

Inclusive Rural Connectivity and Development Project
ENVIRONMENTAL AND SOCIAL MANAGEMENT
FRAMEWORK
Volume I

ROAD DEVELOPMENT AUTHORITY AND THE
MINISTRY OF HIGHWAYS

(July 2021)

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2 List of Abbreviations

ABC	Aggregate Base Concrete (ABC)
AC	Asphalt Concrete
AP	Affected Person
BOQ	Bill of Quantities
CCCRMA	Coast Conservation and Coastal Resources Management Act
CCCRMD	Coast Conservation and Coastal Resources Management Department
CEA	Central Environment Authority
CoVID	Coronavirus disease
CESGP	Codes of Environmental and Social Good Practice
Borrower	Democratic Socialist Republic of Sri Lanka
DFC	Department of Forest Conservation
DMC	Disaster Management Center
DWIC	Department of Wildlife Conservation
EEZ	Exclusive Economic Zone
EHS	Environment Health and Safety
ESHS	Environmental, Social Health and Safety
EPA	Environmental Protection Areas
EPL	Environmental Protection License
ESIA	Environmental and Social Impact Assessment
ESMF	Environment and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
ESU	Environmental and Social Unit
FD	Forest Department
FFPO	Fauna and Flora Protection Ordinance
GHG	Green-House Gas
GIIP	Good International Industry Practice
GoSL	Government of Sri Lanka
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
GWP	Global Warming Potential
HEC	Human Elephant Conflict
HFC	Hydrofluorocarbons
ICT	Information and Communication Technology
IA	Implementing Agency
IBAT	Integrated Biodiversity Assessment Tool
IBRD	International Bank for Reconstruction and Development
ID	Irrigation Department
IDA	International Development Authority
IEE	Initial Environment Examination
Implementing Agency	Ministry of Highways
IRCDP	Inclusive Rural Connectivity Development Project
IWMI	International Water Management Institute
IUCN	International Union for Conservation of Nature
LA	Local Authorities
LMP	Labor Management Plan
MC	Municipal Council
NEA	National Environmental Act
NBRO	National Building Research Organization
NWPC	North Western Provincial Council
ODS	Ozone Depleting Substance
PA	Protected Areas

PAD	Project Appraisal Document
PEA	Provincial Environmental Act
PMU	Project Management Unit
RAC	Refrigeration and Air-Conditioning
RAMS	Road Asset Management System
RDA	Road Development Authority
SDO	Social Development Officer
SEA/SH	Sexual Exploitation and Abuse/Sexual Harassment
SEP	Stakeholder Engagement Plan
SPC	State Plantation Corporation
TRWR	Total Renewable Water Resources
UC	Urban Council
VLD	Voluntary Land Donation
W-GRM	Workers Grievance Redress Mechanism

This Environmental and Social Management Framework (ESMF) is developed for Inclusive Rural Connectivity and Development Project (IRCDP). The project is funded by the World Bank (IBRD) and implemented by the Government of Sri Lanka. Ministry of Highways (MoH) is the key Executing Agency while Road Development Authority (RDA) is the Implementing Agency.

The Project Development Objective (PDO) is to provide safe, efficient and climate resilient connectivity and supply chain to empower project communities in Sri Lanka. Under the project, a priority list of rural roads will be improved and rehabilitated, along with improvements on ancillary infrastructure and services related to transport and agro-logistics, under two components.

Component 1: Enhancing Safe and Climate Resilient Transport Connectivity (US\$450 million). This component will finance planning, review and monitoring, knowledge sharing, design, civil works, and contract management related to rehabilitation/improvement, and maintenance of an estimated 3000 km of priority rural roads spread across all nine provinces. Activities will be implemented under three sub-components: (i) Improving road transport connectivity; (ii) Improving institutional and policy framework of the road sector; and (iii) Road sector and community capacity enhancement. Climate and disaster vulnerabilities will be a key criterion considered in roads prioritization and all roads will be improved to withstand climate risks. This component will also focus on institutional strengthening for better road management and building capacity for stakeholders engaged in the local road construction industry in asset management, road safety, climate resilience as well as development and adoption of technical guidelines on bioengineered solutions for road construction.

Component 2: Enhancing Supply Chain and Access to Services for Farmers (US\$50 million). This component will augment the rural roads investments for better impact by supporting complementary infrastructure and services. This will support the construction and/or rehabilitation of produce collection points adjacent to the road networks being improved under the project. Activities will be implemented under four sub-components: (i) Improving produce collection points; (ii) Improving economic centers / wholesale markets; (iii) Supporting green and efficient value chains; and (iv) Enhancing policy and institutional frameworks promoting efficient agro-logistics system. Assessments will be carried out to identify specific interventions to further improve the agriculture supply chains, such as the dedicated economic centers, the policy and institutional framework for agro-logistics and leveraging private investments in areas such as introducing innovation into agro-logistical aspects of value chains, improving market access for smallholder producers, supporting green and/or climate resilient technologies etc.

The IRCDP is being prepared and will implemented under the World Bank's Environmental and Social Framework (ESF), all the ESF's Environmental and Social Standards (ESSs) but ESS9 will apply to the project.

The key anticipated or potential E&S risks and main impacts identified for the project include those typical for road rehabilitation and small scale construction works, i.e.

(i) *environmental*: dust and noise nuisance, gaseous emissions from machinery, potential pollution of soil and water resources, disturbance to biotope within and adjacent to project sites, erosion and sedimentation of rivers and wetlands from earth works and run-off, felling of trees along the Right of Way (ROW), generation and disposal of waste/spoil, generation of hazardous chemicals involved in cold-storage facilities, handling of asbestos in old infrastructure; (ii) *social*: temporary disruption of current traffic circulation, traffic safety, damage to access roads, occupational and community health and safety (especially with added risks associated with the spread of COVID-19), potential land acquisition for road widening and construction/expansion of agriculture facilities (e.g., warehouses, collection centres, cold storage facilities) and [for improvement/construction of economic centres/community infrastructure (community centres, playgrounds, community childcare and health care facilities, village markets)], temporary/permanent physical and economic displacement of squatters/encroachers on the RoW of the roads, damages to crops, structures, relocation/damages to communal properties such as religious statues, shrines, sacred trees etc., during the project implementation. The social screening process may further identify if there will be any potential impacts on the Veddha community which would have to be addressed.

Overall, these E&S risks and impacts are expected to be site-specific and can be addressed through comprehensive environmental screening and conventional mitigation and management measures. At the appraisal stage, it is not expected that the project will have adverse impacts to environmentally or socially sensitive areas, as the project sites will be largely located within pre-settled areas of human habitation. As such, the risks and impacts are predictable and expected to be temporary and/or reversible, low to moderate in magnitude, site-specific, without likelihood of impacts beyond the actual footprint of the project. The ESMF recommends the mitigation hierarchy to be followed to effectively mitigate the above impacts.

Framework approach. The E&S team sees the benefit in preparing an ESMF as opposed to site-specific ESMPs due to the largely unidentified nature of the proposed sites and location of physical works at the time of project preparation and appraisal. This framework approach develops specific guidance, processes, proposed generic mitigation measures that will be then be applied and adapted to the specific physical works and locations during project implementation. The timeframe of project preparation does not allow to select, screen, and prepare the technical specifications and E&S mitigation measures for 3,000 km of roads planned for rehabilitation over the project's lifetime. The front-runner sub-projects covering 500 km of 3,000 km were identified and screened in time for the project appraisal (July 2021) utilizing the guidance of this ESMF. and ESMPs (for moderate risk front runner roads) and CESGPs (for low risk sub-projects) were prepared. This screening analysis confirms low and moderate nature of the E&S risks of the sub-projects.

The ESMF is an instrument that examines the risks and impacts when a project consists of a program and/or series of sub-projects, and all the E&S risks and impacts cannot be determined until the program or all sub-project details have been identified. The ESMF sets out the principles, rules, guidelines, and procedures to assess the environmental and social risks and impacts. It contains measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project risks and impacts, including on its capacity to manage environmental and social risks and impacts. It includes adequate information on the area in which subprojects are expected to be sited, including any potential

environmental and social vulnerabilities of the area; and on the potential impacts that may occur and mitigation measures that might be expected to be used.

The objectives of this Environmental and Social Management Framework (ESMF) include:

- a. Establishing clear procedures and methodologies for environmental and social planning, review, approval, and implementation of sub-projects to be financed under the Project.
- b. Carrying out a preliminary assessment of environmental and social impacts from project investments and propose mitigation measures.
- c. Specifying appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to sub-projects.
- d. Determining the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF.
- e. Providing practical resources for implementing the ESMF.

Implementation arrangements. The ESMF builds on the responsible parties and administrative arrangements for implementation of the E&S mitigation measures based on the appraised implementation arrangements of the project. In this regard, all environmental and social screening will be undertaken by Project Management Unit (PMU) of RDA for all the components. Codes of Environmental and Social Good Practices (CESGPs) or Environmental and Social Management Plans (ESMP) for respective subprojects will be prepared by RDA. The Senior Environmental Specialist (SES) and Senior Social Specialist (SSS) of the PMU will oversee the implementation of this ESMF. It further identifies that Environmental Officers (EOs) and Social Officers (SOs) recruited at PIUs will also provide support in implementing ESF requirements as required under this ESMF. Cost estimates for implementation of this ESMF, monitoring and reporting arrangements, grievance resolution and capacity development needs are also identified and described in this ESMF.

1.1 Project Description

1.1.1 Project Development Objective and Project Components

The purpose of this document is to outline a framework for environmental and social assessment and management, giving details of potential environmental and social issues and guidelines on what type of environmental and social assessment tools to be applied for various sub-project activities.

The Project Development Objective (PDO) is to provide safe, efficient and climate resilient connectivity and supply chain to empower project communities in Sri Lanka. Under the project, a priority list of rural roads will be improved and rehabilitated, along with improvements on ancillary infrastructure and services related to transport and agro-logistics, under two components.

Component 1: Enhancing Safe and Climate Resilient Transport Connectivity (US\$450 million).

This component will finance planning, review and monitoring, knowledge sharing, design, civil works, and contract management related to rehabilitation/improvement, and maintenance of an estimated 3000 km of priority rural roads spread across all nine provinces. Activities will be implemented under three sub-components: (i) Improving road transport connectivity; (ii) Improving institutional and policy framework of the road sector; and (iii) Road sector and community capacity enhancement. Climate and disaster vulnerabilities will be a key criterion considered in roads prioritization and all roads will be improved to withstand climate risks. This component will also focus on institutional strengthening for better road management and building capacity for stakeholders engaged in the local road construction industry in asset management, road safety, climate resilience as well as development and adoption of technical guidelines on bioengineered solutions for road construction.

Component 2: Enhancing Supply Chain and Access to Services for Farmers (US\$50 million).

This component will augment the rural roads investments for better impact by supporting complementary infrastructure and services. This will support the construction and/or rehabilitation of produce collection points adjacent to the road networks being improved under the project. Activities will be implemented under four sub-components: (i) Improving produce collection points; (ii) Improving economic centers / wholesale markets; (iii) Supporting green and efficient value chains; and (iv) Enhancing policy and institutional frameworks promoting efficient agro-logistics system. Assessments will be carried out to identify specific interventions to further improve the agriculture supply chains, such as the dedicated economic centers, the policy and institutional framework for agro-logistics and leveraging private investments in areas such as introducing innovation into agro-logistical aspects of value chains, improving market access for smallholder producers, supporting green and/or climate resilient technologies etc.

These ancillary infrastructures will broadly include the following:

- a. *Improvement of agro-logistics infrastructure:* This will include improvements of critical agro-logistic infrastructure along the supply chains connected through the road sections improved under the project. These investments will include rehabilitating common user warehouses and consolidation facilities, farm/agri produce collection centers, improving cold storage facilities, improving existing economic centers, improving accessibility of such facilities for women through adequate design improvements (lighting, sanitation facilities etc.) etc., where

applicable. These investments are expected to help increase agriculture productivity, improve market access, and enhance value addition of smallholder farmers and agribusinesses in the project areas will make the framers more resilient to the impacts of Climate Change such as droughts, floods, slope failures and landslides.

A cluster development initiative in 12 selected districts is being considered to improve tropical fruits value chain under the World Bank's ongoing ASMP. These investments will be closely coordinated and integrated into such ongoing initiatives.

- b. *Improvement of community infrastructure:* This will include improvements of economic and community infrastructure, built to climate resilient standards, that will help improve rural economy and livability, such as community centers, playgrounds for children, community childcare and health care facilities, village markets etc.

Community development initiatives: This will include capacity building to empower vulnerable communities in rural areas (targeting communities that have been heavily affected by the COVID-19 pandemic in particular):

- a. *Community Capacity Development:* This will include capacity building and training for local community groups, including youth and women, in areas such as managing local development activities, such as road maintenance and monitoring of both roads and other infrastructure improvement works and community-based landslide monitoring and mitigation, preparedness planning etc.
- b. *Public awareness activities:* This will include raising awareness and education on road safety, GBV and support services and managing climate vulnerabilities among communities in the project financed areas.

1.2 Objective of Environmental and Social Management Framework (ESMF)

Projects and Programs financed with World Bank resources need to comply with World Bank ESF. Therefore, project activities eligible for funding under this project are expected to be implemented in line with ESSs of the World Bank's, ESF, in addition to conformity with environmental and social legislation of the GoSL.

Since specific details of the project intervention sites are not available at this stage, site-specific Environmental and Social Assessments cannot be conducted and site-specific ESMPs prepared. What is possible at this stage would be to carry out an identification of generic issues that are typically associated with activities that would potentially be funded by the project and apply the information to site specific environmental assessments and plans, as and when the need arises.

Therefore, the purpose of this document is to outline a framework for environmental and social assessment and management, giving details of potential environmental and social issues and guidelines on what type of environmental and social assessment tools to be applied for various sub-project activities. This will serve as the basis in the preparation of site-specific specific Environmental and Social Impact Assessments (ESIAs) and/or Environmental and Social Management Plans (ESMPs). This ESMF will form the basis for appraising the environmental and social aspects of the project. It will be made available for public review and comments in appropriate locations in Sri Lanka and in World Bank's external website, in accordance with World Bank's policy of Access to Information.

It is expected that detailed environmental and social assessments and preparation of site-specific plans (ESIAs and ESMPs) for activities will be carried out (in accordance with this Framework) by the implementing agencies and will be reviewed and cleared by the Central Environmental Authority

(CEA) or any other agency as applicable, under prevailing national environmental legislation in Sri Lanka. In addition, the ESIA, ESMPs, and other E&S instruments, will also be reviewed and cleared, as applicable, by the World Bank, for all physical activities prior to the approval of sub-projects.

The objectives of this Environmental and Social Management Framework (ESMF) are:

- a. To establish clear procedures and methodologies for environmental and social planning, review, approval, and implementation of subprojects to be financed under the Project
- b. To carry out a preliminary assessment of environmental and social impacts from project investments and propose mitigation measures.
- c. To specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to subprojects
- d. To determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF
- e. To provide practical resources for implementing the ESMF

1.2.1 Due diligence Principles

This ESMF considers and incorporates principles of due diligence that will be applied during project and sub-project preparation and implementation in managing potential environmental and social risks that may be encountered. The key due diligence principles are as follows:

Principle 1: Review and Categorization. All physical interventions will be subject to a social and environmental review and shall be categorized based on the magnitude of potential impacts and risks in accordance with environmental and social screening criteria specified in this ESMF.

Principle 2: Environmental and Social Impact Assessment (ESIA). As per the GoSL regulatory requirements, where necessary Initial Environmental Examinations (IEEs) or Environmental Impact Assessments (EIAs) will be undertaken to address, as appropriate, the relevant social and environmental impacts and risks. The Assessment will also propose mitigation and management measures relevant and appropriate to the nature and scale of the proposed project as described earlier.

Principle 3: Applicable Social and Environmental Standards. The ESMF will refer to the applicable World Bank ESF Environmental and Social Standards (ESSs) and the World Bank Group Environmental, Health, and Safety Guidelines (known as the "EHS Guidelines"), as well as policies and standards of the GoSL. The Assessment will establish the project's overall compliance with, or justified deviation from, the respective World Bank ESSs, and EHS Guidelines where applicable.

Principle 4: Environmental and Social Management System. For all project's physical activities / sub-projects, an Environmental and Social Management Plans (ESMPs) or a Codes of Environmental and Social Good Practice (CESGPs) and monitoring indicators will be developed (following the screening process) to address the relevant findings, and draws on the conclusions of the assessments. The ESMPs/CESGPs will describe and prioritize the actions needed to implement mitigation measures, corrective actions and monitoring measures necessary to manage the impacts and risks identified in the assessments. In some cases, such as in sensitive ecosystems or where there is a need for further environmental or social due diligence, an ESIA will be prepared which will guide the preparation of a site-specific ESMP. These actions will be costed and reflected as part of the contractual documents of the civil works contracts for ESMPs' implementation; costs of the social and environmental screening and preparation of any ESIA will be assumed by RDA as part of the project management.

Principle 5: Consultation and Disclosure. For all activities affected communities will be consulted within a structured and culturally appropriate manner according to the Stakeholder Engagement Plan (SEP). If principle project activities or subproject activities are assessed to have significant adverse

impacts on communities, all PAPs will be consulted as a means to establish whether those activities have adequately incorporated affected communities' concerns. In order to accomplish this, this framework as well as all other E&S instruments will be made available to the public for a reasonable minimum period, with active efforts made to reach out to and engage the stakeholders in sub-projects' preparation and implementation process. The process will be documented, and account will be taken of the results of the consultation, including any actions agreed resulting from the consultation. For projects with adverse social or environmental impacts, disclosure will occur early in the assessment process, and on an ongoing basis.

Principle 6: Grievance Redress Mechanism. To ensure that consultation, disclosure, and community engagement continues throughout project implementation, a Grievance Redress Mechanism (GRM) will be established, scaled to the risks and adverse impacts of the project or subproject, as part of the E&S management system. The grievance redress mechanism will allow for concerns and grievances about the project's social and environmental performance raised by individuals or groups from among project-affected communities to be received and to facilitate resolution of those concerns and grievances.

Principle 7: Monitoring and Reporting. Implementation of all ESMPs/CESGPs will be monitored based on the monitoring schedule identified in the ESMPs/CESGPs by the relevant responsible party. The Environmental and Social Unit (ESU) of Project Team of Road Development Authority (RDA) will be responsible to ensure the monitoring activities that have been taken place including its monitoring and a consolidated monitoring report is prepared bi-annually.

Principle 8: Training. Training to ensure project staff, staff of civil contracts and other parties who would play a role in managing environmental and social impacts will be necessary to ensure successful implementation of this ESMF. Necessary budget will be allocated to carry out the training plan.

2 Chapter 2: Introduction to Prevailing Environmental Conditions and Road Sector in Project Areas

This chapter describes the overall baseline condition of Sri Lanka in terms of bio-physical environment, as well as the socio-economic environment.

2.1 Bio-Physical Environment

2.1.1 Geography and Climate

Sri Lanka is a tropical island in the Indian subcontinent. It covers an area of about 65,610 km² and lies between 6° and 10°N latitude and 80° and 81°E longitude. A central mountainous massif with an altitude of more than 2500 m and a vast plain surrounding it describe the topography of the island Figure 2.1



Figure 2.1: Locality of Sri Lanka

The climatic pattern of Sri Lanka is determined by the generation of monsoonal wind patterns in the surrounding oceans. Four basic seasons based on rainfall exist. These are, the south - west monsoonal period during May to September; an inter-monsoonal period during October– November; the north-east monsoonal period from December to February; and another inter monsoonal period lasting from March to April.

For administrative purposes, the country is divided into nine provinces: Central, Eastern, North Central, Northern, North Western, Sabaragamuwa, Southern, Uva and Western and 25 districts. Figure 2.2

Sri Lanka

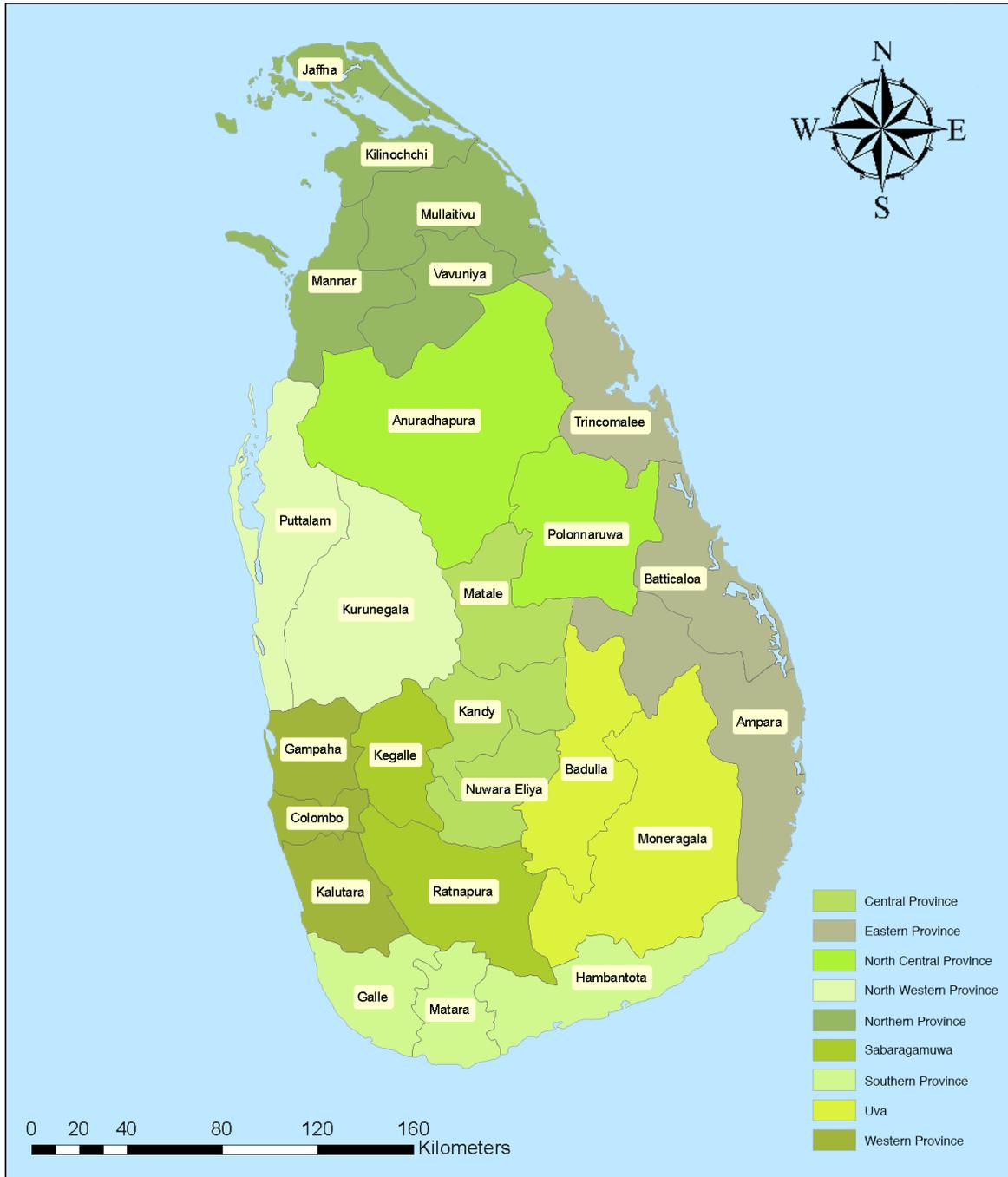


Figure 2.2: Administrative Map of Sri Lanka

On the basis of the rainfall regimes, the country is divided into three broad climatic zones. These are designated as the Wet Zone, Dry Zone and the Intermediate Zone. Sri Lanka is further divided into 46 agro-ecological regions based on rainfall expectancy, altitude, soil class, and landform. Figure 2.3

The physiography of Sri Lanka comprises of three pen plains or erosion plains made up of a central highland massif, rising in tiers from a low gently undulating plain surrounding it and extending to the

sea, (the lowest penneplain). Rising from the inner edge of the lowest pen plain, in a steep step of about 300 meters is the middle pen plain with a maximum elevation of about 800 m above sea level. Within it and rising from it in another step of 1000 to 1300 m is the highest penneplain at a general level of about 2000 m above mean sea level, but rising in places to 2300 to 2700 m.

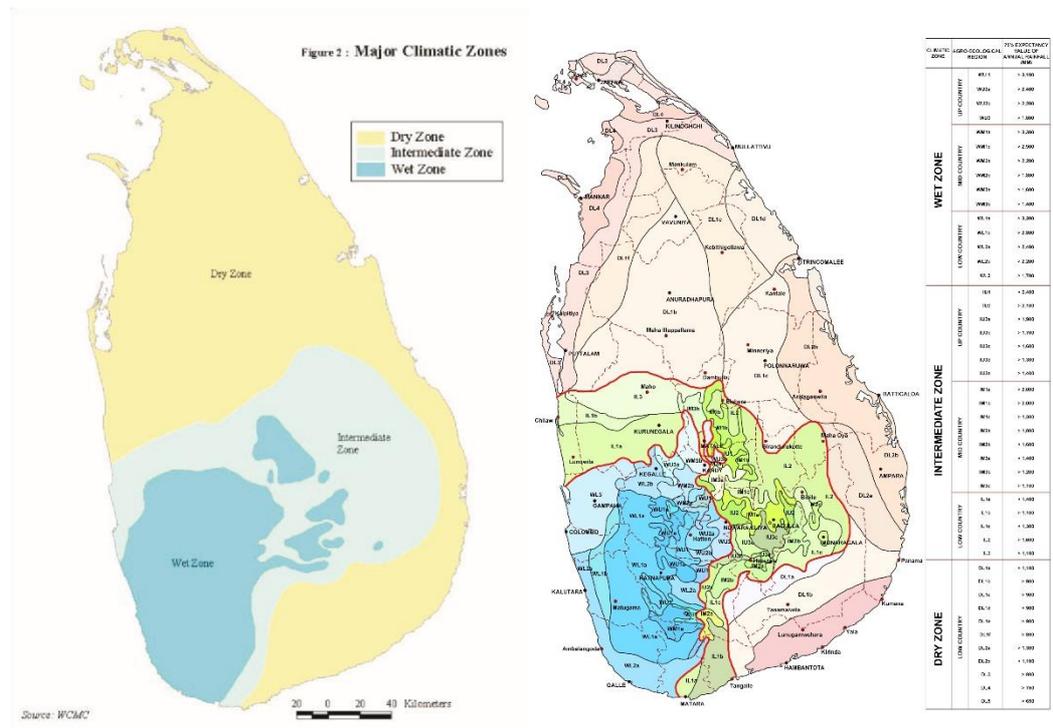


Figure 2.3: Major climatic zones and agro-ecological regions in Sri Lanka

A major part of the country is made up of Precambrian crystalline rocks, which constitute 90% of the land area (i.e., the Highland Complex, Vijayan Complex and Wannu Complex), with Miocene limestone sedimentary deposits extending from Puttalam to the Jaffna Peninsula.

There are Jurassic deposits in Tabbowa and Andigama of the North-western province, and quaternary deposits in the coastal area (i.e., sand, sandstone, clay and gravels, and coral reef). Inland deposits of coral debris and gem-bearing gravels are mainly found in Sabaragamuwa Province.

Fourteen Great Soil Groups are found in Sri Lanka. Reddish-brown earth and low humic clay soils are mostly found in the dry zone and drier parts of the intermediate zone. Non-calcic brown soil, red-yellow latosols and alluvial soils are found in the flood plains of larger rivers. Old alluvium, solodized solonetz and regosols are found in more arid areas of the island. Grumusols and rendzinas exist in small extents. The wet parts of the intermediate zone and wet zone consist of red yellow podzolic soils and reddish brown latosolic soils. Immature brown loam and bog and half-bog soils are found mainly in tidal marshes.

The mean annual temperature is approximately 27.50 C in most parts of the island's low-lying areas, while it is around 18 C in the higher altitudes of the central part of the country. The average relative humidity varies from 70% during day to 95% in the night. Rainfall is monsoonal, convectional and depressional. 55% of the island's rainfall comes from the monsoons. The mean annual rainfall ranges between 900 mm to 6000 mm, with an island wide average of about 1900 mm, which is about two and a half times more than the world annual mean of 750 mm. The average rainfall varies from below 1000 mm in the arid regions of the dry zone (north west area and the southeast corner of the island), to over 5000 mm in the wet season in south west of the country.

2.1.2 Terrestrial Water Resources

There are 103 natural river basins with catchments ranging from 9 to 10,448 sq. km **Error! Reference source not found.** Seventeen river basins have catchment areas of over 1000 sq. km. 103 distinct river basins covering 90 percent of the island. The southwestern part of the island has seven major basins with catchment areas ranging from 620 to 2 700 km². They are, from north to south: Maha river (1 528 km²), Attanagalu river (736 km²), Kelani river (2 292 km²), Kalu river (2 719 km²), Bentota river (629 km²), Gin river (932 km²) and Nilwala river (971 km²). An exception to the radial pattern is the largest basin, that of the 335 km long Mahaweli river, which has a catchment area of 10 448 km². After leaving the central highlands, it runs almost north for 90 km from Minipe to Manampitiya and then a further 70 km through several distributaries as far as Verugal and Mutur on the east coast. Most Sri Lankan river basins are small. Only 17 of the 103 basins exceed 1 000 km². Besides the Mahaweli basin, four others exceed 2 500 km². Three of these (Deduru river, Kalu river and Malvathu river) have their entire catchment area in the dry zone, and only Kalu river is in the wet zone. The total runoff in Sri Lanka is an estimated 52 km³/year. Considering 75% and 50% dependability rainfall, annual runoff estimates are 42 and 49 km³ respectively.

There are six types of aquifers: the shallow karstic aquifer of the Jaffna Peninsula, deep confined aquifers, coastal sand aquifers, alluvial aquifers, the shallow regolith aquifer of the Hard Rock Region and the southwestern lateritic (cabook) aquifer. Sri Lanka's largest aquifer extends over 200 km in the northwestern and northern coastal areas.

The internal renewable groundwater resources are an estimated 7.8 km³, most (estimated as 7 km³/year) returning to the river systems and being included in the estimate for surface water resources. Therefore, the total renewable water resources are an estimated 52.8 km³/year.

The Kalu, Kelani, Gin, Bentota, and Nilwala river basins cover only 13 percent of the land area, but are where 30 percent of the population live and where 38 percent of the total renewable water resources (TRWR) are located. The basin of the Mahaweli river, the longest river, covers 17 percent of the total area of the country, supports 17 percent of the population and carries 19 percent of TRWR. The basin of the eastward flowing Gal river, known for its irrigated rice production, covers 3 percent of the land area and has 2 percent of TRWR.

Most of the studies on water scarcity assessment rank Sri Lanka as a country with either little or no water scarcity or moderate water-scarcity conditions, but they do not consider the spatial and temporal variation of water availability. Sri Lanka experiences high seasonal and spatial variations in rainfall as a result of the bi-monsoonal climatic pattern (northeast monsoon from October to March and southwest monsoon from April to September). Large areas of the country are drought prone. Droughts occur to different degrees in both semi-arid and humid zones. Dryzone districts, comprising 75 percent of the country, contribute to only 49 percent and 29 percent of the maha and yala season runoff. Thus, storing water for irrigation in the yala season (April to September) is essential in many river basins. Large-scale development of water resources for irrigation and hydropower has progressed rapidly in the last 50 years. The Eastern, North-Western, and North-Central provinces and Hambantota in the Southern Province account for 76 percent of the total withdrawals.

Groundwater resources are widely used for domestic, commercial and industrial purposes, and small-scale irrigation. About 80 percent of rural domestic water supply needs are met by groundwater from dug wells and tube wells. In many areas, where surface water systems are not fully reliable, groundwater provides industrial and commercial users with a margin of safety. Most industries in the country depend heavily on deep wells where groundwater is safe and of good quality, and can be self-managed. The demand for groundwater in Sri Lanka is steadily increasing, especially for urban and rural water supplies, irrigated agriculture, industries, aquaculture, small and medium enterprises and urban housing schemes. The rapid expansion of these projects is exerting much pressure on available groundwater resources.

Sri Lanka is covered with a network of thousands of artificial lakes and ponds, known locally as ‘tanks’ (after tanque, the Portuguese word for reservoir) Figure 2.4 . Some are truly massive, many are thousands of years old and almost all show a high degree of sophistication in their construction and design. A recent study undertaken by the International Water Management Institute in Sri Lanka’s dry zone, where groundwater use for farming is greatest, highlighted a significant rise in the numbers of water pumps and ‘agro-wells’ (wells used mainly for agriculture) sunk over the past few decades. Researchers estimated that there are close to 50 000 agro-wells in the dry zone. The number of pumps is higher, around 100 000, as it includes those used to pump water from rivers, irrigation canals and tanks, and not just those fitted to agro-wells. This boom in agro-well construction occurred partly because a government subsidy program for brick and concrete-lined wells was introduced in 1989, but also because many aquifers are quite close to the surface, which makes digging shallow wells and drilling-tube wells relatively cheap.

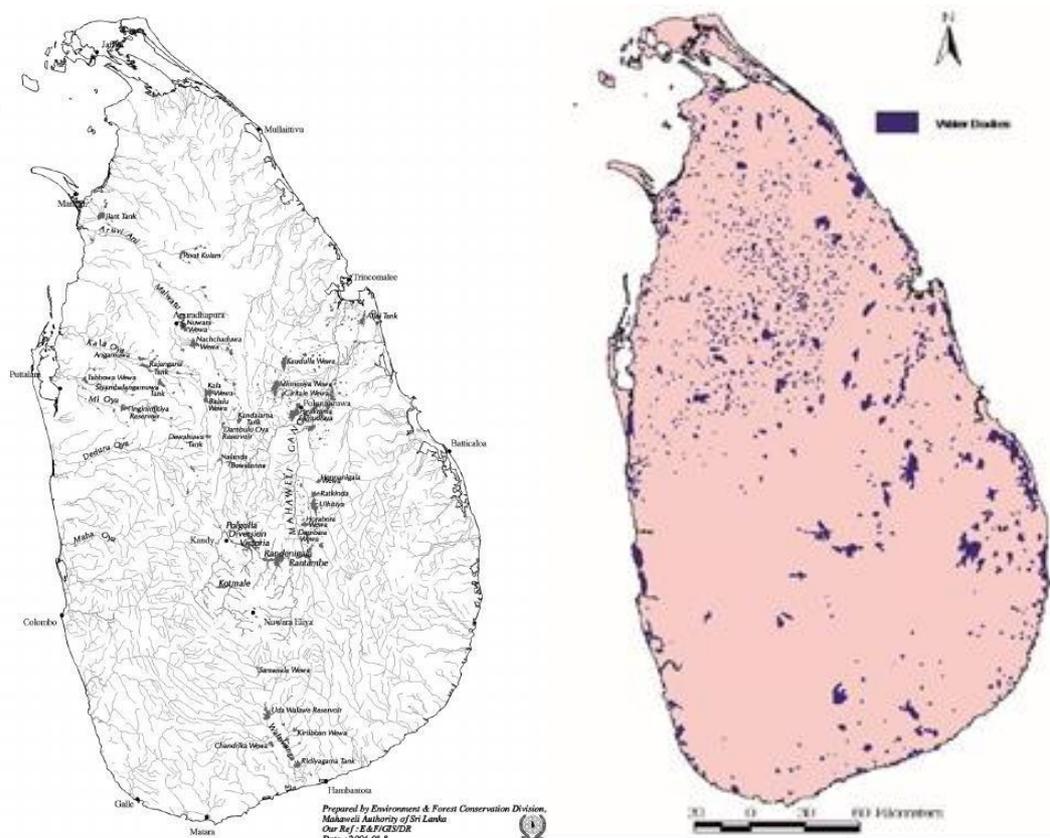


Figure 2.4: Rivers and Lentic water of Sri Lanka

Irrigation activities in Sri Lanka date back 2 500 years. Initially, these activities started with a small-scale village tank and a simple channel system. Later, from the fourth to the end of the twelfth century, these systems were developed. Dams were built to intercept river flows across shallow valleys, or water flowing down perennial rivers was diverted by weirs and it conveyed through long excavated canals to be impounded in large reservoirs at appropriate locations to supply large areas. Given the state of irrigation development and the present level of technology in agriculture and in construction engineering, since the mid-1990s little economic potential is left to be exploited by new irrigation construction. Hence, it is reasonable to assume that the country has reached its irrigation potential, but there is large scope for improvement of the existing areas.

In the wet zone, flood control and drainage schemes have been incorporated into the irrigation system mainly in the lower reaches of rivers. In the coastal areas, saltwater exclusion schemes have been

commissioned where water salinity affects agriculture. Flood bunds and pumps are the main features in flood protection schemes, whereas gated regulators are adopted in saltwater exclusion schemes.

2.1.3 Marine and Coastal Resources

Sri Lanka has a coastline of about 1620 km. Sri Lanka and the southern tip of India stand on the same continental shelf and are separated by a shallow sea, the Palk Strait, which is barely 30 m deep. However, the shelf ends more abruptly in the south and east of Sri Lanka, averaging 22.5 km in width and rarely extending beyond 40 km. Within the shelf area, estimated to cover about 30,000 sq. km., the mean water depth is about 75 m, but the submarine elevations drop abruptly to 900 m within 3 km and 1800 m within about 15 km of the shelf's edge. Beyond this there is a steep descent of over 5500 m bringing it to the general bottom level of the Indian Ocean.

Under the *Maritime Zones* Law No. 22 of 1976, Sri Lanka has proclaimed several areas of national maritime jurisdiction, in conformity with the provisions of the United Nations Convention on the Law of the Sea Figure 2.5. Sri Lanka's only international border is its maritime boundary with India. In the north western quadrant of Sri Lanka the EEZ and other areas of maritime jurisdiction adjoin those of India and as a result are restricted to narrower zones than around the rest of the island.

