H.M.P. Abeykoon, Director, Biodiversity Secretariat
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SUBMISSION	
Officer responsible for signature for submission of national report	
Date of submission	

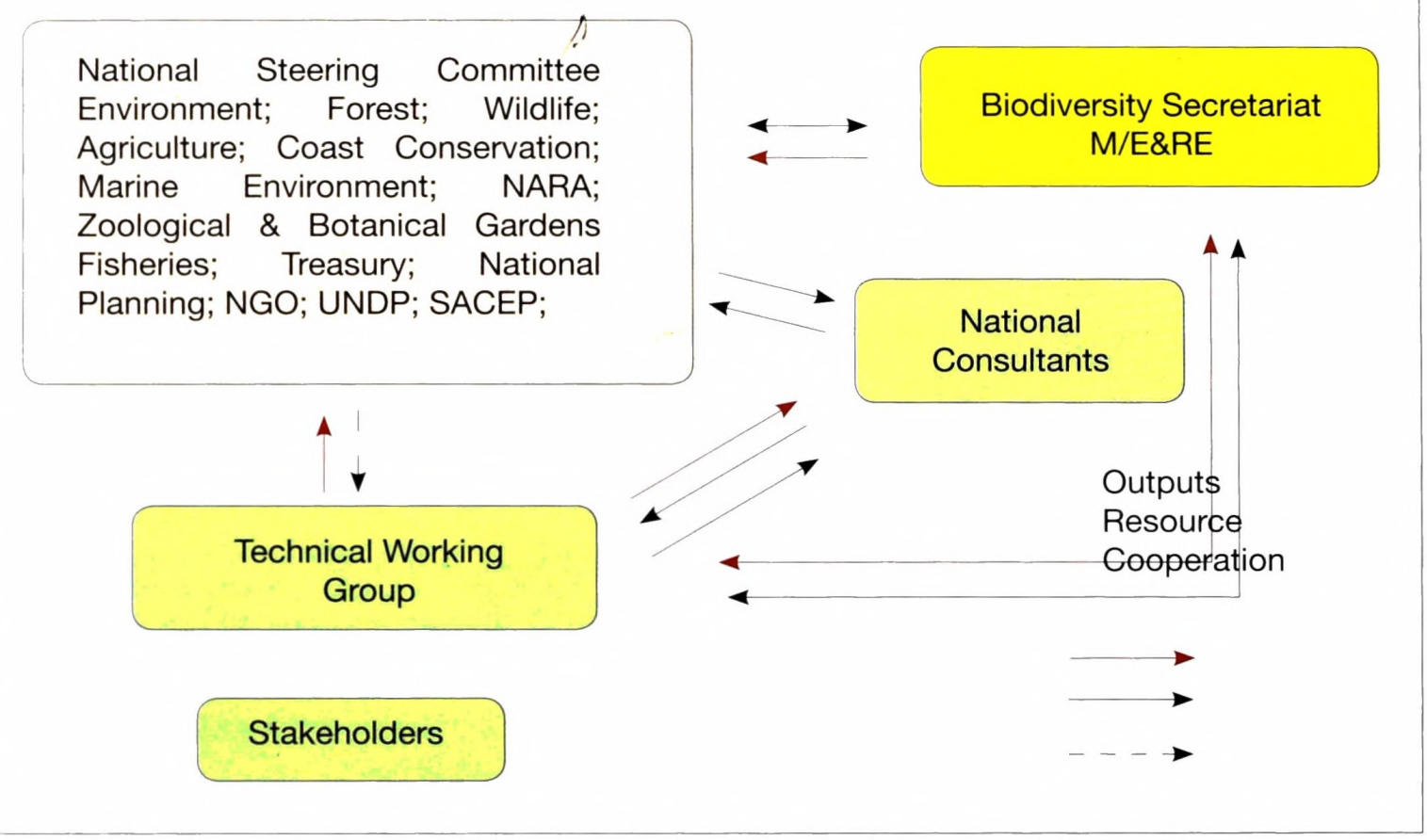
Information Concerning Process of Preparation of the Fifth National Report (FNR)

Sri Lanka as a contracting party to the Convention on Biological Diversity (CBD), according to the Article 26 of the CBD, it has to present to the Conference of the Parties (COP), reports on measures which it has taken for the implementation of the provisions of the Convention and their effectiveness in meeting the objectives of the convention. The Ministry of Environment and Renewable Energy as the focal point for the CBD has an obligation and commitment to submit the Fifth National Report on Biological Diversity to the Secretariat of the Convention in accordance with the CBD – COP decision x/10 on National Reporting. The Global Environmental Facility (GEF) provides the necessary financial support to facilitate the preparation of the Fifth National Report through the United Nations Development Programme UNDP),Colombo office, Sri Lanka.

