

Background Analytical Study on Availability of Forest Data in Sri Lanka

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List of acronyms and abbreviations

AD	- Activity Data
CBD	- Convention on Biological Diversity
CCRMA	- Coast Conservation and Coastal Resources Management Department
CCS	- Climate Change Secretariat
CEA	- Central Environment Authority
CRS	- Centre for Remote Sensing
CSO	- Civil Society Organization
DWC	- Department of Wildlife Conservation
EPAs	- Environmental Protection Areas
FAO	- Food and Agriculture Organization of United Nations
FD	- Forest Department
FORLUMP	- Forest/Land Use Mapping Project
FORMP	- Forest Management and Plantation Project
FRL	- Forest Reference Level
GCS	- Global core set of forest-related indicators
GHG	- Greenhouse Gas
GoSL	- Government of Sri Lanka
IP	- Indigenous People
LRC	- Land Reform Commission
LUPPD	- Land Use Policy Planning Department
MAR	- Monitoring, assessment, and reporting
MASL	- Mahaweli Authority of Sri Lanka
MRV	- Measurement, Reporting and Verification
NBSAP	- National Biodiversity Strategy and Action Plan
NCBs	- Non-Carbon Benefits
NFGIS	- National forest geographic information system

NFI	- National Forest Inventory
NFIRAP	- National REDD+ Investment Framework and Action Plan
NFMS	- National Forest Monitoring System
NRMC	- Natural Resource Management Center
NTFPs	- Non-Timber Forest Products
NWFPs	- Non-wood Forest Products
ODA	- British Overseas Development Administration
PAMs	- Policies and Measures
REDD+	- Reducing emissions from deforestation and forest degradation
RPCs	- Regional Plantation Companies
RPCs	- Regional Plantation Companies
SD	- Survey Department
SDGS	- Sustainable Development Goals
SFM	- Sustainable Forest Management
SIS	- Safeguard Information System
SLMS	- Satellite Land Monitoring Systems
SoI	- Summaries of Information
STC	- State Timber Corporation
TWG	- Technical Working Group
UMC	- Upper Mahaweli Catchment
UNCCD	- United Nations Convention to Combat Desertification
UNESCO	- United Nations Educational, Scientific and Cultural Organization
UNFCCC	- United Nations Framework Convention on Climate Change
UNFI	- United Nations Forest Instrument
UNGI	- United Nations General Assembly
UN-REDD	- The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
UNSPF	- The United Nations Strategic Plan for Forests 2017-2030

Executive Summary

The United Nations Strategic Plan for Forests 2017-2030 (UNSPF) was created with a mission to promote sustainable forest management and enhance the contribution of forests and trees to the 2030 Agenda for Sustainable Development. Strategic Plan contains six Global Forest Goals and 26 associated targets which are voluntary and universal. The Goals fully encompass and build on the foundation of the four Global Objectives on Forests of the United Nations Forest Instrument (UNFI), which was adopted by the United Nations General Assembly (UNGA) in 2007.

The United Nations Forum on Forests (UNFF) is mandated to review the implementation of the United Nations Forest Instrument (UNFI) and the UNSPF by its member states. To do so, the Forum relies on voluntary national reporting from its member states. UNFF implements a program to support countries to identify, prioritize, improve and make available relevant datasets in forms that are useful for further application in national monitoring systems, and for sharing across countries where relevant.

Although a range of forest related social and environmental data already exist in Sri Lanka, these are seldom comprehensively integrated into and across national information systems. A better understanding of, and access to, these data can help to provide more complete information required to assess environmental and social impacts in the forest and related sectors over time.

The purpose of conducting this study is to support and assist Sri Lanka in developing a comprehensive and efficient system for monitoring progress towards Sustainable Forest Management. The main objective of this study is to develop a national monitoring and evaluation framework for conducting inventories of existing forest-related data, mapping data gaps; and addressing these gaps and selecting appropriate national indicators.

The Global Forest Goals Report 2021 was used as the base document for the analysis. There are six Global Forest Goals and under each goal, there are 24 targets identified, followed by indicators to measure each target. Since most of the indicators in the Global core set of indicators consist of more than one measurable data, each of those data were extracted and assessed under the relevant indicator.

The primary focus of the assessment was to investigate the existing datasets and information systems, firstly within the forestry sector organizations and secondly with other potential sources, to provide data and/or information to fulfil the key information needs. The assessment was done through desk review of relevant documents and datasets, as well as meetings and discussions conducted with the key informants of relevant stakeholder institutions. The findings of the assessment were presented to a wider range of stakeholders through a virtual national stakeholder workshop to obtain further comments and feedback and also for the purpose of validation.

The study shows that some indicators can be measured using the existing data available in the country whereas other indicators require more data to be collected to fulfill their information needs. Among the total of 41 indicators, 12 indicators can be estimated using existing data.

However, it is important to note that the information available for those indicators are not readily available in a central database. Most of the information are scattered among several government institutes and can only be obtained upon an official request.

Based on the study conducted and consultations made with different stakeholders, following conclusions can be established.

- *The Global Forest Goals and targets are yet to be institutionalized in Sri Lanka. Since they were introduced recently, majority of the stakeholder agencies lack adequate knowledge on those.*
- *Majority of Global Forest indicators cannot be measured in Sri Lanka with the presently available data and information. New data to be collected and data gaps to be addressed to prepare the country for measuring and reporting its achievements towards Global Forest Goals.*
- *There is no dedicated government institute identified in Sri Lanka and vested with the responsibility to monitor and report on the Global Forest Goals and targets.*
- *Most of the programs implemented by the forest authorities such as Forest Department and Department of Wildlife Conservation are in line with the Global Forest Goals and Targets. However, there are lack of efforts to collect data and consolidate information systematically.*
- *There are other agencies such as Central Environment Authority, state and private plantation companies also play a vital role in sustainable forest management. However, currently there is no identified mechanism to systematically collect data and information on their contribution to the national level achievements.*
- *Even though some important data and information available in the country to monitor the achievements of the Global Forest Goals and targets, they are mostly scattered and entails official written requests and approvals for access.*
- *There is no proper data sharing mechanism exist among the key forestry authorities. The data sharing agreement, signed in 2014, between the FD, SD, DWC, CEA, CCS and the Food and Agriculture Organization of the United Nations (FAO) under the UN-REDD Project does not function due to lack of follow up action after the completion of the project.*
- *Some important information collection mechanisms such as National Forest Monitoring System and Safeguard Information System introduced by the UN-REDD Project are not functioning to the expected level due to lack of follow up actions.*
- *Forest Management activities are not adequately coordinated due to the absence of a strong coordination mechanism at National as well as Sub national level. Some stakeholder platforms established under the UN-REDD Project such as the CSO Forum and IP forum are not adequately being followed up after the project period.*

The study provides 07 key recommendations as follows;

- *Global Forest Goals and Targets should be applied and institutionalized in Sri Lanka to develop national strategies to ensure sustainable forest management.*
- *Initiate a dialog among forest related stakeholder agencies facilitated by the Government of Sri Lanka to develop programs and to realize national targets to be in line with the Global Forest Goals and its targets.*
- *Establish/Strengthen National and Sub-National Coordination bodies to ensure effective coordination among various sectors to achieve Global Forest targets. If existing mechanism are used, take appropriate measures to develop the capacity of these existing structures.*
- *Establish three stakeholder forums to obtain the participation of the Civil Society, Indigenous People and Private Sector. The forums established under the UN-REDD Project can be used as an entry point.*
- *Nominate and appoint a central organization to monitor and report the achievements of Global Forest Goals and targets. It is recommended that the Forest Department would be selected for this task as it holds the major responsibility in sustainable forest management in Sri Lanka.*
- *Revisit the data sharing agreement signed in 2014 between the FD, SD, DWC, CEA, CCS and the Food and Agriculture Organization of the United Nations (FAO). Take appropriate measures to revitalize the data sharing mechanism and accommodate new data acquired by these departments to update the geo-portal.*
- *Reassess the implementation of the National Forest Monitoring system and identify gaps and drawbacks that are deterring the smooth functioning of the system. Address those gaps and take appropriate measures to secure technical and financial supports where necessary to ensure the continuous functioning of the system.*

1. Background

1.1 Introduction

Sustainably managed forests are crucial for eradicating poverty, combatting climate change, conserving biodiversity, protecting watersheds, and building food and energy security. Forests support the livelihoods of some most vulnerable segments of society, especially the rural poor and indigenous peoples. An estimated 1.6 billion people, or 25% of the global population, rely on forests for their subsistence needs, livelihoods, employment, and income¹. For centuries, forests have provided socio-economic safety nets for people and communities in times of crises.