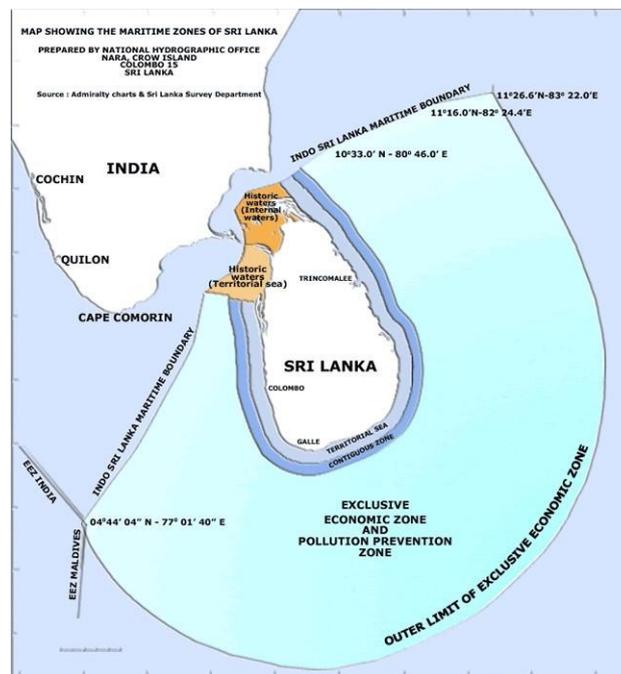


Figure 2.5: 200 mile Exclusive Economic Zone of Sri Lanka

Sri Lanka's *coastal zone* is defined in the Coast Conservation Act No. 57 of 1981 as "that area lying within a limit of three hundred metres landwards of the Mean High Water line and a limit of 2 km seawards of the Mean Low water line and in the case of rivers, streams, lagoons, or any other body of water connected to the sea either permanently or periodically, the landward boundary shall extend to a limit of 2 km measured perpendicularly to the straight baseline drawn between the natural entrance points thereof and shall include the waters of such rivers, streams and lagoons or any other body of water so connected to the sea" Figure 2.6. The area defined for management purposes as the coastal region comprises all of the 74 administrative divisions (Divisional Secretary) with a coastal boundary.

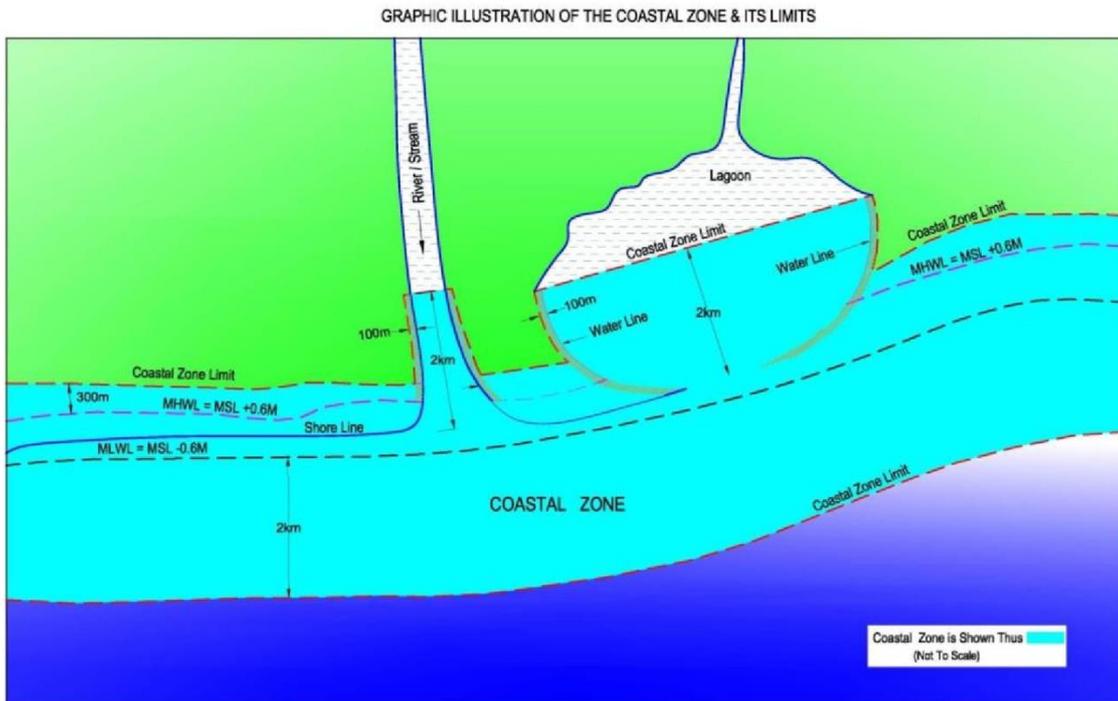


Figure 2.6: Coastal Zone as per the Coast Conservation Act No.49 of 2011

Sri Lanka's coastal waters have extensive *sea grass beds*, often occurring in association with coral reef ecosystems or in estuaries and lagoons. They are particularly found in the basin estuaries and lagoons of Puttalam, Mundal, Negombo, Mawella, Rekawa, Koggala, Kokilai, Jaffna and Batticaloa. A total of 16 sea grass species belonging to 10 genera have been reported from Puttalam Negombo, Mundal and Rekawa lagoons. Extensive seagrass beds have been reported from the Dutch bay (in Kalpitiya) to the western end of the Jaffna Peninsula, and from Mannar to the northwest across the Palk Bay and to Rameswaram Island on the Indian coast. However, the distribution of sea grasses along the coast from north east to south east is limited and no records are available. Thus, it is difficult to get a clear picture of total composition and distribution of sea grasses in coastal zone of Sri Lanka. However, in 2008 the extent of sea grass beds in Sri Lanka has been reported as 23,819 ha.

Sri Lanka's coastline is characterized by a series of *estuaries and lagoons* which are transitional ecosystems of diverse tropic statuses, scenic beauties, rich rare and endemic species, aquatic biodiversity and ecosystem productivity. They are complex socio-ecological systems containing a diversity of species and a variety of coastal habitats including, mangroves, salt marshes, seagrass beds and mud flats. The heterogeneous nature and complexities of lagoons and estuaries are primarily determined by geomorphology, climate and weather, tidal fluxes and fluvial inputs and cohesive interactions with land based activities. By and large, the range of ecosystem services provided by the lagoons and estuaries are undervalued and their multiple use and benefits have not been adequately taken into consideration policy formulation and decision making process. Beside the primary features, the knowledge of the ecological significance of the lagoon and estuaries are negligible. A total of 82 lagoons with a shoreline (perimeter) of 2791 km are located in the coastal region and considered to be highly productive and contained economic value associated with biological production of aquatic and semiaquatic habitat and mangrove vegetation. Meaningful approach to management of barrier built estuaries and lagoons must combine bio-physical, socio-economic and political considerations. Therefore, estuaries and lagoons are regarded as Socio-Ecological Systems.

Salt marshes are found close to the landward margin of the intertidal zone where the soil salinity is relatively high due to insufficient fresh water supply to flush out the accumulated salts. Salt marshes consist of herbaceous, salt resistant plants growing in sandy or mud tidal flats in arid areas and are periodically inundated by the sea. The existing information revealed that there are around 27,520 ha of salt marshes in the country. Extensive salt marshes also occur in the Mannar area (mainly on tidal flats and containing about 56 species of marsh vegetation) in the coastal belt from Mantai to Vankalai. Patchy salt marshes also occur mainly in sedimented lagoon/estuarine areas such as Hambantota, Puttalam, Kalpitiya and Mundel.

Mangroves are highly productive but extremely vulnerable ecosystems confined to intertidal zones of coastal environment including lagoons. Sri Lanka's mangrove areas amounted to about 15,669 ha in extent in 2013. As per the estimates prepared in 2014 using Global Information System (GIS) and remote sensing, the extent of mangrove areas is about 11,656 ha. Sri Lanka's tidal variation being low and rarely exceeding 75 cm, mangroves generally occur as a narrow belt in inter-tidal areas of lagoons, estuaries or associated islands and river mouths. However, they do not occur in all inter-tidal areas and are confined to areas with low wave action. Although mangroves rarely extend beyond 1km landwards from the mean low water tidal level they may spread up-river to the upper limit of brackish water intrusion in some riverine estuaries, even up to a distance of 20 km (e.g. Galatara in the Kalutara district). In addition to the tacit value and environmental services rendered by mangroves, it supports the depending communities by providing fish resources, fuel wood, building materials and dyes for coloration of fish nets. Mangroves serve to reduce the effects of floods while functioning as filters to sift out pollutants that reach the coastal area from inland and trap sediments. It is also important in carbon sequestration. Sri Lanka's wide and sandy beaches along much of the 1620 km coastline are famed for their scenic beauty and support a distinct littoral fauna and flora. Beaches have been formed by accumulation of sediment deposited on the shore. Among them, barrier beaches, spits and dunes are the most delicate and vulnerable due to their changing nature. The major mangrove areas in Sri Lanka are located around Jaffna, Vadamarachchi (Thondamanar) lagoons, Nanthikadal lagoons in North coast Kokilai, Navaru, Trincomlaee, Kathiraveli, Upparu Laggon, Valachchenai, Batticaloa Lagoon, Pothuvil in Eastern Coast, Weligama, Gintota, Balapitiya, Bentota in Southern coast, and Panadura estuary, Negombo and Chilaw lagoons, Mundal lake, Puttalam lagoon, Dutch bay, Portugal bay and Mannar in Western and North western coast. According to Amarasinghe (1986), 29 mangrove species are found in Sri Lanka.

Barrier beaches are accumulations of unconsolidated sediments transported ashore by waves and moulded into a form that lies across a body of water, isolating it from the sea. Coastal areas around the island contain barrier beaches that isolate lagoons and swamps from the sea (e.g. the beaches at Rekawa, Kosgoda, and Panama). Barrier beaches are found mainly between Bentota and Balapitiya on the southwest coast. Along the southern coast there is a barrier beach at Weligam Bay, and several between Dondra and Ambalantota. Thambalagam Bay, a westward embayment of Koddigar Bay, is almost entirely cut off as a barrier beach which gets partially breached during the northeast monsoon. Some barrier beaches are free at both ends and form islands (e.g. at Karaitivu).

Spits are incipient barrier beaches that projects from the shore in the direction of the dominant drift and are free at one end. Spits are frequently observed along the western and eastern coasts of the country and are associated with estuaries. Examples are the shoal that builds seasonally at the mouth of the Negombo estuary and the sand spit at the Kalu Ganga estuary. Some of the barrier beaches and spits have extensive dunes associated with them as seen at Kalpitiya. Most spits appear to be unstable, especially those which protrude into estuaries (e.g. the Kalu Ganga spit). Consequently, they shift position from time to time, causing changes in the form and precise location of the inlets of estuaries. For example, the inlet of the Batticaloa estuary has shifted northward to its present position from a previous location 5 km to the south. Some spits are formed seasonally at estuarine inlets and tend to obstruct the natural water flow

patterns, often resulting in the inundation of low-lying lands (e.g. the Kalu Ganga and Maha Oya estuaries).

Sand Dunes are wind-blown accumulation of sand which are distinctive from adjacent land forms such as beaches and tidal flats mainly due to the fact that dunes do not get the effects of tides. Coastal dunes are unique terrestrial ecosystem located in the transition zone between the ocean and the continent. These habitats are naturally dynamic. Therefore, highly fragile and vulnerable to the impacts of human induced activities. There are three types of dunes that have been identified in the country. They are:

- *low, flat to slightly undulating, isolated platforms of sand less than 1m in height (e.g. incipient dunes found at Koggala, Matara, Akurala and Uswetakeiyawa);*
- *transverse primary dunes, consisting of single fore-dune ridges of undulating sand masses associated with stable beaches, exceeding 5 m in height (e.g. dunes at Mannar, Pooneryn, Kalpitiya and along the southeastern coast).*
- *secondary transgressive dunes; usually exceeding 3 m in height (e.g. dunes at Mannar, Pooneryn, Kalpitiya and Jaffna); most of which are longitudinal, some are parabolic, and a few are complex in form.*

The most prominent sand dunes lie along the northeastern, northwestern and southeastern coasts of Sri Lanka. These extend from Mullaitivu and Point Pedro, Elephant Pass and Chavakachcheri across Mannar Island towards Kalpitiya and Ambakandawila. On the southeast, they extend from Ambalantota (Godawaya) in the Hambantota district to Sangamankande Point in the Ampara district. The latter is identified as the longest stretch of dunes in the world, close to the equator. Sand dunes in Sri Lanka are essential components of the coastal vistas and bio-diversity. The materials in sand dunes protect the land behind them from storm erosion and potential sea level rise. Dune vegetation also traps sand and prevent it from being blown further inland. When there are storm surges and waves, sand dunes prevent flooding inland. According to prevailing information, intact sand dunes were the most effective barrier against tsunami waves that affected the coastal region of Sri Lanka in 2004.

2.1.4 Minerals

Minerals and rocks in Sri Lanka can be classified under several categories of economic geology. Economic minerals are classified into four major groups: energy minerals, the ferrous and ferro-alloy group, the non-ferrous group and the non-metallic group. Energy minerals, uranium, uranite, thorite (the silicate of thorium), thorianite (the oxide of thorium) and monazite have been found in Sri Lanka.

Magnetite, hematite and iron oxides are the most common minerals found in the island and the recently found magnetite-hematite deposit at Wellawaya is one of the best ferrous and ferroalloy mineral deposits in Sri Lanka. Forty per cent of the copper-magnetite deposit at Seruwawila is considered as iron while 2 per cent is estimated as copper. Sri Lankan beaches are rich with mineral sands such as ilmenite, rutile, monazite, zircon, garnet and silica. The largest deposit of mineral sands (ilmenite, rutile and zircon) is found in Pulmoddai. The silica sand deposit at Madampe and Naththandiya is used for the glass industry. Non-metallic minerals such as feldspar, gems, apatite, graphite, mica, quartz and halite are widely excavated. Three main types of clays (kaolinite, ball clay and brick clay) are used to produce domestic and export goods. Further, graphite in Sri Lanka is of high purity in carbon (99 per cent), which occurs as massive veins in rocks. Major mines are in Kahatagaha- Kolongaha and Bogala. The Eppawala apatite deposit has been estimated at 40 million tonnes of phosphate. However, this phosphate has a very low water solubility and a concern of many chemists and geologists has been finding a method to increase its water solubility. Silica rich (100%) high-quality quartzite is found in many places of Sri Lanka, such as Galaha, Wellawaya, Ambalamana and Akarella. Mining vein quartz produces a lot of weather-resistant waste material.

The recovery of gems in Sri Lanka has over 2,000 years of history. Sri Lanka has long been recognized for varieties of corundum, chrysoberyl, spinel, garnets, beryl, tourmaline and zircons. Sri Lanka is the

largest producer of gem varieties per square kilometer in the world. The gem trade accounts for nearly 60% of the five mineral-based, foreign-exchange earning industries of Sri Lanka.

2.1.5 Land resources

Land tenure. In Sri Lanka, 82.25 percent of the country’s land is owned by the State while only 17.75 percent is privately owned, reflecting a history of centralized control over land. Records from as early as 500 B.C. document land allocation by the Kings while successive colonial governments (Portuguese (1505 – 1656), Dutch (1656 – 1796), and British (1796 – 1948)) asserted their control over land while instituting land ordinances and centralized administration systems.

During the last few decades, natural disasters have been on the increase because of improper land uses in Sri Lanka. For example, human settlement and cultivation of annual crops on steeply sloping lands have resulted in rapid soil erosion, landslides and the silting of rivers, waterways and reservoirs, thereby reducing their capacity and causing floods. Furthermore, the productivity of fertile lands has been reduced due to improper land use. According to the available statistics nearly 44% of agricultural lands have been subject to land degradation.

There is also a significant imbalance between the ownership and tenure patterns of land. There are a large number of fragmented agricultural lands small in size and generally unproductive. Similarly, there is a large extent of agricultural land in plantations areas, a significant proportion of which is underutilized.

Land use. Sri Lanka is one of the most densely populated countries in the world, and therefore much of the land has been put into productive use. There is limited information to assess the spatial and land use changes that have taken place due to incompatibility of available data. Figure 2.7, based on forest cover assessments, provides gross evidence that forests are the major land use type lost between 1956-1984. It also suggests that the combined increase in area under paddy, settlements and other crops, which can be considered as the major outcome of land settlement and irrigation development, is a compatible gross match with the loss of forest cover. Land use categories in Sri Lanka is provided in Table 2.1.

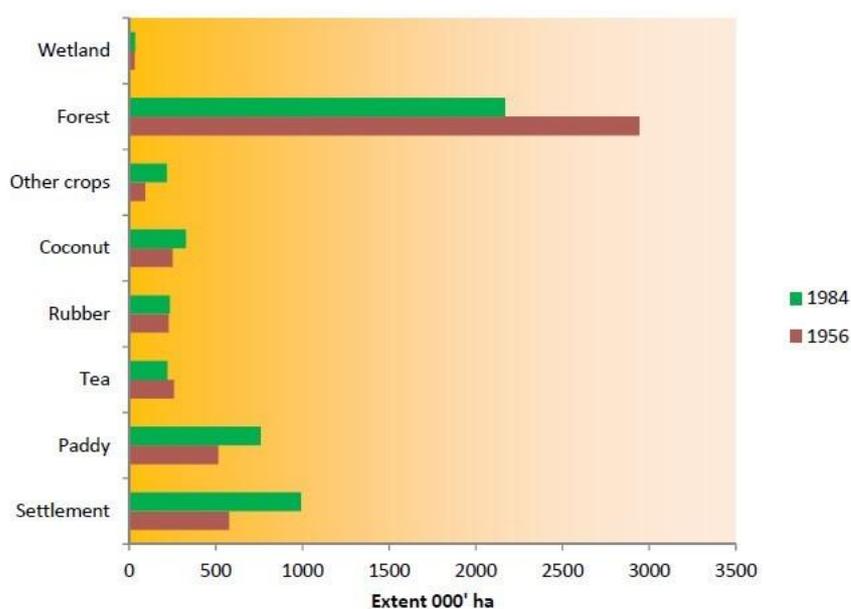


Figure 2.7: Land Use changes (1956-1984)

Table 2.1 below shows how land is used throughout the country based on data from Survey Department in 2015.

Table 2.1 Land use in Sri Lanka

Land Type	Land Use	Hectares (Year 2000)	% Area
Urban Land	Urban Land/Settlement	27,830	0.40%
Agriculture	Homesteads (associated non-agricultural land)	943,495	14.40%
	Horticulture Plantation	1,779,245	27.10%
Crop Land	Paddy	912,927	13.90%
	Other Crop Land	176,218	2.70%
Forest Land	Dense Forest	1,070,555	16.30%
	Open Forest	439,050	6.70%
	Forest Plantation	93,910	1.40%
Range Land	Scrub land	590,180	9.00%
	Grass land	97,274	1.50%
	Wetland	55,698	0.80%
	Barren Land	93,810	1.40%
	Water	285,778	4.40%
	Unclassified	124	0%
Total		6,566,094	100 %

A multitude of policies and legislations concerning land resources management exists in the country. Among others, laws and regulations connected to alienation and management of state land has had a significant catalytic effect on deforestation and degradation processes in Sri Lanka. These have significant implications on major proximate drivers in operation, namely, encroachments, infrastructure development projects and private agriculture ventures. All successive governments have followed a policy of periodic regularization of encroachments. The encroached lands were usually unutilized state land, often forested. The permissive policy of regularization of encroachments is therefore a catalyst, and has provided a clear encouragement to encroachers to continue with the expectation that one day the encroached property would be theirs legally.

Poor implementation of existing land use policies has created catalytic conditions for deforestation and forest degradation. This is particularly important in the cases of large government projects for infrastructure development, private sector agriculture and tourism ventures. The country has a number of agencies with some mandate connected to the land use planning. The major institutions are Land Use Policy Planning Department, National Physical Planning Department, Urban Development Authority and Mahaweli Development Authority. It seems their activities are not fully coordinated or connected through an overall planning framework. As a result, agencies with different sectoral mandates (e.g. forestry, agriculture, infrastructure development) do not have a common guide or framework of reference concerning decisions on land use. For instance, agriculture policy of government promotes expansion of agricultural lands. Given the growing scarcity of land, such expansions could only come at the expense of existing natural forests. Role of land use planning and policy is to harmonize such competing claims so that sustainable solutions can be found.

Liberal economic reforms introduced since 1977 have progressively connected rural economies to the global and domestic markets. The process of commercialization was accelerated recently due to: (a) growing market opportunities for local agricultural products such as offering forward contract arrangements for maize; and (b) development of marketing facilities (e.g. the Economic Centre in Dambulla) for channeling rural agricultural products to urban markets. Such developments enhanced

the market access for agricultural products that had earlier been produced for household consumption. According to farmers in dry zone villages, supply side facilitation for entry to the commercial stream brought several changes to traditional farming systems. One major change occurred the 1990s is the rapid spread of rain-fed commercial farming of maize in the *Maha* season. This accelerated deforestation in dry zone villages significantly, as surrounding forest lands were encroached for commercial cultivation of maize.

Adoption of technological innovations significantly increased the farmers' capacity to expand the area of cultivation within a short period of time. Use of hybrid seeds and adoption of land preparation machinery have played a significant role here. These factors seem to have had a cumulative impact on transforming the traditional farming system in the dry zone to a commercial system. Commercialization and adoption of technological innovations has provided a clear direction for farmers to face resource scarcities by intensifying the production of cash crops to meet the market demand. Overall, the net effect of all key factors has pushed the traditional farming system towards a commercially oriented direction. This has invariably accelerated the deforestation process.

According to Census and Statistics data of 2015, overall cultivate extent was 2,196,306ha. Highest cultivation extent was coming from paddy cultivation that covers 1,253,288ha, followed by coconut (394,836ha), tea (221,969ha), and rubber (143,137ha). Other significant crops such as maize, pepper, and cinnamon remained below 70,000ha each.

Forest land. In Sri Lanka forests cover approximately 29.7% (1.95m ha) of the land area, with dense forest amounting to 21.88% (1.44m ha). Eighty-six percent of the natural forest is located in the dry and intermediate zones of the country, and these areas contain about 85% of the closed canopy forests and 90% of the sparse (open) forests in Sri Lanka. The total area of dense natural forests in the country is 1.44 million ha of which 167,000 ha are identified as primary forest, while the remaining area is categorized as naturally regenerated forests. Approximately 79,941 ha are identified as plantation forests, including coconut and rubber plantations. Primary forests, most important from a biodiversity perspective, are conserved within protected areas. Furthermore, the extent of plantations, while significant, does not indicate widespread conversion

Forest cover in Sri Lanka has declined sharply over the past century as evidenced in a number of studies. Early forest inventories suggest that Sri Lanka's closed canopy (dense) forest cover declined from about 84% of the land area in 1881, to 44% in 1956 and to 31.2% in 1992. It further declined to 29.6% in 1996. A district-level

analysis suggests that closed canopy forest cover increased in recent years but the accuracy of this data is unclear.

The Forest Resource Assessment indicates that the trend in forest cover loss has considerably slowed down during the recent past but is still continuing and now increasing.

Findings of a recent study on the drivers of deforestation and degradation suggest that current (i.e., from 1992 onwards) drivers of deforestation in Sri Lanka result from four major proximate drivers including encroachment, infrastructure development projects, large scale private agriculture ventures, and localized drivers of forest degradation scattered around the country. The study also concluded that:

- *Overall, the process of deforestation has slowed down all over Sri Lanka. The current rate of deforestation (7,147 ha/year) has dropped significantly compared with the earlier rate reported in the period 1956 - 1984 (42,200 ha/year).*
- *Even if five hotspots of deforestation have been identified, deforestation also appears to be more scattered and widespread all over the country.*
- *Deforestation still takes place at a higher rate in the dry zone compared to the wet zone.*

As seen on the forest cover map of 2010 Figure 2.8, what remains of forest cover is highly fragmented, making protection and management challenging. Furthermore, the level of forest degradation has not been clearly assessed. Moreover, regions in the north and east are rapidly changing since the end of the civil war.

For the most part, natural forests in Sri Lanka are owned, managed and protected by the State Forest Department (FD) or the Department of Wildlife Conservation (DWC), which account for approximately 1,767,000 hectares of the total forest estate, equivalent to over 26.5% of the total land area of Sri Lanka Figure 2.9. Forest resources owned privately or by other parties are negligible in relation to State-controlled forests, but may nevertheless be a significant part of the national Reducing Emissions From Deforestation and Forest Degradation Plus strategy. Much of the State-owned forestland controlled by the FD and the DWC are designated protected areas⁴ falling within a number of sub-categories as follows:

In terms of administration, State forests are tightly controlled. In the case of the FD, staff are assigned to 23 forest divisions that are divided into more than 300 ranges, which are further divided into beats. In the case of the DWC, the island is divided administratively into 12 regions. In addition, a new category of protected area is administered by the CEA. These are known as Environmental Protection Areas (EPAs) and are gazetted under the provisions of sections 24C and 24D of the National Environmental Act No. 47 (1980).

Scattered along Sri Lanka's coastline are important mangrove forests that cover 15,669 hectares. These areas are under the authority of the FD, though the Coast Conservation Department's role in overall management in coastal regions is complementary. In the 1990s, mangrove forests were destroyed and converted to areas for shrimp aquaculture. However, the shrimp farming industry failed, and these areas have been abandoned. There could be potential to rehabilitate these areas and replant mangroves; however, one barrier is the long-term leases (99 years) which some of the aquaculture companies still possess. In May 2015, Sri Lanka announced the Sri Lanka Mangrove Conservation Project, a joint program with foreign and domestic non-governmental organizations' support to protect all of the country's remaining mangroves through demarcation, gazettement, legal protection, and enforcement.

Other forest land and tree tenure. Outside the forest lands owned and controlled by the FD, DWC, and CEA which are mentioned above, there are a number of other types of forest land in Sri Lanka, as described here briefly.

Forest Plantations and Woodlots. A number of different entities own forest plantations including State government departments (FD, DWC), State corporations, village collectives, and private plantation owners. Between 1972 and 1975, some 419,100 hectares were nationalized with tea plantations accounting for 39.7%, rubber for 17.8%, coconut for 11.5%, and other land 31%. Most of these lands were vested with two state corporations: the Janatha Estate Development Board and State Plantation Corporation (SPC). Plantations managed by Regional Plantation Companies currently account for approximately 6,000 hectares, while village collectives lease approximately 16,250 hectares of farmers' woodlots.

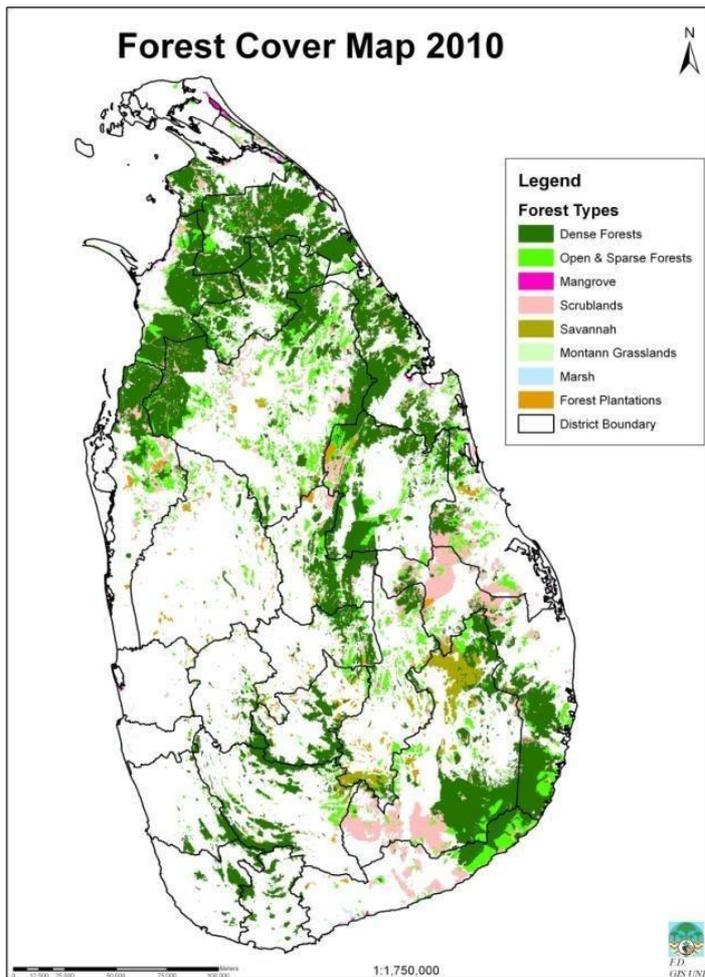


Figure 2.8: Forest Cover Map of Sri Lanka(2010)

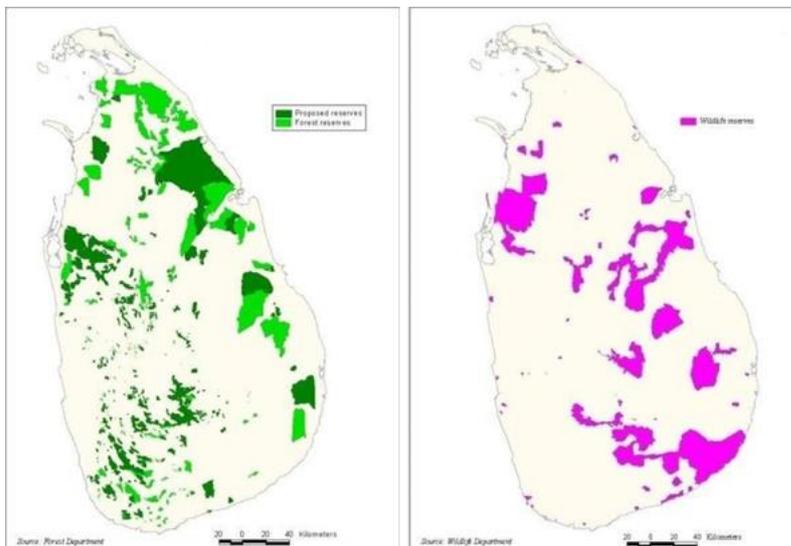


Figure 2.9: Land under the jurisdiction of Forest Department (green) and Department of Wildlife and Conservation (purple)

Home Gardens and Tree Tenure. Home gardens are widespread throughout Sri Lanka and represent a significant non-forest carbon sink, classified as ‘settlement’ land. Home gardens are said to cover 858,490 hectares, a relatively large area comparable to about half of natural forest cover. Notably, home

gardens provide approximately 40 to 60 percent of household fuelwood supply, among other food and medicinal household goods. There are regulations to protect trees within these systems, and village officers are responsible for monitoring. Since home gardens tend to be part of deeded private property, tenure is generally secure.

Throughout Sri Lanka there is a ban on felling trees in natural forests. Even within home gardens there are restrictions on cutting certain species (i.e. jack tree, wal del and female Palmyrha), requiring a permit from the Divisional Secretariat through the Grama Niladhari, and village officers are responsible for enforcing these rules. In this sense, owners of home gardens are subject to some restrictions on the rights over trees on their properties. As mentioned, home gardens are not considered to be part of Sri Lanka's forest cover. However, they remain potentially important in addressing drivers of deforestation and forest degradation.

Temple Forests. Traditionally in Sri Lanka temple lands were given by the King to the community in order to facilitate their provision of goods and services to the temples. Some of the temple lands contain forest areas of significant size and richness, and one source estimated that temple forests may cover as much as 30,000 hectares (in sum) though specific figures are not available.

Over time, the authority over temple lands has shifted from the surrounding community into the hands of the high priest. This concentration of power in the hands of the high priest has left the temple forests vulnerable to conversion. In one notable case in Soragune) the temple forest has been leased and cleared for a golf course while natural forests on the hillside were converted to rubber. Leasing of temple lands must be approved by the Ministry of Buddhist Affairs, but nevertheless with 'proper justification' forests may be converted to other uses. In practice, decisions may be taken by the priest or appointed layman called the Basnayaka Nilame.

2.1.6 Biodiversity

The southwestern region of Sri Lanka, encompassing approximately 20,000 km², is the only a seasonal ever wet region in the whole of South Asia. This region is referred to as the wet zone of Sri Lanka and receives up to 3,000 mm of rainfall annually. Wet-zone of Sri Lanka along with the Western Ghats of India is designated as one of the world's biodiversity hotspots, in demand of extensive conservation investment. This high biodiversity seen in Sri Lanka can be attributed to a wide variety of climatic, topographic and soil conditions that exist in the island that has resulted in a diverse array of aquatic and terrestrial habitats.

Sri Lanka was part of the ancient Gondwanaland and was located adjacent to the African continent. Around 160 million years ago, the Deccan plate which comprised of India and Sri Lanka, broke away from the Gondwanaland, drifted northwards and collided with the Asian plate around 55 million years ago. Thereafter, Sri Lanka separated from India due to submersion of the land bridge between the two countries about 20 million years ago. These zoogeographic, climatic, topographic and edaphic factors have shaped the faunal and floral assemblage seen in Sri Lanka. During the last 2 to 3 thousand years land-use changes brought about by humans have been instrumental in large scale habitat changes that have had both positive and negative influences on Sri Lanka's flora and fauna.

Sri Lanka's biodiversity is significantly important both in a regional and global scale. Sri Lanka has the highest species density (number of species present per 10,000sq. km) for flowering plants, amphibians, reptiles, and mammals in the Asian region. The currently recognized statistics of the major plant and animal taxa are presented in Table 2.2

Even though the above table indicates that Sri Lanka is endowed with a rich biodiversity, at present only a small fraction of Sri Lanka's biodiversity is known to science. For instance, higher plants and vertebrates are the only taxa that have been studied in sufficient detail to date.

Lower plants and invertebrates are largely neglected except for few selected groups such as butterflies, dragonflies, land snails, pteridophytes and algae. Even the vertebrates and, for that matter, higher plants are not completely listed, as during the last two decade alone large number of new species have been discovered Table 2.2

Table 2.2: Species richness of selected faunal and floral groups of Sri Lanka.

Taxonomic Group	Number of Species	Number of Endemic Species
Angiosperms	3,154	894
Gymnosperms	2	0
Pteridophytes	336	49
Soft corals	35	
Hard corals	208	
Spiders	501	256
Centipedes	19	
Marine crustaceans	742	
Fresh water crabs	51	50
Dragonflies	118	47
Ants	194	33
Bees	130	
Butterflies	245	26
Leafhoppers	257	
Dung beetles	103	21
Bivalves	287	
Gastropods (marine)	469	
Land snails	253	205
Echinoderms	190	
Marine fish	1377	
Fresh water fish	91	50
Amphibians	111	95
Reptiles	211	125
Resident birds	240	27 + 6 Proposed
Mammals	125	21

The statistics clearly indicate that most of the information available for flora and fauna of Sri Lanka is on higher plants or vertebrates. However, one must keep in mind that higher plants and vertebrates make up only about 3% of all the species described to date while Order Insecta alone make up about 54%. There is no doubt that large number of insect species are awaiting to be discovered in Sri Lanka. It will be rather unfortunate if some of these organisms would perish even before we discover them. Furthermore, so far very little attention has been given to species that inhabit the forest canopy. Studies

in Australia and South America have shown that the forest canopy is home to large number of living organisms that will not be detected by the traditional sampling techniques used.

Sri Lanka's exceptional biodiversity is possible due to the high ecosystem diversity it supports on land and in the coastal seas Table 2.3 , and the wealth of plant and animal species they harbor (Tables 2.5 and 2.6). This includes many species that are yet to be discovered. Of note is the remarkably high percentage of endemic and geographically relict species that are found in the island's forests and wetlands.

Table 2.3: Ecosystems diversity in Sri Lanka: Status and trends

Ecosystems	Previous data (ha)	Present (ha)
Forest and related ecosystems	<i>(1999 data, FD)</i>	<i>(2010 survey, FD)*</i>
<input type="checkbox"/> tropical wet lowland evergreen forest (includes lowland and mid elevation rain forests)	124,340.8	123,302
<input type="checkbox"/> tropical sub-montane forest	65,792.3	28,513
<input type="checkbox"/> tropical montane forest	3,099.5	44,758
<input type="checkbox"/> tropical moist monsoon forest	221,977.0	117,885
<input type="checkbox"/> tropical dry monsoon (mixed evergreen) forest†	1,027,544.1	1,121,392
<input type="checkbox"/> tropical thorn forest	NA	NA
<input type="checkbox"/> riverine dry forest	18,352.1	2,425
<input type="checkbox"/> grasslands (wet pathana, dry pathana, savannah, etc)	>75,000	68,043 (savannah only)
Inland wetland ecosystems	<i>(4th National Report to CBD)</i>	
<input type="checkbox"/> flood plains	NA	NA
<input type="checkbox"/> lentic waters (tanks/reservoirs and ponds)	179,790	*169,941
<input type="checkbox"/> swamps	NA	NA
<input type="checkbox"/> wet villu grasslands	NA	*12,500
<input type="checkbox"/> Overall water bodies	NA	‡ 488,181
Coastal and marine ecosystems	<i>(4th National Report to CBD)</i>	
<input type="checkbox"/> mangroves	6,080	†15,669
<input type="checkbox"/> salt marshes	23,800	NA
<input type="checkbox"/> sand dunes and beaches	19,394	NA
<input type="checkbox"/> mud flats	9,754	NA
<input type="checkbox"/> sea grass beds	NA	NA
<input type="checkbox"/> lagoons and estuaries	158,017	NA
<input type="checkbox"/> coral reefs	NA	68,000
Agricultural ecosystems	<i>(4th National Report to CBD)</i>	
<input type="checkbox"/> paddy lands	525,000	*845,444.00
<input type="checkbox"/> fruit cultivations	97,000	‡135,567

Ecosystems	Previous data (ha)	Present (ha)
<input type="checkbox"/> small crop holdings or other field crops (pulses, sesame etc)	128,000	*146,544.69
<input type="checkbox"/> vegetable cultivations (<i>excluding root and tuber crops for 2012</i>)	110,000	*89,980
<input type="checkbox"/> crop plantations (major export crops)	772,000	*703682.8
<input type="checkbox"/> minor export crops	NA	**106,232
<input type="checkbox"/> home gardens (cultivated, includes fruit cultivations in home gardens)	367,800	*1,684,165.60
<input type="checkbox"/> chena lands (slash and burn cultivation)	NA	*227,710.28

Source: The data for this table are from the following sources except where specifically mentioned: Forest Department 2010 survey data; † AgStats, 2013; ‡ paddy land extent is Asweddumized land area from the DOA for 2012/13; † † Data from Department of Export Agriculture, 2014; *IUCN and CEA, 2006; *MOE, 2010, **MoENR, 2003.