The objective of this project is to prepare the Fifth National Report (FNR) based on the guideline adopted by the CBD to provide a complete picture of national implementation of the convention and to assess the progress towards the Aichi Biodiversity targets and Millennium Development Goals.

The Biodiversity Secretariat (BDS) of the Ministry of Environment and Renewable Energy (MoE&RE) of Sri Lankan has followed the guidelines for preparation of the FNR to Convention on Biological Diversity, Resource Manual for the fifth national report provided by Secretariat to the Convention on Biological Diversity (CBD) and the guidance from the eleventh meeting of the Conference of the Parties (decision X/10, paragraph 1). An overview of the institutional arrangement involved in preparation of the FNR is shown in Figure 1.

Figure 1 : Institutional Arrangement for Preparation of the Fifth National Report



Based on the guidelines proposed by the Secretariat to the CBD, the following steps in forming institutional arrangements have been performed by the Biodiversity Secretariat (BDS) of the MoE&RE:

- Establish the National Steering Committee (NSC) for Conservation of Biodiversity in Sri Lanka
- Identify relevant stakeholder agencies and personals for the National Steering Committee (NSC).
- Convene a meeting to discuss and agree the process to be adopted for the preparation of the fifth national report.
- Appoint of three (03) national consultants and a Team Leader for preparation of the fifth national report.
- Identify lead technical institutions and representing participants for the Technical Working Group (TWG), and other technical experts to provide inputs for preparation of the fifth national report.
- Establish the Technical Working Group (TWG) with representatives from relevant technical institutions, NGOs, civil society, indigenous & local communities, individual technical experts etc.
- Convene an inception meeting of the TWG to discuss and define process for involvement of all stakeholders.

Ministry of Environment and Renewable Energy (MoE&RE) & National Steering Committee (NSC):

Setting up of the National Steering Committee (NSC) which is the top most decision is making body concerning the preparation of the fifth national report was the first operational task undertaken in the preparation process of the fifth national report. The same NSC for Biological Diversity which was functional during 2013 was taken as the NSC for preparation of the Fifth National Report (FNR). The MoE&RE which is the focal point for Convention on Biological Diversity is the responsible Ministry for preparation of the FNR to Convention on Biological Diversity. Accordingly MoE&RE provides the leadership to the preparation process of the report. The NSC was chaired by the secretary of the MoE&RE and comprises 24 members including senior officers from the MoE&RE and all other relevant Ministries, Government institutions and members from non-governmental organizations. The Composition of the NSC is provided in table 1.1.

Table: 4.1: The Composition of the National Steering Committee (NSC)

Institution	Designation	Institution	Designation
1. MoE&RE	Secretary (Chairman)	13. Department of Wildlife Conservation	Deputy Director
2. MoE&RE	Addl. Sec (Natural Resources)	14. Department of Agriculture	Director General
3. MoE&RE	Addl. Sec (Environment & Policy)	15. IUCN	Country Representative
4. MoE&RE	Director (Biodiversity)	16. Central Environment Authority	Director General
5. MoE&RE	Director (Planning)	17. Marine Environment Protection Authority	General Manager
6. MoE&RE	Director (Climate change)	18. Coast Conservation Department	Director General
7. MoE&RE	Director (N/R Management)	19. NARA	Head(Environmental Studies)
8. UNDP	Assistant Country Director	20. Department of Fisheries	Director General
9. Department of National Planning	Director General	21. SACEP	Senior Programme Officer
10. Department of External Resources	Director (UN & TA)	22. Green Movement Sri Lanka	
11. General Treasury	Director General (Operations)	23. Dept. National Zoological Gardens	Deputy Director
12. Forest Department	Conservator General of Forest	24. Dept .National Botanical Gardens	Director General

Role of the Biodiversity Secretariat and National Consultants:

The Biodiversity Secretariat (BDS) which is responsible for preparation of the FNR, functions under the MoE&RE. A total of three (03) National Consultants and a team leader were appointed by the BDS in February 2014 to carry out the task of preparation of the FNR to the CBD. The responsibility of each Consultant was to prepare the relevant chapter of the fifth national report in accordance with the guidelines provided by the secretariat of the CBD. The three Consultants were responsible for preparation of three chapters of the report and they were required to provide their relevant chapter reports to the team leader within a given time frame. The responsibilities of the team leader comprised providing over all guidance to three Consultants, coordination of report preparation activities, preparation of the executive summary and appendices, compilation and edition of the report and submission of the consolidated fifth national report to the biodiversity secretariat. The NSC and Director of the BDS provided the overall guidance to the team leader and other consultants.