The United Nations Strategic Plan for Forests 2017-2030 (UNSPF) was created with a mission to promote sustainable forest management and enhance the contribution of forests and trees to the 2030 Agenda for Sustainable Development. Strategic Plan contains six Global Forest Goals and 26 associated targets which are voluntary and universal. The Goals fully encompass and build on the foundation of the four Global Objectives on Forests of the United Nations Forest Instrument (UNFI), which was adopted by the United Nations General Assembly (UNGA) in 2007.

The UNSPF vision, principles, and commitments align with the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), which offer a global and universally agreed blueprint for achieving sustainable development. Like the SDGs, the Global Forest Goals are interconnected and integrate the economic, social, and environmental dimensions of sustainable forest management. Achievement of the Global Forest Goals is meant to foster and accelerate progress towards the SDGs, as well as other international forest-related instruments, processes, commitments, and objectives such as the Aichi Biodiversity Targets of the Convention on Biological Diversity (CBD), the Paris Agreement adopted under the United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention to Combat Desertification (UNCCD).

The need for timely, quality, and accessible data and statistics has never been more urgent. Data are essential for designing short-term responses as well as longer-term recovery measures. This is particularly true for the sustainable management of forests. Comprehensive forest monitoring, assessment, and reporting (MAR) is widely recognized as essential for informed and evidence-based decision-making. Systematic data is critical to understanding how forests contribute to livelihoods, poverty reduction, health and well-being, and sustainable development overall.

When it comes to tracking progress towards the Global Forest Goals, a lack of standardized and comparable data and statistics remains a challenge. Countries have noted many challenges in data collection, data quality and national capacity in generating and systematically managing databases to be used for national-level actions and international-

¹ United Nations strategic plan for forests, 2017 - 2030

level reporting. Even if relevant data are available in a country, they are often found scattered across different government agencies and private organizations.

The global core set of forest-related indicators (GCS) is a set of 21 indicators that address topics identified in high-level political commitments on forests and high-level forum discourse. While the GCS, inter-alia, supports measuring progress towards Global Forest Goals and their associated targets, it also aims to reduce the reporting burden of countries in reporting on other indicators, including those related to the SDGs and the Rio Conventions. Essentially, by offering core set with a limited number of forest-related indicators that address key policy topics, the GCS helps to focus data collection efforts and avoid duplication in reporting.

The United Nations Forum on Forests (UNFF) is mandated to review the implementation of the United Nations Forest Instrument (UNFI) and the UNSPF by its member states. To do so, the Forum relies on voluntary national reporting from its member states. In the future, these national voluntary reports will have to also capture national efforts to address the impacts of the COVID19 pandemic on Sustainable Forest Management (SFM) and actions taken to build on long-term recovery from the pandemic including the contributions of forests to inclusive sustainable development.

UNFF implements a program to support countries to identify, prioritize, improve and make available relevant datasets in forms that are useful for further application in national monitoring systems, and for sharing across countries where relevant.

1.2 National Context

1.2.1 Forests in Sri Lanka

Sri Lanka is divided into three main climatic zones (wet, dry and intermediate) based on the average annual rainfall. Diversified topographic features, varying climatic conditions and edaphic factors have led to the development of different forest types in Sri Lanka.

By the dawn of nineteenth century, Sri Lanka's forest cover was estimated at 70% of the total land area. Since then, the forest cover has decreased progressively over time (Forestry Planning Unit 1995; FAO 2010).

According to the latest forest cover assessment conducted in 2015, Sri Lanka has a total natural forest area of approximately 1.92 million ha covering 29.2% of the total land area of the country.

During this recent forest cover survey (see figure 1), the Forest Department identified the extents of the specified forest types grouping them as follows; montane forests (44,758 ha), sub-montane forests (28,514 ha), lowland rain forests (123,301ha), moist monsoon forests (117,886 ha), dry monsoon forests (1,121,392ha) riverine forests (2,425 ha), mangroves (15,670 ha) and open and sparse forests (429,484 ha).

Of these forest types moist monsoon forests and dry monsoon forests are found in the Dry Zone. The Intermediate Zone accommodates dry monsoon as well as moist monsoon forests

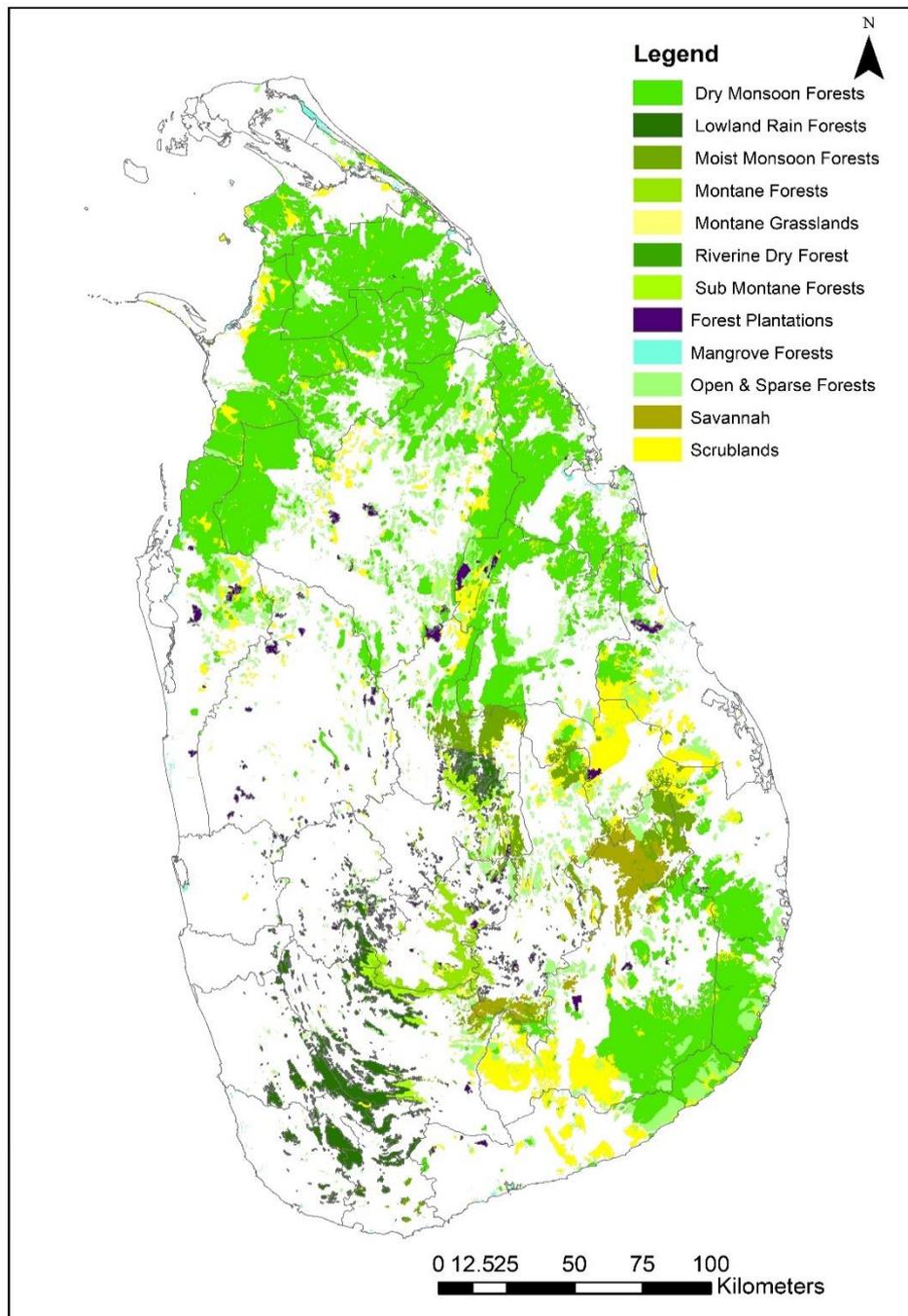


Figure1. Forest Cover Map of Sri Lanka

with the sparse and open forests found across the two zones. The Wet Zone is characterized by species rich lowland rain forests as well as lower montane and montane forests. In all climatic zones, riverine forests are along streams and rivers. Each of these forest types has

inherent characteristics based on their local environment and species composition, playing an important role in biodiversity conservation, hydrology (especially in head waters protection), soil conservation, amelioration of the environment and as a source of raw material for livelihood development.

Different forest types thriving in different climatic zones provide a high level of species diversity. Sri Lanka, along with the Western Ghats is considered one of the world's biodiversity hotspots. In particular the country's floral biodiversity and number of endemic species is extremely high relative to its size.