Note: The discrepancies between areas given for montane and sub-montane forests in the 1999 and 2010 forest assessments are reportedly due to differences in criteria for separation of these forest types. Accordingly, the area under both montane and sub-montane forests has changed from 68,892 ha in 1999 to 73,271 ha in 2010.

Table 2.4: Species diversity among selected groups of Sri Lanka's fauna and flora in terrestrial and freshwater habitats

Taxonomic group	Number of species		Number of endemic species and % endemism
	4th National Report to CBD	Present	Present
Land snails	246	253	205 (81)
Dragonflies	120	118	47 (39.8)
Bees	148	130	NA
Ants	NA	194	33 (17)
Carabid beetles	525	NA	NA
Butterflies	243	245	26 (10.6)
Spiders	501	510	257 (51)
Freshwater crabs	51	51	50 (98)
Freshwater fish	82	91	50 (54.9)
Amphibians	106 +	111	95 (85.6)
Reptiles (terrestrial)	183	193	124 (58.8)
Birds (including migrants)	482 (220 residents)	453, with 240 residents	27 (11.3) definitive and 8 Proposed
Mammals	91	95	21 (22.1)
Angiosperms	3,771	3,154	894 (28.3)
Pteridophytes (Ferns only)	348	336	49 (14.6)
Mosses †	560	560	63+
Liverworts*	303	222	NA
Lichens*	661	661	NA

NA= data not available; All data are from BDS/MoE & DNBG (2012) except otherwise mentioned

Taxonomic group	Number of species		Number of endemic species and % endemism
	4th National Report to CBD	Present	Present
Data source for present status: BDS/MoE & DNBG, 2012 except IUCN and MoENR, 2007 for mosses and MoENR 2006 for Liverworts and Lichens			

Table 2.5: Species diversity among selected groups of fauna in coastal and marine systems

Taxonomic group	Number of species	
	4th report	present
Hard coral species	183	208
Soft corals	NA	35
Echinoderms	213	NA
Echinoderms (Echinoidea)	NA	55
Echinoderms (Crinoidea, Ophuroidea and Holothuroidea)	NA	135
Marine mollusks	228	NA
Marine shelled bivalves and gastropods	NA	756
Marine crustaceans	NA	742
Sharks	61	64
Skates and Rays	31	33
Marine reptiles	18*	18
Marine mammals	28	30
Marine and brackish water bony fishes	NA	916

While association with Peninsular India and its mega biodiversity for millions of years has resulted in a high species diversity in Sri Lanka, the island's separation in the Miocene about 20 million years ago, has resulted in a remarkable endemism. This is underscored by the fact that 28% of Sri Lanka's 3,154 species of indigenous angiosperm flora are endemic to the country, including 14 endemic genera distributed in 186 families. For example, all 58 species of Dipterocarps found in Sri Lanka are endemic. Similarly, the genus *Syzygium* (Myrtaceae) has 30 indigenous species, of which 25 are endemic, while 26 of the 33 species of *Memecylon* (Melastomataceae) are endemic. The lower plant groups are insufficiently identified, but a high biodiversity and endemism is revealed from past studies. Among aquatic plants, the family Araceae harbors the highest number of endemics including 10 species of the genus *Cryptocoryne* and seven species of *Lagenandra*.

Endemism is also high among the indigenous vertebrates, which without the migrant birds, is about 42%. Highest endemism in vertebrates is seen among amphibians, freshwater fishes and reptiles. Most invertebrate groups in the island have been incompletely surveyed, but a high diversity is documented among butterflies, dragonflies, bees, spiders and land snails.

Biodiversity is also high among marine species such as corals, echinoderms, molluscs and pelagic fishes. Fringing coral reefs with high biodiversity such as those in the southwest and eastern coasts of Sri Lanka and offshore reefs such as the Bar Reef are of high tourism value, while echinoderms such as sea cucumber, molluscs such as squid and cuttlefish, crustaceans such as lobster, crabs, prawns and shrimps, and a host of marine fishes are of major importance in the food fishery in terms of national nutrition and export value.

The global recognition of Sri Lanka's unique biodiversity is demonstrated by the fact that in a land area less than 65,250 km², the country has four forests recognized as Natural World Heritage Sites because of their exceptional biodiversity value due to high endemism, and four Biosphere Reserves (with Core Zones recognized as making significant contribution to national and global biodiversity) within the UNESCO World Network of Biosphere Reserves. Sri Lanka also has six Ramsar wetlands (namely: Bundala National Park, Annaiwilundawa Tanks Sanctuary, Maduganga, Vankalai Sanctuary, Kumana Wetland Cluster and the Wilpattu Ramsar Wetland Cluster) indicating global importance of the island's wetlands. The Bundala Ramsar site harbours a large number of migrant waterbirds, and four marine turtle species come ashore to its beaches. Thus, biodiversity loss in Sri Lanka will contribute significantly to the loss and degradation of the earth's ecosystem services that underlie human well-being in addition to the national impacts of biodiversity loss.

The areas managed and protected by the FD and the DWC have increased from 2008 to 2010 Table 2.6. The moratorium on logging in all natural forests which came into force in 1990 is continuing. Hence, commercial timber extraction is prohibited from all natural forests in Sri Lanka. The extent of Conservation Forests set aside for strict conservation has increased over the years with more valuable wet zone forests being added to the Protected Area Network based on the biodiversity assessments made through the National Conservation Review. Fifteen mangrove sites have also been protected by the Forest Department along the southwest and north-west coast. There has also been a perceptible increase in the Protected Area extent under the Department of Wildlife Conservation. However, management of all Protected Areas do not always meet the required standards, particularly the forest reserves that are not set aside for strict conservation and the wildlife sanctuaries, due to limitations of staff and other resources in the agencies responsible for conservation of these areas. This is compounded in recent years by poor coordination between agencies concerned directly with development and conservation. Eight (08) Environmental Protection Areas have been gazetted by the CEA under the National Environmental Act. They are Gregory's Lake, Thalangama Lake, Bolgoda, Walauwatte-Wathurana, Muthurajawela (buffer zone), private lands within the Knuckles Conservation Forest boundary, Hantane and Maragala. Although they do not have strict legal protection, only identified development activities are allowed in them by the CEA as specified in the National Environmental Act. The CEA, however, does not have adequate mandate to monitor these areas to see that developers adhere to the conditions that need to be followed during development.

Table 2.6: Number and extent of protected areas administered by the Forest Department and the Department of Wildlife Conservation

Protected Area category	Area under each category (ha)	
	4th NR (ha)	2010 (ha)
Forests under the Forest Department (FD)*		
National Heritage Wilderness Area (also a World Heritage Area) [N=1]	11,187	11,427
Conservation Forests* [2008 = 33, now N=75]	76,227	118,758.7
Other Reserved Forests [now N=371]	NA	1,044,008.5
Forest Plantations	72,350 (in 2001)	75,556.7 (in 2014)
Mangroves (now N=15)	2,163	1153.1
Forests under the Department of Wildlife Conservation (DWLC)*		
National Parks (2008=14, now = 22)	495,984	535,182
Nature Reserves (2008=4, now = 5)	32,581	64,585
Sanctuaries (2008=63, now =65)	262,156	376,943

Strict Natural Reserves (3)	31,573	31,574
Jungle Corridors (Kaudulla- Minneriya) (1)	10,360	8,777

The extent (proposed and implemented) as Biosphere Reserves has increased Table 2.7 with the identification of Transition Zones for the Sinharaja and Hurulu Biosphere Reserves where people live and lead normal lives and demonstrate sustainable livelihoods that do not degrade the adjacent biodiversity rich Core Zones.

Table 2.7: Changes in International protected area and Ramsar Sites

International PA Category	Number of PAs and area covered in 2008	Number of PAs and area covered in 2014
Natural World Heritage Sits (IUCN category X PA)	n=1, 8864 ha The Sinharaja World Heritage site	n=2, 118,884 New: The Central Highlands Serial World Heritage Site with 3 forests
Biosphere Reserves Recognised by UNESCO (IUCN category IX PA)	n=4, extent 81363.7 ha Sinharaja, Kanneliya, Dedyagala, Nakiyadeniya, Hurulu and Bundala BRs	n=4, extent 143106.3 Same reserves, increased area
Ramsar sites	n=3; 8,377 ha	n=6, 198,027 ha

2.1.7 Cultural resources

The culture of Sri Lanka mixes modern elements with traditional aspects and is known for its regional diversity. Sri Lankan culture has long been influenced by the heritage of Theravada Buddhism passed on from India, and the religion's legacy is particularly strong in Sri Lanka's southern and central regions. South Indian cultural influences are especially pronounced in the northernmost reaches of the country. The history of colonial occupation has also left a mark on Sri Lanka's identity, with Portuguese, Dutch, and British elements having intermingled with various traditional facets of Sri Lankan culture. Culturally, Sri Lanka, particularly the Sinhalese people, possesses strong links to both India and Southeast Asia.

The country has a rich artistic tradition, with distinct creative forms that encompass music, dance, and the visual arts. Sri Lankan culture is internationally associated with cricket, a distinct cuisine, an indigenous holistic medicine practice, religious iconography such as the Buddhist flag, and exports such as tea, cinnamon, and gemstones, as well as a robust tourism industry. Sri Lanka has longstanding ties with the Indian subcontinent that can be traced back to prehistory.

The architecture of ancient Sri Lanka displays a rich diversity, varying in form and architectural style from the Anuradhapura Kingdom (377 BC–1017) through the Kingdom of Kandy (1469–1815). Sri Lankan (Sinhalese architecture also displays many ancient North Indian as well as East Asian influences). Buddhism had a significant influence on Sri Lankan architecture after it was introduced to the island in the 3rd century BC, and ancient Sri Lankan architecture was mainly religious, with more than 25 styles of Buddhist monasteries.

Significant buildings include the stupas of Jetavanaramaya and Ruwanvelisaya in the Anuradhapura kingdom and further in the Polonnaruwa Kingdom (11th–13th centuries). The palace of Sigiriya is considered a masterpiece of ancient architecture and ingenuity, and the fortress in Yapahuwa and the Temple of the tooth in Kandy are also notable for their architectural qualities. Ancient Sri Lankan

architecture is also significant to sustainability, notably Sigiriya which was designed as an environmentally friendly structure.

Cultural triangle. Sri Lanka’s Cultural triangle is situated in the centre of the island and covers an area which includes the World Heritage cultural sites of the Sacred City of Anuradhapura, the Ancient City of Polonnaruwa, the Ancient City of Sigiriya, the Ancient City of Dambulla and the Sacred City of Kandy. Due to the constructions and associated historical events, some of which are millennia old, these sites are of high universal value; they are visited by many pilgrims, both laymen and the clergy (prominently Buddhist), as well as by local and foreign tourists.

Other religious sites. In addition to sites around Buddhism, there are many sites scattered across the entire country that honours religions, especially Christianity and Hinduism.

Cultural heritage sites under UNESCO’s World Heritage List.

- *Ancient City of Polonnaruwa - Polonnaruwa was the second capital of Sri Lanka after the destruction of Anuradhapura in 993. It comprises, besides the Brahmanic monuments built by the Cholas, the monumental ruins of the fabulous garden-city created by Parakramabahu I in the 12th century.*
- *Ancient City of Sigiriya - The ruins of the capital built by the parricidal King Kassapa I (477–95) lie on the steep slopes and at the summit of a granite peak standing some 180m high (the 'Lion's Rock', which dominates the jungle from all sides). A series of galleries and staircases emerging from the mouth of a gigantic lion constructed of bricks and plaster provide access to the site.*
- *Golden Temple of Dambulla - A sacred pilgrimage site for 22 centuries, this cave monastery, with its five sanctuaries, is the largest, best-preserved cave-temple complex in Sri Lanka. The Buddhist mural paintings (covering an area of 2,100 m²) are of particular importance, as are the 157 statues.*
- *Old Town of Galle and its Fortifications - Founded in the 16th century by the Portuguese, Galle reached the height of its development in the 18th century, before the arrival of the British. It is the best example of a fortified city built by Europeans in South and South-East Asia, showing the interaction between European architectural styles and South Asian traditions.*
- *Sacred City of Anuradhapura - This sacred city was established around a cutting from the 'tree of enlightenment', the Buddha's fig tree, brought there in the 3rd century B.C. by Sanghamitta, the founder of an order of Buddhist nuns. Anuradhapura, a Ceylonese political and religious capital that flourished for 1,300 years, was abandoned after an invasion in 993. Hidden away in dense jungle for many years, the splendid site, with its palaces, monasteries and monuments, is now accessible once again.*
- *Sacred City of Kandy - This sacred Buddhist site, popularly known as the city of Senkadagalapura, was the last capital of the Sinhala kings whose patronage enabled the Dinahala culture to flourish for more than 2,500 years until the occupation of Sri Lanka by the British in 1815. It is also the site of the Temple of the Tooth Relic (the sacred tooth of the Buddha), which is a famous pilgrimage site.*

2.2 Socio-Economic Context

2.2.1

2.2.2 Demography

Sri Lanka has a population of about 20 million. Population density is highest in the southwest where Colombo, the country's main port and industrial center, is located. The net population growth is about 1.3% Table 2.8.

Table 2.8: Population and Land Area by Provinces

Province	Population ('000)	Land Area (sq. km)	Population Density
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Western	5,979	3,593	1,664
Central	2,658	5,575	477
Southern	2,556	5,383	475
Northern	1,094	8,290	132
Eastern	1,615	9,361	173
North Western	2,448	7,506	326
North Central	1,312	9,741	135
Uva	1,316	8,335	158
Sabargamuwa	1,988	4,921	404
TOTAL	20,966	62,705	334

Sri Lanka is ethnically, linguistically, and religiously diverse. Sinhalese make up 75% of the population and are concentrated in the densely populated southwest. Sri Lanka Tamils, citizens whose ancestors have lived on the island for centuries, total about 11% and live predominantly in the north and east. Indian Tamils who constitute about 4% of the population are a distinct ethnic group who were brought to Sri Lanka in the 19th century as tea and rubber plantation workers, and they remain concentrated in the "tea country" of south-central Sri Lanka. Other minorities include Muslims (both Moors and Malays), at about 9.3% of the population; Burghers, who are descendants of European colonists, principally from Portugal, the Netherlands and the UK; and aboriginal Veddahs.

Table 2.9: Composition of Population

By Ethnicity	%	By Religion	%
Sinhalese	74.9	Buddhist	70.1
Sri Lankan Tamil	11.2	Hindu	12.6
Indian Tamil	4.1	Islam	9.7
Sri Lankan Moor	9.3	Christian & Roman Catholic	7.6
Other	0.5	Other	0

Sizable minorities of both Sinhalese and Tamils are Christians, most of whom are Roman Catholic. The Burgher population is mostly Roman Catholic or Presbyterian. The Veddahs have Animist and Buddhist practices. Sinhala, an Indo-European language, is the native tongue of the Sinhalese. Tamils speak Tamil, a Dravidian language. The moors speak an Arab-Tamil dialect, consisting of a large number of Arabic words. The Malays speak Sri Lankan Creole Malay. Many of the Burghers speak Sri Lankan Indo-Portuguese although its use has declined and all speak Sinhala. The Veddahs speak a language closely related to Sinhala.

2.2.3 Economy

Sri Lanka has shown steady growth over the last decade although key macroeconomic challenges persist. Sri Lanka is a middle-income country with a GDP per capita of USD 4,102 (2018) and a total population of 21.7 million people. Following 30 years of civil war that ended in 2009, Sri Lanka's economy grew at an average 5.6 percent during the period of 2010-2018, reflecting a peace dividend and a determined policy thrust towards reconstruction and growth; although growth slowed down in the last few years.

The economy is transitioning from a predominantly rural-based economy towards a more urbanized economy oriented around manufacturing and services Figure 2.9. The government is carrying out fiscal

reforms, improving public financial management, increasing public and private investments, addressing infrastructure constraints and improving competitiveness. It launched its Vision 2025 on September 4, 2017 to strengthen democracy and reconciliation, inclusive and equitable growth and ensure good governance.

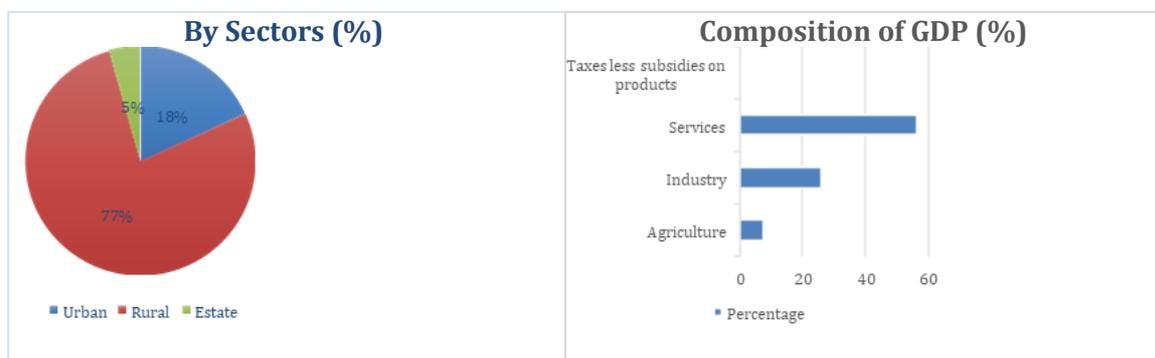


Figure 2.10: Basic Profile of the Economy

Social indicators rank among the highest in South Asia and compare favorably with those in middle-income countries. Economic growth has translated into shared prosperity with the national poverty headcount ratio declining from 15.3 percent in 2006/07 to 4.1 percent in 2016.

Sri Lanka has made strong progress in reducing poverty and sharing prosperity among the less well-off in recent years. Extreme poverty is rare and concentrated in some geographical pockets; however, a relatively large share of the population subsists on slightly more than the poverty line. Specifically, using Sri Lanka's national poverty line, the poverty headcount rate fell from 8.9 percent in 2009/10 to 6.7 percent in 2012/13, and then further to 4.1 percent in 2016. Moreover, extreme poverty has been almost eliminated, with only 0.8 percent of the population living on less than \$1.90 per person per day. However, poverty remains concentrated in rural areas—of the poor, 82 percent were rural residents while only 8 percent lived in urban areas and 10 percent in the estate sector. While the Northern and Eastern Provinces have the highest poverty rates among provinces, a large number of poor live in and around the predominantly rural and agricultural Central Highlands. Districts with the largest number of poor are in Ratnapura, Kandy, and Badulla, which together account for about a quarter of all the poor. Further, estate sector residents remain one of the most marginalized group in Sri Lanka, with almost a quarter classified as poor according to the \$3.20 international poverty line. Further, while official national poverty is low, Sri Lankans remain highly vulnerable to various shocks. A large number of people remains just a small shock away from falling back into poverty. The risk factors for vulnerability are diverse and include cultural norms, insecurity, difficulties accessing economic opportunities, and climatic shocks and natural disasters.

Low fiscal revenues combined with largely non-discretionary expenditure in salary bill, transfers, and interest payments have constrained critical development spending on health, education and social protection, which is low compared to peer countries. Public debt levels are high while the overall debt portfolio indicate some important challenges.

2.2.4 Human Development

Sri Lanka has made significant progress in human development. Social indicators rank among the highest in South Asia and compare favorably with those in middle-income countries. The national poverty headcount ratio declined from 15.3 percent in 2006/07 to 6.7 percent in 2012/13 although disparities remain. Table 2.10.

Table 2.10: Status of Human Development Indicators in Sri Lanka.

Indicators	
Life Expectancy (Avg. years)	74.9
Literacy Rate (Aged 15 years and above)	
Total	93.2%
Male	94.1
Female	92.4
Human Development Index	0.757

At the national level, nearly 32% of the population has education attainments above secondary level education while ‘No schooling’ population accounts for 3.8% of the total Sri Lankan population.

2.2.5 Labor Force Participation

As per the *Sri Lanka Labor Force Statistics Quarterly Bulletin* (Sri Lanka Labor Force Survey, 1st Quarter, 2020), the estimated economically active population is about 8.5 million in the first quarter 2020. Of the economically active population, 65.7 percent are males and 34.3 percent are females. The economically inactive population is about 8.2 million (26.1 percent males and 73.9 percent females). During first quarter of 2020, the total number of employed persons in Sri Lanka is estimated at about 8.0 million. Of which, about 46.4 percent engaged in Service sector, 27.1 percent in Industry sector and 26.5 percent in Agriculture sector.

The overall unemployment rate reported for female is 9.6 percent while it is 3.7 percent for male. Youth unemployment rate (age 15 – 24 years) corresponding to the first quarter 2020 is 26.8 percent and that is the highest reported unemployment rate among all age groups. Further the unemployment rates for males and females are 21.1 and 36.3 percent respectively for age group 15—24. Further, the unemployment among females is higher than that and gender – First quarter 2020 of males, in all age groups. Youth and female unemployment contribute more to the overall unemployment of the country.

Table 2.11: Labor Force Participation in Sri Lanka.

Indicators	2020 (Q1)
Labour Force Participation Rate (%)	
Total	51.0%
Male	72.4%
Female	32.5%
Unemployment Rate (% of labour force)	
Total	5.7%
Male	3.7%
Female	9.6%

2.2.6 Housing and Access to Public Utilities

The following table presents information on households by tenure which forms an important consideration in resettlement planning processes under the project.

Area	Total	Owned by Household member	Rent/ Lease Govt. owned	Rent/ Lease privately owned	Rent free occupied	Encroached	Other
Sri Lanka	5264282	4365190	116871	330410	328346	68650	54815
Colombo	572475	427264	24830	90417	17221	7478	5265
Households by Principal Type of Lighting							
Area	Total	National Electricity Network	Rural Hydro Electricity Projects	Kerosene	Solar power	Bio Gas	Other
Sri Lanka	5264282	4577662	8549	640265	33597	133	4076
Colombo	572475	559218	-	12586	158	13	500
Households by Principal Type of Source of Drinking water							
Area	Total	Protected well	Unprotected well	Tap (main line)	Rural water project	Tube well	Other
Sri Lanka	5264282	2425791	211556	1654328	482937	177432	312238
Colombo	572475	134923	1951	416857	12728	2065	3951

Source: Census of Population and Housing-2012

A large number of households are owned by householders themselves, amounting to 83% of the total household at the national level. However, it is to be understood that in large metropolitan areas like Colombo District, many residents do not have ownership rights of their premises and are living on rented/encroached premises (house ownership in Colombo is 74%). Similarly, as can be expected, a large section of the population in Colombo district, as compared to the National average has better access to electricity through the national grid and other sources such as Kerosene and Solar Power. Similarly, the data reflects better access and source of drinking water in Colombo district.

2.2.7 Status of Women

According to the United Nations Development Programme (UNDP) Human Development Report 2019, Sri Lanka ranked 72 among 187 countries in human development index (HDI). The country has an HDI of 0.780, with a rank of 86 for its Gender Inequality Index (GII). GII measures gender inequality in three dimensions: reproductive health, empowerment (political participation and education), and labor market participation.¹ The sex ratio is in favor of women (106:100) both at the national level and in Colombo, as they accounted for 51.5% and 50.90% of the national and district population in the 2011/12 National Census, respectively.

Workforce Participation of Women: The data from ILO modelled estimate shows that while percentage of women working in the agricultural sector is more (29.2%), women are lagging in the industry and service sector by a margin of 2.2% and 2.9%, respectively.²

¹ <http://hdr.undp.org/sites/default/files/hdr2019.pdf>

² <http://datatopics.worldbank.org/gender/country/sri-lanka>

Political Participation: Despite significant efforts towards gender equality, women are underrepresented in political and public decision-making in Sri Lanka. The percentage of women in Parliament since the 1930s has never exceeded 6 %. Less than 5.8 % of women were elected to Parliament in the recent General Elections in 2015. Women's were even less represented at the municipality and local government level, comprising only 2 % of elected officials between 2008-2012.³ However this increased to 29.1% in 2018 after incorporating the 25% quota for women⁴.

Access to Health Services: Universal access to free health services has resulted in a decline in mortality rates, especially among women. Female feticide and infanticide have not been reported. Sri Lanka also has a low prevalence of HIV/AIDS cases (0.1%). Utilization of health services such as antenatal and postnatal care and immunization, and institutional births are near universal, but the rising cost of drugs in an unregulated market creates hardships for the poor.⁵

Access to Education: The provision of free state education supported by extensive incentives such as free textbooks, free uniforms, scholarships, subsidized transport for all, and free school meals for the children of the economically disadvantaged have resulted in a rapid rise in the participation rates at school to over 95% and the achievement of gender parity in enrollment in primary, secondary, and university education. Girls (96.9%) have higher enrollment and retention rates in secondary education than boys (96.8%). The percentage of female students in universities and non-vocational tertiary education are higher than that of male students (Annual Health Bulletin 2015). Similar trends were noted in Colombo as well.

Prevalence of Gender Based Violence: Despite amendments to the Penal Code and the Prevention of Domestic Violence Act, the incidence of GBV continues to be high as per studies conducted by relevant service entities and NGOs (WHO, 2018). At present, there are no mechanisms for systematic collection of data on GBV in the country. The UN multi-country study on men and violence by CARE, Partners for Prevention and the UN (2013) revealed that a significant majority of men and women in Sri Lanka subscribe to attitudes that perpetuate gender inequality. This study was undertaken in four districts including Colombo.

Sri Lanka's Demographic Health Survey (DHS) 2016 indicated that almost 17% of ever-married women had experienced intimate partner violence during the preceding 12 months, with urban women reporting a slightly higher prevalence than rural women. Furthermore, 13 percent of all the women who suffered from violence, declared to have suffered violent behaviors by an intimate partner on a daily basis and violence increases with the age of the women. Among all women who have experienced domestic violence, only twenty eight percent (28%) sought help to escape from violence. In Colombo, fourteen percent (14%) of respondents have experienced at least one form of domestic violence, while thirty eight percent of those who suffered sought help (DHS, 2016).

While the legal age of marriage in the country is 18 years, 2% of females below the age of 15 and 12% of females under 18 years of age are living in cohabitation (ILO). This impedes many girls from fulfilling their aspirations and is also a cause for gender inequality and gender-based violence. Prevalence on inter-state and cross-border trafficking have also been reported in US State Department's Trafficking in Persons Report 2017, which states that trafficking for sex and exploitative forms of labour exists, especially in cases where women travel out of the country to work as domestic helps or in garment factories.

³ <https://asiapacific.unwomen.org/en/countries/sri-lanka>

⁴ https://www.clgf.org.uk/default/assets/File/Country_profiles/Sri_Lanka.pdf

⁵ <https://www.adb.org/sites/default/files/institutional-document/172710/sri-lanka-country-gender-assessment-update.pdf>

2.2.8 Vulnerable Groups

Women-headed households and war widows are disproportionately represented among the poorest. In Sri Lanka, 1.2 million households or 23 % of households are female-headed. War-affected women are particularly vulnerable since they face an additional layer of challenges including exclusion from inheritance, inability to acquire property rights, lack of access to land, and inability to participate in public realm due to negative social norms and perceptions about widows and women who live alone.

Estate workers fare much worse on several social indicators than the general population. In addition to a high concentration of poverty among estate workers, the estate sector continues to be plagued by chronic malnutrition and by lack of access to proper housing, water and sanitation, health services, and education. **Internally Displaced Persons and Returnees** are in many cases still struggling to rebuild their lives, even though it has now been 10 years since the end of the conflict.

Another group that is particularly vulnerable are the **Veddhas**, forest-dwellers, who have been impacted by development projects that led to both involuntary and voluntary resettlements in 1980's and hence have been deprived of access to their traditional source of livelihoods. The Veddha communities thus continue to struggle with no proper livelihoods to fend for themselves, poor education attainment and living with minimum living standards.

When compounded with poverty and high rates of unemployment, **youth** can also be considered a vulnerable group. Sri Lanka's youth population (15- 29 years), which constitutes nearly 1/4th of the total country population, is unable to enjoy opportunities to participate effectively in the labor market and the public realm – youth unemployment is 23.3%, especially when compared to national average of 5.1%. Further, disparities exist between young women's unemployment which is at 37.5% while young men's unemployment is at 17.5% . With weak links to the labor market and social institutions, the youth become increasingly disenfranchised.

Cruelty to children is also on the rise in Sri Lanka. According to government reports, violence against children is on the rise, with 2,068 cases reported in 2014 and over 12,000 cases in 2015, an increase partly due to increased reporting. While more than 14,500 children live in long-term state residential institutions, it is estimated that an additional 20,000 children live in unregulated private and religious orphanages or boarding houses. The country's child-protection system lacks the necessary framework, capacity and resources to prevent the abuse, neglect and exploitation of children and to provide timely responses.

People (including children) with disabilities lack equal access to education, employment opportunities, and safety. The labour force participation rate of the population with difficulties is low (29.1 per cent compared to 54.2 per cent for those without difficulties). Women with disabilities face higher challenges with getting a job than their male counterparts. Additionally, people with disabilities have limited access to social protection schemes, including insurance coverage provided by the Government, CSOs and the private sector. Other barriers include insufficient sign language instructors and the unavailability of vocational training systems for people with disabilities; lack of understanding by employers of the skills and abilities of people who are disabled; and negative societal attitudes. At present, there are 153 centers for people with special needs. Most centers are run by private sector, NGO or religious organizations. There are approximately 3000 special needs people living in those centers.

The **chronically ill** people, especially those infected with chronic ailments such as Chronic kidney disease (CKD) and cancer can also be considered vulnerable. There is a definite increase in the number of cancer patients in the past decade. According World Health Organization, a total of 16,963 new cancer patients were registered for treatment during the

year 2010 (males - 7,993 and females - 8,970) and in 2018, the number had increased to 23,530 (10,645 and females - 12,885).

Sri Lanka also faces a looming demographic burden with the increasing *elderly* population. Driven by a downtrend in the birth rate and increased life expectancy (at 74 years in 2012), the dependency ratio is gradually rising as the population ages. By 2021, one in six Sri Lankans will be over 60 years. Only around 40-50% of the current elders are covered under some form of social protection/old-age benefit programme like pension schemes, provident funds or monthly cash transfers. At present, there are 330 eldercare centers according to the National Secretariat for Elders Sri Lanka.

To cater to the needs and concerns of these poor vulnerable groups, Sri Lanka has an extensive social protection system in place. However, these programmes are managed and implemented by numerous department and agencies. This fragmented social protection system in the country has resulted in programme overlap and high administrative costs. A brief summary of the major noncontributory cash transfer programs are given below:

- Samurdhi cash allowance- Samurdhi is the largest scheme in Sri Lanka, an integrated welfare program, that provides cash transfers, microfinance, and various community and livelihood development activities. Low income families are paid a cash allowance of LKR 420/-3500/- per month depending on the number of family members to 1,798,655 low income families by the Department of Samurdhi Development. There are 600,339 families in the waiting list. In 2015, the program covered 1.48 million families, approximately 30 percent of the population.
- Financial Assistance to Elders – Financial support to elders program provides LKR 2000/- per month to low income persons above 70 years old. There are 416,764 beneficiaries receiving financial assistance. In addition, there are 142,345 in the waiting list. This program is being implemented by the National Secretariat for Elders (NSE).
- Payments for People with Special Needs – The National Secretariat for the People with Disabilities, MWCASS provide Rs. 5,000/- per month benefits to 72,000 persons with special needs. There are 38,791 people in the waiting list.
- Payment for People with Chronic Kidney Disease- Rs. 5,000/- per month is given to 25,320 low income people with CKD. There are 13,850 people in the waiting list.

2.3 Status of Road Sector in Sri Lanka

In Sri Lanka the Physical Infrastructure Sector consists of Roads; Public Works; Transport; Energy; Agriculture and Housing Sub-Sectors. In the new long-term development blueprint for the country “Sri Lanka Vision 2025”, infrastructure development has been recognized as an enabler for sustained development of the economy.

Sri Lanka Vision 2025 sets out a course of reforms to make the country more competitive and lift all Sri Lankans’ standards of living. These reforms range from the pressing need for labour law reform to restructuring social safety net programs and boosting technology acquisition and digitization. It also recognizes the importance of development infrastructure as critical for socio-economic transformation. The Government recognizes that inadequate physical infrastructure services are a significant drag on growth. Physical connectivity, both internal and external, will be an important part of Sri Lanka’s growth agenda moving forward.

Sri Lanka aspires to be a country with modern infrastructural facilities that meet international standards to make Sri Lanka a globally competitive and prosperous country. The strategies and measures to be pursued in the medium term include; supporting the development of infrastructure initiatives around flagship projects, strengthening the institutional framework for infrastructure development, raising the efficiency and quality of infrastructure as well as increasing the pace of infrastructure projects so that

they are completed as envisaged, protecting the environment as a national asset and conserving it for the benefit of the future generations and the wider international community.

2.3.1 Rural Roads and Community and Agricultural Infrastructure in Rural and Peri urban Areas

The rural areas form a significant part of Sri Lanka's economy; yet lag behind the more urban areas in terms of development, connectivity and accessibility to basic services and economic opportunities. Rural population accounts for over 80 percent of Sri Lanka's total population and contributes to 52.7 percent of the country's labor force. With the majority of the working aged rural people engaged in agricultural activities, agriculture naturally forms the primary source of livelihood of the rural communities. Rural areas are also home to a large majority (77 percent) of the country's elderly (aged 60 years and above). However, poverty at 12.2 percent is significantly higher than the urban poverty rate at 5.2 percent. More importantly, over 90 percent of the poor reside in rural areas. Among those working in the rural sector only 35 percent are women while 65 percent are men. Rural areas are also characterized by higher incidence of fertility and mortality than the urban sector.

Road transport, being the only mode of transport in many rural areas plays a key role connecting the rural population with economic opportunities and social services. In Sri Lanka, roads carry 95 percent of passengers and 98 percent of freight. Therefore, uninterrupted road connectivity and accessibility to health care, education, employment opportunities, and other basic services is critical for the rural communities. The agriculture sector, the main source of livelihood for the rural community, is also fully dependent on the road network to deliver inputs and connect farmers, many of whom are small-scale and dispersed, to domestic and international markets.

Nearly 50 percent of Sri Lanka's overall road network is in poor condition, resulting in poor connectivity and travel experiences, increased travel times, and increased vulnerability of the road network to erosion and flooding. Sri Lanka's road network is around 120,000km (classified roads). The network consists of three main classes of roads: (i) national highways - Class A and B (12,380 km, 10 percent), (ii) provincial roads - Class C and D (18,900 km, 16 percent), (iii) local/rural roads - Class R (88,200 km, 74 percent) while nearly 100 percent of national roads are paved, only 67 percent of the provincial roads and 13 percent of rural roads are paved and in good condition. Most rural roads have been poorly designed, with no consideration to road safety or climate impacts. Poor road conditions at the provincial and rural level are further exacerbated by lack of proper maintenance due to limited funding allocations.

Poor transport connectivity between farms and markets and the lack of adequate infrastructure facilities along the more remote road networks have resulted in inefficiencies in agriculture supply chains. The agriculture sector contributes to 6.9 percent to GDP and employs approximately 27 percent of the population. Of the country's approximately 2.3 million hectares (ha) of agricultural land, around 80 percent is under smallholder production, with around 1.65 million smallholder farmers operating on average less than 2 ha. The large number of relatively small-scale producers cultivating land across the country presents challenges for connectivity, with many farmers having limited access to roads throughout the year or seasonally. While many of the smallholder farmers are engaged in paddy cultivation, given its yields, the Government is now seeking to diversify the smallholder sector, including higher value horticulture, spices and tropical fruits. This creates extra pressure on the already weak road infrastructure while also requiring complementary agro-logistic infrastructure and services. Currently, the inadequate infrastructure such as collection centers, warehouses and cold storage facilities, poor road connectivity and inadequate transport facilities have resulted in increasing post-harvest losses (which alone are estimated at 30 to 40 percent of the commercial production) and high logistics costs. This has been indicated as a major constraint for farmers, collectors and wholesale distributors, particularly given the layered and fragmented supply chain. A more integrated approach to road infrastructure development is required to ensure that produces are able to reach consumers (both in domestic and export markets) efficiently and without loss in quality. Modern warehousing and

storage facilities, freight services and related supporting road infrastructure with professional management and handling of crops along the roads connecting rural farmers, is therefore required to improve the marketing efficiency and would open up additional opportunities for rural farmers, including possible warehouse receipt financing.

Female employment in Sri Lanka's agriculture sector is 27.6 percent. A recent World Bank study finds that although both men and women participate in field productions, men tend to dominate the later stages of the value chain whereas women tend to participate in the most time-consuming activities at earlier stages. This could be due to women's constraints to transportation and because they allow women to work closer to home and have flexibility to also work in household chores, whereas men are more familiar with productive technologies, have more information about markets, have more influential networks and access to capital (FAO, 2018). Furthermore, most agriculture activities that women participate in tend to be considered as unpaid family work.