Responsibility of the Director of the BDS was to provide vision and leadership for the overall process of preparation of the FNR and submission to the secretariat of the CBD. This included facilitating the tasks of communication with the NSC, coordination and communication with TWG and other stakeholders, recruitment and coordination with national consultants, formation of networks with stakeholder institutions, information acquisition, and preparation of work plans & monitoring of the progress of preparation of the report. In addition, overall responsibilities of undertaking activities such as administrative support, organization of meetings and workshops as well as implementation of the work plan of the project were with the Director, BDS through the staff of the biodiversity secretariat.

Stakeholder Engagement Process:

Following the appointment of Consultants in February 2014, a number of interaction meetings were held with the BDS, concerned divisions in the MoE&RE and relevant agencies and organizations. A plan of action with tentative timelines was also prepared by the team leader and finalized in consultation with the BDS to ensure timely submission of the Report to the Secretariat of the CBD.

Preparation of the FNR involves collection of vast amounts of data and information from the relevant stakeholders, institutions, projects and programmes relevant to the implementation of CBD. Therefore, stakeholder involvement is very crucial to the preparation process of FNR. In order to get the stakeholder participation in this process, a Technical Working Group (TWG) was constituted by the BDS in order to ensure a consultative process involving all the relevant stakeholders. The stakeholders for the technical working group were identified in accordance with the guideline provided by the secretariat to the CBD. These stakeholders included members from the relevant government organizations & institutions with responsibilities for policy formulation and regulation, relevant NGOs, civil society, indigenous & local communities, and other relevant institutions such as universities and research organizations etc. The national counterpart organizations and institutions which are responsible for implementation of CBD and other related conventions were also included in the TWG. The Composition of the Technical Working Group is provided is attached.

Technical Working Group (TWG) Workshops and National Workshop:

The TWG included around 30-35 persons representing related organizations. The composition of the TWG was flexible and members could be included depending on the requirement. The BDS made all the arrangements together with Consultants to coordinate and facilitate working group discussions effectively in order to achieve maximum output.

The goals and objectives of the participatory process were discussed with the stakeholders at the Inception Technical Working Group Workshop held in mid March 2014 and agreed to the proposed process. At this meeting, objective of the preparation of the FNR and the purpose of stakeholder participation together with roles and responsibilities of stakeholder working group were also discussed and agreed. The main purpose of the stakeholder participation is to get their involvement throughout the report preparation process and for implementation of actions planned. The Second Technical Working Group Workshop was held during the third week of April and the first draft FNR was discussed in detail and responses of participants to the draft report were

noted by Consultants. In addition to the discussions with the TWG, the project Consultants have communicated with individual experts to get further information on various related matters. Based on the information gathered from TWGs, individual experts and various other sources including written and published documents and policy papers, the first draft report was revised and final draft of the FNR was prepared by the Consultants during April – June 2014.

Thereafter, a National Workshop to discuss the final draft of Sri Lanka's FNR was organized by the BDS on behalf of the MoE&RE in June 2014. The workshop was well attended by more than 45 participants, representing several concerned Ministries/Departments/organizations, specialized institutions and agencies, NGOs, academia, UNDP etc. During the workshop deliberations, some very useful inputs/comments were received. Many of the participants subsequently also sent their comments in writing via e-mail.

After deliberations at the National Workshop, the final version of the FNR was prepared by Consultants during the third week of June, 2014, by incorporating inputs received from all the participants. The final version of the report was then submitted to the NSC for approval. The FNR approved by the NSC was considered as the final version of Sri Lanka's Fifth National Report to submit to the secretariat of the CBD.

Table 4.2: The Composition of the Technical Working Group (TWG)

	Designation	**Institute**
1	Director/Agriculture Technology	Ministry of Agriculture
2	Conservator of Forests	Forest Department
3	Head, Department of Zoology	Faculty of Science, University of Colombo
4	Deputy Director, Natural Resources Management Unit	Central Environmental Authority
5	Deputy Director	Department of National Zoological Gardens
6	Director, Science	Ministry of Education
7	Scientist (Pharmacognosy)	Department of Ayurveda
8	Scientific Officer (Research Division)	National Science Foundation
9	Deputy Director	Royal Botanical Garden, Peradeniya
10	Director (Engineering)	Ministry of Wildlife Resources Conservation
11	Programme Officer	IUCN
12	Deputy Director	Sri Lanka Custom
13	Assistant Director (Livestock Development)	Ministry of Livestock & Rural Community Development
14	Assistant Director (Planning)	Coast Conservation and Coastal Resource Management Department
15	Research Officer	Office of the Registrar of Pesticides
16	Museum Keeper of Natural History Museum	Department of National Museum
17	Director (Research)	Department of Export Agriculture
18	Assistant Director (United Nations and Technical Assistance Division)	Department of External Resources
19	Chair of the Department of Forestry and Environmental Science	Department of Forestry and Environmental Science, University of Sri Jayawardenepura