In order to conserve biodiversity, the Government of Sri Lanka (GoSL), through the two major agencies concerned, the Forest Department (FD) and the Department of Wildlife Conservation (DWC), has undertaken significant efforts by creating a large network of protected areas. The present protected area network of the FD includes 125 Conservation Forests (176,691 ha), 4 International Biosphere Reserves (143,106 ha) and 722 Reserved Forests (1,157,023ha). Due to the presence of unique biodiversity, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has designated 2 World Heritage Sites (Sinharaja - 11,127 ha) and the Central Highlands of Sri Lanka, which is a serial property comprising three component parts: Knuckles Conservation Forest (31,305 ha), Horton Plains National Park (3,109 ha) and the Peak Wilderness Protected Area (20,596 ha)). The DWC is also responsible for a significant number of protected areas targeted towards faunal and floral biodiversity conservation. These include 3 Strict Nature Reserves (31,571 ha), 16 National Parks (738,547 ha), 7 Nature Reserves (101,645 ha), 1 Jungle Corridor (8,777 ha) and 61 Sanctuaries (277,122 ha).

The natural forests of the island have not been harvested for timber for the last three decades, with the domestic supply of timber and firewood coming from forest plantations and tree resources outside forests, such as home gardens and community wood lots. Twenty-three Regional Plantation Companies (RPCs) currently manage approximately 9,000 ha of forest plantations in order to supply fuelwood and timber for both private and industrial use. The FD manages approximately 80,000 ha of forest plantations

The high floral biodiversity contributes to the availability of a significant number of Non-Timber Forest Products (NTFPs). These products are utilized by communities living along the forest fringe and also provides them with a significant income. A CSO-led study undertaken in 2016 has identified 38 Non-Carbon Benefits (NCBs) from the conservation of Sri Lanka's forests². These vary with the forest type but provide substantial monetary and non-monetary benefits to forest-user communities.

1.2.2 Drivers of Deforestation and Forest Degradation.

The spatial analysis of forest cover changes between 2000 and 2010 shows that the overall rate of deforestation has slowed to an average of 8,088 ha/year³ (annual deforestation rate of approx. 0.3%). A significant reduction from the rate of 42,200 ha/year that had occurred

² Non-carbon benefits in the context of REDD+ in Sri Lanka, UN-REDD National Programme in Sri Lanka, 2016.

³ Sri Lanka's Forest Reference Level submission to UNFCCC, January 2017

between 1956 and 1984. Deforestation has also becoming more scattered across the country with rates higher in the Dry Zone than the Wet Zone.

A study carried out in 2015 under UN-REDD Programme (2012 – 2017), showed that deforestation and forest degradation, is due to three direct drivers⁴:

1) Encroachments, for agriculture, settlements and other purposes such as gem mining and coastal shrimp farming.

2) Infrastructure development projects, such as the construction of roads, highways, harbors and airports, the development of tourism activities and expansion of power generation and transmission facilities as well as associated resettlement programmes. The number of such projects has also increased rapidly since the return of peace in 2009.

3) Private agriculture ventures, in particular the expansion of commercial rain-fed highland agriculture and the development of smallholder plantation agriculture in the Dry Zone.

The study also identified that forest degradation in the same period resulted from a range of small-scale activities including practices such as cardamom cultivation, fuelwood collection, collection of various NTFPs (e.g. rattan, medicinal plants, resin), grazing lands for cattle, anthropogenic forest fires, gem mining and quarrying and illicit felling of timber. This latter issue, though not in large scale, is prevalent throughout the country.

These direct drivers are catalyzed by underlying drivers such as a rapid increase in the demand for land for agricultural activities and infrastructure development projects following the end of the civil war, as well as ongoing demand for forest products in national and international markets. In many cases these underlying drivers are supported by land-sector policies that are targeted on expanding food production or increasing infrastructure development. This creates a situation of poor coordination and conflicts of objectives among governmental agencies. Other underlying drivers include; population growth, technological advancement, commercialization of rural economies and political patronage. The practice of periodic regularization of encroached lands together with lack of law enforcement by authorities also play a key role in allowing the impacts of encroachment to continue.

The assessment also highlighted some existing mechanisms to address these drivers, including protected area management and policies, environmental laws and regulations, spread of home gardens (as a source of timber and other resources), customary rights, public pressure, labor migration and off-farm employment opportunities as well as increase in general awareness of environmental issues.

1.1.3 Institutional Setup

Sri Lanka has a well-established and effective sub-national administrative system. This includes 9 Provinces, 25 Districts and 331 Divisional Secretaries. The technical departments with jurisdiction over forest areas such as the Forest Department and the Department of Wildlife Conservation are centralized in terms of decisions, operational planning and budgets

⁴ Drivers of deforestation and forest degradation in Sri Lanka: Assessment of key Policies and Measures, UN-REDD National Programme in Sri Lanka, December 2015.

but have demonstrated the ability to take appropriate action on the ground and maintain relationships with the local government at the divisional level despite the coordination issues among the institutions.

Management of the country's forest cover falls mainly within the purview of two government entities, the Forest Department (FD) and the Department of Wildlife Conservation (DWC). FD and the DWC are responsible for the management of approximately 19.2% and 17.6% surface area of the island respectively (including both forest and non-forest lands). Some fragmented areas of forests are within lands administered by the Coast Conservation and Coastal Resources Management Department, the Land Reform Commission (LRC) and the Mahaweli Authority of Sri Lanka (MASL), in estates leased to Regional Plantation Companies (RPCs) and in Vihara & Dewala (temple) lands. Some forests are also under private ownership. The extent and condition of forests in these ownership categories is not available.

The FD has a long tradition of forest governance, the objectives of which has evolved over time with the changing social, cultural and economic environment. Established in 1887, the FD has a significant organizational network consisting of 5 forestry regions, 23 forestry divisions, 82 forest ranges, 358 forest beats and 782 forest field assistant divisions in a hierarchical order. Forests are categorized as Conservation Forests, Reserved Forests and Other State Forests. Forestry operations related to sustainable forest management are centrally regulated while general administration activities are decentralized to the forestry regions.

The DWC has divided the island into 12 regions with powers delegated to these regions to undertake wildlife management.

1.1.4 Main forest-related policies

National Forestry Policy

Sri Lanka's first forest policy was promulgated in 1929 and modified several times according to circumstances and priorities at different periods. A new policy was approved in March 1995, which is currently operational and has the following objectives:

- i. To conserve forests for posterity, with particular regard to biodiversity, soils, water, and historical, cultural, religious and aesthetic values;
- ii. To increase the tree cover and productivity of the forests to meet the needs of present and future generations for forest products and services;
- iii. To enhance the contribution of forests to the welfare of the rural population, and strengthen the national economy with special attention paid to equity in economic development.

National Wildlife Policy

The first National Policy on Wildlife Conservation was approved by cabinet in June 1990. The present National Wildlife Policy promulgated in 2000 updates the previous policy, while also adding some points that respond to the evolving needs of Sri Lankan society and the additional mandates of the Convention on Biological Diversity (CBD), which Sri Lanka ratified in 1994.

National Climate Change Policy

This policy was approved in 2012 with the objectives to:

- i. Periodically sensitize and make communities aware of the country's vulnerability to climate change;
- ii. Take adaptive measures to avoid and minimize the adverse impacts of climate change on people, their livelihoods and ecosystems;
- iii. Mitigate greenhouse gas emissions in the path of sustainable development;
- iv. Promote sustainable consumption and production;
- v. Enhance knowledge on the multifaceted issues related to climate change in the society and build its capacity to make prudent choices in decision making;
- vi. Develop the country's capacity to address the impacts of climate change effectively and efficiently;
- vii. Mainstream and integrate climate change issues in the national development process.

National Biodiversity Strategy and Action Plan (NBSAP)

The plan has an operational period of seven years from 2016 to 2022 and provides the strategic approach needed to ensure that Sri Lanka's rich biodiversity is conserved and used in a sustainable manner. The national targets are synergistic with global targets such as the Aichi Biodiversity Targets and the Sustainable Development Goals (SDGs). The NBSAP is also a guiding policy framework for provincial authorities as well as civil society groups and private sector organizations and provides approaches to biodiversity conservation and ecosystems management. The NBSAP has five strategic goals with 20 targets. The strategic Goals are,

- i. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society;
- ii. Reduce the direct pressures on biodiversity and promote sustainable use;
- iii. Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity;
- iv. Enhance the benefits to all from biodiversity and ecosystem services;
- v. Enhance implementation through participatory planning, knowledge management and capacity building.

1.1.5 Main forest-related legislations

Several legislations being in force in Sri Lanka has some reference to forests. Among them, two main legislations exclusively address forest and wildlife conservation and management.

Forest Ordinance – This is the legislative tool that empowers forest officers to implement their duties in relation to the protection of forest resources. First enacted in 1907, it has multiple amendments - the last in 2009 (Forest (Amendment) Act No.65 of 2009).

Fauna and Flora Protection Ordinance - This ordinance (Fauna and Flora Protection Ordinance, No.2 of 1937) came into effect during a period when wildlife management was a subject handled by the FD. Since then, it has been amended several times with the last amendment made in 2009 (Fauna and Flora Protection (Amendment) Act, No.22 of 2009).