Limited connectivity and accessibility to basic services resulting from inadequate road connectivity makes the rural and remote areas more vulnerable during public health emergencies such as the COVID-19 pandemic. This puts additional pressure on the already disadvantaged social groups living in rural areas such as women, the elderly, youth, informal sector workers, and people with disabilities; some of whom are in the high risk groups in terms of contracting the virus but also experience greater socio-economic impacts, including job loss, reduced household income and reduced access to basic health services. Experience from past outbreaks also illustrates that public health emergencies compound existing gender inequalities and expose women to risks in ways connected to their roles in the household and community.

Natural disaster related vulnerabilities call for a more resilient and sustainable rural road network and ancillary infrastructure. Sri Lanka is highly vulnerable to slope failures and climate related extreme weather conditions such as floods, landslides and high temperature which often cause transport disruptions for the communities and make it challenging and expensive to maintain the road network and agriculture supply chains. While majority of the country is susceptible to these disaster events, the National Adaptation Plan of Sri Lanka (2016) notes that based on past experience impacts were disproportionately larger for the poorest sectors of population. Landslides in particular have affected the poorest regions in the country significantly. Local transport infrastructure, in particular, rural and provincial roads, is more vulnerable to disaster risks as a result of generally weak design standards, technical designs that do not account for increased climate variability, and lack of adequate maintenance. In the five most affected districts during the floods and landslides of 2017, 898 sections of roads reported carriageway damages and earth slips in addition to bridges, culverts/drains, retaining walls, etc. The total damages and losses to the transport sector of the country following these disaster events in 2017 was estimated to be about US\$65 million (about 75 percent of the infrastructure sector as a whole). The impact of these disasters has resulted in increasing the already large road maintenance backlog, increased emergency rehabilitation requirements of the road network, and loss of agriculture harvest and damages to arable land.

Furthermore, high GHG emissions in the transport sector and growing cumulative impacts associated with development activities on natural resources call for the road sector to be innovative on the use of alternate materials for construction and maintenance. Poor road construction can also often trigger landslides (during or after) due to unplanned development on hilly terrains and lack of proper technical preventive measures such as proper drainage. To increase resilience of the rural road infrastructure and to reduce the potential negative impact of these development activities on the environment and climate, more sustainable and greener development practices and nature-based solutions need to be adopted. A transformational shift towards policies and institutions that enable climate resilient investments is needed in the longer-term to ensure sustainability.

Road safety remains a key concern for the entire road network, creating additional vulnerabilities to rural road users. Road safety is often overlooked in provincial and rural road improvement, and they often lack even the basic safety measures such as signage, road markings and crash barriers. Sri Lanka's annual number of fatalities is around 3,000, twice the average rate in high-income countries and five times that of the best performing countries. It is also the worst in the South Asia region. Cost-effective preventive measures need to be incorporated in provincial and rural road improvements to avoid potential risks as roads are improved and speeds and passenger traffic might increase.

Institutional fragmentation, insufficient funding for roads, lack of systematic planning and inadequate capacity at the local level are key institutional challenges for provincial/rural road management. There are two separate central ministries, nine provincial road agencies, and hundreds of local agencies overseeing the road network in Sri Lanka. The national highways come under the responsibility of the Ministry of Highways (MoH) and are managed by Road Development Authority (RDA) housed under MoH. The provincial roads are managed by Provincial Road Development Authorities (PRDAs) for each of the 9 provinces under the Ministry of Provincial Councils and Local Government (MoPCLG). Management of the local/rural roads are the responsibility of over 300 separate Municipal Councils, Urban Councils, and Pradeshiya Sabhas. In addition, a large number of unclassified minor village access roads, foot paths, and cart tracks are generally constructed by various rural development programs with community participation. Such a high number of road management agencies (approximately 1 for every 330 km of roads) is inefficient and presents barriers to streamlining institutional and technical capacity growth. In contrast, only two agencies in Bangladesh are responsible for over 240,000 km of roads and only 14 road agencies in Pakistan are responsible for nearly 260,000 km of roads. The financing allocated through the national budget for provincial and rural road improvements remains inadequate and revenues collected by provincial and local authorities are insufficient to even maintain the existing road network. Due to such inadequate and irregular funding, there remains little incentive for the provincial and local road agencies to plan and budget for either capital or maintenance works.

This is exacerbated by the lack of long-term development planning and asset management for provincial and rural networks. There is no proper inventory of rural roads or a systematic prioritization framework in selecting roads for rehabilitation/maintenance giving due consideration to economic and social importance of the road corridors. A provincial Road Asset Management System (RAMS) has been developed under iRoads programme financed by the Asian Development Bank (ADB) for 3 Provinces with related data collection, however, it is not fully operationalized yet. Capacity is so low at the provincial and local level for road development and maintenance work – both in government agencies and in local contractors. Due to their scattered resources, provincial and local authorities often face difficulties hiring and retaining competent and qualified technical staff, and most of these agencies lack necessary physical assets (e.g. laboratories), planning units and databases.

The Government of Sri Lanka (GoSL) recently initiated the 100,000km rural roads development program as part of the Government's national development program "Vistas of Prosperity and Splendour". This is expected to complement other ongoing provincial and rural road initiatives financed by the World Bank and Asian Development Bank (ADB). The ADB is financing two separate "Integrated Road Investment Programs" (iRoad I and II), with a total of US\$1.7 billion and cover the rehabilitation of almost 7,000 km of roads, predominantly rural roads with some national and provincial roads as well. The World Bank's ongoing Transport Connectivity and Asset Management Project (TCAMP) is financing the rehabilitation of around 400km of provincial roads across all nine provinces of the country. While these programs have been quite successful with improved connectivity and accessibility for some rural communities, they cover less than 10 percent of the 100,000 km rural roads program. The GoSL is now looking to scale up ongoing initiatives by building on the success and lessons learnt and establish a data driven and comprehensive system to enhance rural transport infrastructure and services in an inclusive manner in order to support the rural community. This project is part of this broader government initiative to improve rural connectivity.

The Government also places a high priority on the development of the agriculture sector. In “Vistas of Prosperity and Splendour”, agriculture is prioritized as a driver of economic growth and for the sector to become a “global player” based on a smallholder model producing high quality outputs using modern technologies. With the onset of Covid-19, there is also a priority to improve the agriculture sector to better meet people’s food needs, and therefore a parallel push for the production of domestic food crops to ensure food security. The World Bank is already engaged in the sector and well aligned with the Government’s strategy. The Agriculture Sector Modernization Project (ASMP) financed by the World Bank expects to support increasing agriculture productivity, improving market access, and enhancing value addition of smallholder farmers and agribusinesses in project areas. The ASMP promotes the demonstration of agriculture diversification and technology improvements, value-chain development for higher value-added production and better market linkages, as well as income generation. The main guiding principle for ASMP is private sector led agriculture growth. Some funding under the project is allocated for local infrastructure, including feeder roads, noting that connectivity is a major constraint facing farmers. The proposed investments under this project are therefore highly complementary to ASMP and would provide the opportunity for a more comprehensive approach to agro-logistics with a broader geographical coverage.

3 Environmental, Energy and Social Legislation, Regulatory and Institutional Framework in GoSL

3.1 Overview of Environmental Legislation

Sri Lanka is one of the leading countries in the South Asian region in enacting environmental legislations. Its concern for environment dates back to over two and a half millennia. The constitution of the Democratic Socialist Republic of Sri Lanka under chapter VI Directive Principles of State policy and Fundamental duties in section 27-14 and in section 28-f proclaim “The state shall protect, preserve and improve the environment for the benefit of the community”, “The duty and obligation of every person in Sri Lanka to protect nature and conserve its riches” thus showing the commitment by the state and obligations of the citizens.

The overall environmental concerns are addressed by the National Environmental Act No. 47 of 1980 (and subsequent amendments by act no 56 of 1988 and act no 53 of 2000). It is the umbrella legislation for environmental protection in the country. In addition, several other sectoral legislative enactments are in place. The national organization that has the mandate to protect and take measures to safeguard the environment is the Central Environmental Authority. It currently operates in the entire country except in the North Western Provincial Council (NWPC), where the NWPC has enacted a separate statute under the 13th amendment to the Constitution of Sri Lanka and had created a separate provincial institute.

There are several other key national agencies with a mandate for environmental management and protection. The Forest Department, the Department of Wildlife Conservation, Department of Archeology, Department of Coast Conservation and Coastal Resources Management, Disaster Management Center and Geological Survey and Mines Bureau have their regional offices and staff to cater to and monitor the environmental safeguards as per the policies and regulations governing them. In addition, there are several national agencies that are impacting on the environment and adopting environmental safeguards as well. They are the Sri Lanka Land Development Corporation, Urban Development Authority, National Water Supply and Drainage Board, Water Resources Board and Irrigation Department.

The Local Authorities (LA) also have provisions under their respective acts to safeguards and provide useful facility and maintain the same for the convenience of the public in their respective areas. The Municipal Council (MC) Act No. 19 of 1987 & Urban Council (UC) Act No. 18 of 1987 provide for the establishment of MCs and UCs with a view to provide greater opportunities for the people to participate effectively in the decision making process relating to administrative and development activities at a local level and it specify the powers, functions and duties of such LAs and provide for matters connected therewith or incidental thereto. These acts contain sixteen and eight parts respectively, several schedules and 327 & 249 sections respectively. The MC act, spell out its status, powers & functions in Section IV, Section V and Section VI in sections 34 to 154 and covers public health, drainage, latrines, unhealthy buildings, conservancy & scavenging, nuisance etc. Further the respective local authorities have mandate regionally to implement the project activities and monitor the progress of compliance work.

3.2 Detail Review of Key Environmental Legislations in relation to Environmental Issues and their Applicability to the IRCDP

The Constitution of Sri Lanka & the 13th Amendment

The Constitution of Sri Lanka contains several provisions, relating to the environment 9 Article 27 (14) and article 28 (f). The 13th amendment to the constitution introduced a new level of institution for environmental protection and management. Therefore, the provincial government also has legislative and executive power, the North Western Provincial Environmental Authority to control, prevent and monitor all environmental related activities.

Application to IRCDP: Overall responsibility of individuals and organizations to protect and conserve the natural environment. All project proponents/implementers and public are responsible.

The National Environmental Act. No. 47 of 1980 & its amendments

The National Environmental Act (NEA) provides conservation and development guidelines for natural resources including water, soil, fisheries resources, forest, flora and fauna in Sri Lanka. It also paved the way for the creation of the Central Environmental Authority (CEA). Further it spells out the creation of an Environmental Council in collaboration with the respective line agencies to advise the CEA (Section7) and provide necessary guidelines to establish District Environmental Agency under the chairmanship of the District Secretary. The NEA is the basic national decree for environmental protection. The three main regulatory tools implemented under the NEA are Environmental Impact Assessment/Initial Environmental Examination, Environment Protection License (EPL) and Schedule Waste Management License supported by standards for discharge and waste disposal guidelines.

A comprehensive description of EIA/IEE process is given in the Annex 4. It is the key regulatory tool enabling any developer to implement the development activity in line with the NEA and thereby assuring the long-term sustainability of the development undertaken while paying due respect to the environment. According to provisions of the NEA regulations, the only prescribed project type under the Transport and Highways Sector relevant to the proposed project requiring an EA is the construction of national and provincial highways involving a length exceeding 10 Km.

The second regulatory tool under the provisions of the National Environmental Act is the Environmental Protection License (EPL). The EPL procedure has been introduced to prevent or minimize the release of discharges and emissions in to the environment from industrial activities in compliance with national discharge and emission standards, to provide guidance on pollution control for polluting processes and to encourage the use of pollution abatement technology such as cleaner production, waste minimization etc. Here the industries are classified into three lists named A, B and C. List A is comprised of 80 potentially high polluting industries, List B is comprised of 33 medium

polluting industries and List C is comprised of low polluting industrial activities. The operational details are given in CEA website (www.cea.lk).

The third regulatory tool deals with the disposal of scheduled waste. The gazette notification No 1534/18 of 1st February 2008 made by the Hon. Minister under section 23A and 23B of the National Environmental Act No. 47 of 1980 is referred to as the National Environmental (Protection & Quality) regulations No. 1 of 2008. It deals with waste from specific and non-specific sources. The notification has three parts and eight schedules. The Part I deals with the Issue of Environmental Protection License for Emission of Disposal of waste. Part II deals on issue of license for the management of scheduled waste (Hazardous Waste) and Part III on General matters including definitions and the effectiveness and validity of the license issued under National Environment (Protection & Quality) regulation No 1 of 1990 published in extraordinary gazette No 595/16 of February 1990. The eight schedules include the tolerance limits, applications, formats for reporting, categorization of non-specific and specific waste etc.

The 1994 amendment delegated the authorization to the local authorities to issue EPL for low polluting industries. The CEA's environmental management functions are holistic, and they are very well set out in section IV of the act. Along with the EPL procedures several standards also have been gazette with regard to disposal of effluents to land and water bodies.

Annex 5 contains a detail description of the EIA/IEE procedure in Sri Lanka. For further information of prescribed projects please visit: www.cea.lk

Permission and License related to Environment

The Environmental Protection License (EPL) is Sri Lanka's major regulatory program for control of industrial pollution stipulated in the National Environmental Act No. 47 of 1980, which was amended by Acts No.56 of 1988 and No. 53 of 2000. Industries and activities that have to be issued EPLs are classified under three categories: Category A, B and C. If a proposed project falls under Category A, the project proponent requires an EPL from the CEA, while Category C projects require EPLs from the respective local authorities. Like Category A, Category B projects require EPLs from the CEA, but the EPLs can be processed through the regional office of the CEA.

Application to IRCDP: According to Part I of the Environmental Impact Assessment Regulation (No 772/22 of 18.06.1993), the projects listed below require either Environmental Impact Assessment (EIA) or Initial Environmental Examination (IEE) prior to implementation.

- All river basin development and irrigation projects excluding minor irrigation works (as defined by Irrigation Ordinance Chapter 453)
- Reclamation of land, wetland area exceeding 4 hectares.
- Conversion of Forests covering an area exceeding 1ha into non- forest use.
- Clearing of land areas exceeding 50ha
- Extraction of timber covering land areas exceeding 5 hectares,
- Involuntary resettlement exceeding 100 families, other than resettlement effected under emergency situations

In addition to the above-mentioned projects, Part III of the above mentioned EIA gazette specifies the following environmentally sensitive areas. Projects of any magnitude within such environmentally sensitive areas require to undergo either an EIA or IEE prior to implementation.

- 60 meters from a river or stream bank and having a width of 25 meters or more at any point of its course;
- 100 meters from the boundaries of or within any area declared under the National Heritage Wilderness Act; the Forest Ordinance;
- any archeological reserve, ancient or protected monument as defined or declared under the Antiquities Ordinance (Chapter 188);
- any areas declared under the Botanical Gardens Ordinance; and
- within 100 meters from the boundaries of or within any areas declared as a Sanctuary under the Fauna and Flora Protection Ordinance.

As per the NEA, IRCDP is not a Prescribed Project therefore an approval shall not be necessary from the Project Approving Agency so that either IEE or EIA shall not be required for the implementation of the project. However if any of the subproject falls within an environmental sensitive area as specified in Part III of the regulation (as mentioned above), it will require to undergo the EIA process so that either an EIA or IEE will be required as determined by the CEA or relevant PAA prior to implementation.

The North Western Provincial Environmental Statute No. 12 of 1990

Provincial Environmental Act (PEA) of 1991 implemented by the North Western Provincial Council applies for areas coming under the North Western Province. Environmental Assessments are required for prescribed projects that have been gazetted in Gazette Extraordinary 1020/21 of 27th March, 1998. It specifies two lists of project types (a) where EIA/IEE is mandatory and (b) where the EA can be requested if the PAA decides so. The process is similar to that of the NEA and will be headed by one of the two listed PAAs; (a) Provincial Environmental Authority or (b) Provincial Ministry of Fisheries and Aquaculture.

Application to IRCDP– Similar to IEE/EIA regulations applicable under the NEA. In areas of the North Western Province, this Act will supersede the NEA if it is not an area under the DWLC or CCD.

State Land Ordinance Act No 13 of 1949

The State Lands Ordinance provides necessary guidelines to:

- The protection of the source, course or bed of any public stream
- The protection of springs, reservoirs, lakes ponds lagoons, creeks, canals, aqueducts etc.
- The construction or protection of roads, paths, railways and other means of internal communication.
- The prevention of the erosion of soil.
- The preservation of water supplies.

In addition, section 75 of the State Land Ordinance highlights on riparian proprietor's activities. The occupier of land or the bank of any public lake or public stream shall have the right to use the water in that lake or stream for domestic purpose and shall not be diverted through a channel, drain or pipe or by means of a pump or other mechanical contrivance but shall be removed in a bucket or other receptacle.

Application to IRCDP: Provisions of this act are applicable if any proposed interventions fall under this legislation.

The Coast Conservation and Coastal Resources Management Act No.49 of 2011 (Amendment)

The Coast Conservation and Coastal Resources Management Act (CCCRMA) makes provisions for the regulation and control of development activities within the coastal zone as well as formulates and executes schemes of work for coast conservation. Under the section 6 of the act, there is provision to appoint a Coast Conservation Advisory Council (CCAC) which would advise the Coast Conservation and Coastal Resources Management Department (CCCRMD) on all development activities proposed to be implemented in the coastal zone and review its coastal zone management plans. The law specifies that projects located wholly or partly within the coastal zone (the area lying within a limit of three hundred meters landwards of the Mean High Water line and a limit of two kilometers seawards of the Mean Low Water line and in the case of rivers, streams, lagoons, or any other body of water connected to these either permanently or periodically, the landward boundary shall extend to a limit of two kilometers measured perpendicular to the straight base line drawn between the natural entrance point thereof and shall include waters of such rivers, stream and lagoons or any other body of water so connected to the sea) must undergo the approval process that is laid down in the Coast Conservation and Coastal Resources Management Act irrespective of its size.

Only those projects located totally outside the Coastal Zone will be subject to the approval process laid down in the National Environmental Act. Therefore, any development work taking place within this zone falls under the jurisdiction of CCCRMD. According to the CCCRMA, Director of the CCCRMD has the discretion to request for an EIA/IEE from the project proponent if the initial screening reveals significant impacts in the coastal areas by the project. The process is very much like the NEA excepting that the Director of the CCCRMD reserves the right to request for an EIA/IEE depending on the nature and scale of anticipated impacts of the proposed investments rather than on pre-determined prescribed limits as in the NEA and also to make a final decision. The Director is advised by the CCAC on the findings of EIA/ IEEs.

Application to IRCDP: Provisions of this act are applicable to the proposed interventions/activities that may be undertaken during in the coastal areas that falls within the “Coastal Zone” as stipulated in the Coast Conservation and Coastal Resources Management Act (CCCRMA) , namely if any rural road or its project activities.. This as per the provisions of CCRMA, clearances from the relevant departments will be needed in addition to EIA/IEEs that may be required. These requirements will be duly identified during sub-project level environmental screening.

The Flood Protection Ordinance Act No.22 of 1955

This act provides room for the Minister to declare any area in the country as flood area. It has provisions to prepare scheme for protection of flood area, creation of flood authority, regulations for management of flood area and acquisition of land for the purpose of the ordinance. The flood authority is usually the District Secretary of the affected area. In case of a large area of a Municipality is coming under flood the Minister may substitute the District Secretary by appointing the Mayor of the Municipality.

Application to IRCDP: Provisions are applicable to interventions with flood mitigation activities.

The Fauna & Flora Protection Ordinance Act No. 49 of 1993 & its amendments

This act provides the protection, conservation and preservation of the fauna and flora of Sri Lanka. Under the Fauna and Flora Protection Ordinance (FFPO), five categories of protected areas are established viz. Strict Nature Reserves, National Parks, Nature Reserves, Jungle Corridors and Intermediate Zones including sanctuaries. According to this Act, any development activity of any description what so ever proposed to be established within a national reserve or within one mile from the boundary of any national reserve, is required to be subjected to EIA/IEE, and written approval should be obtained from the Director General, Department of Wildlife Conservation prior to implementation of such projects. The FFPO follows a similar process as the NEA in conducting scoping, setting the TOR, preparation of EA, review of EA and public consultation and disclosure. The decision of project approval or disapproval is finally granted by the Director General of the Department of Wildlife Conservation.

Application to IRCDP: Any activity which will be implemented in close proximity of protected areas/ wildlife reserves will require clearance from the relevant authorities, no activities may be conducted in buffer zones of protected areas designated under the FFPO. No resources can be extracted, for project purposes, from within or adjacent to designated areas under the Fauna and Flora Protection Ordinance Act.

The Sri Lanka Land Reclamation & Development Corporation Act No. 15 of 1968

The Act provides the formation of the Sri Lanka Land Reclamation & Development Corporation (SLLRDC). The latest amendment to this act is the No 35 of 2006 which incorporated section 2A- Prohibiting filling or developing and reclaiming land, section 2B-Declaring areas as low lying marshy or swampy and section 20 C- stipulating that pollution of canal as an offence. In addition, Section 28 of the principal enactment has added new definition– retention areas. The gazette regulations under this act also had declared several areas as wetland.

Application to IRCDP: It is essential that any wetlands identified by the SLLRDC for protection are maintained in the same way as part of project interventions. Any works on these retention areas will need concurrence from the SLLRDC as per their mandate.

The Mines and Mineral Act No.33 of 1992

The Geological Survey and Mines Bureau established under the Mines and Minerals Act No. 33 of 1992. Under this act, mining falls within the purview of the Geological Survey and Mines Bureau (GSMB). Mining and exploitation for minerals, including sand, must be licensed under the act by the GSMB. Mining licenses are issued only to a qualified individuals and companies registered to do business in Sri Lanka. Mining is not permitted within Archaeological Reserves and within specified distance of monuments. New mining licenses are subject to the EIA process, if the type and extent of mining is listed under the EIA regulations. Additionally, the GSMB has power to stipulate conditions including the taking of deposits and insurance for the protection of environment. Regulations made by the GSMB under the act cover a variety of environmental stipulations, criteria and conditions for licensing and operating mines.

This also covers the disposal of mine wastes. The act also deals with the health, safety and welfare of miners. Reclamation of mines is a major problem in Sri Lanka and due to current practice requires the mining enterprise to make a deposit to cover costs of recovery. The deposit however is inadequate for the purpose. Large extents of mined areas, particularly areas mined for clay and sand remain open. Mining rights on public and private land are subject to licensing by the GSMB and all minerals wherever situated belonging to the state. The right to mine particular parcels of public lands may be subject to EIA procedures as well as to lease for permit conditions.

Application to IRCDP: Earth and quarry material will be needed for the development work undertaken by the respective implementing agencies through contractors under the assistance in case required from the RDA. In such cases quantities specified need to be extracted and permission from the GSMB is required. Alternatively, the project contractors can procure them from the open market, but they will have to make sure that such sources/traders are operating with valid licenses.

Local Authorities Acts

The Municipal Council (MC) Act No. 19 of 1987 & Urban Council (UC) Act No. 18 of 1987 provide provisions for the establishment of MCs and UCs with a view to provide greater opportunities for the people to participate effectively in decision making process relating to administrative and development activities at a local level and it specify the powers, functions and duties of such Las and provide for matters connected there with or incidental there to. These acts contain sixteen & eight parts respectively, several schedules and 327 & 249 sections respectively. The MC act, spell out its status, powers & functions in Section IV, Section V and Section VI in sections 34 to 154 and covers public health, drainage, latrines, unhealthy buildings, conservancy & scavenging, nuisance etc. Further the respective local authorities have mandate regionally to implement the project activities and monitor the progress of compliance work.

Application to IRCDP: Project interventions relevant to the Local Authority act are relevant.

Forest Ordinance including Amendments

The Forest Ordinance is one of the oldest ordinances in the country, first enacted in 1887 under which the Forest Department was established in 1887. This act has been amended several times in the past. The Forest Reserves gazetted under the provisions of the ordinance and all proposed reserves that are not gazetted under these provisions but selected for conservation based on biological and hydrological importance should be taken into account in implementation of this project. The Department of Forest Conservation (DFC) can release land only on renewable annual permits and land within conservation and strict reserves would not be released for other by the DFC.

Application to IRCDP: Project interventions are not expected to be carried out in areas under the jurisdiction of the Forest Department, any interventions conducted in proximity to buffer areas of protected areas should be obtained guidance from Forest Department prior to implement of the activities.

The Antiquities Ordinance

The Antiquities Ordinance (Revised in 1956 & 1998) is the main legislation dealing with Cultural Assets Preservation in Sri Lanka. Section 16 covers Ancient Monuments and their declaration as well as the declaration of specified trees as ancient monuments. According to Section 21, the restoration, repair, alteration or addition in connection with any protected monuments has to be conducted in accordance with the conditions of a permit issued by the Director General of Archaeology, or in accordance with an agreement entered in to under Section 20. Section 24 prohibits or restricts subjects to certain prescribed conditions, the erection of buildings or carrying out mining, quarrying, or blasting operations on any land within the prescribed distance of any ancient monument situated on Crown land or any protected monument. As per the ordinance the Director General of Archaeology “shall cause an impact assessment survey to be undertaken at the expense of the sponsors of such project or scheme to assess the consequences thereof upon the antiquarian, historical or archaeological aspects or value of the land in question or on any antiquities upon it and shall, within such period of time as may be agreed on.

Application to IRCDP: Project interventions that will require further feasibility studies and will be selected for potential financing in the later known and demarcated sites of archeological and cultural significant. Specific measures to ensure chance find physical cultural resources are managed accordingly as per this ordinance, are embedded in to project environmental due diligence procedures.

Disaster Management Act No. 13 of 2005

Under the Disaster Management Act No.13 of 2005, there is a provision to establish a National Council for Disaster Management (NCDM). The Act defines “disaster” as an actual or imminent occurrence of a natural or man-made event, which endangers or threatens to endanger the safety or health of any person or group of persons in Sri Lanka, or which destroys or damages or threatens to destroy or damage any property, and inter alia includes:

- An industrial hazard
- A fire
- An explosion
- A chemical accident
- Oils spills including inland oil spills
- Cyclones
- Tsunamis

Disasters may happen as the result of a malfunction of the normal operating procedures or precipitated by the intervention of an outside force such as a cyclone, flood or deliberate acts of arson or sabotage.

The major objective of this act is to protect human life, property and the environment of Sri Lanka from any event defined as a disaster. Therefore this act plays key role to protect the environment and provides necessary guidelines for the protection of human life, property and the environment of the country.

Major functions of the NCDM include, to formulate a National Policy and Program on the management of disasters which shall provide for the protection of life of the community and environment and the maintenance and development of disaster affected areas; the effective use of resources for preparedness prevention, response, relief, reconstruction and rehabilitation; and the enhancement of public awareness and training to help people to protect themselves from disasters.

Section 10 of the Sri Lanka Disaster Management Act stipulates that “It shall be the duty of every ministry, Government Department and public corporation to prepare a Disaster Management Plan with

respect to such ministry, Government Department or public corporation to counter any disaster or impending disaster based on the National Disaster Management Plan and in accordance with such guidelines as may be specified by the National Council for Disaster Management. As per the definition of public corporation provided under Section 25 of the said act, a Disaster Management Plan is compulsory for coal-based thermal power plant operations.

Application to IRCDP: If a subproject is falling within a disaster prone area, necessary remedial measures shall be incorporated to the project in line with the requirements of the DMC.

Prevention of Mosquito Breeding Act No. 11 of 2007

This act has been passed for the purpose of ensuring the prevention and eradication of all mosquito-borne diseases. Under this act, it shall be the duty of every owner or occupier of any premises to cause, (a) open tins, bottles, boxes, coconut shells, split, coconuts, tyres or any other article or receptacle found in or within such premises, capable of holding water, to be removed, destroyed or otherwise effectively disposed; (b) any well found in the premises and its surroundings to be maintained and kept in good repair so as to make it mosquito-proof and thereby prevent the breeding of mosquitoes; (c) any artificial pond or pool found in such premises to be emptied at least once every week; (d) any casual collection of water within the premises which is conducive to mosquito breeding, to be regularly drained; (e) shrubs, undergrowth and all other types of vegetation, other than those grown for the purpose of food or those which are ornamental, found within or outside any building or structure within the premises used as a dwelling place which has become a breeding place for mosquitoes, to be removed; (f) the removal and destruction of water plants having the botanical name pistiastratiotes and commonly known as “diyaparandal”, “kondepasei”, “telpassy”, “barawa-pasi”, “nanayaviraddi” and of any other water plant, or plants, found within the premises, which may facilitate the breeding of mosquitoes. Hence, this act placed to eradicate or prevent mosquito borne diseases and is mainly targeted at water sources.

Application to IRCDP: All project interventions during the construction and operational stages should be compliant with Prevention of Mosquito Breeding Act requirements to control or mitigate or avoid generation breeding sites.

Coconut Development Act 46 of 1971 amended by Coconut Development Law, No 24 of 1975 – Section 63 Regulations stipulated in the Gazette Notification No 331 of August 18, 1978 of Palmyra Development Board

Ministry of Plantation constituted by the Gazette Notification 331 of August 18, 1978 published in terms of introduction of amendments of 74 of 1975 to the Sri Lanka Coconut Development Act of 46 of 1921 to carry out all forms of cultivation and development in relation to Palmyra Plantation. Under this gazette notification, Palmyra Development Board established and its main office located in Jaffna district. According to this gazette notification, engaging in the regulation, control, supervision, direction, management and inspection of the cultivation and utilization of land in Palmira plantation and the cultivation of land with Palmyra palms.

Application to IRCDP: Any of interventions requiring use of Coconut and Palmyra cultivated lands, require prior approval from the Palmyra Development Board must be obtained.

Felling of Trees Control Act No.9 of 1951 as amended through Act No. 30 of 1953

This Act sought to prohibit and control felling of specified tree species (mainly intended to stop indiscriminate felling of specified trees) in the country.

Application to IRCDP: Any of interventions requiring felling of specified trees
Soil Conservation Act, No. 25 of 1951 and Amended No. 24 of 1996

This Act makes provisions for the enhancement of productive capacity of soil; to restore degraded land for the prevention and mitigation of soil erosion; for the conservation of soil resources and protection of land against damage by floods, salinity, alkalinity, water logging; and to provide for matters connected therewith or incidental thereto.

Application to IRCDP: Any project intervention located within a fragile area as specified by the act.

3.3 Review of Key Legislations related to Social Risk Management and their Applicability to the IRCDP

Land Acquisition Act (LAA) No.09 of 1950

The acquisition of land for public purposes is guided by the provisions and procedures outlined in the Land Acquisition Act No. 9 of 1950 (LAA) and its subsequent amendments. The Act provides a framework for land acquisition and guarantees that no one can be deprived of land except under the provisions of the LAA, and it entitles Affected Persons (APs) to a hearing before acquisition. The Act is based on the principle of eminent domain and lays down the general procedure for the acquisition of private land for 'public purpose' (e.g. development projects). The acquisition of land for public purposes is a time-consuming process and can take a minimum of 72 weeks for its completion. The Act discourages unnecessary acquisition and lands that have been acquired for one purpose cannot be used for a different purpose and lands that remain unused have to be returned to the original owners. The major causes of delay in land acquisition arise from disputes over land titles, disagreements over property valuation and the compensation procedure and attendant legal proceedings.

Under the LAA, the Ministry of Land is responsible for land acquisition, which is carried out by acquiring officers who are appointed by the Minister of Lands, and gazetted for the information of the public. All Divisional Secretaries are the ex-officio Acquiring Officers, whereas the Valuation Department is responsible for the valuation. The law only provides for compensation to affected persons who are in possession of valid titles, and have their titles registered in the respective Land Registries. It does not recognize the rights of the non-title holders such as squatters, who do not possess legal title to the lands they live in or make a living from. The non-titleholders will receive compensation only for any development activities that they have carried out on such land including for structures built on the land.

The LAA provides for the payment of compensation on the basis of 'market value' defined as the 'amount which the land might be expected to have realized if sold by a willing seller in the open market as a separate entity'. This 'separate entity principle' resulted in hardships particularly when a small part of a larger land was acquired since such small areas of land fetched a minimum value in the open market.

Application to IRCDP: Land acquisition and resettlement planning and implementation undertaken under the project will fall under this legislation.

Land Acquisition Regulations (LAR) 2008

The Land Acquisition Regulations of 2008 approved by the Cabinet of Ministers and the Parliament under Section 63 (2) (f) of LAA 1950 and published in the Government Gazette of 07th April, 2009 (Gazette notification No.1596/12 of 7.4.2009) gave the legal status to these Regulations and bound all development projects by the consolidated land acquisition and resettlement/rehabilitation processes outlined in the National Involuntary Resettlement Policy of 2001 (see below for description of this policy). The Regulations redefine the valuation approach for determining market value and states that 'in the case of land where part of a land is acquired and when its value as a separate entity deems to realize a value proportionately lower than the Market Value of the main land the compensation should be proportionate to the value of the main land'. The Regulations also provides additional compensation beyond 'market value' and incorporates compensation for injurious affection and severance (equivalent

to the full cost of damage based on the market value of land acquired) and disturbances (in terms of Section 3.11, and based on the principle of 'value to owner' of the property affected as per the written claims submitted by the AP). The regulations also provide for payment of compensation to non-titleholders.

The 2008 Regulations incorporates the concept of replacement cost in the valuation of land and other assets. The regulations require compensation for land to be paid at market rates, along with the cost of reconstruction for houses and other structures, without taking into account depreciation of the buildings. The Regulations also include provision to compensate for loss of business income, as well as relocation assistance and other benefits. Further, the 2008 Regulations provides for affected persons to be entitled for a hearing before their land is acquired. However, the level of compensation can only be determined by the Valuation Department. The LAR 2008 endeavored to incorporate the NIRP principles into the regulations and to introduce a uniform system and methodology for the payment of compensation as required by the National Policy for the Payment of Compensation (2008). The regulations also contributed minimizing the incongruence between the local regulatory framework for land acquisition and resettlement and international best practices for involuntary resettlement.

Application to IRCDP: The land acquisition, relocation and resettlement procedures will be guided by the provisions under the 2008 Regulations, including on matters relating to valuation of land and other assets as well as payment of compensation.

State Lands (Recovery of Possession) Act No. 7 of 1979

The provisions for the recovery of possession of State lands from persons in unauthorized possession or occupation thereof are contained in the State Lands (Recovery of Possession) Act No. 7 of 1979. Furthermore, Section 10 stipulates that no appeal is maintainable against an order of eviction by a Magistrate. Section 13 provides for reasonable compensation for damages sustained by reason of the affected person having been compelled to deliver up possession of such land.

Application to IRCDP: While under the provisions of this Act, such persons with unauthorized occupation of land could be removed, the project will pay compensation based on the guidelines of this RPF before these affected persons are displaced from such locations.

National Involuntary Resettlement Policy (NIRP)

The National Involuntary Resettlement Policy (NIRP) of 2001 principled on human and ethical considerations entails the payment of replacement cost to the persons affected by land acquisition and arranges for their resettlement and where necessary even their rehabilitation. NIRP was a significant milestone in the development of a systematic approach to addressing resettlement issues in Sri Lanka. The policy ensures that (i) project affected persons are adequately compensated, relocated and rehabilitated; (ii) delays in project implementation and cost overruns are reduced; and (iii) better community relations are restored. It aims at ensuring that people affected by development projects are treated in a fair and equitable manner, and ensuring that they are not impoverished in the process. The policy also enables establishing the framework for project planning and implementation that would meet international best practices in involuntary resettlement through preparation and formal acceptance of a comprehensive Resettlement Action Plan (RAP) where 20 or more families are affected. Even when the number of affected families is less than 20, the compensation, rehabilitation and resettlement processes must be arranged through a resettlement planning document of a lesser magnitude to be assessed and approved by the relevant agencies. The responsibility for reviewing and approving RAPs is vested with the Ministry of Lands.

Application to IRCDP: Land acquisition process and resettlement planning under the project will be guided by the principles of established under NIRP

Road Development Authority Act No. 73 of 1981-

The Road Development Authority Act (1981) provides for the establishment of the RDA and specifies the powers; Section 22 deals with land acquisition for road development as a "public purpose" and

provides for the acquisition by, and transfers to, the RDA of immovable or moveable property within any declared road development area.

Application to IRCDP: Land acquisition for road development under the project will fall under this legislation.

Thoroughfare Ordinance (40 of 2008)

Salient features of the above Act are:

- *It empowers the Highways Authority to establish Road Network Development Advisory Council and District Road Development Coordinating Committees and:*
- *Prevent unauthorized constructions within the road reservations.*
- *Construct new roads divert roads.*
- *Acquire lands vested in a local authority for widening and construction of roads.*
- *Make special grants under the Crown land Ordinance. Power of authority to alienate lands.*
- *Purchase lands for resettlement sites.*
- *The power to purchase land by the Highways Authority would accelerate the process of resettlement, Officers are authorized to pay compensation for the damages caused to properties.*

In totality this act promotes the construction of new roads and improvement to existing roads in a more accelerated phase due to build in mechanisms to acquisition of land, payment of compensation and resettlement speedily.

Application to IRCDP: Provisions of this act are applicable if any proposed interventions fall under this legislation.

Mahaweli Authority Act of 1977

Under the Mahaweli Authority Act of 1977, with in the area declared under the Act, all matters pertaining to the administration of land, falls within the Mahaweli Authority.

Application to IRCDP: Provisions of this act are applicable if any proposed interventions fall under the jurisdiction of the Mahaweli Authority.

Vihaara (Temple) and Devalagam (Compensation) Ordinance, No.28 of 1944

This Act deals with lands donated to the temples and Devala (Places of religious significance) by rulers under a deed of dedication or ‘Sannasa’ (Order) for the maintenance of such institutions. The rights of the custodian of temples and Devala for the receipt of compensation in the event of land acquisition for public purposes are spelt out in this Act in addition to the other provisions. The compensation for the acquired land belonging to temples and devalas will be received by the public trustee and will be deposited in the joint names of himself and the trustee and the chief incumbent of the temple in a bank account approved by the Minister. The public trustee in consultation with the trustee or the chief incumbent of the temple will authorize the funds to be utilized for promoting the aims and objectives of the temple.