	Designation	Institute
20	Deputy Director (Planning & ICT)	Department of Wildlife Conservation
21	Assistant Manager	MEPA
22	Director(Planning)	Min/Disaster Management
23	Assistant Director	Disaster Management Centre
24	Assistant Director	Department of Fisheries & Aquatic Resources
25	Director (Planning)	Ministry of Indigenous Medicine
26	Programme Officer	SACEP
27	Scientist	NARA
28	Deputy Director	Plant Genetic Resource Centre
29	Assistant Director	Ministry of Fisheries & Aquatic Resources
30.	Deputy Director(Research)	V.R.I, Department of Animal Production
31.	Deputy Director	Lands & Land Development
32.	Progremme Analyst	UNDP

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Important Web links:

Ministry / Department / Institution	Web link
Ministry of Environment and Renewable Energy	http://www.environmentmin.gov.lk/
Ministry of Fisheries and Aquatic Resources	http://www.fisheries.gov.lk/
Ministry of Indigenous Medicine	http://www.indigenousmedimini.gov.lk/
Ministry of Finance and Planning	http://www.treasury.gov.lk/
Ministry of Agriculture	http://www.agrimin.gov.lk/
Ministry of Disaster Management	http://www.disastermin.gov.lk/
Ministry of Health	http://www.health.gov.lk/
Ministry of Defense and Urban Development	http://www.defence.lk/
Ministry of Education	http://www.moe.gov.lk/
Ministry of Higher Education	http://www.mohe.gov.lk/
Ministry of Land and Land Development	http://www.landmin.gov.lk/
Ministry of Power and Energy	http://www.powermin.gov.lk/
Ministry of Maas Media and Information	http://www.media.gov.lk/
Ministry of Irrigation and Water Resources	http://www.irrigationmin.gov.lk/
Ministry of Technology Research and Atomic Energy	http://www.motr.gov.lk/

Forest Department	http://www.forestdept.gov.lk/
Department of Wildlife Conservation	http://www.dwc.gov.lk/index.php/en/
Department of Census and statistics	www.statistics.gov.lk
Department of Agriculture	www.agridept.gov.lk
Department of Export Agriculture	www.exportagridept.gov.lk
Department of Fisheries and Aquatic Resources	http://www.fisheriesdept.gov.lk/
Department of Agrarian Development	www.agrariandept.gov.lk
Department of Health Service	http://www.health.gov.lk/
Department of Meteorology	http://www.meteo.gov.lk/
Department of National Botanic Gardens	http://www.botanicgardens.gov.lk/
Department of National Zoological Gardens	http://www.colombozoo.gov.lk/
Department of National Physical Planning	http://www.nppd.gov.lk/
Department of Ayurveda	http://www.ayurveda.gov.lk/
Department of Coast Conservation	http://www.coastal.gov.lk/
Department of Customs	http://www.customs.gov.lk/
Department of Government Information	http://www.news.lk/
Department of External Resources	http://www.erd.gov.lk/
Department of Irrigation	http://www.irrigation.gov.lk/
Department of Meteorology	http://www.meteo.gov.lk/
Department of National Budget	http://www.treasury.gov.lk/
Department of Public Finance	http://www.treasury.gov.lk/
Department of Rubber Development	http://www.rubberdev.gov.lk/
Department of Social Services	http://www.socialservices.gov.lk/
Department of Survey	http://www.survey.gov.lk/
Ayurvedic Medical Council	http://www.ayurvedicmedicoun.gov.lk/
Central Bank of Sri Lanka	http://www.cbsl.gov.lk/
Bandaranayke Memorial Ayurvedic Research Ins	http://www.bmich.lk/
Central Environmental Authority	http://www.cea.lk/
Coconut Cultivation Board	http://www.coconut.gov.lk/
Ceylon Fisheries Corporation	http://www.fisheriescorporation.gov.lk
Coconut Development Authority	http://www.cda.lk/
Disaster Management Center	http://www.dmc.gov.lk/
Gampaha Wickramarachchi Ayurveda Institute	http://www.kln.ac.lk/institutes/wickramarachchi/index.htm
Hector Kobbwkaduwa Agrarian Training and Research Institute	http://www.harti.lk/
Institute of Molecular Biology and Biotechnology	http://www.ibmbb.lk/
Institute of Indigenous Medicine	http://iim.cmb.ac.lk/
International Union for Conservation of Nature (IUCN)	http://www.iucn.org/srilanka
National Aquaculture Development Authority	http://www.naqda.gov.lk/
National Aquatic Resource Research & Dev Agency (NARA)	http://www.nara.ac.lk/
Land Reform Commission	http://www.landcommdept.gov.lk/
National Science Foundation	http://www.nsf.ac.lk/
Post Graduate Institute of Agriculture	http://www.pgia.ac.lk/
Post Graduate Institute of Science	http://www.pgis.lk/
Ramsar Convention	http://www.ramsar.org/cda/en/
Sri Lanka Council for Agricultural Research Policy	http://www.slcarp.lk/
State Timber Corporation	http://www.timco.lk/statetimco/
Ayurvedic Drugs Corporation	http://www.ayurvediccorporation.lk