2. Assessment of Forest Related Data

2.1 History

The first systematic forest cover assessment based on spatial data in Sri Lanka was carried out in 1956. The first forest cover map was prepared in 1956 by Hunting Survey Inc. of Canada which conducted an island-wide reconnaissance mapping of land use and forest cover using aerial photographs. Maps produced by this exercise were published in the early 1960s, at the scale of 1:31,680 (two inches to one mile).

The Centre for Remote Sensing (CRS) of the Survey Department of Sri Lanka produced a series of land use maps for the whole island at a scale of 1:100,000 from the late 1970s and early 1980s based on satellite imagery. Landsat images were used as a base on to which land-use information derived from the interpretation of aerial photographs of various dates was transferred. The technical support for this project was provided by the Swiss CRS.

A national forest inventory was carried out between 1983 and 1986 by the Forest Department with the assistance of FAO. This project was based mainly on interpretation of 1983 aerial photographs. It used data from successive inventories to assess general changes in forest areas. Even though it planned for a detailed appraisal of deforestation based on aerial photographs of 1:20,000 scale, it was not conducted for the whole country due to delays in photograph flying. This effort used the forestry and land use classification in the CRS maps.

The Mahaweli Authority of Sri Lanka (MASL) produced land-use maps at a scale of 1:10,000 since 1989 under the Forest/Land Use Mapping Project (FORLUMP). Unlike previous projects which covered the entire island, these maps only covered the Upper Mahaweli Catchment (UMC) area. They were based on 1987 aerial photos (1:15,000) using 1:10,000 scale topographic bases prepared by the Survey Department. Detailed and extensive field checking of the sample areas were carried out.

The British Overseas Development Administration (ODA) provided funding channeled through FORLUMP and Forest Management and Plantation Project (FORMP) enabling the establishment of a remote sensing unit in the FD. The aim of this unit was to prepare new maps on forest cover using satellite remote sensing techniques, building up the national forest geographic information system (NFGIS). A generalized map of the forest cover was prepared in 1992 and it was compared with the national forest inventory (1983) supported by the FAO

to assess the forest cover changes that have taken place between 1983 and 1992. The FD has produced subsequent forest cover assessments in 1999 and 2010.

2.2 Initiatives under UN-REDD Readiness Project

The Government of Sri Lanka (GoSL) with the support from the UN-REDD Programme, implemented a REDD+ Readiness Project from 2012 – 2017. The objective of the project was to build capacity for and develop a comprehensive approach to reducing Greenhouse Gas (GHG) emissions from the country's forests as well as increasing their capacity for GHG absorption. This approach will form part of Sri Lanka's efforts under the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement. Specifically, it will allow Sri Lanka to participate in a results-based financing mechanism under the UNFCCC, which is designed to support the reduction of emissions from deforestation and forest degradation in developing countries, as well as support to the role of conservation of forests, sustainable management of forests, and enhancement of forest carbon stocks.

The project supported GoSL to establish the four key technical elements of REDD+ as laid out in the Warsaw Framework (i.e., UNFCCC Decisions 9 - 15/CP.19), namely

- A National REDD+ Strategy and/or Action Plan – to provide information on what a country will do on REDD+ and how it will implement REDD+
- A National Forest Monitoring System (NFMS) – to monitor land use change, and link with a national forest inventory to provide information on emissions from the forestry sector.
- A Forest Reference Level (FRL) – which is an assessment of trends in land use change over time and emissions from land cover change and acts as a baseline against which a country's performance in reducing emissions or increasing removals of GHG will be assessed.
- A Safeguard Information System (SIS) - to provide information on how REDD+ safeguards are being addressed and respected.

2.2.1 National REDD+ Investment Framework and Action Plan (NFIRAP)

The National REDD+ Investment Framework and Action Plan (NRIFAP), a five-year USD 99 million investment framework, represents the culmination of REDD+ readiness phase and provided a summary of both the work already achieved in Sri Lanka and what actions will be taken in the future.

The NRIFAP identified 13 Policies and Measures (PAMs) within three key policy areas that will be implemented to help achieve Sri Lanka's vision for REDD+. These PAMs developed through an extensive process of stake/rights-holder consultation and expert analysis represent the key measures to deliver emission reductions and removals as well as helping to strengthen forest management more broadly within Sri Lanka. Many are based on the scaling up of key government actions while others represent new areas of development.

Implementation of the NRIFAP is expected to deliver a number of non-carbon benefits as well. These non-carbon benefits will contribute to good environmental governance, rural economic development, social justice and ecosystem services restoration and enhancement, as well as to climate change adaptation.

2.2.2 National Forest Monitoring System (NFMS)

Sri Lanka's National Forest Monitoring System (NFMS) developed under the REDD+ Readiness project is an online geo-portal for data storage, analysis and information dissemination and has three major components: (a) Satellite Land Monitoring Systems (SLMS) for land use and forest cover; (b) National Forest Inventory (NFI); and (c) Greenhouse Gas Inventory data.

The monitoring function of the NFMS is primarily a domestic tool to assess the participation and results of REDD+ implementation by different stakeholders and institutions. The NFMS uses a combination of data sources and assessments to estimate anthropogenic GHG emissions by source and removals by sinks, forest carbon stocks and forest area changes in order to measure and report on the performance of REDD+ activities against its submitted and assessed FRL. It may also allow for the implementation of specific PAMs to be monitored and their carbon and non-carbon impacts to be compared, thus permitting refinement and adaptive management of the NRIFAP.

Within this system there are a significant number of departments and agencies that have a role to play in data provision or systems management. These are provided in Table 1 below. To develop the NFMS, a Measurement, Reporting and Verification (MRV) Task Force was established in 2012 with membership including the FD, DWC, Survey Department (SD), Central Environment Authority (CEA) and Climate Change Secretariat (CCS). The MRV Task Force was expected to be continued to ensure the maintenance of the geo-portal and to support its updating with new data and functionalities as required.

Table 1. Roles and responsibilities of departments in data provision

Department	Roles	Responsibilities
Forest Department (FD)	SLMS/NFMS host	Hosting website server and its maintenance, periodically uploading data in coordination with other data provider departments
	SLMS/NFMS data	Producing forest cover maps (years 1992, 1999, 2010 and 2015) and uploading on SLMS / NFMS server
	NFI data	Disseminating analyzed NFI results via geo portal
Department of Wildlife Conservation (DWC)	Data provider	Providing data on important wildlife habitats and ecosystems
Survey Department (SD) and Land Use Policy Planning Department (LUPPD)	Data provider	Producing Land Use Land Cover maps (years 1985, 2000, 2005, 2010 and 2015) and other topographical and thematic maps

Climate Change Secretariat (CCS)	Data provider	Producing historical records on national communications
Central Environmental Authority (CEA)	Data provider	Providing data on environmentally sensitive and protected areas under the National Environmental Act
Natural Resource Management Center (NRMC)	Data provider	Producing maps of soil, watersheds and agro-ecological zones/regions
Forest user communities	Feedback / information / alert provider	Sharing information on hazards affecting forests such as fires and other illicit activities

The development of the NFMS system and geoportal was designed with a data sharing agreement, signed in 2014, between the FD, SD, DWC, CEA, CCS and the Food and Agriculture Organization of the United Nations (FAO). The data sharing agreement is expected to be updated in the future to accommodate new data acquired by these departments to update the geo-portal.

The below sections provide an overview of the key elements of the NFMS developed during the REDD+ Readiness phase. It was expected that they will be continued during the implementation phase and will help to improve the quality and accuracy of information included within the system.

Satellite Land Monitoring System (SLMS)

During the readiness phase, the Survey Department developed digitized versions of the national land and forest cover map for 1985, including the development of a land and forest cover classification system that is consistent across all government departments and institutions, and a methodology for interpreting remote sensing images according to this classification system. Following this, the national land cover maps of 2000, 2005, 2010 and 2015 were digitized (visual interpretation) according to the same classification system using Landsat satellite images. These images, along with layers of information on forest management, use, tenure, planning and statistics have been incorporated into a web-based geo-portal for forest information, hosted by the FD and accessible to all.

Following the launch of the Sri Lanka SLMS geo-portal in February 2017, additionally required imagery, equipment and materials for operation and updating of the portal have been identified, and will be acquired to provide forest information and to monitor the implementation of PAMs.

Activity Data (AD) on forest cover change will be improved and refined through accuracy assessment and adjustment of wall-to-wall land cover maps from 2000, 2005, 2010 and 2015 to minimize error and bias. Accuracy will be further ensured through the use of open source online resources.

Forest cover classification will be refined by modification of forest type classifications, subdividing key forest types by density and developing a methodology for consistently identifying

transitions between density classes, thus allowing the measurement of forest degradation and restoration after 5 years.