Application to IRCDP: This ordinance will apply if the project interventions affect lands that has been donated to temples and davalas as defined by the Temple and Devalagam (Compensation) Ordinance, No.28 of 1944.

Occupational Health and Safety

Project interventions involve multifarious activities during construction and operation and maintenance phases. These activities are also associated with problems of occupational health and safety. The problems envisaged during construction and erection stages can mainly be due to exposure to dust, accidents and noise. The problems envisaged during the operation and maintenance phase are accidents, exposure to heat, noise, arc lights, chemicals etc.

The National Policy on Occupational Safety and Health in Sri Lanka is in the drafting stage. The Labour and Labour Relations Ministry in collaboration with 25 ministries, trade unions, employers and other authorities are involved in the drafting with the intention of reducing work place related injuries and other mishaps (Ceylon Daily News; 14th November 2014).

Application to IRCDP: All project activities, during construction should comply with Factory Ordinance requirements related to occupational, health and safety and International Labour Organization (ILO) guidelines on the same.

Labor Related Laws

Sri Lanka lacks a single unified labor law/code; instead, a number of statutes govern employment and industrial relations in the private sector of the country. The terms and conditions of employment are governed by the Wages Board Ordinance No. 27 of 1941, the Shop and Office Employees' Act No. 19 of 1954, Factories Ordinance No. 45 of 1942, and the Employment of Trainees (Private Sector) Act No. 8 of 1978. Labor/industrial relations are governed by the Trade Unions Ordinance No. 14 of 1935, the Industrial Dispute Act No. 43 of 1950, the Termination of Employment of Workmen (Special Provision) Act No. 45 of 1971, and the Employees' Councils Act No. 32 of 1979. The well-being of employees is governed by the Employment of Women, Young Persons, and Children Act No. 47 of 1956, the Maternity Benefits Ordinance No. 32 of 1939, and the Employment of Females in Mines Ordinance No. 13 of 1937. Occupational Safety and Health (OSH) is governed by the Factories Ordinance (Sections 35-66) (consolidation) of 2001, Factories Ordinance No. 45 of 1942, National Institute of Occupational Safety and Health Act, No. 38 of 2009 (b), and the Workmen's Compensation Ordinance No. 19 of 1934.

Application to IRCDP: The 'Labor Management Procedures' prepared separately for the project discusses the ways in which these laws and regulations apply.

Stakeholder Engagement and Public Disclosure

People's rights relating to access to information, consultation and engagement is recognized in both the Constitution of Sri Lanka as well as several other legal enactments. People's right to access information is enshrined in the **Constitution of Sri Lanka** (Chapter III, Section 14A) which advocates that every citizen shall have the right of access to any information as provided for by law, being information that is required for the exercise or protection of a citizen's right. The **Right to Information Act** establishes the right of access to information to foster a culture of transparency and accountability in public authorities. As per the **National Environmental Act**, development projects which are designated as 'prescribed projects' by the Minister (in-charge of the subject of environment) require obtaining approval for such projects from the project approving agencies specified by the Minister, disclose the documents prepared for such approval, and respond to the public comments. Further, in reference to resettlement of persons displaced by development projects, the policy principles of the **National Involuntary Resettlement Policy (NIRP)** of Sri Lanka stipulate that "Resettlement should be planned and implemented with full participation of the provincial and local authorities". Furthermore, its policy objectives require that all affected people are made aware of processes available for the redress of grievances that are easily accessible and immediately responsive.

Application to IRCDP: The 'Stakeholder Engagement Plan' prepared separately for the project discusses the ways in which these laws and regulations apply.

3.3.1 Capacity of Sectoral Management Agencies

The Road Development Authority (RDA) has significant capacity to manage environmental and social concerns when developing the road network as a result of continuous engagement with financing institutions like the World Bank and Asian Development Bank (ADB). The RDA has its own Environment and Social Development Division (ESDD) which was established over a decade ago with the support of ADB. The national environmental management regulations mainly apply to new road construction activities and not for existing road rehabilitation. However, natural resources use during construction/rehabilitation activities requires obtaining necessary licenses and permits including the Environmental Protection License. Local authorities which manages roads within their jurisdiction with the technical support from Provincial Roads Development Department has limited capacity and also rarely need to adopt the national regulations due to many of their current activities only involves rehabilitation and maintenance. Maintenance of roads has been relatively weak in the past due to non-allocation of maintenance funds. With the Road Maintenance Trust Fund in place and with the transition towards design, build, operate and maintain type of arrangements, the situation is slowly changing, especially for RDA managed roads.

In Sri Lanka, about 85% of the population is living in the rural and peri urban sector and out of that 84.7% are identified as poor. Poverty is concentrated in areas where connectivity to towns and markets, access to electricity and average educational attainment are relatively low, and agricultural labor is an important source of employment. Location attributes are highly correlated with each other, which indicate the many-sided nature of challenges faced by poor areas. Remote areas with lack of all-weather access to the socioeconomic centers have rendered a large portion of the rural population with poor agricultural productivity, limited employment opportunities and slow economic growth. 42. In order to address this problem and improve transport connectivity between rural communities and socioeconomic centers, the Road Development Authority (RDA) under Ministry of Highways has proposed the rehabilitation of rural roads network, improvement of agro-logistical infrastructure and services through the Inclusive Rural Connectivity and Development Project.

4 Chapter 4: Overview of the World Bank's Environmental and Social Framework, Relevant Environmental Standards

The World Bank's Environmental and Social Framework sets out the Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social Standards that are designed to support **Borrowers**⁶ projects, with the aim of ending extreme poverty and promoting shared prosperity. The E&S Framework comprises of (1) Vision for Sustainable Development, which sets out the Bank's aspirations regarding environmental and social sustainability; (2) The World Bank Environmental and Social Policy for Investment Project Financing, which sets out the mandatory requirements that apply to the Bank; and (3) The Environmental and Social Standards, together with their Annexes, which set out the mandatory requirements that apply to the Borrower and projects.

The World Bank Environmental and Social Policy for Investment Project Financing sets out the requirements that the Bank must follow regarding projects it supports through Investment Project Financing. Likewise, the Environmental and Social Standards set out the requirements for Borrowers relating to the identification and assessment of environmental and social risks and impacts and mitigation measures associated with projects supported by the Bank through Investment Project Financing. The E&S standards is expected to: (a) support Borrowers in achieving good international practice relating to environmental and social sustainability, (b) assist Borrowers in fulfilling their

⁶ Overview of the ESF provided in this chapter uses direct language of the framework; "**Borrower**" in the context of the IRCDP is Democratic Socialist Republic of Sri Lanka, **Implementing Agency** is the Ministry of Highways.

national and international environmental and social obligations; (c) enhance non-discrimination, transparency, participation, accountability and governance; and (d) enhance the sustainable development outcomes of projects through ongoing stakeholder engagement.

There are ten Environmental and Social Standards (ESS) that the Borrower⁷ and the project needs to meet through the project life cycle:

- ESS 1: Assessment and Management of Environmental and Social Risks and Impacts.
- ESS 2: Labor and Working Conditions.
- ESS 3: Resource Efficiency and Pollution Prevention and Management.
- ESS 4: Community Health and Safety.
- ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement.
- ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.
- ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities.
- ESS 8: Cultural Heritage.
- ESS 9: Financial Intermediaries; and
- ESS 10: Stakeholder Engagement and Information Disclosure.
-

Environmental and Social Standard ESS1 applies to all projects for which Bank Investment Project financing is sought. ESS1 establishes the importance of: (a) the Borrower's existing environmental and social framework in addressing the risks and impacts of the project; (b) an integrated environmental and social assessment to identify the risks and impacts of a project; (c) effective community engagement through disclosure of project-related information, consultation and effective feedback; and (d) management of environmental and social risks and impacts by the Borrower throughout the project life cycle. The Bank requires that all environmental and social risks and impacts of the project be addressed as part of the environmental and social assessment conducted in accordance with ESS1. ESS2–10 set out the obligations of the Borrower in identifying and addressing environmental and social risks and impacts that may require particular attention.

The World Bank Access to Information Policy, which reflects the Bank's commitment to transparency, accountability, and good governance, applies to the entire Framework and includes the disclosure obligations that relate to the Bank's Investment Project Financing. Borrowers and projects are also required to apply the relevant requirements of the World Bank Group Environmental, Social, Health and Safety Guidelines. These are technical reference documents, with general and industry specific examples of Good International Industry Practice (GIIP).

Additionally, the World Bank has also a series of directives and Good Practice Notes (GPN) which will inform the assessment and management of social risks and impacts under the project, including:

- Bank Directive on Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups,
- Good Practice Note on Addressing Sexual Exploitation and Abuse/Sexual Harassment,
- Good Practice Note on Gender,
- Good practice Note on Non-Discrimination and Disability,
- Good Practice Note on Sexual Orientation and Gender Identity (SOGI), and
- Guidance Note on Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced Labor Influx.

⁷ Government of Sri Lanka

Table 4.1: Screening for relevant ESS

ESS	Relevance to the IRDCP
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	√
ESS 2: Labor and Working Conditions	√
ESS 3: Resource Efficiency and Pollution Prevention and Management	√
ESS 4: Community Health and Safety	√
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	√
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	√
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	√
ESS 8: Cultural Heritage	√
ESS 9: Financial Intermediaries	X
ESS 10: Stakeholder Engagement and Information Disclosure	√

The ESMF is an instrument that examines the risks and impacts when a project consists of a program and/or series of sub-projects, and all the E&S risks and impacts cannot be determined until the program or sub-project details have been identified. The ESMF sets out the principles, rules, guidelines, and procedures to assess the environmental and social risks and impacts. It contains measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project risks and impacts, including on its capacity to manage environmental and social risks and impacts. It includes adequate information on the area in which subprojects are expected to be sited, including any potential environmental and social vulnerabilities of the area; and on the potential impacts that may occur and mitigation measures that might be expected to be used.

4.1.1 ESS 1 - Assessment and Management of Environmental and Social Risks and Impacts

ESS1 sets out the Borrower’s responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs).

The ESSs are designed to help Borrowers to manage the risks and impacts of a project, and improve their environmental and social performance, through a risk and outcomes-based approach. The desired outcomes for the project are described in the objectives of each ESS, followed by specific requirements to help Borrowers achieve these objectives through means that are appropriate to the nature and scale of the project and proportionate to the level of environmental and social risks and impacts.

Borrowers will conduct environmental and social assessments of projects/sub-projects proposed for Bank financing to help ensure that projects are environmentally and socially sound and sustainable. The environmental and social assessment will be proportionate to the risks and impacts of the project. It will inform the design of the project and be used to identify mitigation measures and actions and to improve decision making.

Borrowers will manage environmental and social risks and impacts of the project throughout the project life cycle in a systematic manner, proportionate to the nature and scale of the project and the potential risks and impacts.

The objectives of this ESS are:

- To identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.
- To adopt a mitigation hierarchy approach to:
 - o Anticipate and avoid risks and impacts.
 - o Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels.
 - o Once risks and impacts have been minimized or reduced, mitigate; and
 - o Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.
- To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable groups, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.
- To utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development, and implementation of projects, whenever appropriate.
- To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity.

ESS1 applies to all projects supported by the Bank through Investment Project Financing.

4.1.2 ESS 2 - Labor and Working Conditions

ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker- management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. ESS2 applies to project workers including fulltime, part-time, temporary, seasonal, and migrant workers.

The Borrower will develop and implement written labor management procedures applicable to the project. These procedures will set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS. The procedures will address the way in which this ESS will apply to different categories of project workers including direct workers, and the way in which the Borrower will require third parties to manage their workers in accordance with ESS2.

4.1.3 ESS 3 - Resource and Efficiency, Pollution Prevention and Management

This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life-cycle consistent with GIIP. Objectives of this standards are:

- To promote the sustainable use of resources, including energy, water and raw materials.
- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.
- To avoid or minimize project-related emissions of short and long-lived climate pollutants 3.
- To avoid or minimize generation of hazardous and non-hazardous waste.
- To minimize and manage the risks and impacts associated with pesticide use.

4.1.3.1 Resource Efficiency

The Borrower will implement technically and financially feasible measures for improving efficient consumption of energy, water and raw materials, as well as other resources. Such measures will integrate the principles of cleaner production into product design and production processes to conserve raw materials, energy and water, as well as other resources. Where benchmarking data are available, the Borrower will make a comparison to establish the relative level of efficiency.

4.1.3.2 Pollution Prevention and Management

The Borrower will avoid the release of pollutants or, when avoidance is not feasible, minimize and control the concentration and mass flow of their release using the performance levels and measures specified in national law or the EHS Guidelines, whichever is most stringent. This applies to the release of pollutants to air, water and land due to routine, non-routine, and accidental circumstances, and with the potential for local, regional, and transboundary impacts.

4.1.3.3 Climate Adaptation

Inspired by the vision for Sustainable Development, the World Bank Group is globally committed to environmental sustainability, including stronger collective action to support climate change mitigation and adaptation, recognizing this as essential in a world of finite natural resources.

It recognizes that climate change is affecting the nature and location of projects, and that World Bank-financed projects should reduce their impact on the climate by choosing alternatives with lower carbon emissions. The World Bank works on climate change because it is a fundamental threat to development in our lifetime.

At a project level, the WB seeks to address project-level impacts on climate change and consider the impacts of climate change on the selection, siting, planning, road rehabilitation's design and implementation and decommissioning of projects. This issue is addressed as part of the environmental and social risks and impacts assessment. This aspect is mainly considered within ESS1 and ESS3.

4.1.4 ESS 4 - Community Health and Safety

ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. ESS4 addresses the community health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. ESMPs will address and mitigate impacts from the sub-project related activities on community health, safety of the project-affected communities. It is expected that there will be no significant security related risks to the communities.

4.1.5 ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

ESS 5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood), or both. The term "involuntary resettlement refers to these impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement, which includes, eligibility classifications, compensation resettlement rehabilitation and displacement community engagement and grievance redress mechanism. The main objectives of this standard are to:

- Avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives.
- Avoid forced eviction.
- Mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement, and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher;
- Improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure.

- Conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant.
- Ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.

In cases where there are risks and impacts associated with involuntary resettlement, the Borrower is required to prepare ‘Resettlement Plans’ which include measures to address physical and/or economic displacement, depending on the nature of the impacts expected from a project.⁸

4.1.6 ESS 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services

ESS6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. Habitat is defined as a terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living environment. All habitats support complexities of living organisms and vary in terms of species diversity, abundance and importance.

The objectives of this ESS are:

- To protect and conserve biodiversity and habitats.
- To apply the mitigation hierarchy⁴ and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.
- To promote the sustainable management of living natural resources.
- To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.

The applicability of this ESS is established during the environmental and social assessment described in ESS1. Based on the environmental and social assessment, the requirements of this ESS are applied to all projects that potentially affect biodiversity or habitats, either positively or negatively, directly or indirectly, or that depend upon biodiversity for their success.

The environmental and social assessment as set out in ESS1 will consider direct, indirect and cumulative project-related impacts on habitats and the biodiversity they support. This assessment will consider threats to biodiversity. It will determine the significance of biodiversity or habitats based on their vulnerability and irreplaceability at a global, regional or national level and will also take into account the differing values attached to biodiversity and habitats by project-affected parties and other interested parties.

⁸ Projects may use alternative nomenclature, depending on the scope of the resettlement plan – for example, where a project involves only economic displacement, the resettlement plan may be called a “livelihood plan” or where restrictions on access to legally designated parks and protected areas are involved, the plan may take the form of a “process framework.”

4.1.6.1 Forests and Wetlands

Forests and wetlands are considered as habitats, which is defined as terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living environment. Habitats vary in their significance for conserving globally, regionally and nationally important biodiversity, their sensitivity to impacts and in the significance different stakeholders attribute to them. Because, in most instances, habitat loss, degradation or fragmentation represents the greatest threat to biodiversity, much of the focus of biodiversity conservation actions is on maintaining or restoring suitable habitats.

This ESS requires a differentiated risk management approach to habitats based on their sensitivity and values.

Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.

If natural habitats are identified as part of the assessment, the Borrower will seek to avoid adverse impacts on them in accordance with the mitigation hierarchy. Where natural habitats have the potential to be adversely affected by the project, the Borrower will not implement any project related activities unless:

- a) There are no technically and financially feasible alternatives; and
- b) Appropriate mitigation measures are put in place, in accordance with the mitigation hierarchy, to achieve no net loss and, where feasible, preferably a net gain of biodiversity over the long term. When residual impacts remain despite best efforts to avoid, minimize and mitigate impacts, and where appropriate and supported by relevant stakeholders, mitigation measures may include biodiversity offsets adhering to the principle of "like-for-like or better."

Where the project includes commercial agriculture and forestry plantations (particularly projects involving land clearing or afforestation), the Borrower will locate such projects on land that is already converted or highly degraded (excluding any land that has been converted in anticipation of the project). In view of the potential for plantation projects to introduce invasive alien species and threaten biodiversity, such projects will be designed to prevent and mitigate these potential threats to natural habitats. When the Borrower invests in production forestry in natural forests, these forests will be managed sustainably.

4.1.6.2 Protected Areas

Where the project occurs within or has the potential to adversely affect an area that is legally protected⁹ designated for protection, or regionally or internationally recognized, the Borrower will ensure that any activities undertaken are consistent with the area's legal protection status and management objectives. The Borrower will also identify and assess potential project-related adverse impacts and apply the mitigation hierarchy so as to prevent or mitigate adverse impacts from projects that could compromise the integrity, conservation objectives or biodiversity importance of such an area. Appendix A of this report provides a full list of protected areas of Sri Lanka.

4.1.7 ESS 7- Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

⁹ A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.

⁵ Internationally recognized areas of high biodiversity value include World Heritage Natural Sites, Biosphere Reserves, Ramsar Wetlands of International Importance, Key Biodiversity Areas, Important Bird Areas, and Alliance for Zero Extinction Sites, among others.

This ESS recognizes that Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities have identities and aspirations that are distinct from mainstream groups in national societies and often are disadvantaged by traditional models of development.¹⁰ In many instances, they are among the most economically marginalized and vulnerable segments of the population. Their economic, social, and legal status frequently limits their capacity to defend their rights to, and interests in, land, territories and natural and cultural resources, and may restrict their ability to participate in and benefit from development projects. In many cases, they do not receive equitable access to project benefits, or benefits are not devised or delivered in a form that is culturally appropriate, and they may not always be adequately consulted about the design or implementation of projects that would profoundly affect their lives or communities.

In this ESS, the term “Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities” (or as they may be referred to in the national context using an alternative terminology) is used in a generic sense to refer exclusively to a distinct social and cultural group possessing the following characteristics in varying degrees:

- (a) Self-identification as members of a distinct indigenous social and cultural group and recognition of this identity by others; and
- (b) Collective attachment⁶ to geographically distinct habitats, ancestral territories, or areas of seasonal use or occupation, as well as to the natural resources in these areas; and
- (c) Customary cultural, economic, social, or political institutions that are distinct or separate from those of the mainstream society or culture; and
- (d) A distinct language or dialect, often different from the official language or languages of the country or region in which they reside.

Accordingly, the objectives of ESS7 are:

- To ensure that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities.
- To avoid adverse impacts of projects on Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.
- To promote sustainable development benefits and opportunities for Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities in a manner that is accessible, culturally appropriate and inclusive.
- To improve project design and promote local support by establishing and maintaining an ongoing relationship based on meaningful consultation with the Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities affected by a project throughout the project’s life-cycle.
- To obtain the Free, Prior, and Informed Consent (FPIC) of affected Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities in the three circumstances described in this ESS.
- To recognize, respect and preserve the culture, knowledge, and practices of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, and

¹⁰ In some countries, such groups are referred to as ‘Indigenous Peoples.’ In other countries they may be referred to by other terms, such as “Sub-Saharan African historically underserved traditional local communities,” “indigenous ethnic minorities,” “aboriginals,” “hill tribes,” “vulnerable and marginalized groups,” “minority nationalities,” “scheduled tribes,” “first nations,” or “tribal groups.”

to provide them with an opportunity to adapt to changing conditions in a manner and in a timeframe acceptable to them.

In the instance that these groups are present in, or have collective attachment to a proposed project area, as determined during the environmental and social assessment, the borrower is required to prepare a time-bound plan, such as an Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities plan in consultation with the affected Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities. The scope and scale of the plan will be proportionate to the potential risks and impacts of the project. The format and title of the plan will be adjusted as appropriate to the project or country context, and will reflect any alternative terminology for the Indigenous Peoples.

4.1.8 ESS 8 - Cultural Heritage

ESS8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. People identify with cultural heritage as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. Cultural heritage, in its many manifestations, is important as a source of valuable scientific and historical information, as an economic and social asset for development, and as an integral part of people's cultural identity and practice. ESS8 sets out measures designed to protect cultural heritage throughout the project life cycle.

The requirements of ESS8 apply to cultural heritage regardless of whether or not it has been legally protected or previously identified or disturbed. The requirements of ESS8 apply to intangible cultural heritage only if a physical component of a project will have a material impact on such cultural heritage or if a project intends to use such cultural heritage for commercial purposes.

The Borrower will implement globally recognized practices for field-based study, documentation and protection of cultural heritage in connection with the project, including by contractors and other third parties.

A chance finds procedure is a project-specific procedure which will be followed if previously unknown cultural heritage is encountered during project activities. It will be included in all contracts relating to construction of the project, including excavations, demolition, movement of earth, flooding or other changes in the physical environment. The chance finds procedure will set out how chance finds associated with the project will be managed. The procedure will include a requirement to notify relevant authorities of found objects or sites by cultural heritage experts; to fence-off the area of finds or sites to avoid further disturbance; to conduct an assessment of found objects or sites by cultural heritage experts; to identify and implement actions consistent with the requirements of this ESS and national law; and to train project personnel and project workers on chance find procedures. The procedure is provided in section 6.7 of this report.

4.1.9 ESS 10 - Stakeholder Engagement and Information Disclosure

This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. A stakeholder engagement plan is prepared to meet the requirements of this standard.

4.2 World Bank Group's EHS Guidelines

The World Bank Group's Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry specific examples of Good International Industry Practice (GIIP).

EHS Guidelines are applied as required by their respective policies and standards. These industry sector EHS guidelines are designed to be used together with the General EHS Guidelines document, which provides guidance to users on common EHS issues potentially applicable to all industry sectors.

The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. Application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets, with an appropriate timetable for achieving them. The applicability of the EHS Guidelines should be tailored to the hazards and risks established for each project on the basis of the results of an environmental assessment in which site-specific variables, such as host country context, assimilative capacity of the Defined as the exercise of professional skill, diligence, prudence and foresight that would be reasonably expected from skilled and experienced professionals engaged in the same type of undertaking under the same or similar circumstances globally. The circumstances that skilled and experienced professionals may find when evaluating the range of pollution prevention and control techniques available to a project may include, but are not limited to, varying levels of environmental degradation and environmental assimilative capacity as well as varying levels of financial and technical feasibility. Environment, and other project factors, are taken into account.

The applicability of specific technical recommendations should be based on the professional opinion of qualified and experienced persons. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures than those provided in these EHS Guidelines are appropriate, in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternate performance levels is protective of human health and the environment.

The World Bank Group General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to construction and can be downloaded via the following link.

- https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines

The World Bank Group ESH Guidelines for Construction Materials Extraction is also applicable to the project and used as key guidance provided to contractors on the management of environmental health and safety during construction material extraction in addition to specific guidance provided in the EAMF. This document includes information relevant to construction materials extraction activities such as aggregates, limestone, slates, sand, gravel, clay, gypsum, feldspar, silica sands, and quartzite, as well as to the extraction of dimension stone. It addresses stand-alone projects and extraction activities supporting construction, civil works, and cement projects. Although the construction materials extraction guidelines Emphasize major and complex extraction schemes, the concepts are also applicable to small operations and should be used for guidance. These guidelines can also be downloaded via the link provided above.

5 Assessment of Environmental and Social Risks and Impacts and Mitigation Measures

5.1 Environmental and Social Risk Classification as per the World Banks ESF

This ESMF provides for initial risk assessment and classification based on the available documentation and data. The environment and social risks are rated as *Substantial* by the World Bank as per the following rationale, in line with the World Bank’s Environmental and Social Policy and ESF for the IRDCP.

Environmental Risk Rating	Substantial
<p>The Environmental risk classification of the Project is proposed to be <i>Substantial</i> given that exact subprojects and their locations are largely undetermined at this point and will be detailed out in terms of nature, scale and footprint also during project implementation. Project financed subprojects will also be extensive in number and sporadically spread across all nine provinces of the country. The project activities related to the reconstruction and rehabilitation of roads and the rehabilitation and potential new construction of small scale agrological and community infrastructure, are not likely to have significant adverse risks or impacts on human populations and/or the environment at an individual level however. The project will finance the rehabilitation, reconstruction and/or upgradation of dirt roads to asphalt rural roads and streets as well as rehabilitation of small-scale community infrastructure (e.g., rehabilitation of cold storage facilities, warehouses, community centers, community childcare facilities, village markets, bus stands, rest stops, etc). Impacts are expected to be site-specific and can be addressed through comprehensive environmental screening and conventional mitigation and management measures. It is also not expected that the project will have adverse impacts to environmentally or socially sensitive areas as the project sites will be largely located within pre- settled areas of human habitation.</p> <p>As such, the potential risks and impacts and issues are predictable and expected to be temporary and/or reversible; low in magnitude; site-specific, without likelihood of impacts beyond the actual footprint of the project. Potential key environmental risks and impacts expected due to the nature of proposed physical interventions will relate to possible temporary disruption of current traffic circulation, traffic safety, damage to access roads, dust nuisance, and gaseous emissions, potential pollution of soil and water resources, brief disturbance to biotope, and momentary interference to neighboring settlements through various operational activities, erosion and sedimentation of rivers and wetlands from earth works and run-off, felling of trees along the Right of Way (ROW), increased traffic, generation and disposal of waste/spoil, occupational and community health and safety (especially with added risks associated with the spread of COVID-19 under the current pandemic context in the country), air pollution and noise emissions from machinery. Sourcing of construction materials will also have risks and impacts from extraction, transport and hauling and site restoration after extraction.</p> <p>Ancillary infrastructure that will be supported such as rehabilitation of cold-storage, storage facilities may also potentially involve the generation of hazardous chemicals and handling of asbestos in old infrastructure that would need to be handled via adequate guidance criteria and exclusion criteria. Negative impacts are anticipated mainly during the rehabilitation/construction period largely within the existing footprints and can be managed through implementation of engineering measures and good construction site management. Off-site activities include quarry, borrow pit and asphalt plant operations, which if not managed properly, may cause localized adverse impacts. There might be site- specific E&S risks and impacts of some road improvement works, which will need to be screened, assessed and managed in site-specific instruments such as E&S Impact Assessments (ESIAs) and/or E&S Management Plans (ESMPs) to be prepared during project implementation when the locations of these roads are known, and detailed designs are prepared.</p> <p>At the concept stage, the capacity of the implementing agencies will require to be built via capacity enhancement and augmented and strengthened to manage the extensive number of projects planned across the country via this program, especially at the provincial level and at the level of contractors as well.</p>	

Social Risk Rating	Substantial
<p>The social risk rating for the project is considered as <i>Substantial</i>. Construction works will mainly occur within the existing ROW with the nature of interventions limited mostly to rehabilitation, upgrade from dirt to asphalt rural roads, and in some instances, widening of local roads may also be required. There might be a need for land acquisition either for road widening or construction of agriculture/community infrastructure such as cold storage facilities, community centers, etc. However, the land required are envisaged to be either of very small scale or mostly linear and narrow strips of the land by the road. Thus, land acquisition requirements may not be high, and people may lose only small proportion of lands.</p> <p>At this preliminary stage, other social risks identified include, inadequate coordination between concerned agencies, including the RDA, PRDD, agriculture institutions, etc. on E&S issues; lack of dedicated personnel to address and manage social issues, particularly within the provincial/local government agencies; adverse impacts on vulnerable and disadvantaged individuals from the risks and impacts of land-taking (albeit minimal), construction works, exclusion from livelihoods and other agricultural assistance, etc. At this stage, there is no evidence of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, as defined under ESS7, that would be impacted due to the project.</p> <p>Improving the safety standards of the roads will be important and this project could be used as an opportunity to improve the safety standards, especially for the roads within inhabited settlements. Construction works under the project will be carried out by domestic companies thus supporting generation of the road maintenance related jobs. The number of laborers needed for the project is expected to be small and most likely to be hired locally. Thus, potential impacts caused by labor influx to communities, including GBV risks, are not likely to be significant.</p> <p>At the time of project appraisal, the risk rating will be revisited based on identified risks and impacts. Management of these risks would be undertaken through principle of ‘mitigation hierarchy’.</p>	

In order to address the risks described in detail above the following instruments have been prepared:

- i. Environmental and Social Commitment Plan (ESCP)
- ii. Environment and Social Management Framework (ESMF)
- iii. Stakeholder Engagement Plan (SEP)
- iv. Labor Management Procedures (LMP)
- v. Resettlement Policy Framework (RPF)

5.1.1 ESS 1 - Assessment and Management of Environmental and Social Risks and Impacts

ESS1 applies to the project. It is expected that the location and design of 500 Kms of roads to be rehabilitated or upgraded will be confirmed prior to the project appraisal as front runner investments. Potential E&S risks and impacts are predictable, expected to be temporary and reversible, low in magnitude, and site specific.

More precisely, the environmental impacts most commonly include possible temporary disruption of current traffic circulation, traffic safety, relocation of utilities, damage to access roads, dust nuisance, and gaseous emissions, potential pollution of soil and water resources, brief disturbance to biotope, and momentary interference to neighboring settlements through various operation activities. Off-site activities include quarry, burrow pit and asphalt plant operations, which if not managed properly, may cause localized adverse impacts.

Social risks identified at this stage include, inadequate coordination between concerned agencies on land acquisition, livelihoods support and agriculture-related issues; lack of dedicated personnel dealing with social aspects within the implementing agencies; frequent changes of alignments and project sites leading to delays in project implementation as well as adverse impacts on affected communities; political interferences during the selection of roads and community infrastructure; and adverse impacts

arising from land acquisition, though such impacts are expected to be minimal. Vulnerable and disadvantaged individuals and groups are more likely to be adversely affected by these risks, including exclusion from decision-making as well as other project benefits. Further, at this stage, there is no evidence of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, as defined under ESS7, that would be impacted due to the project. However, the presence of indigenous peoples in the project area will be assessed during site-specific E&S screening and appropriate mitigation measures will be applied.

The contractor's site offices, and possibly, but highly unlikely, workers' camp can be potential sources of temporary adverse E&S impacts. In most cases such impacts can be mitigated readily through good construction practice, environmental permitting process and through implementation of site-specific environmental and social due diligence mechanisms.

The Environmental and Social Commitment Plan (ESCP) of the IRDCP, drawn and agreed upon with the GoSL, sets out the substantive measures and actions that will be required for the project to meet E&S requirements over the project's lifetime. These measures shall be implemented within a specified timeframe and the status of implementation will be reviewed as part of project monitoring and reporting.

Given that the location of most road segments and ancillary facilities to be rehabilitated will not be known before the project appraisal, the RDA has prepared this Environmental and Social Management Framework (ESMF), an Resettlement Policy Framework (RPF), Labor Management Procedures (LMP) and Stakeholder Engagement Plan (SEP), prior to project appraisal to facilitate screening, assessment, and management of E&S issues of activities / sub-projects during project implementation, as a key task of the ESCP. The preparation of these instruments as well as the management of the associated risks will be undertaken through the principle of 'mitigation hierarchy'.

This ESMF will guide the preparation of the appropriate instruments to be used for specific sub-projects. In addition, all front runner subprojects selected prior to appraisal, where sites and designs will be finalized will need E&S screening and the preparation of management instruments to mitigate any site-specific impacts associated with the proposed interventions and 26 such projects have undergone the process. The relevant E&S Screening and instruments for these projects are presented in Volume 3 of this ESMF. The instruments to be prepared when the sub-project locations are identified and defined as per the guidance provided in Chapter 6 of the ESMF includes site-specific Environmental and Social Screening Reports (ESSRs), ESIA, ESMPs or CESGPs. The instruments so prepared will also be in compliance with the World Bank Group's EHS Guidelines. The screening criteria for sub projects have been defined in the ESMF (Annex 1). It is expected that CESGPs will be used for low risk sub projects that usually only involve change of asphalt or drainage on exiting road, concrete resurfacing or pavement improvements for instance as defined via the environmental and social screening. The site specific ESMPs would be used in more complex rehabilitation that involve resurfacing, asphaltting and when locations of road segments are more sensitive or involve works on existing structures, bridge and culvert rehabilitation, landslide mitigation structures or widening. These site-specific documents will constitute an integral part of bidding documents for contractors. The ESMF and site-specific assessments and plans (ESIAs and E&S screening checklists), the ESMPs and CESGPs will be appropriately disclosed and discussed with the public on a timely basis as per the guidance provided in Chapter 6 and the project's SEP.

5.1.2 ESS 2 - Labor and Working Conditions

ESS2 is considered relevant to the project. The total workforce at the site level at any given time is expected to be less than 50-80 persons. The expected types of workers to be employed by the project include: direct workers (workers and staff either hired or seconded from within the RDA for project implementation); contracted workers involved in the implementation of civil works for road rehabilitation and ancillary facilities (contractors, sub- contractors, laborers); and primary supply

workers (suppliers of construction materials such as aggregates, equipment, etc). However, the potential risks, including Occupational Health and Safety (OHS) associated with the construction and operation of roads and agro- logistic infrastructure, as well as the presence, and nature of engagement of these different types of workers (e.g., primary suppliers), and the corresponding provisions of ESS2 that will apply to those workers, will be determined during the sub-project preparation and implementation phase.

While the scope of construction work on individual projects involved is presumed to be comparatively small and with an emphasis to engage local workers (particularly for unskilled labor), it will require some contracted workers to be brought in from other parts of the island. Further, and there is also the potential of foreign workers based in Sri Lanka partaking in such activities, especially as skilled workers. The various categories of workers hired for the anticipated civil works (as required) and the influx of ‘followers’ will be subject to the requirements of ESS2 (and ESS4), including clear information on the terms and conditions of employment, principles regarding non- discrimination and equal opportunity and the establishment of workers’ organizations, rules regarding child labor and forced labor, and occupational health and safety measures including provisions for management and spread of diseases such as COVID-19 under the pandemic context. There will also be a grievance mechanism for workers, drawing on national laws and procedures.

The project has applied the Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) Risk Assessment Tool and the risk level is assessed to be 'low.' Based on the additional information obtained during project preparation and implementation, the SEA/SH risk levels will be reassessed and measures for addressing any risks associated with Gender Based Violence (GBV)/SEA/SH, if relevant, will be included in an action plan following the Good Practice Note on Addressing Sexual Exploitation and Abuse/Sexual Harassment, prepared by the Bank.

A comprehensive Labor Management Procedures (LMP) in line with the requirements of ESS2 and the Guidance Note on Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced Labor Influx, has been prepared and disclosed. Further, to ensure health and safety of workers during the construction and operational phases of sub-projects to be financed via the project, an OHS plan, in line with the World Bank Group Environmental Health and Safety Guidelines and Good International Industry Practice (GIIP), has been prepared as an Annexure presented in Volume II of the ESMF in line with the nature of works expected via the project interventions. The OHS plan will provide guidance in the preparation of sub-project specific OHS actions and plans where essential and will be specifically identified in the ESCP.

In addition to the LMP, specific measures of managing OHS risks such as risk of electrocution and fire safety, solid waste management and accident prevention and road safety recommendations will be included in to the guidance provided in the ESMF in the form of generic ESMPs and CESGPs for both road and agro-logistical infrastructure types the project may finance.

5.1.3 ESS 3 - Resource and Efficiency, Pollution Prevention and Management

ESS3 is relevant to the project as civil works associated with road and ancillary infrastructure reconstruction and rehabilitation work will include the use of a range of materials like asphalt, cement, fly ash, lime stabilized soil, upcycled plastic waste and other material that can pollute the environment unless properly handled. In addition, the project might be a significant user of material resources like gravel and stone from burrow pits and quarries. Large quantities of construction and demolition waste are expected, as asphalt might be removed from current roads and replaced and will need to be either reused in the construction process or disposed in an environmentally sound manner. Ideally construction waste would be reused where feasible for road rehabilitation and maintenance works, while unusable fractions will be disposed at dedicated sites as per national environmental regulations. Through the

implementation of procedures and measures stated in this ESMF, and via site-specific ESMPs and CESGPs, the contractors will be required to avoid or minimize the release of pollutants and assure compliance with the Environmental, Health and Safety Guidelines of the World Bank Group.

Mitigation measures to ensure the appropriate handling; storage, use and disposal of hazardous and non-hazardous materials and wastes will be identified in the ESMF. When supporting the rehabilitation of any cold storage facilities, Non-Ozone Depleting Substance (ODS) refrigerants will be selected via the facility design selection criteria and procurement of ODS will also be included as part of a negative list in the ESMF and project Operations Manual. The basic Negative List of activities applicable to the project is presented in Annex 1 of Volume II of the ESMF.

These will be included in the ESMF, in subsequent site-specific instruments and also in the management plans of work camps and work sites. Only licensed quarries and licensed sources of sand and borrow sites that have received pre environmental clearance should be considered for material sourcing. Guidelines for quarry and burrow site management and due diligence criteria for material sourcing and selection are presented in the Generic ESMPs and Generic CESGP presented in Volume II of the ESMF.

Energy-efficient refrigeration equipment will be recommended for the cold storage system and to manage Green-House Gas (GHG) emissions, the ESMF recommends measures in line with international and national best practices for selection of GHG-friendly equipment where the use of harmful coolants will be managed via product design. ESMF will also include guidelines for the decommissioning of any old structures during rehabilitation of agro-logistical infrastructure and in line with the available final disposal facilities for hazardous waste in the country the ESMF indicates measures to be taken for safe removal, containment, and disposal. The site-- specific ESMPs or generic CESGPs will be part of the tendering documentation and civil works contracts, ensuring these measures are adhered to in line with the ESMF.