Annex 1

Detailed case studies of the Central Highlands World Heritage Site: a Haven for Threatened Endemic Relict species and other Ecosystem Services

The Central Highlands World Heritage site (CH WHS) consists of the Knuckles Conservation Forest (KCF), the Peak Wilderness Protected Area (PWPA) and the Horton Plains National Park (HPNP).

These wet montane forests of the Sri Lanka's central highlands, contain some of the most distinctive faunal elements of the island, particularly with respect to herpetofauna. Altogh ilsoated from the Indian sub-continent for the past 20 million years, some species were able to migrate across the land bridges with India during the Pleistocene, but some species remained isolated in the higher altitudes of the wet zone due to their relative immobility and the inhospitable dry climate which prevailed in the drier lowlands (Goonewardene, et al., 2006). Examples of such relict species are *Ceratophora tennentii* - confined to the higher elevations of the Knuckles Conservation Forest while close relatives have survived in the Rakwana hills and the central massif (Goonewardene, et al., 2006) which contains the Peak Wilderness Protected Area and the Horton Plains National Park. The skink *Chalcidoceps thwaitesii* from an endemic monotypic genus is found only in the KCF while all populations of the endemic *Cerotopora stoddarti, Calotes nigrilabris* and *Cophotis ceylonica* are 'mountaintop isolates' (Bahir and Surasinghe, 2005) , for which the Central Highlnads World Heritage Site provides critically important habitats for their future survival. It is significant that the three nominated sites between them provide habitats for 48% of the country's endemic vertebrate species (GoSL, 2008), among which are many geographically relict species "considered as living fossils of the biogeographical and ecological sense" (Cruz, 1986). The three sites also contain 21 out of the 27 bird species that are endemic to Sri Lanka (GOSL, 2008; BDS/MoE & DNBG, 2012).

Overall, some of the endemic species within the Central Highland World Heritage Site (CH WHS) are also very habitat specific, and include species that are found at only one location within the island. As such, the Central Highlands World Heritage Site containing the KCF, HPNP and PWPA assumes high importance as refugia for Sri Lanka's endemic and relict fauna that are of high global significance.

Another very significant feature of the CH WHS is that nearly all the river systems in the country originate from these forests. The PWPA covers the headwaters of Kelani and Kal Ganga (rivers), while the Walawe Ganga arises from the HPNP. The entire drainage system of the KCF belongs to the Mahaweli Ganga system while the Hulu Ganga flows down the dip slopes of the Knuckles range of mountains. These forests thus serve critical ecosystem functions of protecting the headwaters of major rivers, controlling floods, controlling soil erosion and fog interception.

The PWPA is the largest block of pristine and near-pristine montane and sub-montane rainforest in Sri Lanka. It contains 555 woody plant species, of which about 50% are endemic, and 310 vertebrate species of which 50% are endemic. Among the plant species are several dipterocarp species that occur at exceptionally high elevations for this group anywhere in the world (GOSL, 2012). Among the fauna, there are many point endemics in his forest such as the globally threatened Dasi's dwarf toad. *(Adenomus dasi)*. This forest is also of high religious and cultural significance to all major religious in the island and contains a world famous Buddhist Shrine. Present day pilgrims continue to brave the steep terrain as in ages past, inspired by deep faith.

The HPNP occurs on a highland plateau with altitudes ranging from 1200m to 2300m from which arise two peaks Kirigalpotta and (2359m) and Thotupolakanda (2324m). The vegetation consists of gently undulating wet pathana grasslands and mist laden patches of cloud forest with characteristic flat topped canopy trees provide habitats for a rich and unique fauna