National Forest Monitoring (NFI)

Sri Lanka did not have a system of regular forest inventory at the national scale, a network of permanent sample plots (to generate data on land and forest cover, forest dynamics and biomass), or a historical record of managing natural forest areas. The readiness efforts therefore focused on building understanding and capacities of GoSL staff on NFI methodologies and design by conducting piloting and capacity development activities.

NRIFAP implementation will thus focus on the completion of a full NFI cycle using the approach piloted during the readiness phase. This will include full-time technical assistance during the cycle, and regular training and mentoring.

One central and five regional NFI units have been established for implementation of the NFI, and for institutionalization of the NFI within the FD and DWC. In addition, a dedicated database management team has been set up and trained to manage, interpret and present NFI data for both technical planning and policymaking purposes. National-level management plans will be prepared for natural forests, based on the data produced through the NFI, along with updating of management plans for forest plantations.

Sri Lanka's forest area will be classified into specific strata based on information available prior to NFI, and these strata will be revised and updated on the basis of data collected during the first NFI cycle. Key tree species will be identified and allometric equations will be identified/developed for these key species and key forest types (strata). As required, research and sampling will be carried out to develop equations for species and strata that are not covered by existing allometric equations. With full-time technical advisory support, these data will be used to generate nationally-specific emission factors for use in Sri Lanka's GHG-I.

Forest Reference Level (FRL)

The FRL was developed through a Technical Working Group established under the MRV Task Force to ensure consistent guidance and technical oversight of the FRL. This multi-disciplinary Technical Working Group (TWG) was responsible for developing a complete draft FRL for Sri Lanka, and recommending its submission to the UNFCCC for assessment.

2.2.3 Safeguard Information System (SIS)

A SIS refers to a framework in which different information sources and existing systems are identified and coordinated for the provision of information on how the Cancun Safeguards are being addressed and respected through national communications to the UNFCCC and UNFCCC REDD+ web platform. During the UN-REDD National Programme, Sri Lanka has designed its SIS in the form of a matrix, indicating for each PAM how the potential risks and their level; relevant national safeguard criteria; national policies, laws and regulations (PLRs) that are needed to operationalize the safeguard criteria; PLR gaps and gap-filling actions; and relevant sources of information could be organized to allow for the regular reporting of safeguard performance.

Sri Lanka's SIS is based on an extensive assessment process carried out during the UN-REDD National Programme which set the goal and scope of the SIS as well as reviewing Sri Lanka policies, laws and regulations (PLRs) against the REDD+ safeguards laid out in the Cancun agreement and the potential risks and benefits inherent within each PAM. Based on this a number of safeguards and indicators were identified for inclusion in the SIS. Information on the presence, updating and application of these will initially be provided by the five 'primary' institutions, which hold responsibility for them. Information on environmental and social outcomes (benefits enhanced and risks mitigated) of PAMs implementation will be collected by those institutions responsible for implementing the PAMs. This includes national and sub-national government institutions, as well as key non-state actors, including community-based organizations and forest-users/rural communities.

Over time this system is expected to be expanded to include 'secondary' information providers to gain a broader understanding of how safeguards are being addressed and respected and the impacts of PAMs.

Existing capacity constraints within these institutions, however, limits the availability of such data. This incremental approach, based around country data collection systems is in line with the country approach to safeguards and UNFCCC guidance that a SIS should be built on existing country systems. As the central coordinating agency, the responsibilities of the Climate Change Secretariat include:

- Overall coordination of institutions contributing information to, and disseminating information from, the SIS;
- Information compilation in a pre-defined format;
- Analysis and interpretation of compiled information to demonstrate how the Cancun safeguards/national criteria have been addressed and respected, including attribution of benefits and risks to implementation of PAMs;
- Production of Summaries of Information (SoI) and submission to the UNFCCC.

Both state and non-state actors will be engaged in the final quality assurance of SIS products, with stakeholders provided with the opportunity to review draft products, notably Summaries of Information (SoI) before their submission to the UNFCCC.

3. Purpose and Objectives of this study

Although a range of forest related social and environmental data already exist in Sri Lanka, these are seldom comprehensively integrated into and across national information systems. A better understanding of, and access to, these data can help to provide more complete information required to assess environmental and social impacts in the forest and related sectors over time.

3.1 Purpose

The purpose of conducting this study is to support and assist Sri Lanka in developing a comprehensive and efficient system for monitoring progress towards Sustainable Forest Management.

3.2 Objective

The main objective of this study is to develop a national monitoring and evaluation framework for conducting inventories of existing forest-related data, mapping data gaps; and addressing these gaps and selecting appropriate national indicators.

4. Methodology

As described above, the study has primarily been based on the Global Forest Goals Report 2021 of United Nations.

The Global Forest Goals Report 2021 was used as the base document for the analysis (Annexure ii). There are six Global Forest Goals. Under each goal, there are 24 targets identified, followed by indicators to measure each target. Among the total of 24 targets 21 Global core set of indicators have been identified in the Global Forest Goals Report 2021. The Global Forest Goals, targets and relevant indicators were summarized and presented in Annexure iii.

A draft Assessment Table was developed using a generic table template for the Sri Lanka Forest Monitoring Framework Assessment (Annexure i). Since most of the indicators in the Global core set of indicators consist of more than one measurable data, each of those data were extracted and listed under the relevant indicator.

The primary focus of the assessment was to investigate the existing datasets and information systems, firstly within the forestry sector organizations and secondly with other potential sources, to provide data and/or information to fulfil the key information needs. The assessment was done through desk review of relevant documents and datasets, as well as brief meetings and discussions conducted with the key informants of relevant institutions. Information collected was then incorporated into the Assessment Table and verified further with the informants.

The draft Assessment Table was then circulated among key stakeholders to receive their feedback. Having received the comments and inputs from the key stakeholders, the assessment table was further improved and then presented to a wider range of stakeholders through a virtual national stakeholder workshop to obtain further comments and feedback and also for the purpose of validation.

A total of 12 participants attended the virtual national workshop representing relevant government stakeholder agencies. (see Annexure v for list of participants). After a brief presentation on the assessment process followed in the study, the findings of the study were presented to the participants. They were then invited to provide their comments either as verbal interventions or as written submission within a stipulated time period.

5. Results and Discussion

Data requirement for Global core set of forest-related indicators and availability of these data were identified. The final Assessment Table after incorporating all relevant stakeholder comments and inputs is attached to this report as Annexure i and Annexure iv. The summary of the analysis is presented with brief description in the following section.

5.1 Description of data/information needs for Global Forest Goals indicators.

Indicator 1. Forest area as a proportion of the total land area

This indicator measures Target 1.1 of the Global Forest Goal 1. This indicator needs Forest Cover assessment data of Sri Lanka. Forest cover assessment is done in Sri Lanka in Five-year intervals by the Forest Department of Sri Lanka. Data is available for 1992, 1999, 2010 and 2015 and forest cover assessment of 2020 is currently ongoing and will be ready in 2022. Spatial data is available as shape files. The data can be obtained on request from the Forest Department of Sri Lanka.

Indicator 2. Forest area annual net change rate

Target 1.1 of the Global Forest Goal number 1 is measured by this indicator. Forest area of the country in the reporting year and forest area in the reference year is required to estimate this indicator. Since the forest area is estimated in five-year intervals, the annual net change can be estimated as an average for that five-year interval. (Global Forest Resource assessment is also done in five-year intervals).

Indicator 3. Net greenhouse gas emissions (source)/ removals (sink) of forests, and carbon balance of harvested wood products.

This indicator measures Target 1.2 of the Global Forest Goal Number 1. To measure this indicator following data are required and these data can be obtained from different sources.

- i. Extent of forest cover under different forest types deforested.

This data can be collected from forest cover estimates of Forest Department which is done every five years. This estimate consists extent of different forest types present

in Sri Lanka. Comparison of the estimate of each forest types with the previous estimate, deforestation of different forest types can be estimated.

ii. Emission Factors of different forest types

Emission factors of different forest types has not been estimated in Sri Lanka. Therefore, emission factors developed by the IPCC should be used.

iii. Extent of forest area restored annually

Forest Department and Department of Wildlife Conservation undertake forest restoration activities annually. These records are available in the respective departments and available on request. Department of Wildlife Conservation undertakes comparatively limited amount of forest restoration programmes since their main task is the management of habitats for wild animals.

iv. Emission Factors of different planted forests of different maturity levels.