5.1.4 ESS 4 - Community Health and Safety

ESS4 is relevant to the project. The civil works will lead to risks to road users, both pedestrians and motorists, during the construction phase and given the linear character of the sub projects, full partition or fencing of construction sites might not be possible. Therefore, the ESMF provides guidance on best practice mitigation measures, ranging from signage and signaling and mitigation measures to control excessive noise and dust levels and other civil works impacts that can be a nuisance to the public. A robust mitigation and management plan will be included in the proposed ESMPs or site-specific CESGPs. Traffic and Road Safety Management Plans with measures to ensure the safety and wellbeing of nearby communities and road users during construction and for the operation phase will be prepared together with the Emergency Response Plans with procedures to respond to accidental leaks, spills, emissions, fires, and other unforeseen crisis events as part of these instruments are guided by the Generic ESMPs and CESGP presented in Volume II of the ESMF. General national guidelines for traffic management plans will be included in ESMF to guide contractors to prepare site specific plans. Special guidelines will be given for sensitive sites like schools, hospitals, religious places, and other sensitive receptors where applicable.

The SEA/SH risk classification for the project has been assessed as 'low' during concept stage but will be reassessed during project preparation. The guidance on potential issues related to SEA/SH as well as others such as COVID-19, universal access, climate and geophysical hazards are incorporated to guidance in this ESMF (Annex 17).

5.1.5 ESS 5-Land acquisition, Restrictions on Land Use and Involuntary Resettlement

ESS5 is relevant to the project. The project will finance rehabilitation, reconstruction and/or upgradation of dirt roads to asphalt local rural roads and streets as well as small-scale community

infrastructure (e.g., rehabilitation of cold storage facilities, warehouses, community centers, community childcare facilities, village markets, bus stands, rest stops, etc.). The interventions are not expected to require large land take; instead, land acquisition requirements will be limited to small and narrow linear impacts or site-specific impacts. Accordingly, only limited resettlements, demolition of structures, or impacts to livelihoods due to land acquisition, is expected.

To the extent possible, the project will carry out the civil works in the existing footprint of the land, and if required, will explore the option to take land either partly or all through voluntary land donation (VLD) based on meaningful consultations. The VLD will be acceptable only when the borrower can demonstrate the provisions as set in ESS5 are followed. These include that the potential donor is informed and consulted about the choices, choice of refusal is an option, amount of land required is expected to be minor allowing the participating households to maintain their livelihoods at current levels, with no physical relocation. Consent will be obtained from actual users in case of communal land.

A Resettlement Policy Framework (RPF) has been prepared because there is the possibility of adverse impact on land and land users. The RPF includes processes to be followed for VLD, procedures for resettlement planning as well as provisions to deal with construction-induced social impacts, such as possible damages on nearby structures and will need temporary or permanent displacement due to use of heavy machinery during construction period.

5.1.6 ESS 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

The proposed operation's sub-projects are expected to be restricted to existing road corridors and therefore impacts on natural habitats is expected to be limited. Nevertheless, as the location of roads are still not identified, some of the rehabilitation works might be carried out in areas in close proximity to designated protected areas and or in the buffer zones of protected areas. The potential impacts of such activities will only be identified during project design when specific routes are known, and should be addressed in the ESMF, as well as in the subsequent ESMPs and therefore as a precautionary measure ESS6 is relevant to the project. The ESMF defines procedures for identifying and managing sub-projects potentially affecting natural habitats via screening criteria and mitigation measures and presents guidance on augmenting design to avoid and enhance good impacts and aspects. No activities will be allowed within designated protected areas as per the project's negative list presented in Annex 1 of Volume II of the ESMF. The ESMF provides an overview of existing protected areas and identifies potentially critical areas that require special screening based on proximity to such sites, in consultations with and guidance of the Forest Department and Department of Wildlife Conservation.

5.1.7 ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

All the subprojects will be screened during preparation/implementation, as described in the ESMF, to ascertain the absence/presence of such groups, especially Veddas, in the project areas. If the screening indicates presence of any groups that meet the criteria set out under ESS7, sub-project specific Indigenous Peoples Development Plans (IPDPs) will be developed. Further, Free Prior Informed Consent (FPIC) will be applicable in cases involving impacts on IPs land, livelihood, cultural heritage besides in cases requiring relocation. In the instances where FPIC cannot be ascertained, the project will not proceed with those sub-projects/activities. The same provisions have been also mentioned in the ESCP.

5.1.8 ESS 8-Cultural Heritage

ESS8 is relevant. Project activities are highly unlikely to involve risks or impacts on tangible or intangible cultural heritage as it involves the rehabilitation of existing roads and infrastructure. However, the Standard is considered Relevant as a precautionary measure. While cultural heritage sites are relatively well documented in Sri Lanka, proximity of selected roads to such places or located within known cities designated as heritage areas are yet to be identified. Since all constructions will take place in existing footprints, there will be no direct adverse impacts to cultural resources in close proximity. If at all, there could be minor indirect impacts from ongoing construction activities including the potential impacts from vibrations if sites are located in close proximity to the respective roads and the potential of discovering chance finds. The ESMF includes due diligence procedures in line with ESS8 to screen for risks and impacts on cultural heritage and include chance find procedures (Annex 9).

5.1.9 ESS 10 - Stakeholder Engagement and Information Disclosure

Being cognizant of elements proposed under the scope of the project design at this stage the possible stakeholders include: national agencies like the Ministry of Highways, Road Development Authority; provincial and local government departments of roads, forests, agriculture, revenue and tourism; farmer and producer groups; local communities along the roads; civil society organizations; traders, transport operators; road users including users of private and public transport; and people likely to be affected. Likewise, vulnerable groups requiring special attention will include the poor, women-headed households, people with disabilities, female workers, etc. The presence of these vulnerable groups will be determined during the screening and the consultations. Further, the exact composition of stakeholders may also change depending on final project design. However, the consultation and disclosure of information with stakeholders will be core during both planning and implementation stages of the project.

As required under ESS 10, a Stakeholder Engagement Plan (SEP) has been prepared and disclosed. The SEP includes an assessment of and provides strategies for engaging with the communities in the: (i) selection of the local roads to be rehabilitated; (ii) selection of community infrastructure and implementation/preparation of livelihoods and entrepreneurial activities; (iii) engagement during the implementation - works period; and (iv) assessment and proposed mechanism for community engagement in the post reconstruction - maintenance phase. A project level Grievance Redressal Mechanism (GRM) has been established drawing on the existing structures and experiences within the RDA. The project will also be used to strengthen capacity of the local government in the dialogue with the communities in local road network maintenance.

Updating of the SEP, as ongoing/continued stakeholder engagements take place during project implementation, is a condition, specified in the ESCP for the project.

5.2 An Overview of Potential Environmental and Social Impacts Associated with the Proposed IRCDP Operation.

Environmental and social impact assessment of a project/sub-project (or project options) consists of comparing the expected changes in the biophysical and socioeconomic environment with and without

the project. For each potential environmental or social impact, the analysis should predict the nature and significance of the expected impacts or explain why no significant impact is anticipated.

Based on the information available for the selected case studies / sub-projects for the development of this ESMF, key environmental issues / impacts identified that would require detailed investigations during the ESIA stage are listed below. A summary of the issues and potential impacts is presented in the following paragraphs to guide preparation of sub-project ESIA and ESMPs.

5.2.1 Potential Impacts Associated with Design and Siting of Project Financed Infrastructure

5.2.1.1 Road rehabilitation and set up of community infrastructure in flood prone areas.

When deducing the road trace need to be reconstructed or repaired and or siting of project financed infrastructure is to be located in pre known flood prone areas as per the Disaster Management Center (DMC) derived flood maps and assessments, special consideration should be paid for these roads in terms of design requirements to mitigate flooding impacts.

For roads being rehabilitated if new culverts and bridges are designed and constructed without adequate openings considering the hydrology of such areas, natural drainage of upstream area would get severely altered during intensive rains.

For buildings and other ancillary facilities it is essential to ensure that the appropriate building codes are used to ensure for instance that flood risks are mitigated via the proper design, such as setting up buildings on stilts or in the form of elevated structures having adequate drainage structures as part of the design as well as proper means of evacuation facilities etc.

5.2.1.2 Impacts due to landslides.

As the project will be implemented across the country it is possible that some road sections to be rehabilitated and or siting of ancillary and community/agrologistical infrastructure facilities are located within areas with rolling and hilly terrain which are prone to landslides, it is possible for landslides to occur if natural slopes are disturbed by the construction activities during extreme rainfall events.

5.2.1.3 Nuisances and Disturbances to Supply due Shifting of utility supply lines.

For the road upgrading works electricity power lines, telephone lines and water supply mains located closer to the ROW will need to be shifted. Such utility facilities are identified via environmental and social screening. The movement of utility lines can cause disruption in connectivity and public nuisances as well as have associated risks during the removal phase if any excavation or re-ground laying occur.

5.2.1.4 Tree Removal due to road widening and road alignment and land clearance for construction

During the design phase there may be the need to remove large trees and or trees of economic value for road expansion and widening as well as reestablishment of corridors and for safety reasons. This may lead to the need for removal of trees which will impact the surrounding catchment area as well as the aesthetic conditions and erosion control aspects provided by the presence of these trees.

5.2.2 Potential Impacts Associated with the Rehabilitation of Rural Roads and the Construction of Ancillary Community and Agrologistical Infrastructure

5.2.2.1 Air Emissions, Noise and Vibrations

Air Emissions

Earthworks, pavement improvement operations, quarry operations, operation of hot mix plants, operation of construction vehicles and operation of plants during construction period will release aerial contaminants (dust and fumes) increasing local air pollution. During construction phase generation of dust will be the main concern. Measuring selected air quality parameters at the nearest receiver will be the ideal approach in determining the effectiveness of mitigation measures that are used to suppress dust and maintain good air quality. During construction stage pollutants emissions will be caused by earth works, construction activities and exhaust gases from vehicles. Improper waste management, particularly burning of construction and domestic wastes may lead to air pollution and should not be practiced at any stage. Additionally, resource efficiency and pollution control measures will be adopted and incorporated in design, construction and operation of the sub-projects, as per measures outlined in the ESMP.

In addition the project will also finance the building of cold storage facilities and it will be recommended that only Energy-efficient refrigeration equipment will be recommended for the cold storage system and to manage Green-House Gas (GHG) emissions that can be significant if proper equipment is not utilized or due to fugitive emissions or accidental discharge.

Vibrations

Heavy machinery used for construction work such as vibrators and compactors and operation of heavy vehicles at higher speeds will create noise and vibration which will cause nuisance to residents in settlements. And since baseline noise and vibration values are low in rural areas, the project induced impact will be more noticeable, if not managed. Sensitive receptors such as schools, hospitals and places of worship are particularly vulnerable to nuisance from noise. Buildings located closer to the road trace may lead to the appearance of cracks due to construction vibration unless managed.

Noise Emissions

Noise generated through construction operations and vehicle movement will have an impact on settlements through which roads pass and fauna living in forest areas close to road sections under the project. Establishing baseline noise levels at sensitive receivers will assist to minimize noise impacts during construction stage.

5.2.2.2 Solid and Hazardous Waste Material

Non-hazardous wastes will be generated during most part of construction works and will be represented by demolishing parts of existing roads, buildings, and pipes. In order to upgrade roads and widen the narrow roads clearing of roadside vegetation near the edge of the existing road, excavation, and removal of unsuitable soil, cutting trenches for roadside drains and removal of degraded surface of roads will be required. Such activities may develop temporary piles of soil and debris along the road edge.

Storage of such wastes in areas close to settlement and untimely or improper disposal may have impacts on air quality, dust generation and disturbance of neighboring settlements. In addition, the lack of proper sanitary waste dumping and management facilities in the country also cause issues as these wastes can only be disposed via open dumping in a designated Local Authority dumping site.

During the decommissioning or rehabilitation of infrastructure there also may be the presence of asbestos/asbestos cement-based products that will have to be removed and movement and handling of such material can cause exposure and associated health and safety risks to handlers.

5.2.2.3 Water Pollution

For project sites, when project activities will be conducted next to the water courses the surface water could be polluted due to improper placement of excavated soil, improper storage of construction materials, leakage of fuel and lubricates from construction machinery, washing of vehicles and techniques without proper treatment. Measures will be adopted to ensure the sub- projects are designed, constructed, and operated with environmentally sound measures for solid/wastewater collection and disposal. All these activities, specifically the construction and rehabilitation of culverts and bridges could cause temporary erosion and therefore siltation of nearby water bodies would occur. And if uncompacted earth surfaces or soil dumps are left exposed to rain or if they are placed near water bodies and paddy lands soil erosion will be possible. Sediments could drift away and get silted up in the side drains, adjoining streams and irrigation canals causing deterioration of water quality. Run off contaminated with oil, grease, emissions from construction vehicles, equipment and material stores, wastewater and solid waste from worker camp sites will contain pollutant materials. Such materials have the potential to cause deterioration of surface water sources if they are released to adjacent water bodies.

5.2.2.4 Disruption to Traffic/Transportation

Improvement works on the road pavement and reconstruction of culverts will impede existing traffic flows. The movement of trucks and other construction vehicles may cause accident risks and may damage other roads that they use to bring construction material to the construction sites.

5.2.2.5 Impacts on Biodiversity/Ecosystems

Evaluation of ecological impacts should be done with three objectives, that is; to take stock of the existing conditions, determine the sensitivity of these conditions to the proposed project and to predict the short term and long-term environmental response. For sub-projects near PAs, forests, or ecologically sensitive areas measures should be adopted and the sub-project should be designed in consultations with the Forest Department and Department of Wildlife Conservation in order to mitigate any possible adverse short term/long term effects during construction and post- construction.

Adverse impacts on terrestrial flora.

During the construction stage loss of vegetation is inevitable. During this phase the loss of vegetation could aggravate the erosive processes especially during the rainy season. Loss of soil moisture especially for the project area lies within the dry zone of Sri Lanka. Loss of trees may also cause economic loss to the owners of the trees

Establishment of invasive species.

During the construction stage, soil brought into the project area from outside may contain seeds of alien invasive species. Also, the construction machinery and vehicles can accidentally introduce seeds of such plants if used without proper cleaning. Temporary facilities such as labor camps, dumping sites, soil storage sites are potential locations where invasive plant species can get established in quick succession. This will negatively affect both the natural and manmade habitats. As alien invasive species, predominantly grasses and weeds are common along road corridors and shoulders, there is a possibility that such invasive species may invade new areas if the waste plant material generated during site clearing and dredging activities (if any) is disposed to areas away from the project.

Adverse impacts on terrestrial fauna.

It is likely the many of the roads and project sites to support agrological infrastructure will be located in agricultural areas where there are buffaloes, neat cattle birds such as Pea fowls and other terrestrial fauna. In addition, some project sites may be located in buffer zones of protected areas where animal

crossing and movements will be common. There will be frequent animal movement including elephants observed such areas. The free movement and natural behavior of and animals in the project area will be disturbed during the construction stage due to workers, construction noise and frequent movement of construction vehicles.

Impact on aquatic fauna and flora.

Project associated activities will lead to potential soil erosion from stockpiles, excavation, oil and grease from construction vehicles. Addition of these materials to water bodies will cause increase in turbidity level. This will lead to reduction of light penetration and make it an undesirable place for aquatic fauna and flora. Further due to the reduced light penetration to the water body, the primary productivity of the biota in the water body will be reduced resulting in increased mortality. In addition, when these particles settle on the bottom it will affect the breeding ground of aquatic animals unless sediment flow is duly managed.

Potential Exacerbation of Human Elephant Conflict

Potential project sites can be located in areas where existing Human Elephant Conflict (HEC) has been reported and/or in areas close to Protect areas where the movement of Elephants and incidents of HEC can be common. As agrologistical infrastructure will be supported by the project and will include storage facilities for grains and other agricultural products these may be places that can attract elephants. Therefore, via E&S Screening prevalence of HEC in the area should be deduced and established and infrastructure designs should be made to include due elephant fencing and other infrastructure to mitigate HEC and promote Human Elephant co habituation.

5.2.2.6 Cultural Heritage

The project activities should take adequate precaution in carrying out civil works near/in the vicinity of culturally sensitive buildings/sites etc. These include sites such as temples, historical buildings/sites, shrines, trees of cultural importance (e.g. Bo tree) and cemeteries. It will be important to ensure via Environmental and Social screening and stakeholder consultation that the proposed projects do not have an effect on a place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical or social significance or other special value for present and future generations.

5.2.2.7 Impacts Due to Extraction and Transportation of Construction Materials

Sources of construction materials such as soil/metal could be obtained from the quarry and borrow sites which are in or away from the project site. Extraction and transportation of materials from such sites will cause noise, vibration, dust, induced slope failure, negative visual impacts, creation of mosquito breeding sites and damage to private properties and minor roads. Heavy trucks will be used to transport material to construction sites. Such trucks can potentially cause disturbances to local traffic, damage minor roads, and increase dust and noise nuisance.

5.2.2.8 Health and Safety Risks during Civil Works

For community - Inadequate lighting and fencing of construction sites can be dangerous for pedestrians and vehicles especially during the nighttime. Construction activities may temporarily disrupt access to public transport amenities such as bus-stops and railway stations, in close proximity to the sub-projects. Temporary closure or diversion in some section of the roads for construction work may affect the traffic movements along the three arterial roads and may adversely affect the neighboring communities and daily commuters. The short access paths that cut-across the project sites and used by the public for their quick and easy reach to public places such as the hospital, schools, post office etc. maybe temporarily blocked for public use with the fencing-off of the site for civil works. The risks and impacts of the project on the health and safety of communities will be evaluated and mitigation measures will be incorporated into the sub-project specific Health and Safety Plan prepared as part of

the ESMP to avoid (i) safety risks causing from structural elements of the project and; (ii) incremental risks of public's potential exposure to operational accidents or natural hazards, including extreme weather events. Further, consultations will need to be carried out with all the relevant stakeholders on the design, including in the areas of safety and accessibility, with particular attention to the views of the more vulnerable groups. Additionally, a generic Traffic Management Plan will be developed with traffic safety measures throughout project life cycle to avoid potential traffic and road safety risks to workers, communities, and road users.

For workers - Unsafe working conditions like non-availability of PPE and working in precarious locations can create risk of workplace accidents or fatalities on-site for construction workers. As per the relevant provisions of the Factories Ordinance, 1942 (see Section 4.3.2), requirements under ESS2, World Bank Groups' General Environmental, Health and Safety Guidelines (EHS Guidelines), ESMPs prepared under IRCDP and the World Bank standard procurement documents, the contractor will be responsible for managing all construction sites in such a way that the workers are properly protected against possible OHS risks. Key elements of OHS measures will include: (a) identification of potential hazards to workers; (b) provision of preventive and protective measures; (c) training of workers and maintenance of training records; (d) documentation and reporting of occupational accidents and incidents; (e) emergency preparedness; and (f) remedies for occupational injuries and fatalities.

5.2.2.9 Land Acquisition and Resettlement related Impacts

The project is anticipated to provide positive benefits in terms of enhanced access to national roads, reduction in travel time and transportation costs in transporting agricultural produce, and income generation from the construction work. Further, the project activities will result in increased connectivity and accessibility to services such as higher educational institutions, markets, better employment opportunities and health care facilities, particularly for those residing in remote areas who are more vulnerable during public health emergencies such as the COVID-19 pandemic. However, the upgrading of existing infrastructures, including roads and agro-logistics structures, is likely to have some social impacts that will need to be mitigated across the detailed design and implementation phases of the investments. No large-scale land acquisition is envisaged in this project in the front runner roads as well as in the balance, and the rehabilitation and maintenance of proposed roads will be within the existing right-of-way, to the extent possible. However, adequate provisions would be made under the project for the development of future investments which would be limiting only to the circumstances with inevitable land acquisition.

The project may use of voluntary land donation in case additional small parcels of private land are required. This process is likely to be adopted for rehabilitation/upgradation of roads to be taken up in Phase 2, based on community consultations via transect walk and an assessment tool to be developed under Component 1.3. There may be a potential risk of donations being induced through informal pressure or, in extreme cases, coercion. In other cases, people may agree to donate land because they are not aware that they are entitled to compensation and they have not been given sufficient information to make an informed choice. To address these potential risks, project must ensure that the process of voluntary land donation is well documented and third-party due diligence is undertaken. It is important to confirm that land donated is free of encumbrances and that it will not impact on the livelihoods and incomes of the donors and their physical/economic displacements. Where land is donated by the owner, other users and occupiers of the land who will be physically or economically displaced because of donation, should equally be consulted and the impacts on them should be addressed in accordance with the RPF and ESS 5.

In cases voluntary donation is not possible and the risks and impacts associated with involuntary resettlement are present, the project will be required to mitigation measures such as compensation and assistance, including for displacement and relocation of establishments will be addressed in accordance with the RPF and ESS 5.

5.2.2.10 Temporary Disruption of Access to Services

During the construction period, there may be temporary disruption to commercial establishments as well as services such as telecommunication, water and electricity facilities in proposed roads/sub project sites. Commercial establishments such as shops located within the area directly affected by the Project, are either operated by the owner as family businesses or with a few employees. Some of these activities would be either temporarily or permanently affected by construction related activity, affecting the livelihood activities and jobs of permanent and temporary workers.

Further, during construction period, there can be temporary disruption to services such as telecommunication, water supply and electricity facilities in all proposed roads. Some religious sites were observed on either side of the proposed roads for the front runner roads, and the same can be expected in other roads supported under the project. Common properties such as educational institutions and hospitals are also located near the project areas. While the structures are located away from the existing road RoW, the construction work may result in temporary disruption of access to these properties.

5.2.2.11 Community Health and Safety

Civil construction works may also cause unanticipated adverse impacts on communities living beyond the area earmarked for the project. Such adverse impacts include accidental damages to properties due to vibration causing from the use of heavy machinery and piling, minor access difficulties, safety issues, and inconveniences and disturbances due to dust and noise generated by construction works. All these impacts can be minimized with known technology and good construction management practices.

5.2.2.12 Increased crime and in-migration

While SEA/SH risks under the project has been assessed as being 'low,' even limited influx of workers may result in increased illegal/sexual misconducts or gender -based violence. The children and women accessing the schools and hospitals, including those residing near the project sites are most vulnerable. This would be mitigated in site-specific ESMPs to avoid health and safety risks on communities, including GBV/SEA/SH risks, that may be caused from behavior of project workers, labor influx, and emergency situations.

5.2.2.13 Impact on Women and Other Vulnerable Groups

The project may cause physical and economic displacement of vulnerable groups, to be identified during the assessment and preparation of RAPs for the sub-projects. Construction work on the Project and its operations can cause adverse impacts on several other vulnerable and disadvantaged groups as well. They would include the following groups.

- a. Women workers at the construction site may possibly face gender discrimination in terms of wage disparities, deprivation of their labor rights, and access to reasonable sanitary facilities. They can also be subject to gender-based violence and sexual exploitation and abuse/sexual harassment.
- b. Children and adolescents who had dropped out of school and are from poor families may be motivated to find employment in construction work thereby becoming vulnerable to labor exploitation, sexual harassment and exploitation, and alcohol and drug abuse and sometimes drug peddling.
- c. Poor women and children in the surrounding slum communities may be induced to engage in high risk behaviors such as prostitution, alcohol and drug peddling etc. in order to find incomes by serving the labor teams.
- d. The elderly and disabled commuters may experience difficulties in accessing public amenities such as hospitals, due to increased distance caused by construction activities or lack of adoption of universal design principles for construction of pedestrian overpasses and bridges.

- e. Women and girls accessing the pedestrian, junction and public spaces in the project area may be subject to sexual harassment and gender-based violence.

5.2.2.14 Labor Related Impacts

Labor Influx

The screening and scoping of the frontrunner roads reveals that the project will be able to tap into labor available from surrounding areas. However, skilled labor, though partially, may need to be brought in from outside project areas. This may result in influx of other people (“followers”) who follow/accompany the incoming workforce with the aim of selling them goods and services, or in pursuit of job or business opportunities. The rapid migration to and settlement of workers and ‘followers’ can have adverse impacts on the host community, in terms of increased risks of social conflict, illicit behavior, burden on and competition for public service provision, such as water, electricity, medical services, transport, education, and social services, risk of communicable diseases and burden on local health services, including sexually transmitted diseases, and gender based violence, particularly in the form of inappropriate behavior.

Labor Camps

Labor camps may need to be established near the road trace or in the vicinity. If improper sanitation, wastewater and solid waste disposal are practiced in labor camps there is a possibility of contaminating surface water sources. In addition, there is a potential of facilitating the formation of places of mosquitoes breeding, spreading of communicable diseases from workers to local population and social conflicts may arise due to use of illicit liquor and due to other unpleasant behavior which causes inconvenience to local community.

Child labor and Forced Labor

According to the ILO, there has been significant decline in the use of child labor in Sri Lanka, including in terms of working children, child labor and children in hazardous forms of child labor; however, child labor has not been eliminated either. In 2016, 1 per cent of children in Sri Lanka were engaged as child labor of which, most (close to 90 per cent) are engaged in hazardous forms of child labor.¹¹ The majority of working children, child laborers, and those that engage in hazardous forms of work are boys. Children engaged in child labor including in hazardous forms, have been found to be engaged as plant and machine operators and assemblers and in other elementary occupations in labor-intensive tasks such as construction.¹²

Likewise, while Sri Lanka has made significant efforts to address issues of forced labor, including prohibition of forced labor in Section 358A of the Penal Code (Amendment) Act No. 16 of 2006 and the ratification of the Protocol of 2014 to the Forced Labor Convention, there continues to be reports of children being subjected to bonded and forced labor in domestic service, agriculture on dry zone farming areas (tea estates), as well as in fireworks and fish-drying industries.¹³ In relation to IRCDP, the risks of forced labor is low since forced labor is mostly confined to commercial sexual exploitation in tourist areas as part of the sex tourism industry;¹⁴ domestic work, sometimes as a result of human

¹¹https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-colombo/documents/publication/wcms_616216.pdf

¹²https://www.dol.gov/sites/dolgov/files/ILAB/child_labor_reports/tda2018/Sri%20Lanka.pdf; https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-colombo/documents/publication/wcms_616216.pdf

¹³<https://www.refworld.org/pdfid/5448a8760.pdf>

¹⁴<https://www.dol.gov/agencies/ilab/resources/reports/child-labor/sri-lanka>

trafficking;¹⁵ and specific vulnerability of migrant workers from Sri Lanka to trafficking and forced labor abroad due to abusive recruitment and employment practices.¹⁶

Labor Disputes over Terms and Conditions of Employment

While the labor management practices in Sri Lanka is geared towards avoidance of disputes¹⁷, construction disputes are reportedly increasing due to the scarcity of skilled labor in the light of the increasing construction demand. The increased demand is not only driving up build-out costs and prolonging project schedules, it is also leading to the ineffective implementation/enforceability of solutions and decisions made by the dispute resolution mechanisms.¹⁸ In the case of IRCDP, likely causes for labor disputes may include poor labor wages rates and delays of payment; disagreement over working conditions; and health and safety concerns in the work environment. Further, there is also a risk that employers such as contractors/sub-contractors may retaliate against workers for demanding legitimate working conditions, or raising concerns regarding unsafe or unhealthy work situations, or any grievances raised, and such situations could lead to labor unrest.

Discrimination and Exclusion of Vulnerable/Disadvantaged Groups

In 2020, the estimated youth unemployment rate in Sri Lanka was at 20.83 percent.¹⁹ Widespread unemployment of youth in Sri Lanka could lead to increased risk of vulnerable/disadvantaged groups from being unable to benefit from employment opportunities under the project. Such groups will include women and persons with disabilities. Sexual harassment and other forms of abusive behavior by co-workers will also have the potential to compromise the safety and well-being of the vulnerable groups of workers and the local communities, while adversely affecting project performance. This may also include potential risk of sexual exploitation and abuse and sexual harassment in recruitment or retention of skilled or unskilled female workers supported under the project.

¹⁵<https://www.dol.gov/agencies/ilab/resources/reports/child-labor/sri-lanka>

¹⁶<https://lk.usembassy.gov/wp-content/uploads/sites/149/2019-Trafficking-in-Persons-Report-Sri-Lanka.pdf>

¹⁷ <http://dl.lib.mrt.ac.lk/handle/123/11960>

¹⁸<https://www.iosrjournals.org/iosr-jbm/papers/Vol23-issue2/Series-7/E2302073541.pdf>; <http://www.sundaytimes.lk/170122/business-times/challenges-in-the-skilled-worker-shortage-in-construction-sector-225295.html>

¹⁹ <https://www.statista.com/statistics/813026/youth-unemployment-rate-in-sri-lanka/>

5.2.2.15 Potential Social Conflicts

The potential benefits from the project in terms of enhanced access to national roads, reduction in travel time and transportation costs, income generation, etc., if not managed well, could potentially lead to social conflicts. Some of the sources of conflicts could be over selection of roads and agro-logistics infrastructure among various stakeholders, disputes between workers and communities, focus on vulnerable groups versus the need to demonstrate benefits to the whole population, conflict between workers and employers/contractors, tensions between decision-makers and the community, disputes over project benefits, etc. The Stakeholder Engagement Plan prepared under the project presents detailed measures for consulting with different stakeholders, including putting in place a robust mechanism for grievance redressal, which will help address these potential sources of conflict.

5.3 Operational Phase Impacts Associated with Rural Roads and Ancillary Community and Agroecological Infrastructure

5.3.1 Potential Impacts on water resources

Improvements to the road drainage will result in improved storm water flows and reduce the tendency of blockages to occur in roadside drains. Risks to the public health caused by such stagnant water bodies by acting as disease vector breeding places will be reduced. By designing the drains to withstand appropriate storm events will reduce the risk of any operational failure of the drainage system and regular maintenance will further reduce the chances of failure.

In addition, improper handling of chemicals used for maintenance works such as paints, pesticides, asphalt etc... will also degrade water bodies located nearby to the road. Proper handling of such chemicals under strict supervision will help to minimize the water pollution during the maintenance period.

Community infrastructure may also require portable water for day to day functioning that can cause stress on areas where water resources are scarce. Thus, design features should look at incorporating facilities such as rainwater harvesting tanks and in the case of road infrastructure rehabilitation the option of surface water drainage ponds and catchments along the road corridors to reduce impacts on water stress.

5.3.2 Disposal of unsuitable material during maintenance work

During maintenance of rural roads de-silting of drains, culverts and bridges, removal of road side vegetation and removal of damaged/degraded road surfaces during the maintenance period will generate unsuitable soil, vegetation and debris. If this material is disposed to roadsides, agricultural lands, areas susceptible to floods etc., there is a possibility of siltation of water bodies, agricultural lands and blocking of drainage paths due to washing away by storm water. Proper disposal of all unsuitable material resulted from periodic and routine maintenance activities in the approved locations will minimize this impact.

5.3.3 Extraction of material for repairing and maintenance works on rural roads and buildings

For repairing and maintenance of carriageway and other structures, material such as gravel, aggregates and sand will be required, they can impact the natural resource base unless mitigation measures such as those recommended for material extraction during construction are implemented during these periods as well.

5.3.4 Pedestrian and Motorist safety on rehabilitated rural roads

Improvements to the road surface will be conducive to safe vehicle travel at higher speeds. Such speeds may increase the incidences of accidents. Furthermore, safety of road users could be ensured during

repairing of carriageway and hydraulic structures by placing standard sign boards, barricading of the repairing site and ensuring all safety furnishing for roads are incorporated into design. In addition, incorporating the following measures could offset this negative impact:

- Provision of centerline road marking where possible, edge delineation etc...
- Provision of clearly marked signing at townships, sensitive areas such as schools, temples
- Enforcement of speed limits and other traffic rules, especially within the town limits
- Placing of sign boards for animal crossings

5.3.5 Air Quality/Noise impacts due to rehabilitated rural roads

Higher speed limits will reduce the travel time through the area and better surface conditions will reduce the number of accelerations and decelerations in travelling thereby reduce the emissions to the air. The project is therefore expected to have a positive effect on overall air quality. This has been further validated by the quantitative assessment on the climate change co-benefits presented in the Project Appraisal Document (PAD) of the IRDCP. Clear signage should be put in sensitive areas such as schools, places of worship to warn drivers and avoid making unnecessary horn signals and there by disrupting ambient noise levels.

5.3.6 Potential impacts on Fauna from rural road usage

With the improved road surfaces number of vehicles and the speed will be increased. Further, certain number of animals will attract to tarred road surfaces (e.g., especially reptiles as cold blood attracts them to warm road surfaces during the night, stray dogs etc.). Moreover, there are plenty of buffaloes, neat cattle birds such as Pea fowls and other animals in rural areas that will commonly use roads for crossing and movement and there by cause risk to themselves as well as road users due to collisions with moto vehicles. There will be frequent animal movement including elephants especially on roads adjacent to PAs. This will potentially result in the increase number of collision and run over of animals (buffaloes, neat cattle, goat, elephants small mammals, reptiles and birds such as Pea fowls) and disturbance to their natural movement within and close to the forest areas. This impact could be reduced by placing warning and information sign boards at least 1km ahead of approaching such areas and installing speed breakers were appropriate via design.

5.3.7 Solid Waste and Wastewater Generation Due to use of community/agrologistical infrastructure

Potential community and agrologistical infrastructure finance via the project will lead to generation of solid waste as well as wastewater via washing/sanitary facilities that will be set up. Sanitary facilities and wastewater management aspects should be well designed to ensure minimal impacts to the surrounding environment and as per the norms of the CEA and guidelines of the Water Board and Ministry of Health of Sri Lanka. From air pollution perspective, fugitive emissions and accidental discharges are operational phase impacts related to agrologistical infrastructure too, which could be GHG emissions, as well as non-GHG emissions.

Solid waste management should also as much as possible incorporated in to design via designated areas for waste management via segregation, use of composting bins for organic waste and liaison with the local authorities and local waste management/recycling programs where available.

5.3.8 Fire Risk and Safety

Community infrastructure and agrologistical infrastructure, pose potential fire risks and hazards during operation, thus via design adequate measures for ensuring fire safety such as the incorporation of fire safety signage and fire management facilities, hoses and other fire fitting equipment, alarms etc should be incorporated accordingly in to the facility designs where appropriate.

5.4 Indicative Mitigation Measures

The Generic ESMPs Presented in Annex 9 and 10 (in Volume II) of this ESMF provides in summary indicative mitigation actions to be taken on the part of the contractor(s)/operators in order to minimize such impacts such as those described in the previous sections. In addition, further means of mitigating impacts via design are presented in **Section 6.3** of this ESMF. In the construction activities as well other actions, the contractor will be required to abide by the provisions of the World Bank and the GoSL EIA regulations, including considering constructive input from stakeholders.

The impacts mitigation is discussed for the following three phases of the project implementation: For the IRCDP sub-projects, these mitigation measures should be combined with the previous mitigation measures, as applicable.

- Design and Pre-construction phase.
- Construction phase; and
- Operation and Maintenance phase.

Any additional (Did you mean unanticipated?) impacts, if any, and relevant to the project's implementation would be reviewed by World Bank based on detailed assessments that will be undertaken as part of the implementation process. As indicated earlier, the environmental laws of GoSL, and the ESF of the World Bank require that all projects be screened for potentially adverse environmental and social impacts. Consistent with these guidelines, an ESMF for the IRCDP project has been prepared to minimize adverse, including any cumulative impacts.

6 Chapter 6: Procedures for Environmental and Social Management During Project Implementation

6.1 Processing Steps for Environmental Social Management

Implementation of environmental requirements will follow the following steps closely linking with activity planning, design and implementation steps.

1. Step 1: Environmental and Social Screening of Identified Physical Subprojects
2. Step 2: Avoiding Potential E&S Impacts Via Design Level Mitigation
3. Step 3: Conducting Environmental and Social Impact Assessments and prepare, Management and Monitoring Instruments such as ESMPs/CESGPs
4. Step 4: Obtaining required concurrences and Clearances
5. Step 5: Inclusion of Environmental and Social Specifications and Environmental and Social Management Plan in bid documents
6. Step 6: Environmental and Social Method Statements and ESHS Performance Clauses (for large investments)
7. Step 7: Compliance Monitoring and Reporting

6.1.1 Diagrammatic representation of Sequencing Environmental Management Steps

The steps highlighted in the predesign sections need to follow the following sequence

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6.2 Environmental and Social Screening of Identified Physical Subprojects

Environmental and Social screening is considered a useful tool in identifying E&S issues in large investment programs consisting of many sub-projects. The main objective of E&S screening of sub-projects will be to (i) determine the anticipated environmental/social impacts, risks and opportunities of the sub-projects, (ii) determine if the anticipated impacts and public concern warrant further environmental/social analysis, and if so to recommend the appropriate type and extent of assessments needed.

At the national level, screening is the process by which proposed developments are reviewed to determine the level of environmental and social assessment to which they should be subjected, which could range from none up to a full Environmental and Social Impact Assessment (ESIA). At the project level, screening is the process of reviewing a proposed activity against a checklist of factors to determine whether it is likely to have adverse environmental and social effects, and if so, what mitigation measures should be applied.

Screening should go hand in hand with project concept development. This way social and environmental opportunities and risks can be appropriately and easily integrated into subsequent design stages, rather than being brought in at the last minute. The environmental and social screening report will be prepared by the Social and Environmental Experts of the PMU with field visits and available data and information (implementation arrangements as given in the subsequent chapter). Where

The World Bank Task Team will maintain supervision of the tasks and provide guidance on the process where required by the Project Implementing Counterparts.

to take necessary actions particularly in relation to the recommendation given in the report. All E&S screening reports are subject to World Bank review and clearance prior to the preparation of identified instruments.