and flora. A total of 79 species of woody plants have been recorded here (IUCN/WCMC/FAO, 1997). Among these are 30 species of Strobilanthes, of which 26 are endemic and *Arundinaria densifolia:* one of the most reduced species of bamboo in the world. While this forest has less vertebrate species (98) than PWPA and KCF, nearly 40 %of these species are endemic (GOSL, 2008) and HPNP has higher percentages endemics than KRPA and PWS in terms of amphibians (100%), reptiles (88%) and mammals (38%). It also provides the main refuge of many rare taxa such as the characteristic bear monkey *(Semnopithecus vetulus monticola),* the montane subspecies of the toque macaque *(Macaca sinica opisthomelas)* and the Horton Plains slender loris of Sri Lanka *(Loris lydekkerianus nycticeboides)*. This site also yields valuable Palaeo-ecological and cultural evidence of global importance. Mesolithic artifacts reveals occupation by prehistoric man on the plains as a hunter-forager, while fossil pollen grains of oat, barley and an Oryza sp. suggest that first agriculture emerged in South Asia in Sri Lanka. Interestingly there is evidence that systematic cultivation of what can be recognised as extant species of wildrice: *Oryza eichingeri, O. nivara* and *O. rhyzomatisat* HPNP date as far back as 13,000-8700 BP (GoSL, 2008). HPNP is currently a very popular tourist destination and offers many prime scenic tourism sites such as the famous Baker's Falls.

Annex 2

Impacts of Actions Implemented for Prevention/Mitigation of Threats

	Actions Implemented	Impacts on Prevention/Minimizing Threats
Forest Ecosystems		
1.	The Mahinda Chintana vision for the future policy framework has set a target of increasing the forest cover to 35% of the island's land area by 2020.	Most of the actions taken by government and other stakeholders on forest conservation focus to achieve this target, and it is considered as the benchmark.
2.	National Physical Policy and Planning process of the National Planning Department has recognized protected areas	This provides a significant contribution for mainstreaming biodiversity conservation, providing funding for forest management.
3.	Amendment of the Forest Ordinance (2009) and Fauna Flora Protection Ordinance (2009) to strengthen the forest & wildlife laws against prevention of illegal activities in forests.	(i) This action helped significantly to halt further encroachments into these valuable natural ecosystems, and prevent using forest and wildlife areas for Chena cultivation. (ii) Prevention of illegal activities in forests and wildlife areas such as illicit felling, gem mining etc minimizes forest degradation.
4.	Survey and boundary marking of most of the forests in Sri Lanka and declaring them as Conservation Forests and Forest Reserves as well as effective enforcement of law.	
5.	Survey and boundary marking of Wildlife Reserves and strengthening enforcement of the wildlife law (Fauna Flora Protection Ordinance).	
6.	Various community forestry initiatives are undertaken in the Dry and Intermediate Zones of Sri Lanka under the Australian Aid funded Sri Lanka Community Forestry Program.	Help to focus on mainstreaming community forestry concept into the forestry sector and to make it a main strategy for the sustainable management of forest resources
7.	Enhanced home garden development programs under Dvineguma Program and FD, aiming production of fruit, food and development of Tree Resources Outside Forests (TROF).	Contribution to food security, and reduction of pressure on forests for timber supply.
8.	Preparation and implementation of Management Plans for all the forests managed by the FD and the DWLC has made a mandatory requirement under the revised Forest Ordinance and Fauna and Flora Protection Ordinances.	Implementation of Management Plans will ensure sustainable management of forest and wildlife areas and help and provide justification and mechanism for close and effective monitoring and enforcement.
9.	Institutional capacity of FD & DWLC developed by way of improvements to manpower, technology (GIS, Remote Sensing).	Building of Institutional capacity will strengthen implementation of Management Plans, monitoring and forest protection.

	Actions Implemented	Impacts on Prevention/Minimizing Threats
	Forest Ecosystems	
10.	The annual forest restoration program of the FD intensified with government allocating special annual allocation of Rs.500 million from 2014 onwards.	Under this, large extents of degraded forest areas (located especially in the Dry Zone) are expected to be restored using assisted natural regeneration.
11.	Inscription of Central Highland World Heritage Site (The Knuckles Conservation Forest, Horton Plains National Park and the Peak Wilderness Protected Area) by the UNESCO in 2010.	Due to this action, the total area under World Heritage category has increased from 8,864 to 118,884 ha.
12.	The extents of Biosphere Reserves have been increased with the identification of Transition Zones for the Sinharaja and Hurulu Biosphere Reserves.	Further, international recognition provided and additional protection of these most sensitive and important ecosystems are strengthened.
13.	A large quantity of non-timber forest products for subsistence and commercial use (e.g. food items, medicinal plants, roof thatching material, raw materials for traditional craft based industries) have been issued to rural households under subsidized (royalty) rate.	These actions reduce the pressure for adjacent forests, as alternatives for such activities are now in place. This reduces the threat to forests in terms of illegal encroachments, illegal extraction of forest products and utilization.
14.	Tourism related policy adopted by the government promotes development of sustainable eco tourism as a key sector of the economy. Private sector is encouraged towards ecotourism initiatives.	
15.	Rural communities are provided with the permission to obtain mineral resources (e.g. sand, clay, gravel, limestone etc.) from the environmentally less sensitive Dry Zone forests	This minimizes the overexploitation of resources and illegal access to which through highly protected and conservation areas.
16.	National Policy on Elephant Conservation developed.	Facilitate minimizing the human – elephant conflicts.
17.	Large extents of grasslands and thorn scrub forests of the Dry Zone are maintained as National Parks.	To secure the primary habitats of the large charismatic species such as elephants, deer, bear and leopard and to avoid conflicts for food and encroachment into human settlements.
18.	Large extents of forest areas are surveyed, demarcated and legally declared with special attention paid to more vulnerable forest ecosystems.	Impact on prevention of illegal encroachments, illegal extraction of forest products as well as deforestation.