This data is not developed for Sri Lanka and hence IPCC data have to be used.

v. Volume of wood harvested in Timber plantations

Three distinct categories of timber plantations are available in Sri Lanka.

a) Forest plantations managed by Forest Department for timber production are harvested annually by the State Timber Corporation (STC). The wood volume data is available in STC records and can be obtained on request.

b) There are agroforestry woodlots established by the Forest Department with the participation of the local farmers on degraded government lands. The farmers can extract timber at the end of the rotation period. Data on removal of wood from these agroforestry woodlots is currently not available. It is proposed to develop data collection system to collect data on timber and fuel wood production from agroforestry systems.

c) There are government owned estates and private owned Regional Plantation companies. These companies have established timber plantations to produce timber and the timber is harvested according to a management plan. Amount of timber harvested is available with these companies and can be obtained on official request. However, there is no mechanism to collect this data at present.

vi. Extent of forest lands deforested

Deforestation can be estimated by obtaining information from different sources that are accounted for deforestation such as planned development activities and illegal activities. Area released by the Forest Department and Department of Wildlife Conservation for the planned development activities are available in respective

departments. These data can be obtained by an official request. Illegal forest clearings are recorded as forest offences and available as official documents and can be obtained upon official request. However, this data may not accurately depict total deforested area due to reporting errors. In addition, some forest lands that are currently hold by the Land Reform Commission are converted in to non-forest lands for development purposes. This information is available with land reform commission and Forest Department.

Indicator 4. Above ground biomass stocks in Forests

This indicator measures Target 1.2 and Target 2.5 of the Global Forest Goal Number 1 and 2. To measure this indicator following data are required and these data can be obtained from different sources.

Above ground Biomass can be estimated using National Forest Inventory Data. National Forest Inventory of Sri Lanka was commenced in 2017 by the Forest Department with the support of REDD+. Data collection is currently being done in 4500 sample points covering the island through a five-year cycle. Since the process started in 2017, the inventory cycle is yet to be completed. The complete set of data will be available with Forest Department from 2022 onwards and can be obtained on submitting an official request. This programme continues under a World Bank funded project at present. It is proposed to continue National Forest Inventory and external financial support is recommended to continue this exercise since the internal resources are limited.

Indicator 5. Change in the area of primary forests

This indicator measures Target 1.3 of the Global Forest Goal Number 1. The Biodiversity Convention defines primary forest as a forest that has never been logged and has developed under natural processes, regardless of its age. Data is not available to measure this indicator at present. It is proposed to develop criteria to estimate primary forests of the country and assess the primary forest area in future.

Indicator 6. Area of degraded forests

This indicator measures Target 1.3 of the Global Forest Goal Number 1. The working definition and measurement for forest degradation has not been developed for Sri Lanka. Therefore, area under degraded forests cannot be measured directly. Consequently, following data will be used to measure the area of degraded forests.

i. Area damaged by forest fires.

Forest Department and Department of Wildlife Conservation actively monitor and collect data on forest fires. It includes the area subjected to and damaged by the forest fires. The data is available with both departments and can be obtained on official request.

ii. Area of forest partially loss of canopy cover.

The area of forest partially loss can be estimated using the illegal felling records. Both Forest Department and Department of Wildlife Conservation collect illegal felling information in terms of number of trees. Therefore, these records do not provide information about area illegally felled. It is proposed to collect more precise information in future on area affected by illegal felling.

iii. Area of Forest Fragmented.

Major causes of forest fragmentation are due to construction of roads and irrigation channels through forest areas. Although the information on these development interventions are available with the Forest Department and Department of wildlife conservation, the area fragmented due to these interventions is not estimated at present. Therefore, it is proposed to collect this information in future.

iv. Area of forests affected by invasive species.

Invasive species impacts on reduce bio diversity and also reduce the productivity of forests. The area affected by invasive species are not estimated at present. It is proposed to estimate this in future.

Indicator 7. Proportion of the forest area under long-term forest management plan

This indicator measures Target 1.3 and Target 3.2 of the Global Forest Goal Number 1 and 3. Management plans have been prepared for forest areas managed by both Forest Department, as well as the Department of Wildlife Conservation. Department of Wildlife Conservation uses the name Park Management Plan for these plans. These management plans include the forest area under jurisdiction of the plan.

Indicator 8. Area of lands reforested/ restored

This indicator measures Target 1.3 of the Global Forest Goal Number 1. Forest Department carry out forest restorations annually. This records are available in the Forest Department and can be made available on request. Department of wildlife conservation also practice limited amount of forest restoration and the records are available with them.

Indicator 9. Proportion of the forest area disturbed

This indicator measures Target 1.4 of the Global Forest Goal Number 1. There are four kinds of disturbances to forests. They include disturbances due to forest fire, storms, landslides, pest and diseases and forest dieback. Forest fire data is available in Sri Lanka as mentioned under indicator 6. The landslides occurred in the country are recorded by the National Building and Research Organization. The spatial data are available and they can be obtained upon payments. Using this data area affected by the landslides should be estimated. The damage caused by storms, pest & diseases and forest die back are not recorded at present. It is proposed to establish a mechanism to collect this information.

Indicator 10. Forest with a designated management objective to maintain and enhance protection functions

This indicator measures Target 1.4 of the Global Forest Goal Number 1. Forest Department and Department of Wildlife Conservation have declared forest areas as protected areas under different categories of management. The declaration is a continuous process and the areas are increasing periodically. Therefore, the data on forest area designated as protected areas under different management objectives are available in both departments. In addition, Environmental Protection Areas (EPAs) are declared by the Central Environment Authority under the National Environment Act. However, some EPAs contain non-forest areas as well. Therefore, forest area under this protected area category should be estimated using the existing maps.

Indicator 11. Number of forest dependent people in extreme poverty.

This indicator measures Target 2.1 of the Global Forest Goal Number 2. Forest Department and Department of Wildlife Conservation have provided various opportunities for poor people who are living in close proximity to forests to support their livelihoods. They are allowed to involve in providing services such as guiding and other services for tourists who visit ecotourism destinations managed by both departments. In addition, Forest Department allows local people to collect non-timber forest products and also get them participate in agroforestry programmes. (Short description of agroforestry programme is given under Indicator 3v). The number of people involve in these programmes are recorded by both departments at present. However, the exact data on the number of individuals who are below the poverty line is currently not available. Therefore, it is proposed to improve the record keeping procedures by including the poverty states of the beneficiaries in future.

Indicator 12. Number of people benefitted through small scale forestry enterprises

This indicator measures Target 2.2 of the Global Forest Goal Number 2. Forest Department and Department of Wildlife Conservation have facilitated various opportunities to implement small scale enterprises for the local people. They are encouraged and supported to provide accommodation facilities for visitors in close proximity to the ecotourism destinations. In addition, local people are involved in marketing of local products to visitors. The NTFP collectors do value additions to the forest products. However, the information regarding such activities and the income generated is not collected by both the departments at present. Therefore, it is proposed to collect this information in future.

Indicator 13. Contribution of Forests to food security

This indicator measures Target 2.3 of the Global Forest Goal Number 2. Forests provide food to local people through various means. This includes collection of food products from natural forests and also grow in agroforestry systems. The amount of food production and number of individuals involve in food production are important for this indicator. The number of people and amount of food collected from forest are recorded regularly in Forest Department records. The number of individuals who are involving in agroforestry programmes is available

but the amount of food they produced is yet not available. Therefore, it is proposed to collect this information in future.

Indicator 14. Volume of wood removals

This indicator measures Target 2.4 of the Global Forest Goal Number 2. Timber is removed from forest department managed forest plantations and agroforestry woodlots. State Timber Corporation harvest timber and fuelwood from forest plantations while the owners of the agroforestry woodlots extract the timber from their woodlots. The data on timber and wood removals from Forest Department managed forest plantations are available in State Timber Corporation. The data on timber removal from Agroforestry woodlot is partially available in farmers records. However, data on removal of fuelwood Agroforestry is currently not available. It is proposed to collect volume of timber harvested from agroforestry system systematically. In addition, government owned estates and Regional Plantation Companies have established timber plantation blocks in tea, rubber and coconut estates. The timber in these plantations are harvested in accordance with their respective management plans. Amount of timber harvested is available with these companies and can be obtained on official request.

Indicator 15 Amount of non-wood forest products collected from forests

This indicator measures Target 2.4 of the Global Forest Goal Number 2. Forest Department issues permits to collect non-wood forest products to local people. In addition, the Forest Department has leased out Pine plantations to private sector organizations to extract resin. The amount of NWFP collected by the local people as well as the resin collected by the private sector organizations is recorded by the Department and the data can be obtained upon an official request.

Indicator 16. Employment related to Forestry Sector

This indicator measures Target 2.4 of the Global Forest Goal Number 2. There are several categories of employment generations in forestry sector can be identified in Sri Lanka. They include, number of direct employees in ecotourism industry in forests as guides, number of employees engage during harvesting of timber from forest plantations, and number of individuals involve in collection of non-timber forest products. The records on employment generated in ecotourism destinations managed by the Forest Department and Department of Wildlife Conservation are available with the two departments. Number of people employed for the collection of NTFPs can be obtained from the permits issued for this purpose. However, number of individuals who engage in forest harvesting operations are not properly recorded at present. Therefore, it is proposed to collect this information through State Timber Corporation.