6.2.1 Screening Method

Preparation of the screening reports will be conducted in four distinct stages, namely (i) field visits, data collection and stakeholder consultation; (ii) data analysis and interpretation; (iii) impact identification; and (iv) filling the screening including recommendations for next steps. The methodologies for each of these steps are explained briefly below. The proposed screening report formats are given in **Annex 2 and 3 of Volume II of this ESMF** will be used for guidance as well.

6.2.2 Data collection and stakeholder consultations

Data will be primarily collected through field visits, discussion with communities, stakeholders, project affected parties, stakeholder agencies and known sources of literature. In addition, supportive tools such as GIS based mapping using GPS coordinates covering the sub project sites, wherever possible is encouraged. Literature Survey will broadly cover the following aspects and attributes necessary for environmental screening:

- Project details/ Reports/ Maps/ documents including design details available with the implementing agencies
- Literature on flora/ fauna/ biodiversity/land use/soil/geology/ hydrology/ climate /socio economic profiles and environmental planning collected from GOSL agencies
- Hydrological/ rainfall/ drainage datasets

6.2.3 Field Visits:

Each sub-project sites will be visited by the expert/s filling the screening form together with representatives from the design team to assess the existing environment (physical, biological and socio economic environment) and gather information with regard to the proposed sites and scale of the proposed sub projects and any prevalent issues. During these visits rapid reconnaissance surveys will be conducted in order to record the faunal, floral diversity, where necessary, to verify and support information gathered through the literature survey.

6.2.4 Focus Group Discussions/ Meetings:

Focus group discussions will be carried out with stakeholders, local authorities, and communities to discuss pertinent issues. In addition, the community/visitors will be consulted to record their views and opinions about the proposed site-specific investment.

6.2.5 Data Analysis and Interpretation

Data collected from field visits and stakeholder discussions will be analyzed by the expert and discussed with the technical team of the project proponent for feedback.

6.2.6 Impact identification

This will be carried out by the Social and Environmental Specialists/Expert through discussion with the technical team.

6.2.7 Filling E&S screening reports

The initial screening report will be filled with details on the proposed project intervention, physical/ecological/social baseline conditions of the site, assessment of potential impacts, feedback from community/public/visitor consultations and recommendations for the type of

environmental assessment required. The Initial E&S Screening form presented in **Annex 2 and 3 of Volume II of this ESMF** will be used for this purpose and for all project subprojects.

If the findings confirm that anticipated impacts are not significant enough for a stand-alone ESIA and that an CESGP or an ESMP would suffice to mitigate the likely impacts, the screening exercise would be completed via the following steps:

1. For Low Risk projects-preparation and inclusion of CESGP depending on the project risk.
2. For Moderate Risk projects- Detailed screening will be undertaken in line with the projects detailed designs via the use of **Annex 2 of Volume II of this ESMF** which presents a more in-depth E&S screening process.

The Basic Criteria to be adopted for subproject E&S Risk deduction and requisite due diligence and management instruments, will be as follows:

Risk Level	Nature of Assessments Required Post Screening
Substantial Risk	<p>The Subproject will be classified as a substantial risk intervention if it will directly lead to the following</p> <ul style="list-style-type: none"> - Sub-projects that involve significant conversion or degradation of critical natural habitats such as sensitive ecosystems. - Activities that could lead to invasion or spread of weeds and feral animals or the use of toxic chemicals, intensive use of pesticides. - Activities that could dangerously lead to the exposure of sensitive/critical/vulnerable habitats - Construction of large new infrastructure within or directly adjacent (in buffer zones) to protected areas - Illegal Activities as defined specifically under the Forest Ordinance and Fauna and Flora Protection Ordinance. - Sub-projects that will cause physical displacement and/or involve economic displacement with significant impacts on livelihoods - Sub-projects that may impose changes in land use that restrict access to resources in legally designated parks or protected areas or other common property resources on which local people may depend for livelihood purposes <p>In addition, as per the screening the subproject will have a majority of large scale environmental and social impacts that will cause irreversible damage to the environment and communities.</p>
Moderate Risk	<p>The subproject will be classified as ‘Moderate risk’ if</p> <ul style="list-style-type: none"> - The subproject will have a majority of reversible, small-medium scale environmental impacts, specifically limited to the civil works phase of the project that can be managed by site specific mitigation measures. - Require minor land acquisition or restrictions on land use, as a result of which there will be no significant impact on incomes or livelihoods - Subprojects requiring adoption of Abbreviated Resettlement Action Plan (ARAP), Environmental and Social Management Plans (ESMPs) and or Environmental and Social Assessment and require further screening in line with the detailed technical designs of the respective subproject. The Screening form presented in Annex 2 of the ESMF should be used
Low Risk	<p>A subproject will be classified as ‘Low risk,’ if:</p> <ul style="list-style-type: none"> - The Subproject have low-negligible environmental impacts that can be managed via mitigatory codes of practice that will be defined as part of the contractual agreement/memorandums of understanding with project implementing contractors or operators. - The Subprojects does not require any land acquisition or lead to any impact on incomes or livelihoods - The Sub-project does not require formal environmental and social assessment, nor preparation of ESMPs and do not have identifiable negative environmental impacts.

If the likely impacts are significant and would require greater environmental and social analysis, the screening report would recommend the appropriate assessment type for the implementation agency to carry out before designs are finalized. A description of the commonly used environmental management tools are given below with guidance on preparation based on the nature of subprojects that the project will finance.

World Bank Group General EHS Guidelines and the Generic ESMPs and guidance presented from Annex 9 and 10 should be used in identifying impacts due to the proposed sub-project activities. In addition, Annex 15 and 16 presents guidance on identifying OHS issues. Annex 19 the Guidance Note on Identifying Human Elephant Conflict Issues during project screening. These documents can guide the impact identification process during screening on E&S.

6.3 Guidance on Mitigating Impacts Via Design

6.3.1 Measures to be undertaken at design stage for Roads/Infrastructure located in Flood Prone Areas

Designing bridges and culverts with adequate opening sizes based on detailed hydrological studies considering relevant flood return periods, liaising with institutes such as Irrigation Department in collecting information and checking the adequacy of design, conducting construction operations during dry weather flow are possible mitigation measures that should be undertaken at the design phase. When designing culverts and bridges RDA uses the “RDA bridge design manual” which specify to consider a 50-year flood return period in culvert designs and a 100-year flood return

6.3.2 Mitigating Land Slide Risks

Since road improvement is restricted to the available ROW, natural slopes along the candidate roads will not be disturbed. Therefore, possibility of occurrence of landslides is minimum due to this project. However prior consent should be obtained from National Building Research Organization (NBRO) for roads along which landslide prone locations are already observed. And recommendation of NBRO if any should be incorporated to the designs.

6.3.3 Reducing Nuisances Due to Utility Relocation

Proper documented advanced co-ordination with the concerned authorities in advance will help to reduce the effects of these utility supply lines. Risks of accidental disruption can be reduced by ensuring that machinery such as excavators are operated by trained personnel, and that operations are adequately supervised. Advance notice to the public about the times that the utility supplies will be disrupted will help the public to adjust to the situation before hand, thereby minimize the difficulties that they will face in the case of sudden disruption of these services.

6.3.4 Compensatory Tree Planting Programs

All construction works should be carried out in a manner that the destruction or disruption of vegetation is minimal. Therefore, a compensatory tree planting program should be developed in the project area. At least three (1:3) good specimens of tree species shall be planted for each tree removed. If there will be no space on either side of roads for tree planting it is recommended to practice alternative options such as promoting home gardening in the project area. Further, the tree planting program could be promoted among schools, government institutions, private institutes and government institutes in the project area. Suitable species of trees should be distributed free of charge among the interested parties by the contractor with the consultation of FD/ DWLC/CEA/Agrarian Service Department/community-based organization.

6.3.5 Managing Potential Spread of Invasive Species

The Generic ESMP/CESGPs include specific measure on managing the spread of invasive species during the construction process. In addition, provisions should be made for securing soil from locations close to the project area will reduce the chances of transporting any seeds of alien invasive species to the project area. Land area of labor camps, dumping sites and soil storage sites should be frequently checked for any growth of invasive plant species. If found they should be destroyed within the premises

which they were found either via removal and controlled burning or side or via recommended measures as guided by the CEA of Sri Lanka.

6.3.6 Design Guidelines for Animal Crossings

The project can have significant impacts on biodiversity and risks to fauna due to the betterment of road networks in rural areas. As Sri Lanka is a global biodiversity “hotspot” and has tremendous importance to the South Asia region, design interventions should be explored to incorporate considerations for the proactive integration of ecological protection measures where possible to limit the roadkill of animals and maintain habitats connectivity. These measures include management, planning, and design activities in road to balance construction with wildlife conservation. Such considerations are applicable to new as well as to existing transport projects where rehabilitation is undertaken where mitigation measures can be included or retrofitted into the design. There is ample guidance specific to Asia and South Asia such as those below that can provide guidance to technical design teams for use of such design measures where appropriate and risks are identified via E&S screening.

- Green Infrastructure Design for Transport Projects: A Road Map to Protecting Asia's Wildlife Biodiversity-2019-Asian Development Bank
 - <https://www.adb.org/publications/green-transport-projects-asia-wildlife>
- Ecofriendly Measures to Mitigate Impacts of Linear Infrastructure on Wildlife-2016- Wildlife Institute of India, Ministry of Environment, Forest and Climate Change India, National Highway Authority of India, National Tiger Conservation Authority of India and the World Bank Group
 - http://moef.gov.in/wp-content/uploads/2019/07/eco_friendly_measures_mitigate_impacts_linear_infra_wildlife_compressed.pdf

6.3.7 Incorporating Sustainable Urban Drainage into Project Design

SUDS (Sustainable Urban Drainage Systems) are commonly used in western countries for many years to design of roads now incorporates SUDS systems and together provides long term environmental and social factors. The following guidelines describes the traditional and historical context of road drainage design. It describes the responsibilities of the roads drainage adopting authorities and provides an overview of concepts of SUDS and its relationship with road pavement construction. It also looks at surface water management plans and their importance in providing an integrated regional drainage strategy. These measures should be incorporated in to design to reap the benefits of better drainage and surface water management to mitigate the impacts caused due rural road infrastructure.

- SUDS for Roads- Design Guidelines- WSP Development and Transportation Scotland.
 - <http://www.scotsnet.org.uk/assets/sudsforroads.pdf>
- The Sustainable Drainage Systems Design Guide- Essex City Council
https://www.essexdesignguide.co.uk/media/2404/suds_design_guide_2020.pdf

6.3.8 Overall Guidance Documents for Design Enhancement for Rural Road Projects

Additional Guidance can be taken via the guidance provided in the following international regional practice documents in order to identify good practice in terms of avoidance principles through design, The following Environmental codes of practice present guidance on managing E&S impacts via design alterations and should be used in the sub project design process.

- Government of India- Pradhan Mantri Gram Sadak Yojana -Environmental and Social Management Framework for Rural Roads Projects II- Environmental Codes of Practice -July 2010
- <http://documents1.worldbank.org/curated/en/211361468771276166/pdf/E8930vol102010paper.pdf>
- The Green Roads Manual-v1.5-2011-University of Washington, USA
- <https://www.greenroads.org/files/236.pdf>

6.4 Preparing Environmental and Social Assessments, Management and Monitoring Instruments

6.4.1 Environmental and Social Impact Assessment (ESIA)/Initial Environmental Examinations (IEEs)

ESIAs and IEEs are effective tools for evaluating the environmental risks and opportunities of project proposals and improving the quality of outcomes. Ideally the ESIA/IEE should be carried out at the end of the preliminary design phase so that the impacts of each planned activity can be evaluated, and alternatives can be worked out for activities that have major impacts. The outcomes of the EA/IEE should then be used to finalize the project design which should ensure that the impacts of the given project are minimal. The importance of this management tool as means of foreseeing potential environmental impacts caused by proposed projects and its use in making projects more suitable to the environment has been highly effective. Since its introduction in 1969 in the US, many countries and international organizations have accepted ESIA as an important planning and environmental management tool.

If a specific subproject requires environmental and social assessment, the first step will be to provide CEA the preliminary information on the proposed project, in order for the process to be initiated (See **Annex 4-5 of Volume II of the ESMF**, for the description of major steps of the environmental assessment process with responsibilities and time frames). The best time for a project proponent to submit the preliminary information on the proposed project is as soon as the project concept is finalized, and the location of the project is decided.

Once the environmental and social screening is conducted for the subproject, the following steps need to be taken.

- For sub-projects that require ESIA (EIA as referred to in National Law) \ IEE as per NEA the Terms of Reference issues by the CEA will be reviewed by the World Bank’s Task Team and World Bank ESF requirements as per the ESMF, will be included in the same TOR to align the processes and ensure there is no replication of instruments.
- For projects that do not require ESIA\IEE as per NEA but warrant ESIA as per the World Bank’s ESF and ESS1, the RDA’s ESF team in collaboration with the World Bank, will produce a Terms of Reference which will be reviewed and cleared by the IRDCP Task team prior to commencement of the study.
- For projects that lead to physical and/or economic displacement, the procedure for resettlement planning, as outlined in the Resettlement Policy Framework prepared for IRCDP, will adopted. All activities relating to land acquisition and resettlement, including voluntary donation and or payment of compensation, will be completed prior to commencement of civil works.

*A Generic Terms of Reference which should be used as the minimum requisite level of information for undertaking all ESIA is presented in **Annex 6 in Volume II of the ESMF**.*

6.4.2 Use of the Integrated Biodiversity Assessment Tool (IBAT).

All TORs prepared for project ESIA/IEEs will make reference to the use of the Integrated Biodiversity Assessment Tool (IBAT). IBAT is a multi-institutional program of work involving BirdLife International, Conservation International, International Union for Conservation of Nature (IUCN) and UNEP-WCMC.

IBAT provides a basic risk screening on biodiversity. It draws together information on globally recognized biodiversity information drawn from a number of IUCN's Knowledge Products: IUCN Red List of Threatened Species, Key Biodiversity Areas (priority sites for conservation) and Protected Planet/The World Database on Protected Areas (covering nationally and internationally recognized sites, including IUCN management categories I–VI, Ramsar Wetlands of International Importance and World Heritage sites). Through an interactive mapping tool, decision-makers are able to easily access and use this up-to-date information to identify biodiversity risks and opportunities within or close to a project boundary.

IBAT helps incorporate biodiversity considerations into key project planning and management decisions, including:

- Screening and classifying potential investments
- Siting an operation in a given region
- Developing action plans to manage for biodiversity risks and impacts
- Assessing risks associated with potential sourcing regions
- Reporting on corporate biodiversity performance

The IBAT Tool can be accessed via the following link: <https://www.ibat-alliance.org/>

6.5 Environmental and Social Management Plans (ESMPs) and Codes of Environmental and Social Good Practice (CESGPs)

Certain activities will have explicit impacts on the natural environment and social aspects and thus require a specific plan to institute and monitor mitigation measures and take desired actions as timely as possible. An ESMP must be kept as simple as possible, clearly describing adverse impacts and mitigation actions that are easy to implement. The scale of the subproject will determine the length of the ESMP. A small-scale subproject's ESMP can be elaborated in a few paragraphs or in tabular format, keeping it as simple as possible with concrete mitigation actions, timelines and responsible persons.

The basic elements of an ESMP are;

- a. A description of all possible significant adverse impacts that are likely to arise due to the project that the ESMP is intending to deal with;
- b. A description of planned mitigation measures, and how and when they will be implemented.
- c. A program for monitoring with measurable indicators that will allow to determine the effectiveness of the mitigation actions
- d. A description of who will be responsible for implementing the ESMP
- e. A cost estimate and source of funds

(Refer Annex 9, 10 for guidelines for developing ESMPs)

It is essential to involve local communities during the development of the ESMP since they are likely to be the most affected parties due to the proposed development. Further, most of the local knowledge is important in identifying, designing and planning the implementation. In addition, the success of the implementation of the ESMP will depend on community support and action.

A CESGP is a more simplified document that provides the recommended mitigatory actions to be undertaken in the context of low risk activities via embedding these codes of practice for good management within contract documents for smaller subprojects. The use of CESGPs will be defined depending on the nature of associated impacts determined at the screening stage. The RDA ESU will use the Generic CESGP provided in **Annex 10 of Volume II** of the ESMF to develop a set of project specific simplified CESGPs that can be embedded in to low risk project contracts to ensure good E&S practice and mitigation and monitor compliance as per the contractual provisions laid out.

In World Bank, funded projects, a standalone ESMP is only considered appropriate in situations where a detailed environmental analysis is not required and potential impacts are defined moderate.

As per the nature of the physical interventions identified, it will be Mandatory that all proposals/ physical interventions implemented will require either an ESMP or for low risk projects a CESGP to mitigate sub-project specific impacts identified during the screening exercise. ESMPs are to be prepared at the stage of project design and included in bidding documents, to be costed for accordingly, and will be part and parcel of contract documents.

Activities outlines in the ESMPs/CESGPs will be implemented by the respective contractors implementing the subproject and monitored accordingly by the project implementing agency during the construction phase.

A comprehensive set of Generic ESMPs and a Generic CESGP and guidelines to facilitate sound preparation of such instruments during the project implementation stage are presented in **Annex 8 through Annex 10 of Volume II of the ESMF**.

In addition, the following Annexes provide guidance on identifying potential impacts and mitigation measures as well as outline requisite standards to be maintained in terms of environmental management during the implementation of activities under the program.

- Annex 13: Guidelines for the Rehabilitation of Burrow Pits
- Annex 14: Environmental Guidelines for Decommissioning and Demolition of Existing Buildings- Including the Management of Asbestos During Rehabilitation Works
- Annex 15: Good Practice Note: Asbestos: Occupational and Community Health
- Annex 16: Guidelines for Health and Safety of Workers, Communities and Visitors
- Annex 17: Occupational Health and Safety Plan for rural road rehabilitation and construction works associated with building/rehabilitating community/agrologistical infrastructure.
- Annex 18: Guidelines for the relocation of living and non-living articles of conservation value
- Annex 19: Guidance Note on Identifying Human Elephant Conflict Issues and Recommended Actions

The **World Bank Group General EHS Guidelines** contain information on cross-cutting environmental, health, and safety issues potentially applicable to construction and can be downloaded via the following link.

- https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines

The **World Bank Group ESH Guidelines for Construction Materials Extraction** is also applicable to the project and used as key guidance provided to contractors on the management of environmental health and safety during construction material extraction in addition to specific guidance provided in the EAMF. This document includes information relevant to construction materials extraction activities such as aggregates, limestone, slates, sand, gravel, clay, gypsum, feldspar, silica sands, and quartzite, as well as to the extraction of dimension stone. It addresses stand-alone projects and extraction activities

supporting construction, civil works, and cement projects. Although the construction materials extraction guidelines emphasize major and complex extraction schemes, the concepts are also applicable to small operations and should be used for guidance. These guidelines can also be downloaded via the link provided above.

Additional Guidance can be taken via the guidance provided via the following international regional practice documents in order to identify good practice in terms of mitigation measures for the construction phase.

- Government of India- Pradhan Mantri Gram Sadak Yojana -Environmental and Social Management Framework for Rural Roads Projects II- Environmental Codes of Practice -July 2010
- <http://documents1.worldbank.org/curated/en/211361468771276166/pdf/E8930vol102010paper.pdf>

6.6 Concurrence and Clearance

6.6.1 Environmental Clearances

As per National Regulations: presented in Chapter 3 when working in specific project locations, such as coastal zones, heavy urbanized areas and environmentally sensitive areas there will be the need to seek specific environmental clearances from relevant authorities

6.6.2 Clearance Procedures with the World Bank

All E&S instruments listed below will be subject to World Bank prior review and clearance. Only cleared E&S instruments can be included in bidding documents and other procurement documents. No work can commence on project sites without due clearance of the respective E&S instruments.

- All TORs and all E&S instruments specified in the ESCP
- All Front Runner ESMPs/CESGPs
- A Random Sample as requested by the Bank of ESMPs/CESGPs on a quarterly basis for review.

Upon project commencement the RDA ESU will be required to prepare a table, tracking all requisite E&S instruments for sub-projects as outlined in the generic template Environmental Social Preparatory Tasks Tracking Sheet presented in **Annex 24 of Volume II of the ESMF**. This sheet should be continuously updated and managed by the project Implementing Agency and shared with the World Bank E&S specialists every quarter or when requested.

6.7 Inclusion of Environmental and Social Specifications and Environmental and Social Management Plan in bid documents

It is important to ensure the environmental and social specifications and ESMP are included in the bid documents prior to commencement of the bidding process. It will be necessary to include a provisional sum for the ESMP as part of the Bill of Quantities for those mitigations measure that are not part of the engineering costing. The environmental and social specifications should also include penalty clauses for non-compliance, specifically for complex and large contracts. The procurement staff of the relevant implementing agency and PMU together with senior environmental specialist(s) and senior social specialist(s) will be responsible for this step.

6.7.1 Guidance on Incorporation of ESHS Requirements for Contracts as per the World Bank's Standard Bidding Documents

With the revision to the World Bank's Standard Bidding Documents in January 2017, Environmental and Social Health and Safety (ESHS) requirements are now more clearly defined in the document and there is also the need for a ESHS Performance Security to be incorporated into the requirements from potential bidders for implementation of works under project financing. This revision incorporates changes to enhance environmental, social, health and safety performance. A positive measure that is intended to enhance the commitment of a given contractor towards sound environmental and social management which clearly define what the expectation is from them as an implementing entity during project execution and reporting.

The following guidance will facilitate in the tailoring of these ESHS requirements during the use of the World Bank Groups Standard Bidding Documents for procurement activities. The Environmental Specialist and team of the PMU will be required to liaise with the Procurement Specialists of the project on ensuring the following guidance is incorporated accordingly.

- All standard language on ESHS and guidance is presented in the Standard Bidding Documents on what expectations are there from the contractor's side and what information should be provided from the client's side during procurement, implementation and reporting in terms of ESHS. The Environmental Social Specialists and team should conduct a thorough review of these requirements and ensue the following.
 - All sections are to be reviewed in detailed and cross reference will need to be made to the ESSs and instruments relevant to the specific subprojects which have been prepared as per the requirements of this ESMF.
 - Where required the PMU Environmental Social specialists may be required to update recommendations in the respective EA/EMP ESMP to match the language in the Bid Document where major discrepancies have been noted to facilitate consistency in all documents.
 - In projects where E&S documents for environment and social are prepared independently, it is recommended that the project Environmental and Social teams, based in the PMU, work together to ensure that social safeguard requirements are incorporated and Social Management Plans (SMPs) and EMPs are merged and represented as ESMP.
 - This ESMF already includes guidance for ESMPs that incorporate the requisite measures for labor management, labor working conditions, worker health and safety, public health and safety and grievance redressal in line with the projects parallel social instruments.
- The ESHS Performance Security, is to be maintained between 1-3% of the total contract value as per the Guidance provided supplementing the World Bank's Standard Bidding Document, depending on the associated risks of the project. The total performance security for contracts will typically be 10% of the total contract value of which 3% should be allocated to the ESHS performance security, where a contract has a performance security of 20% the ESHS performance security is to be maintained at a maximum of 5% of the total contract value.
- While it is recommended that indicative costs should be presented with EMP measures, on the addition of EMP related costs to the Bill of Quantities (BOQ), if indicative costing have not been done on individual EMP implementation items at the time of EMP preparation, due the difficulty of estimating indicative costs in the context of Sri Lanka the following is to be undertaken. A **Lump sum amount of 5% of the total contract value** should be maintained as the allocation for EMP implementation. *(This amount has been typically adequate in managing with some contingency also so the same should be exercised in the BOQ guidance in the bid documents in projects in Sri Lanka.)*

- The contractor is required to provide a costing at minimum within this amount in his BOQ, listing itemized values for EMP implementation.
- The language should indicate that the contractor will be required to provide an itemized costing with the BOQ within this allocation.
- In case of large scale contracts that are assessed as high risk during environmental screening, which is not likely for the IRCDP, it is also requested for the contractors to have the following certifications in the Eligibility and Qualifications Subsection, in Section III of the Standard Bidding Documents, under Contractor Requirements.
 - Registration with ISO 14001 (Environmental Management)
 - Registration with ISO 45001/ OSHAS 18000/ or equivalent on (Occupational Health and Safety Management)
 - If not already registered, must be willing to register as such prior to requesting mobilization amount or any other payment for the contract

Minimal Provisions that should be included in contract documents where National Bidding Documents are used are presented in the Generic CESGPs in **Annex 11 and Annex 12 of Volume II of the ESMF** that presents the Minimal E&S Provisions to be included in contract documents.

6.8 Procedure for Management of Chance Found Physical Cultural Resources

If any person discovers a physical cultural resource, such as (but not limited to) archeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the Contractor shall:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible authorities take over;
- Notify the Supervising Officer who in turn will notify the responsible authorities immediately (within 24 hours or less);
- Responsible authorities are in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by archeologists. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values used by the GoSL;
- Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
- Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities; and
- Construction works could resume only after permission is granted from the responsible local authorities concerning safeguard of the physical cultural resource.
- The Supervising Officer must have capacity to manage the processes in the plan. At a minimum, expert opinion should be sought from government agencies or specialist consultants.

Further elaboration of required steps for the management of any chance for physical cultural resources or property or artifacts of cultural/archeological significance are presented in **Annex 17 of Volume II of the ESMF**.

6.9 Selection of GHG friendly equipment for Agrologistical and Community infrastructure

Energy-efficient refrigeration equipment will be recommended for the cold storage system and to manage Green-House Gas (GHG) emissions, the ESMF recommends measures in line with international and national best practices for selection of GHG friendly equipment where the use of harmful coolants will be managed via product design. Hydrofluorocarbons (HFCs) are commonly used as refrigerants in Refrigeration and Air-Conditioning (RAC) equipment and have high Global Warming Potential. When emitted into the environment, HFCs are many times more potent than carbon dioxide in contributing to global warming.

As there are no specific guidelines available in country the following best practice international guidance will be followed during the selection and procurement of such equipment:

- Select air-conditioner and refrigerator models that use climate-friendly refrigerants.
- The equipment should be certified with appropriate labeling as per international standards
 - Equipment that uses Natural refrigerant with global warming potential (GWP) ≤ 3 (e.g. R290/propane, R600a/isobutane, R744/CO₂)
 - Energy efficiency index (EEI) according to
 - EU regulation 2015/1094 (https://storage.topten.eu/source/files/2015-1094_EN_Professional-equipment_Label.pdf)
 - Permissible labels should be similar to the following norms and during purchase the bidding documents should indicate the need for appropriate labeling as per international standard.

EU energy label



The image shows a sample of an EU Energy Label for professional refrigerated storage cabinets. It features a vertical energy efficiency scale from A+++ (green) to G (red). The label is currently set to A+++. Below the scale, it displays 'ENERGIA - ENERGIJA - ENERGIJA' and 'ENERGIA - ENERGY - ENERGIJA' in multiple languages, followed by 'XYZ kWh/annum'. At the bottom, there are three icons: a refrigerator (XYZ L), a freezer (YZ L), and a combined unit (X XYZ-Y2% 2015/1094-IV).

Since 1 July 2016, the EU energy label for professional refrigerated storage cabinets are mandatory. It shows:

- the energy efficiency class,
- the annual electricity consumption in kWh per year,
- the sum of the net volumes of all chilled compartments functioning at chilled operating temperature,
- the sum of the net volumes of all chilled compartments functioning at frozen operating temperature,
- and the climate class (3, 4 or 5) together with the associated dry bulb temperature (in °C) and the relative humidity (in %).

Document: [Commission delegated regulation \(EU\) 2015/1094](https://storage.topten.eu/source/files/2015-1094_EN_Professional-equipment_Label.pdf)
(https://storage.topten.eu/source/files/2015-1094_EN_Professional-equipment_Label.pdf)

On 1 July 2019, the second label became valid, adding classes A+ to A+++.

On decommissioning of any old structures and equipment such as refrigerators, cold storage units and air conditioners upon the useful lifetime or during rehabilitation of agrologistical infrastructure and in line with the available final disposal facilities for hazardous waste in the country that are issues by the Central Environmental Authority for safe removal, containment and disposal.

- Recovery and reclamation or destruction of spent refrigerants in decommissioned RAC equipment will be undertaken in collaboration with CEA certified E-waste recyclers, who take in air-conditioners and refrigerators for recycling.
- A certified chiller technician will be required to recover refrigerants from decommissioned equipment.

- Refrigerant treatment facilities and e-waste recyclers that handle the reclamation and destruction of spent refrigerants will have to be certified by the CEA and furnish all license during the process for perusal of project implementing agencies.
- Recovered refrigerants that are passed to the licensed refrigerant treatment facilities can either be reclaimed and re-introduced into the market to service.
- RAC equipment or destroyed using established destruction technologies to ensure environmentally sound management of the spent refrigerants.

Further Reading and Guidance can be accessed via the following additional reading.

Standards for Equipment Selection, Design and labels as per European Union guidelines.

- European Commission: FAQ (https://ec.europa.eu/energy/sites/ener/files/guidelines_2018_refrigerated_storage.pdf) of May 2018 related to Regulation (EU) No 2015/1094 (Labelling of professional refrigerated storage cabinets)
- Regulation (EU) No 2015/1095 (Ecodesign for professional refrigerated storage cabinets) EN 16825:2015 Refrigerated storage cabinets and counters for professional use - Classification, requirements, and test conditions
- European Committee for Standardization (CEN) and European Committee for Electrotechnical Standardization (CENELEC), CEN-CENELEC (<http://www.cencenelec.eu/>)
- Energy label and eco-design requirements: Commission delegated regulation (EU) 2015/1094 (https://storage.topten.eu/source/files/20151094_EN_Professionalequipment_Label.pdf) of 5 May 2015 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of professional refrigerated storage cabinets.
- Commission Regulation (EU) 2015/1095 (https://storage.topten.eu/source/files/2015-1095_EN_Professionalequipment_Ecodesign.pdf) of 5 May 2015 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to eco-design requirements for professional refrigerated storage cabinets, blast cabinets, condensing units and process chillers.
- Normalization Methodology (https://storage.topten.eu/source/files/Storage%20Cabinets%20%20Normalisation%20Method%20V0_5.pdf)
- Performance Data Normalization Methodology for Professional Storage Cabinets. DRAFT Version 0.5: 15 June 2012. Tait Consulting limited.
- Impact Assessment study (http://www.taitconsulting.co.uk/Ecodesign_Consultation.html) for professional refrigeration equipment (DG ENTR Lot 1), January to September 2012.
- Eco-design Preparatory Study ENTR Lot 1 and TREN Lot 12 (<http://www.ecofreezercom.org/>)

6.10 Management of Asbestos during Decommissioning and or Repair of Existing Community/Agrologistical Infrastructure

Specific guidance to be followed during the potential exposure to asbestos if identified during project intervention E&S screening are presented in the Generic ESMPs and further guidance is provided via the following Annexes in Volume II of the ESMF that need to be adhered to. In addition to National Level procedures defined by law. These include measures to be undertaken as Occupational Health and safety provisions at minimum to avoid exposure of workers to asbestos. Annex 14 also presents guidance on planning for alternatives to Asbestos/Asbestos cement-based products that can be used via project design.

- Annex 14: Environmental Guidelines for Decommissioning and Demolition of Existing Buildings- Including the Management of Asbestos During Rehabilitation Works

- Annex 15: Good Practice Note: Asbestos: Occupational and Community Health Issues
- Annex 17: Occupational Health and Safety Plan for rural road rehabilitation and construction works associated with building/rehabilitating community/agrological infrastructure.

6.11 Project Level Environment and Social Audit

Most of the development projects in Sri Lanka follow ESMFs and develop ESMP's that need to be implemented ardently at the end which will render the entire process either a success or futile. Therefore, monitoring of the project during the construction and implementation phase is a must to ensure environmental compliance of a project.

The purpose of the environmental and social audit is to

- Collect, analyze and interpret monitoring results to detect changes related to implementation and operation of specific activities
- To verify the monitoring parameters are in compliance with national set standards
- To compare the predicted impacts with actual impacts and evaluate the accuracy of predictions
- To evaluate the effectiveness of implementation of the ESMPs
- To identify shortcomings in the ESMPs if any and incorporate it into the ESMPs if deemed necessary
- To identify and report if there is non-compliance with the ESMPs

The auditors must first develop a structured questionnaire based on the ESMPs for the purpose of conducting the audit. Then during the site visit data can be collected using this questionnaire through interview surveys of officers responsible for implementation of the ESMPs and site records, logs etc., The audits can be carried out at regular intervals or on *ad hoc* basis or when mitigation is not carried out as defined by the ESMP leading to public concern.

Expected outcomes of the Environment and Social Audits are

- Ensure that ESMPs/CESGPs are implemented properly
- Ensure that the mitigation measures are effectively minimizing the identified impacts as well as identify new impacts that may have been excluded in the ESMPs/CESGPs that require mitigation. Then make necessary adaptive changes to the ESMPs/CESGPs to ensure that the all significant impacts are effectively mitigated.
- Identify noncompliance with ESMPs/CESGPs if any and provide recommendations as to how to deal with such non-compliance to further strengthen the success of project activities.

An environmental and social audit for IRDCP will be conducted, twice during the project implementation period. Once prior to the project Mid Term Review and a year from the projects stipulated closing date. The audit will entail to cover all activities outlined in the ESMF. review a sample of (i) the screening forms prepared by each project implementing agency (ii) standalone environmental assessments/management plans (iii) application of the NEA and its clearance procedures followed by the project, as the case be, and based on site visits ensure conformity with conditions, guidelines and comments stipulated in these and other related documents. A detailed Terms of Reference (TOR) for the Environmental and Social Audit is presented in **Annex 23 of Volume II of the ESMF**.

6.12 Management of Any Potential Impacts on Forested Areas

The project environmental and social screening mechanism already include specific screening questions to identify any potential impacts on forested areas due to the conversion of non-protected forested land

for project interventions. No land located in the buffer zones of protected areas or within designated of planned to be designated Protected Areas within the purview of Forest Department, can be used for project purposes.

If via the site-specific environmental screening and environmental assessment it is identified that a forested area is required to be cleared compensatory afforestation needs to be undertaken. Compensatory Afforestation (CA) refers to the afforestation and regeneration activities carried out as a way of compensating for forest land which is diverted to non-forest purposes.

A detailed CA-Plan will be prepared as per the following guidelines and submitted for World Bank clearance.

Land Selection

- Compensatory afforestation shall be done over equivalent area of non-forest land.
- As far as possible, the non-forest land for compensatory afforestation should be identified contiguous to or in the proximity of Reserved Forest or Protected Forest to enable the FD to effectively manage the newly planted area.
- In the event that non-forest land of compensatory afforestation is not available in the same district, land for compensatory afforestation may be identified anywhere else in the Province as possible to the site of diversion, so as to minimize adverse impact on the micro-ecology of the area.
- Where non-forest lands are not available or non-forest land is available in less extent to the forest area being diverted, compensatory afforestation may be carried out over degraded forest twice in extent to the area being diverted or to the difference between forest land being diverted and available non-forest land, as the case may be, in any area determined suitable and endorsed by the FD.

Preparation of CA Plan

- The scheme within the CA Plan for compensatory afforestation should contain the following details: -
 - Details of equivalent non-forest or degraded forest land identified for raising compensatory afforestation.
 - Delineation of proposed area on suitable map.
 - Agency responsible for afforestation.
 - Details of work schedule proposed for compensatory afforestation.
 - Cost structure of plantation, provision of funds and the mechanism to ensure that the funds will be utilized for raising afforestation.
 - Details of proposed monitoring and reporting mechanism.

Funding for CA

If any forested land is to be diverted for no-forestry purposes, the equivalent non-forest land must be identified for CA as per the criteria mentioned above and the CA plan should be cleared by the World Bank.

- The project should allocate adequate funds, as per the CA plan, within the safeguards provisions within the contract to facilitate the contractor to set aside the funding required for CA activities.
- The CA activities should be directly managed by the contractor in collaboration with the relevant GoSL entity and report to the Project PMU who will hold monitoring responsibilities.
- It is advisable that payments within contracts with CA plans are set in line with clear milestones.

Monitoring Requisites

- In each case where the afforestation target as per the CA plan is over 500 hectares in plains, and 200 hectares in hills, a Monitoring Committee shall be established to oversee that the stipulations, including those pertaining to compensatory plantation are carried out.

6.13 Management of Impacts Associated with Covid-19 and other Pandemics

6.13.1 COVID-19 related guidance for containment of disease

The COVID-19 pandemic occurred when a novel (new) coronavirus emerged for which there is little or no immunity in the human population and has the potential to cause serious illness in most humans and spreads easily person-to-person. Specific measures have been brought in globally to minimize the spread of COVID-19 in workplaces, the workforce and the local communities where projects are located.

Labor would continue to be the major player in construction activities in upcoming IRDCP financed construction sites. In view of the prevailing COVID-19 pandemic, the contractors and workers would need to take additional measure to avoid the spread of the disease. Furthermore, guidance that can be provided to farmers in terms of managing operational impacts during project implementation.

All projects involving construction/civil works frequently involve a large work force, together with suppliers and supporting functions and services. The work force may comprise workers from international, national, regional, and local labor markets. They may need to live in on-site accommodation, lodge within communities close to work sites or return to their homes after work. Given the complexity and the concentrated number of workers, the potential for the spread of COVID-19 in projects involving construction is extremely serious, as are the implications of such a spread. Therefore, all project sites and related activities will strictly follow the guidance by the National Health Authorities, World Bank, International Labor Organization (ILO) and the World Health Organization (WHO).

6.13.2 WHO Guidelines

To help countries navigate through these challenges, the World Health Organization (WHO) has updated operational planning guidelines in balancing the demands of responding directly to COVID-19 while maintaining essential health service delivery and mitigating the risk of system collapse. This includes a set of targeted immediate actions that countries should consider at national, regional, and local level to reorganize and maintain access to high-quality essential health services for all. The WHO is maintaining a website specific to the COVID-19 pandemic with up-to-date country and technical guidance. As the situation remains fluid it is critical that those managing both the national response as well as specific health care facilities and programs keep abreast of guidance provided by the WHO and other international best practice.