Coastal and Marine Ecosystems		
1.	Coast Conservation Amendment Act No 49 of 2011 has increased the coastal zone to cover 100 m of riparian land on either side of the 2 km water.	Encroachments to coastal areas are prevented and no development activities are permitted other than research, studies, and conservation activities.
2.	The Coast conservation Act (CCA) amendment No 49 of 2011 paves the way for more positive coastal zone management activities.	
3.	Amendments introduced to the Coast Conservation Act in 2011 declared affected areas in the coast in which no development, dumping of waste or damaging activity can be carried out, beach parks for preservation of scenic beauty and biodiversity, and conservation areas for the protection of the coastal and aquatic eco-system are promoted.	
4.	Eight critically important wetland areas have been declared as Environmental Protection Areas under the National Environmental Act (NEA) (1980) and management plans have been prepared for them.	Activities within these sites are now regulated through a legal instrument.
5.	Measures are in place facilitate optimum utilization of aquatic resources through eco-friendly aquaculture practices (identification of targeted species and potential productive systems (e.g. seasonal tanks), conservation of natural breeding habitats, and conducting breeding programs for stock enhancement of indigenous fish species).	The strategies and actions implemented through these eco-friendly aquaculture practices will prevent over exploitation of species
6.	Introduction and make aware of application of crop calendars for aquaculture and co-management practices	Those engaged in fishing are directed to initiate / adopt responsible fishing practices to maximize resource utilization.
7.	NARA carries out research on captive breeding of threatened species of brackish water food fish, endemic ornamental fish species, and propagated many aquatic plant species.	These initiatives help to protect those threatened species and to bring back them to existence.
8.	Introduction of the Concept of Special Area Management (SAM)	This becomes an integral component of National Coastal Zone Management Policy, which promotes collaborative, adaptive and flexible approach to sustainable resource management within a defined geographic area.

9.	Ban on using lime based paint for government buildings and coral mining for lime production.	Threat - Destructive practices during resources extraction: Protection of coral reef / fish stocks at right amounts by minimizing destructive fishing practices / reduction of illegal sand mining etc. are the outcomes of these actions.
10.	Control of illegal sand mining on the south west coast through strict law enforcement	
11.	New Act on Fisheries and Aquatic Resources (amendment) No. 35 of 2013 introduced by the Department of Fisheries to control the use of destructive fishing implements.	
12.	National Plan on Shark Management is being prepared under the assistance of BOBLME Project.	
13.	Integrated fish culture programs and exotic fish breeding and culture trials are being carried out by NARA to enhance the production harvest and sustainable aquaculture.	
14.	All mining activities in the coastal zones need the concurrence of the CCD.	As a result, CCD records a decrease in beach sand mining in coastal areas.
15.	Thirteen (13) mangrove areas have been declared as conservation forests.	Further destruction of these sites are prevented and established as natural fish breeding sites.
16.	Monitoring of coastal water at 5 sites (i.e. Mount Lavinia, Hikkaduwa, Unawatuna, Polhena, Nilaweli and Arugambay).	Facilitate effect action in-prior to the damage and take precautions.
17.	Marine Environment Protection Authority (MEPA) is mandated to deal with marine pollution under the Marine Pollution Prevention Amendment Act No.35 of 2008.	This helps to issue warnings and promoting prompt remedial action in the event of a major oil spill in Sri Lankan waters, or in adjacent waters that may affect the country's marine environment.
Wetland Ecosystems		
1.	Three critically important wetland sites were inscribed as RAMSAR sites making the total number of sites 06.	Area under RAMSAR sites has increased to 198,027 ha from the previous figure of 8,377ha. International recognition provided and additional protection of these most sensitive ecosystems is strengthened.
2.	Conversion traditional paddy fields into other commercial uses in the Western Province are banned.	This helps to secure the extent of lands available for cultivation to guarantee food security and also protect from flooding.
3.	Preparation of management plans for wetlands (e.g. Bolgoda, Thalangama).	Sustainable Management of these wetland areas is ensured.
4.	Soil Conservation Act is now in force which has created a situation where conservation of soil and prevention of soil erosion is a mandatory requirement by law.	Development activities are now required to undergo with proper land use planning.
5.	Special Wetland Unit established at the CEA to oversee the interests of wetlands and to implement the National Wetlands Policy of 2006	Facilitate monitoring and effective law enforcement.