Indicator 17. Proportion of forest area located within legally established protected areas

This indicator measures Target 2.5 and Target 3.1 of the of the Global Forest Goal Number 2 and 3. Forest Area located within the legally established protected area can be estimated by overlaying the forest cover map of Sri Lanka and the protected area map of Sri Lanka.

Protected areas are declared by Forest Ordinance and Flora and Fauna Protection Ordinance by Forest Department and Department of Wildlife Conservation respectively. In addition, Environment Protected Areas are declared under National Environment act by the Central Environment Authority of Sri Lanka. These maps can be obtained upon an official request from relevant agency.

Indicator 18. Proportion of Different Types of Forest Ecosystems in Forest Areas

This indicator measures Target 2.5 of the of the Global Forest Goal Number 2. There are different forest types in Sri Lanka due to the variability of rainfall and climate. The forest cover map identifies these different types of forests using above criteria. Based on this, estimated different forest types is available in the Forest Department and the data is periodically published.

Indicator 19. Proportion of forest area located outside the legally established protected areas

This indicator measures Target 3.1 of the of the Global Forest Goal Number 3. There are forest areas outside the protected area network. The forest cover map produced by the Forest Department include all forests irrespective of their protection status. Using the forest cover map and the protected area maps, the forest area outside the protected areas can be estimated. The protected area maps are available in digital format and available as Shape files in Forest Department, Department of Wildlife Conservation and Central Environmental Authority.

Indicator 20. Forest area under an independently verified forest management certification scheme

This indicator measures Target 3.1 of the of the Global Forest Goal Number 3. Government owned forest areas of Sri Lanka are currently not under any independently verified forest management certification scheme. However, certain forest plantations managed under few Regional Plantation Companies undertake certification schemes for their timber plantations. However, the forest area under an independently verified forest management certification scheme is not available as a dataset. They are available as individual programs. A mechanism should be developed to collect this information and compile those into one Database.

Indicator 21. Existence of traceability systems of wood products

This indicator measures Target 3.3 of Global Forest Goal Number 3 and Target 5.2 of Goal 5. There are legislations exist to regulate the transport of wood products and to store timber. Transport permit is compulsory to transport some selected timber species from one place to another. So, the original location of the wood can be traced. In addition, there are rules and regulations to govern the timber storing and processing industries. This system also traces origin of the timber stored. The presence of rules and regulations of timber transportation and timber storage enables the measurement of this indicator. These rules and regulations are available in Forest Department.

Indicator 22. Financial resources from all sources for implementation of sustainable forest management

This indicator measures Target 4.1 and Target 4.2 of the of the Global Forest Goal Number 4. Financial resources for forest management includes annual budget allocation of the government, international funds, and local private sector funds that are allocated for this purpose. The data on government spending is available with the Ministry of Finance. Data regarding international and local funds can be obtained from the Forest Department, Department of Wildlife conservation as well as from other relevant ministries.

Private sector organizations and NGOs also invest on sustainable forest management through the Forest Department or Department of Wildlife Conservation. In addition, international donor funds are also available in relevant departments and can be obtained on request.

Indicator 23. Number of International cooperation

This indicator measures Target 4.3 of the Global Forest Goal Number 4. There is international cooperation in the forestry sector. Information regarding this is available in Foreign Ministry of Sri Lanka which can be obtained upon official request.

Indicator 24 Existence of forest financing strategies

This indicator measures Target 4.4 of the Global Forest Goal Number 4. Government has a forest financing strategy which is reflected by the annual budget allocation for the Forestry Sector. This allocation is available in the approved budget proposal of Sri Lanka, which is published. Forest financing strategy of international doner agencies is not always readily available. It is proposed to develop international forest financing strategy.

Indicator 25. Existence of National or sub–National Forest assessment process

This indicator measures Target 4.5 of Global Forest Goal Number 4. The national forest cover assessment is done at five-year intervals by the Forest Department. The web based National Forest Monitoring System was launched few years ago, but not functioning at present due to some technical reasons. It is proposed to activate this system. It is also recommended to assist Forest Department to recommence an continue it effectively. In addition, forest department is conducting the National Forest Inventory (NFI) covering the entire country including the sub-national territorial units.

Indicator 26. Existence of National or sub–National Stakeholder platform for participation in forest policy development

Sri Lanka currently does not have a national level stakeholder platform for forest policy development. However, at the subnational (District) level, District Forest Protection Committees have been established under the chairmanship of the District Secretary/Government Agent. All relevant government agencies as well as selected NGOs are participating in those committees to discuss forest related issues and development programs. However, functioning of those committees are currently not at the optimal expected level.

Under the UN-REDD Readiness Project, several non-governmental networks have also been created such as the Sri Lanka Climate and Forest Action Network (SLCFAN - a CSO platform regrouping more than 50 organizations), an Indigenous People (IP) Forum (regrouping all 6 IP clans), the Academic and Research Forum (regrouping all universities in Sri Lanka) and a private sector network (through the Ceylon Chamber of Commerce, the National Chamber of Commerce of Sri Lanka and Biodiversity Sri Lanka) to help facilitate coordination between government and different stakeholder groups⁵. However, these networks are somewhat defunct at the moment due to the absence of continuous follow up actions after the project is over.

Indicator 27. Existence of Poverty reduction strategies in Forest Management Plans

This indicator measures Target 5.1 of the Global Forest Goal Number 5. Forests and National parks are managed in accordance with their respective management plans. Management plans are available for the majority of forests managed under the Forest Department and Department of Wildlife Conservation. Most of these management plans include poverty reduction strategies. Number of management plans that have incorporated poverty reduction strategies can be obtained by studying those management plans.

Indicator 28. Existence of sustainable development strategies in forest management plans

This indicator measures Target 5.1 of the Global Forest Goal Number 5. Forests and National parks are managed according to management plans. Management plans have been prepared for most of the Forest Department managed Forests and Protected areas Managed by Department of Wildlife Conservation. The primary objective of these plans is to ensure sustainable management. Therefore, most of these management plans include sustainable development strategies. Number of management plans incorporated sustainable development strategies can be obtained by studying the management plans.

Indicator 29. Existence of forestry legislations

This indicator measures Target 5.1 of Global Forest Goal Number 5. The list of forestry legislations is available in the Forest Department and Department of Wildlife Conservation.

Indicator 30. Implementation of forestry legislations

This indicator measures Target 5.1 of Global Forest Goal Number 5. Forest legislations empower certain government officials to implement forestry laws and regulations. They include officials of Forest Department, Department of Wildlife Conservation, Police and few other government agencies. Forest offences recorded and information on legal actions taken for these offences are available with those agencies. This information can be obtained on official request.

⁵ National REDD+ Investment Framework and Action Plan, 2017

Indicator 31. Existence of export control mechanism

This indicator measures Target 5.2 of Global Forest Goal Number 5. The legislations that governs export control mechanisms of forest products including wild animals are available with the Forest Department, Department of Wildlife Conservation and Sri Lanka customs. These exports are controlled by certain acts and ordinances including Forest Ordinance, Fauna and Flora Protection Ordinance, Custom Ordinance and import and export control act. However, the entire procedure has not been comprehensively documented. It is proposed to document the export procedure of all forest products.

Indicator 32. Existence of cross-sectional coordination at national level

This indicator measures Target 5.3 of Global Forest Goal Number 5. The highest level of national cross sectoral coordination takes place at the Cabinet of Ministers. Cabinet decisions are published and available in the website of the Office of the Cabinet of Ministers Sri Lanka.

However, currently there is no effective national level cross sectoral coordination among government agencies. Since the subject of forestry is also currently divided to several ministries, an effective cross sectoral coordination mechanism is a felt need.

Indicator 33. Existence of cross-sectional coordination at District level

This indicator measures Target 5.3 of Global Forest Goal Number 5. There are district coordination committees in each district co-chaired by the Chief Minister of the province and the Member of Parliament of the district who is appointed by H.E. the President of Sri Lanka. Political authorities and government officials of the district participate in this committee meetings. Decisions taken for all sectors are recorded in the meeting minutes and these minutes are available with the district level government officers including the Forest Department and Department of Wildlife Conservation. Matters discussed and decisions taken with regard to the forestry sector can be obtained by submitting an official request. However, the mandate of this committee is not restricted to Forestry, but all other development activities in the district are being considered in the committee meetings.