6.	National Wetlands Directory was developed by the CEA, in collaboration with IUCN and IWMI.	This provides first hand information for respective stakeholders (researchers, policymakers).
7.	ME&RE implement Pavithra Ganga program to deal with the wide spread problem of river pollution.	Facilitate effect action in-prior to the damage and take precautions.
8.	The National Water Supply & Drainage Board (NWS&DB) engaged with the control of pollution in the city canal system under the Colombo Environment Improvement Project (CEIP).	Effective utilization of city canal system without environmental issues.
Agriculture Systems		
1.	DOA has banned several pesticides in Sri Lanka from 2012 (e.g. *Carbaril, Chlorophyriphos, Carbofuran and Propanil and the weedicide Glyphosate).*	Not in sale; so, eliminate the potential damages to the environment.
2.	Promotion of organic tea farming	Cut down the inorganic fertilizer and agro-chemicals use
3.	DoA engaged in research to characterize and investigate the properties of local varieties and wild relatives of crops for varietal improvement.	Conservation of germplasm of indigenous crops and their wild relatives
Invasive Alien Species (IAS)		
1.	All imported plants and animals/their parts are required to be declared at the point of entry to the country and be subject to quarantine regulations under the Plant Protection Act No. 35 of 1999.	Law is in effect at the ports of entry, and illegal importations are curbed to a large extent.
2.	Species (or parts of species) that are perceived as probable sources of potential invasive species have been listed, and all imported seeds should be certified by the National Plant Quarantine Service and the Seed Certification and Plant Protection Centre of the DOA prior to release or use within the country.	Facilitate effective monitoring and enforcement of law.
3.	Legal measures are in place to prohibit growing of highly threatening IAS for agricultural systems such as *Parthinium.*	

4.	Database on IAS was established in 2013 and the information related to the priority IA species have been identified and published.	This provides necessary expertise as well as first hand information to deal with IAS. Also, the capacity development is in place through awareness and research.
5.	Invasive Species Specialist Group has been formulated by the ME&RE.	
6.	Various awareness and education programs were conducted by different agencies on IAS and the capacity of stakeholders are being developed.	
7.	The ME&RE is currently implementing a project for 'Strengthening Capacity to Control the Introduction and Spread of Invasive Alien Species (IAS) in Sri Lanka', with funds from the Global Environmental Facility.	
8.	The CEA has conducted several programs with the participation of communities for the removal of IAS (e.g. mainly Mimosa pigra – Giant Mimosa in Thalangama Environment Protection Area).	Threats to the biodiversity arising from such prominent and rapidly growing IAS could be minimized through this type of community participation programs.
Crosscutting Areas		
1.	New red list for threatened and endangered species have been prepared by ME&RE with the assistance of IUCN in 2012.	This provides first hand information for respective stakeholders (researchers, policymakers).
2.	National Policy on Access to Genetic Resources, Sustainable Use and Benefit Sharing	Direct towards conserving the genetic resources of the country and to bind all relevant parties concerned and to act as an umbrella policy.
3.	The National Botanic Gardens is involved in propagation of many indigenous floral species including the threatened orchid varieties.	These initiatives help to protect those threatened species and to bring back them to existence
4.	Divineguma – Island wide Home Garden Development Program of the Ministry of Economic Development and Horticulture Division of the DOA.	Pollution: This encourages organic farming and use of traditional varieties of vegetables for home gardening to reduce pesticide and chemical fertilizer use
5.	The CEA enforces EIA procedures and an EPL scheme under the National Environmental Act of 1988.	These help inevitably to minimize industrial pollution, reduction of water quality etc. and effective law enforcement for those who violated the conditions ex-ante.
6.	Guidelines and sets of standards for industrial effluents, vehicle emissions, ambient air and water quality set by CEA and SLSI are in place.	
7.	Strict enforcement of the vehicle emission testing system	Contributed significantly to reduce vehicular air pollution (e.g. use of unleaded petrol / recent move into 98-Octane petrol).

8.	Climate Change Secretariat (CCS) is established within the MoERE.	Facilitate, formulate and implement projects and programs related to climate chance at the national level on various issues (e.g. rural livelihoods) in the context of Sri Lanka.
9.	CCS undertakes a pilot project in two DS Divisions (i.e. Walapane and Medirigiriya)	
10.	National Capacity Needs Assessment Project for Climate Change is in place	Facilitate minimizing the marine pollution, in particular.
11.	Sri Lanka is currently implementing UN REDD+ Readiness Project	To reduce deforestation and forest degradation and increase resilience to climate change and to enhance Carbon footprint.

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