Indicator 34. Existence of cross-sectional coordination at Divisional level

This indicator measures Target 5.3 and 6.5 of Global Forest Goal Number 5 and 6. Following the similar format of the District Coordinating Committee, there exist Divisional level coordination committees in each Divisional Secretariate Division chaired by the Member of Parliament who represents that area. Political authorities as well as government officers of the division participate in this committee meeting. Decisions taken for all sectors are recorded in the meeting minutes and information regarding the forestry sector are available with Range Forest offices of the forest department. This information can be obtained on official request. However, the mandate of this committee is not restricted to Forestry but all other development activities in the division are considered at the meeting.

Indicator 35. Existence of National Land use Policy

This indicator measures Target 5.4 of Global Forest Goal Number 5. The National Land Use Policy has been formulated and it is available in the website of the Land Use Policy Planning Department.

Indicator 36. Implementation of the National Land use Policy

Although the National Land use Policy is formulated and approved by the government, its implementation is hampered by the delay in drafting an appropriate legislation.

Indicator 37. Forest-related programs of stakeholder agencies are coherent and complementary and integrate global forest goals and targets

This indicator measures Target 6.1 of Global Forest Goal Number 6. National Forestry Action Plans of relevant agencies should include Global Forest Goals and targets. All forestry stakeholder agencies develop their action plans under different forest-related programs. However, they are not fully aligned with global forest goals and targets, although they cover some of the goals and targets. It is proposed to update the National Forestry Action Plans to be in line with the Global Forest Goals and targets.

Indicator 38. Forest-related programs of stakeholder agencies are coherent and complementary and contribute to 2030 Agenda for Sustainable Development

This indicator measures Target 6.2 of Global Forest Goal Number 6. Similar to the Indicator 37, National Forestry Action Plans of relevant agencies does not fully integrate Sustainable Development Goals and targets. It is proposed to update the National Forestry Action Plans of all the agencies to be coherent and complementary to contribute to 2030 Agenda for Sustainable Development.

Indicator 39. Cross-sectoral coordination and cooperation at National Level is in place to promote sustainable forest management and halt deforestation

This indicator measures Target 6.3 of the Global Forest Goal Number 6. As described previously, currently there is no national level cross-sectoral coordination mechanism in place to promote sustainable forest management and halt deforestation. It is proposed to establish such mechanism to ensure that the forestry organizations are coordinated effectively to halt deforestation and achieve sustainable forest management goals.

Indicator 40. Cross-sectoral coordination and cooperation at District Level is in place to promote sustainable forest management and halt deforestation

This indicator measures Target 6.4 of the Global Forest Goal Number 6. Although the District Forest Protection Committees have been established several years ago under the government circular instructions, it is not effectively functioning at all Districts. The meeting frequency of this committee also vary among different Districts while in some Districts it has not convened for a long period of time. It is required to re-establish this committee to function in a uniform and effective manner.

Indicator 41. Cross-sectoral coordination and cooperation at Divisional Level is in place to promote sustainable forest management and halt deforestation

This indicator measures Target 6.5 of the Global Forest Goal Number 8. There is no dedicated divisional level coordination and cooperation mechanism establish so far to promote sustainable forest management and halt deforestation. Matters related to the subject of forestry are sometimes taken for discussion at Divisional Coordination Committees. However, a formal mechanism is required to ensure the coordination and cooperation at the Divisional Level.

5.2 Summary of data/information required for Global Forest Goals indicators

Section 5.2 describe the data/information availability for identified 41 Global Forest Indicators and gaps. Annexure iv provides the data requirement, data availability and data gaps in a tabular format. It shows that some indicators can be measured using the existing data available in the country whereas some indicators require more data to be collected to fulfill their information needs.

Among the total of 41 indicators, 12 indicators can be estimated using existing data. They are listed below.

Number	Indicator
Indicator 1	Forest area as a proportion of the total land area
Indicator 2	Forest area annual net change rate
Indicator 7	Portion of the forest area under long term forest management plan
Indicator 8	Area of lands reforested/ restored
Indicator 10	Forest with a designated management objective to maintain and enhance it protection functions
Indicator 17	Proportion of forest area located within legally established protected areas
Indicator 21	Existence of traceability systems of wood products
Indicator 22	Financial resources from all sources for implementation of sustainable forest management
Indicator 23	Number of international cooperation
Indicator 27	Existence of poverty reduction strategies in Forest Management Plans
Indicator 28	Existence of sustainable development strategies in forest management plans
Indicator 29	Existence of forestry legislations

However, it is important to note that the information available for those indicators are also not always readily available in a central database. Most of the information are scattered among several government institutes and can be obtained upon an official request.

As mentioned in Section 5.1, data requirement to estimate Indicator 1 and 2 are being generated at five-year intervals.

In order to estimate the other 29 indicators, it is required to collect additional data/information. The required additional data, and some suggestions and recommendations to collect such data is indicated in Annexure iv. Since these data are not currently available, they should be generated and collected. Examples for such data are; wood production data in agroforestry woodlot and private plantations, food production in agroforestry systems, area affected by invasive plants, pest, diseases, forest dieback, forest fragmentation, number of people engage in income generation activities in forest areas area, etc. In order to collect data on primary forest, it is necessary to define a suitable methodology as well.

There are some indicators which needs policy decisions to establish forums and mechanisms such as Cross-sectional coordination bodies and stakeholder platforms. Establishment of such structures will depend on the high-level policy decisions.

6. Conclusions and recommendations

Based on the study conducted and consultations made with different stakeholders, following conclusions can be established.

- The Global Forest Goals and targets are yet to be institutionalized in Sri Lanka. Since they were introduced recently, majority of the stakeholder agencies lack adequate knowledge on those.
- Majority of Global Forest indicators cannot be measured in Sri Lanka with the presently available data and information. New data to be collected and data gaps to be addressed to prepare the country for measuring and reporting its achievements towards Global Forest Goals.
- There is no dedicated government institute identified in Sri Lanka and vested with the responsibility to monitor and report on the Global Forest Goals and targets.
- Most of the programs implemented by the forest authorities such as Forest Department and Department of Wildlife Conservation are in line with the Global Forest Goals and Targets. However, there are lack of efforts to collect data and consolidate information systematically.
- There are other agencies such as Central Environment Authority, state and private plantation companies also play a vital role in sustainable forest management. However, currently there is no identified mechanism to systematically collect data and information on their contribution to the national level achievements.

- Even though some important data and information available in the country to monitor the achievements of the Global Forest Goals and targets, they are mostly scattered and entails official written requests and approvals for access.
- There is no proper data sharing mechanism exist among the key forestry authorities. The data sharing agreement, signed in 2014, between the FD, SD, DWC, CEA, CCS and the Food and Agriculture Organization of the United Nations (FAO) under the UN-REDD Project does not function due to lack of follow up action after the completion of the project.
- Some important information collection mechanisms such as National Forest Monitoring System and Safeguard Information System introduced by the UN-REDD Project are not functioning to the expected level due to lack of follow up actions.
- Forest Management activities are not adequately coordinated due to the absence of a strong coordination mechanism at National as well as Sub national level. Some stakeholder platforms established under the UN-REDD Project such as the CSO Forum and IP forum are not adequately being followed up after the project period.

Recommendations

Based on the findings of this study, following recommendations can be made to develop a comprehensive and efficient system for monitoring progress towards Sustainable Forest Management in Sri Lanka.

- Global Forest Goals and Targets should be applied and institutionalized in Sri Lanka to develop national strategies to ensure sustainable forest management.
- Initiate a dialog among forest related stakeholder agencies facilitated by the Government of Sri Lanka to develop programs and to realize national targets to be in line with the Global Forest Goals and its targets.
- Establish/Strengthen National and Sub-National Coordination bodies to ensure effective coordination among various sectors to achieve Global Forest targets. If existing mechanism are used, take appropriate measures to develop the capacity of these existing structures.
- Establish three stakeholder forums to obtain the participation of the Civil Society, Indigenous People and Private Sector. The forums established under the UN-REDD Project can be used as an entry point.
- Nominate and appoint a central organization to monitor and report the achievements of Global Forest Goals and targets. It is recommended that the Forest Department would be selected for this task as it holds the major responsibility in sustainable forest management in Sri Lanka.

- Revisit the data sharing agreement signed in 2014 between the FD, SD, DWC, CEA, CCS and the Food and Agriculture Organization of the United Nations (FAO). Take appropriate measures to revitalize the data sharing mechanism and accommodate new data acquired by these departments to update the geo-portal.
- Reassess the implementation of the National Forest Monitoring system and identify gaps and drawbacks that are deterring the smooth functioning of the system. Address those gaps and take appropriate measures to secure technical and financial supports where necessary to ensure the continuous functioning of the system.

Annexures

- i. Sri Lanka Forest Monitoring Framework Assessment Global Forest Goals, Targets and Indicators
- ii. Global Forest Goals Report 2021
- iii. The Global Forest Goals, targets and relevant indicators
- iv. Data requirement for identified indicators and the data availability and identified gaps
- v. List of participants of the National Workshop