These Health and Safety Guidelines to be adopted during COVID 19 outbreak are not a Rule, Regulation or Legislation and does not create any legal obligations. It contains instructions and information of mandatory safety and health standards. The instructions are advisory in nature, informative in the form of content, and are intended to assist to ensure construction workers working in construction sites within the country, are provided with a safe and healthy worksite.

A summary of key relevant guidance and access links are presented in **Annex 28 of Volume II of the ESMF of the IRDCP**. This guidance includes guidance specifically issues by the World Bank as well and should be adhered to when preparing project specific ESMPs/CESGPs and as part of all project operations.

6.14 Compliance Monitoring and Reporting

Supervision of final CESGPs, ESMPs, A/RAPs for subprojects, along with other aspects of the project, will cover monitoring, evaluative review and reporting to achieve, among others, the following objectives:

- Determine whether the project is being carried out in conformity with World Bank's ESF, Project ESMF, RPF, SEP, LMP, ESCP and legal agreements
- Identify issues, as they arise, during implementation and recommend means to resolve them in due course of time
- Recommend changes to the proposed concept and the project design, as appropriate, as the project evolves or circumstances change; and
- Identify the key risks to project sustainability and recommend appropriate risk management strategies.

Based on these objectives, an appropriate environmental and social supervision plan will be developed aiming to ensure the successful implementation of the ESMPs, CESGPs, A/RAPs, across the project and will be shared with the World Bank.

The environmental and social specialists and the ESF team based in the RDA ESU will be responsible for overall monitoring of the environmental and social risk management plans up to the project closure and transfer for management to the designated authority.

Where in addition, there will be a supervision consultancy firm appointed for overall supervision of project construction activities on ground, the recruitment of environment and social experts will be a requirement under the contract of the supervision consultant. The supervision consultants will be responsible for all aspects of the project including environment and social compliance and reporting to the RDA ESU, while the overarching monitoring responsibility and reporting to the World Bank will remain with the RDA ESU and Project Implementing Unit.

The RDA ESU team will confirm the performance of the supervision consultants by regularly visiting the project site during the implementation stage and providing guidance on corrective measures on any lapses as required.

Compliance monitoring comprises of on-site inspection of the construction activities to verify that measures identified in the ESMP, CESGPs, and others as relevant, are included in the clauses for contractors are being implemented. This type of monitoring is similar to the normal technical supervision tasks ensuring that the Contractor is achieving the required standards and quality of work. Photographic documentation of non-compliance as well as best practices will be used as a means of recording implementation conditions efficiently, in addition to written evidence

A standard Environmental and Social Compliance Monitoring Plan for Project Activities is presented in **Annex 7**. In addition, the Special Monitoring Checklist for Ensuring Safe Conditions for Workers and Public, presented in **Annex 20** should be attached to the main monitoring update presented in Annex 7. For all project ESMPs in implementation Annex 7 and Annex 20 must be combined and maintained through intervention commencement in the field to implementation completion. These monitoring forms can be digitized via the use of online based survey and data collection tools where possible and is recommended.

Regular World Bank missions will include specialists to monitor the project's compliance with World Bank's Environmental and Social Framework (ESF). The progress of environmental and social monitoring will be formally communicated to World Bank through regular progress reports and updates as per the compliance monitoring agreement made during project implementation. Compliance monitoring reports should be submitted to the World Bank on a bi-annual basis from the commencement of the contract.

6.15 Environmental and Social Monitoring During Construction

Monitoring is the continuous and systematic collection of data in order to assess whether the environmental objectives of the project have been achieved. Good practice demands that procedures for monitoring the environmental performance of proposed projects are incorporated in all relevant environmental management instruments. Monitoring provides information on the occurrence of impacts. It helps identify how well mitigation measures are working, and where better mitigation may be needed. Each respective safeguard instrument prepared will require a monitoring program to be included for the respective activities. The monitoring plan should identify what information will be collected, how, where and how often. It should also indicate at what level of effect there will be a need for further mitigation. How environmental impacts are monitored is discussed below.

- Responsibilities in terms of the people, groups, or organizations that will carry out the monitoring activities be defined, as well as to whom they report amongst others. In some instances, there may be a need to train people to carry out these responsibilities, and to provide them with equipment and supplies;
- Implementation Schedule, covers the timing, frequency and duration of monitoring are specified in an implementation schedule, and linked to the overall sub project schedule;
- Cost Estimates and source of resources for monitoring need to be specified in the monitoring plan;
- Monitoring methods need to be as simple as possible, consistent with collecting useful information, so that the sub project implementer can apply them.
- The data collected during monitoring is analyzed with the aim of:
 - Assessing any changes in baseline conditions;
 - Assessing whether recommended mitigation measures have been successfully implemented;
 - Determining reasons for unsuccessful mitigation.
- Developing and recommending alternative mitigation measures or plans to replace unsatisfactory ones; and
- Identifying and explaining trends in environment improvement or degradation.

Remote monitoring tools can be adopted for the purpose of collating field level data and conducting frequent site monitoring as well.

On the monitoring of environmental and social parameters during construction, Annex 21 shall be used. Monitoring can be undertaken via the following process.

- In building requirements via ESMPs/CESGPs for contractor to undertake monitoring of Environmental parameters. OR
- An agreed mechanism of biannual monitoring of a sample of subprojects via an external party contracted to undertake independent monitoring of compliance with environmental and social parameters in multiple project sites.

Depending on the structure of project implementation, contractor capacity, availability of means of conducting environmental and social parameter monitoring in country and the number of subprojects the RDA ESU may decide on the proposed plan and gain World Bank concurrence during project implementation on the process to be followed via a specific proposal and action plan.

Set of Monitoring Requisite for the construction phase of subprojects are provided in detail in the following Annex 20 and 21 of Volume II of the ESMF.

6.16 Typical Timeframe for planning and carrying out E&S assessments and management plans

Timely planning and execution of environmental and social screening and follow up assessments/plans for sub-project investments would be crucial in achieving the overall project implementation and completion targets. Any delay in obtaining relevant environmental and social approvals/clearances would hold back commencement of sub-project activities thus causing project implementation to be delayed. Such delays can be costly in terms of project time as well as resources. Hence, it is extremely important that the PMU initiates sub-project specific screening and follow up assessments as soon as the concept designs become ready. All environmental and social assessments/plans should be completed by the time of tendering and the ESMPs/CESGPs should be a part of the bidding document so that the contractor is made duly aware of his commitments towards environmental and social risk management under each sub-project.

As a guide, the following table provides typical timelines for completing the safeguards cycle for different types of safeguard instruments. This timeline is intended to guide the PMU in planning screening and safeguards assessment ahead and to determine a realistic timeframe to commence the tender process for the sub-project investments. Please note the table below does not include time taken for procurement of consultancy services to conduct the ESIA/IEEs or other assessments that will be outsourced.

The PMU will prepare and share a project specific timeline with the World Bank during project implementation. A format for tracking of such processing steps is presented in Annex 23

Stages in the process	ESIAs /IEEs	ESMPs	CSEGPs	Remarks
Environmental and Social Screening of a suproject	1 week	1 week	1 week	The need for follow on assessments will be determined by the screening outcome
Scoping and setting of TOR when applicable	2 weeks	1 week	1 week	
Report preparation	4 months (minimum depending on scope)	4 weeks	2 weeks	Length of time will be determined by the complexity of issues involved. What is considered here is an average based on the type of projects.
Report appraisal	2 weeks	1 week	2-3 days	
Public consultation	1 month	1 month	N/A	
Report Finalization	2weeks	1 week		
WB Clearance	2-4 weeks	1-2 weeks	1 week	
Other GoSL Clearances where applicable				
Tentative time for ESIA cycle (min – max) as per NEA	8 months	3–4 months		
Provision of preliminary project information	1 week	-		
Scoping & determine ESMP and TOR preparation	1 month	-		WB will review TOR and provide consent/comment
IEE/EIA report preparation	1 month	-		One report to satisfy both local and WB requirements
Checking adequacy of IEE/EIA report	1 week	-		WB will review and submit comments
Provision of additional information if required	1 week	-		
Forwarding Comments to the PP	1 week	-		
Responding to public comments	NS*	-		

Stages in the process	ESIAs /IEEs	ESMPs	CSEGPs	Remarks
Decision	1 month	-		WB clearance will be provided con-currently
Concurrence on the decision				
Appeal against rejection (If rejected)				
Final Decision				
Tentative time for ESIA cycle	3-8 months approx.			

6.17 ESF and Associated Training

Preliminary training on World Bank’s ESF and procedural requirements will be provided by the World Bank’s Environment and Social Specialists and other team members. Subsequent trainings on the ESMF, ESMPs, and other E&S instruments, including on how to monitor and report on environmental and social requirements, use of GRM, consultations, etc., will be provided by PMU’s E&S Specialists. The generic scope required for such trainings are presented in the Session Plan presented in **Annex 25 of Volume II of the ESMF**.

All contractors are expected to disseminate and create awareness within the workforce ESMP compliance, and any staff training necessary for their effective implementation, specific training on basic Occupational Health and Safety considerations, use of PPE equipment and worker codes of conduct must be conducted. Where contractors do not have existing environmental staff, the PMUs Environment and Social Specialist will plan for adequate capacity building within the workforce to be involved.

Table 13 Requisite training programs required for implementation of ESMF

Training Program	Target Audience	Conducted By	Minimum Number to be conducted over project period
ESF E-Learning Program- Online Modules	RDA ESU and Project IA Staff	Online Modules	Should be completed within the 1 st 2 months post recruitment.
ESMF and ESF Implementation Training: to cover World Bank’s environmental and social management procedures, instrument preparation, consultation and monitoring during project implementation and reporting- (including refresher)- Training for Trainers Modality	RDA ESU and Project IA Staff	World Bank Environmental and Social Specialists and team	3 programs at minimum
ESMF and ESF Implementation Training: to cover world bank environmental and social management procedures, instrument preparation and monitoring during project	Project Engineers E&S Staff	ESDD, RDA ESU	10 programs (twice per annum)

Training Program	Target Audience	Conducted By	Minimum Number to be conducted over project period
implementation and reporting- (including refresher)			
Training on implementation of Environmental Management Plans in construction contracts- focused on contract management	Cluster of project contractors, implementing works under the project	ESDD, RDA ESU, PMU and external resource persons	3 programs at minimum
Training on implementation of Environmental Management Plans- Based on the subproject specific ESMPs	Contractor Staff of each subproject, including supervision consultants' environmental officers/Engineers	PMU, RDA ESU and Team	At minimum once, (prior to the contract commencing on the ground) for each subproject in implementation
Respective Occupational Health and Safety considerations, use of PPP equipment and worker codes of conduct must be conducted.	To all contractor staff during the sub-project implementation	Contractor and Project Engineers	Every 3 months during the contracted project implementation period- specifically targeting the construction phase.
Training/Exposure Visits on Environmental Design and Bioengineering solutions for mitigating E and S impacts	ESDD, RDA ESU and Project IA Staff- Design Teams	World Bank Environmental and Social Specialists and team and external resource persons	3 programs over course of project

7.1 Gender and Inclusion

Female's labor force participation rate at the rural level is low at 35 percent, compared to that of male labor force participation (65 percent)²⁰. In agriculture, women generally tend to be engaged in activities in the lower level of the value chain where their contributions are considered as unpaid family work. The women's employment levels could be further reduced due to the impact of the pandemic. Reasons for women's low labor force participation have been attributed to the social norm expectation that women should carry the burden of unpaid care work, which is particularly more so in rural areas, human capital mismatch with women not acquiring skills that are demanded by the labor market and gender discrimination in entering high skill jobs, wages and gender based violence²¹. With the health systems overloaded and school closures, a greater burden will be placed on women for caring for children and the elderly in the home²². This could result in more women being forced out of jobs. Early evidence indicates that COVID-19 GBV risks and incidents are also increasing in a context where GBV service providers are facing increasing challenges.

The project will address the gap in women's employment and livelihoods at the rural level primarily through: i) improving access to agro-logistics for female farmers, and ii) improving women's employment in road and infrastructure works. More specifically, gender actions under components 2 and 3 to address identified gaps will include:

- a. Improving access to agro-logistics for female farmers: the project will ensure that criteria for infrastructure selection captures women's priorities and voice. Infrastructure improvements will reflect women's needs (proximity, security and lighting, segregated toilets and spaces for women's collective work) in order to improve their productivity and link to the markets.
- b. Improving women's employment in road and infrastructure works²³: The Project will carry out a range of activities to support women's employment in its project activities as well as affected communities including a) utilize the recommendations of the gender assessment of employment within the road works planned to be carried out under World Bank funded IRCDP to increase women's employment (lower, medium and high skilled levels), b) create employment opportunities specifically targeted at women in civil works, maintenance and monitoring activities and in management of community development activities carried out under the project. Specific focus will be on engaging women in community-based maintenance arrangements and creating leadership opportunities for women to head such community-based maintenance groups.

Integral to both sets of activities is creating enabling and safer work environments. This will be ensured by providing child-care facilities through community driven development (CDDs) established with technical support and training, and sensitizing government agencies, community leaders, contractors engaged in the agro-logistics services on GBV and sexual harassment issues through trainings and awareness building sessions and strengthening capacities of local level governmental and CSO level

²⁰ <http://www.statistics.gov.lk/GenderStatistics/StaticInformation/ContributiontoEconomy/EconomicallyActivePopulationbySectorAndSex2017-2019> (Accessed 25th March 2021)

²¹ Solotaroff, J. L., Joseph, G., Kuriakose, A. T., & Sethi, J. (2020). *Getting to Work: Unlocking Women's Potential in Sri Lanka's Labor Force*. The World Bank.

²² What can Sri Lanka do to promote women's economic empowerment? World Bank, 2020 [Unpublished]

²³ A World Bank study found that in the short term, gender sensitive public works benefit participants by providing an immediate income, improved assets or services, and skills development

GBV service providers through trainings, strengthening GBV referral mechanisms and communicating such services to communities to reduce GBV and increase women's access to services.

The effectiveness of these activities will be measured by the following intermediary indicators (i) Percentage increase in women farmers accessing agro-logistics facilities improved under the project; (ii) Percentage of women employed in road maintenance works.

7.2 Citizen Engagement

The project will have a robust citizen engagement approach to contribute towards the achievement of the PDO. The approach includes:

- a. Consultations with the key stakeholders (i.e. local communities, road users) during selection, design and implementation of roads and other ancillary community infrastructure and service improvements via transect walk, focus group and round table discussion and via the use of digital tools when applicable.
- b. Engagement of local communities in project financed areas in monitoring of rehabilitation work and maintenance of roads and other ancillary infrastructure (through community contracts).
- c. A three-tier GRM will be established to process complaints or grievances related to project activities, including GBV/SEA/SH and personal safety-related complaints. The different forms of uptake include in-person, email/letter, and/or telephone calls.
- d. Beneficiary feedback mechanisms, such as satisfaction surveys to:
 - (i) Track users' perception of the accessibility and safety of rehabilitated roads and improved ancillary infrastructure,
 - (ii) Assess the impact of training and capacity building carried out under the project.

The beneficiary feedback indicators of the project include: (i) Number of community groups actively engaged in project design, implementation, and monitoring activities (ii) Percentage of beneficiaries satisfied with improved road and ancillary infrastructure in the project-financed areas.

7.3 Discrimination and Exclusion of Vulnerable/Disadvantaged Groups

In 2020, the estimated youth unemployment rate in Sri Lanka was at 20.83 percent.²⁴ Widespread unemployment of youth in Sri Lanka could lead to increased risk of vulnerable/disadvantaged groups from being unable to benefit from employment opportunities under the project. Such groups will include women and persons with disabilities. Sexual harassment and other forms of abusive behavior by co-workers will also have the potential to compromise the safety and well-being of the vulnerable groups of workers and the local communities, while adversely affecting project performance. This may also include potential risk of sexual exploitation abuse and harassment in recruitment or retention of skilled or unskilled female workers supported under the project. To address these issues:

- With community development initiatives, the project will support community mobilization and public awareness activities to empower vulnerable communities in rural areas on participatory planning and monitoring of roads, road safety, GBV, and managing climate resilient vulnerabilities.
- To address the risk of exclusion of vulnerable groups from employment opportunities, IRCDP will require:
 - Employment of project workers under IRCDP to be based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any

²⁴ <https://www.statista.com/statistics/813026/youth-unemployment-rate-in-sri-lanka/>

- aspects of the employment relationship, such as recruitment and hiring, terms of employment (including wages and benefits), termination and access to training.
- Require the contractor to employ women as part of their skilled and unskilled workforce. The contractor will be also required to comply with the *Factories Ordinance 1942, Employment of Women, Young Persons and Children' Act 1956, Shop and Office Employees' Act 1954, and the Maternity Benefits Ordinance 1939* on gender equality in the work place, which will include provision of maternity leave and nursing breaks and sufficient and suitable toilet and washing facilities, separate for men and women workers.
 - Contractor will be also be required to enable safety in the workplace to address potential sexual exploitation or harassment in recruitment or retention of skilled or unskilled female workers supported under the project.
 - During the process of resettlement planning, if the social assessments/consultations indicate that vulnerable persons/households will be affected by resettlement, the following measures will be adopted:
 - Special attention will be paid to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women, and children, and those without legal title to land, and ensure their participation in consultations.
 - Additional assistance, over and above compensation for lost assets, to reduce impacts of resettlement, and ensure that the project does not simply re-establish levels of vulnerability or marginalization, including: (i) special grant of SLRs 30,000 per household to improve the living standards of the most vulnerable households; (ii) assistance to vulnerable households in finding suitable land for relocation and shifting **OR** provision of resettlement sites if developed by the project and opted for by the affected households

8.1 Grievance Redressal Mechanism

The Grievance Redress Mechanism (GRM) addresses grievances in an efficient, timely and cost-effective manner, that arise in the project, either due to the actions of the project staff or the contractor/sub-contractors employed, and from affected communities and external stakeholders. A separate mechanism will be in place to address the grievances of workers. The PMU will be responsible for managing the GRM, but many of the grievances on the Project will likely relate to the actions of the Contractor and so will need to be resolved by the Contractor. The Project with the support of the supervision consultant will administer the GRM process deciding whether they or the Contractor is responsible for addressing the grievances and accordingly determine the best course of action to resolve the grievance. The supervision consultant will monitor grievance resolution being undertaken by the contractor. Further, the project affected persons as well as other interested parties will be fully informed of the GRM, its functions, procedures, timelines and contact persons both verbally and through booklets and information brochures during consultation meetings and other stakeholder engagement activities.

Specifically, the GRM:

- Provides affected people with avenues for making a complaint or resolving any dispute that may arise during the implementation of the project activities.
- Ensures that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants.
- Supports accessibility, anonymity, confidentiality and transparency in handling complaints and grievances.
- Avoids the need to resort to judicial proceedings (at least at first); though the concerned individuals always have recourse to the formal legal channels for resolving their concerns.

The aggrieved parties can reach beyond the GRM at any time and seek legal action if they are dissatisfied with the grievance redress process and its outcomes. The establishment of the project based GRM will be guided by the principles of its accessibility to aggrieved parties, and transparency and efficiency in the delivery of resolutions for the grievances and complaints. For this purpose, the project will establish a two-tiered GRM and outlined multiple uptake channels (emails, telephone hotlines, SMS, personal delivery/walk-in, etc.) for filing complaints. The GRM will function throughout the life cycle of the project implementation. The PMU will ensure adequate female representation and participation in the composition of the different Grievance Redress Committees (GRCs).

8.1.1 Scope of the GRM

The impacts of the Project may raise grievances and complaints on the part of affected persons in relation to: (i) physical and economic displacement from the project; (ii) construction-related damages; (iii) environmental impacts; (iv) direct and/or indirect social impacts; (v) procurement, contract management and contractor performance; (vi) quality of roads, agriculture facilities, community infrastructure and transport services; (vii) operations and maintenance of the terminal; (viii) safety and public access issues; (ix) gender-based violence, including sexual harassment in project-related issues.

The Project will develop a three-tiered GRM. Project related GRM will be available for project stakeholders including project affected persons (i.e. those who will be and/or are likely to be directly or indirectly affected, positively or negatively, by the project), to submit complaints/grievances, questions, comments, and suggestions, or provide any form of feedback on all project-funded

activities. The GRM will be easily accessible to the aggrieved parties irrespective of their ethnicity, religion, gender, and other social and economic differences. Moreover, it will ensure its transparency, efficiency and accountability in grievance handling and responding while winning the confidence of the complainants. The GRM will endeavor to resolve the grievances locally, and to avoid lengthy court procedures. The GRM will be managed and coordinated by the PMU to be set up for the Project. The PMU will designate a GRM officer.

8.2 GRM Structure/Architecture

The GRM will function throughout the life cycle of the project implementation. The PMU will ensure adequate female representation and participation in the composition of the different GRCs.

8.2.1 Composition of Grievance Redress Committee (GRC) - Gram Niladari (GN) Level

A Grievance Redress Committee will be established at the GN level, chaired by the Grama Niladari of the area. The remaining members of the Committee are:

- Grama Niladhari -Chairperson
- Representative from local government (e.g., UC, PS) - Member
- Representative of Supervision Consultant (as appropriate)- Member
- Representative of Contractor (if required)- Member
- A community member/religious leader in the area- Member
- Woman representative from the local community- Member
-

The GRC will convene its meeting on a periodic basis at the GND office. The committee will also consult the relevant technical experts and carry out site visits, when required. GRC will reach a settlement through consensus among its membership. The GRC will conclude its proceedings within a period of two weeks since the submission of the grievance. If an agreement or resolution is reached, the key points of the agreement/resolution will be summarized, documented and signed by both, the affected person and the GRC.

Grievances that cannot be resolved at this Level, or else if the affected persons were dissatisfied with the resolution, the grievance will be submitted/escalated to GRC-Divisional Secretariat Level.

8.2.2 Composition of Grievance Redress Committee (GRC) - Division Secretariat Level

Level 2 of the GRM is at the Divisional Secretariat level. This Committee is expected to address complaints and disputes that cannot be resolved by the GN level committee. The Committee will review decisions coming from the GN level committee within 15 working days and will communicate its decision to the claimants and the GN level committee within five working days for follow-up actions. The Committee will comprise the following members:

1. Divisional Secretary of the area - Chairman
2. Representative of PDRA-Member
3. Grama Niladari of the area from where the complaint originated - Member
4. Representative of the Supervision Consultant- Member
5. Representative of Contractor- Member
6. Representative of a Social Organization (NGO/CBO) of the area- Member
7. A community member/religious leader- Member
8. Woman representative from the local community- Member

In resolving complaints, for which representation of Provincial Road Development Authority or relevant local authority is necessary, Secretary of the GRC will invite a representative from those institutions to participate in the GRC.

8.2.3 Composition of Grievance Redressal Committee (GRC)- Ministry Level

Level 3 of the GRM is at the Ministry level established by the Ministry of Highways. This Committee is expected to address complaints and disputes that cannot be resolved by the GN or DS level committee. The Committee will review decisions coming from the GN/DS level committee within 15 working days and will communicate its decision to the claimants and the PMU level committee within five working days for follow-up actions. The Ministry level GRC will conduct its deliberations at the Ministry. The Project Director will serve as the secretary to the committee.

The Committee will comprise the following members:

1. Ministry Secretary/Additional Secretary of Highways - Chairman
2. Project Director- Secretary
3. Director of ESDD of RDA- Member
4. Representative of the Supervision Consultant- Member
5. Divisional Secretary of the area or the Assistant Divisional Secretary- Member
6. Road owners/managers (PRDA, UC, PS) - Member

8.3 GRM Uptake Channels

8.3.1 Process for reporting grievances

The GRM will establish multiple channels through which citizens/beneficiaries/PAPs can make complaints regarding project funded activities. Complaints can be submitted either verbally or in written form using a variety of communication tools such as formal letters/petitions, telephone, email, SMS, on-line entry system etc. For specific issues concerning women, such as those related to gender-based violence, the project will identify GBV service providers in the project area for immediate referrals. Moreover, there will be printed standard formats made available at different focal points to receive grievances which can be accessed by the complainants to record their grievances. If project stakeholders/affected parties provide verbal feedback/complaint, project staff will lodge the complaint on their behalf, and it will be processed through the same channels.

8.3.2 Focal points for receiving/recording grievances

Using any of the uptake methods (in person, letters/petitions, telephone, email, SMS, on-line, etc.), aggrieved parties can report/submit their complaints to several focal points that will be established by the project to receive the complaints. The focal points will include the following; (i) PMU; (ii) a project officer located in the sub-project premises; and (iii) site office of the contractor/supervision consultant. Log books will be maintained at each focal point to record complaints/grievances. Names of the focal points together with their contact phone numbers, and email addresses will be posted at visible locations of the construction site and other strategic locations. In addition, feedback boxes will be placed at project's construction site, contractor's office, DS office and GN office.

8.4 Grievance Registry, Referral, Resolution and Appeal Process

8.4.1 Grievances registration

The focal points that receive the complaints either in written or verbal form will register those complaints using a standard format maintained at each focal point. Complaint registration will include details of (i) date of receiving the complaint, (ii) name and address of the complainant, (iii) copy of the complaint if a written submission, and (iv) a brief note if a telephone message. PMU will introduce a standard format for recording/registering the complaints received by the focal points. Having recorded the relevant information, focal points will forward the relevant documents along with a copy of the registering format to the Social Specialist (SEP, GRM, Community Relations) at PMU either on the same day or the following day.

8.4.2 Grievance sorting and categorization

Upon receipt of any complaint either directly or from focal persons, the Social Specialist (SEP, GRM, Community Relations) will screen and categorize the complaints. Complaints can be classified into the following categories.

1. Grievances related to land acquisition & property valuation, inadequate compensation & payment delays, loss of livelihoods & incomes, resettlement related issues
2. Environment related issues – impacts on natural resources, dust, noise, vibration, traffic congestion and access disturbances
3. Technical issues – design errors, technical deviations, and adverse impacts
4. Contract violations, non-compliance of the contractor and construction related impacts including labor management
5. Violation of policies, laws and regulations, guidelines and procedures of the government and the donor agency
6. Misuse of funds/lack of transparency, or other financial management concerns
7. Abuse of power/intervention by project or government officials
8. Community social issues, gender-based violence, discrimination
9. Requests for information
10. Suggestions
11. Appreciation
12. Complaints not relating to the project should be passed along to the relevant institutions

8.4.3 Screening, acknowledgement and closure of grievances

The Social Specialist (SEP, GRM, Community Relations) will respond to the complainant acknowledging the grievance and explaining the course of action to be taken and its approximate time frame for resolution. This acknowledgement and notification will be sent to the complainant within three days of receiving the complaint by the Social Specialist (SEP, GRM, Community Relations). The specialist can use a standard format for this notification.

In consultation with Project Director (PD), the Social Specialist (SEP, GRM, Community Relations) will review and determine the (i) eligibility of the complaint for hearing by the GRM; (ii) the level at which the complaint should be referred to for resolution (i.e. GN-level GRC, DS level GRC or Ministry level GRC); (iii) the timeframe within which the complaint should be resolved. Having determined the above, the specialist will refer the complaints to the appropriate GRC level. Such referrals should be completed within a maximum of 4 working days of receiving the complaint. If complaints take longer than the stipulated period to handle, weekly updates will be provided to the complainant in writing indicating the reasons for delay. Grievances that do not meet the eligibility criteria to be investigated in the GRM will be notified to the aggrieved party/complainant by the Social Specialist (SEP, GRM, Community Relations).

Decisions of the different GRCs (i.e. GN-level GRC, DS level GRC or Ministry level GRC), will also be formally communicated to the complainants by the Social Specialist (SEP, GRM, Community Relations). A grievance will be considered 'resolved' or 'closed' when a resolution satisfactory to both parties has been reached, and after corrective measures has been successfully implemented. When a proposed solution is agreed between the project and the complainant, the time needed to implement it will depend on the nature of the solution. However, the actions to implement this solution will be undertaken within one month of the grievance being logged and will be tracked until completion. Once the solution is being implemented or is implemented, the PMU will also request feedback from the complainant as to whether s/he deems the action(s) satisfactory, and this will be recorded along with the details of the complaint and the action taken.

In certain situations, however, the Project may “close” a grievance even if the complainant is not satisfied with the outcome. This could be the case, for example, if the complainant is unable to substantiate a grievance, or it is obviously speculative or fraudulent. In such situations, the project’s efforts to investigate the grievance and to arrive at a conclusion will be well documented and the complainant advised of the situation. The project will not dismiss grievances based on a cursory review and close them unless the complainant has been notified and had the opportunity to provide supplementary information or evidence.

8.4.4 Appeal process

The GRM established under the project will not impede access to the legal system. Affected persons can leave the GRM at any point, if they are dissatisfied with the process and the decisions of the GRM, and resort to legal action through the country’s judiciary system at any time. They can also submit their grievances to World Bank Group’s Grievance Redress Service (GRS) and the Inspection Panel.

8.4.5 World Bank Group’s Grievance Redress Service (GRS)

Communities and individuals who believe that they are adversely affected due to World Bank staff not following proper procedure —supported project may submit complaints to existing project-level grievance redress mechanisms or the World Bank Group’s Grievance Redress Service (GRS) (<http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project- affected communities and individuals may also submit their complaints to the World Bank Group’s independent Inspection Panel (<https://www.inspectionpanel.org>), which determines whether harm occurred, or could occur, as a result of World Bank Group- noncompliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank’s attention and Bank Management has been given an opportunity to respond.

8.5 Awareness Raising on GRM

Information about the grievance handling system will be distributed to all beneficiaries and project affected people through regular information channels used by the project including initiating meetings at the start of the project, public consultations held, public meetings during project implementation, brochures/pamphlets in local languages, posting on notice boards and online. The Environmental and Social Unit team of the project will play a lead role in awareness building and information sharing on the GRM. Moreover, the stakeholder engagement program of the project will be used by the PMU to encourage the use of the GRM and publish information on complaints received and resolved. The campaigns will also use local media (e.g. TV, newspaper, radio). When organizing and conducting these campaigns, special efforts shall be made to reach vulnerable groups. Information to be disseminated will include the scope of the GRM, specific locations where GRCs are established and their focal points for receiving grievances, the eligibility criteria to make a complaint, the procedure to make a complaint (where, when and how), the investigation process, the timeframe(s) for responding to the complainant, as well as the principle of confidentiality and the right to make anonymous complaints. Furthermore, the project will provide orientation and training to the members of the GRM on effective grievance handling procedures.

8.6 Monitoring and Reporting

8.6.1 Project level reporting and monitoring

The PMU will assess the functioning of the GRM and undertake spot checks during regular supervision visits. The PMU will be responsible for regular reporting of the GRM status including those grievances received, resolved, and pending. The Social Specialist (SEP, GRM, Community Relations) will: (i) ensure

accurate entry of GRM data into the data base; (ii) produce monthly/quarterly reports of GRM results including any suggestions and questions, to the project team and the management; and (iii) review the status of complaints to track which are not yet resolved and suggest any needed remedial action. The quarterly and annual progress reports will include updated information on the following:

- Status of establishment of the GRM (procedures, staffing, training, awareness building, budgeting etc.).
- Quantitative data on the number of complaints received, the number that were eligible, and the number resolved
- Qualitative data on the type of complaints and answers provided, issues that are unresolved
- Time taken to resolve complaints
- Number of grievances resolved at the lowest level, and raised/appealed to higher levels.
- Summary of resolutions/decisions made
- Satisfaction with the action taken
- Any particular issues faced with the procedures/staffing or use
- Factors that may be affecting the use of the GRM/beneficiary feedback system
- Any corrective measures adopted

8.6.2 Reporting to World Bank

The World Bank will be kept informed and where necessary consulted on World Bank requirements, during the process of grievance resolution, and also on the outcome of the process. A summary sheet of all complaints received and resolved will be shared with the World Bank Task Team. Any complaint or incident categorized as high risk should be reported to the World Bank Task Team immediately.

8.7 GRM Contact Information

Aggrieved parties can approach and use the following contact/s for any inquiries regarding their grievances/complaints and feedback.

Description	Contact Details
Project Implementing Agency:	Road Development Authority
Project:	
Contact person/s:	
Address:	
e-mail:	
Website:	
Telephone:	

8.8 Workers' Grievance Redress Mechanism

The contractors hired under the project have the contractual obligation to establish a separate GRM to address the grievances and complaints reported by the construction workers including the sub-contractors. Grievances/complaints of the workers will be reported to either the site office of the contractor or the office of the supervision consultant. Additionally, a complaint/suggestion box will be placed within the construction site. A focal point to receive and register the grievances and complaints in each of the two offices will be designated, and their contact details will be displayed on the respective office notice boards as well as in appropriate places within the construction site. The availability of the W-GRM to report grievances will be communicated to the workers during worker induction sessions, at periodic meetings of the workers, and through leaflets. The W-GRM will establish (i) clear procedures for reporting and registering grievances; (ii) stipulated time frames for grievance resolution; and (iii) a register to record and track timely resolution of grievances. The contractor is responsible to maintain transparency in GRM operations, secure the confidentiality of

the complainants, and avoid any form of discrimination against complainants. The supervision consultant will monitor and report on the processes and outcomes of the grievance redress followed by the contractor. In case the complaints are not addressed at the Contractor's level, the grievance can be escalated to the Grievance Redressal Committee (DS level), and subsequently to the Grievance Redressal Committee (Ministry level) if the matter is not resolved (See Section 7.2.2 and 7.2.3 for details). The aggrieved worker can consider proceeding to the national appeal process as well.

8.9 Grievance Registry, Referral, Resolution and Appeal Process

8.9.1 Grievances registration

The focal points that receive the complaints either in written or verbal form will register those complaints using a standard format maintained at each focal point. Complaint registration will include details of (i) date of receiving the complaint, (ii) name and address of the complainant, (iii) copy of the complaint if a written submission, and (iv) a brief note if a telephone message. PMU will introduce a standard format for recording/registering the complaints received by the focal points. Having recorded the relevant information, focal points will forward the relevant documents along with a copy of the registering format to the Social Specialist (SEP, GRM, Community Relations) at PMU either on the same day or the following day.

8.9.2 Grievance sorting and categorization

Upon receipt of any complaint either directly or from focal persons, the Social Specialist (SEP, GRM, Community Relations) will screen and categorize the complaints. Complaints can be classified into the following categories.

1. Grievances related to land acquisition & property valuation, inadequate compensation & payment delays, loss of livelihoods & incomes, resettlement related issues
2. Environment related issues – impacts on natural resources, dust, noise, vibration, traffic congestion and access disturbances
3. Technical issues – design errors, technical deviations, and adverse impacts
4. Contract violations, non-compliance of the contractor and construction related impacts including labor management
5. Violation of policies, laws and regulations, guidelines and procedures of the government and the donor agency
6. Misuse of funds/lack of transparency, or other financial management concerns
7. Abuse of power/intervention by project or government officials
8. Community social issues, gender-based violence, discrimination
9. Requests for information
10. Suggestions
11. Appreciation
12. Complaints not relating to the project should be passed along to the relevant institutions

8.9.3 Screening, acknowledgement and closure of grievances

The Social Specialist (SEP, GRM, Community Relations) will respond to the complainant acknowledging the grievance and explaining the course of action to be taken and its approximate time frame for resolution. This acknowledgement and notification will be sent to the complainant within three days of receiving the complaint by the Social Specialist (SEP, GRM, Community Relations). The specialist can use a standard format for this notification.

In consultation with Project Director (PD), the Social Specialist (SEP, GRM, Community Relations) will review and determine the (i) eligibility of the complaint for hearing by the GRM; (ii) the level at which the complaint should be referred to for resolution (i.e. GN-level GRC, DS level GRC or Ministry level GRC); (iii) the timeframe within which the complaint should be resolved. Having determined the above, the specialist will refer the complaints to the appropriate GRC level. Such referrals should be completed within a maximum of 4 working days of receiving the complaint. If complaints take longer

than the stipulated period to handle, weekly updates will be provided to the complainant in writing indicating the reasons for delay. Grievances that do not meet the eligibility criteria to be investigated in the GRM will be notified to the aggrieved party/complainant by the Social Specialist (SEP, GRM, Community Relations).

Decisions of the different GRCs (i.e. GN-level GRC, DS level GRC or Ministry level GRC), will also be formally communicated to the complainants by the Social Specialist (SEP, GRM, Community Relations). A grievance will be considered 'resolved' or 'closed' when a resolution satisfactory to both parties has been reached, and after corrective measures has been successfully implemented. When a proposed solution is agreed between the project and the complainant, the time needed to implement it will depend on the nature of the solution. However, the actions to implement this solution will be undertaken within one month of the grievance being logged and will be tracked until completion. Once the solution is being implemented or is implemented, the PMU will also request feedback from the complainant as to whether s/he deems the action(s) satisfactory, and this will be recorded along with the details of the complaint and the action taken.

In certain situations, however, the Project may "close" a grievance even if the complainant is not satisfied with the outcome. This could be the case, for example, if the complainant is unable to substantiate a grievance, or it is obviously speculative or fraudulent. In such situations, the project's efforts to investigate the grievance and to arrive at a conclusion will be well documented and the complainant advised of the situation. The project will not dismiss grievances based on a cursory review and close them unless the complainant has been notified and had the opportunity to provide supplementary information or evidence.

8.10 Information Disclosure

Disclosure of relevant project information will help affected communities understand the risks, impacts and opportunities of the Project. The implementing agency will publicly disclose the ESMF and all Environmental and Social Assessment and mitigation instruments, including ESIA, RAPs, ESMPs, CESGPs, Environment and Social Audits, for public review and comments in appropriate locations in the Project area. These include the project websites, social media, project offices and local authority offices to ensure all layers of the community have due access. Executive summaries of all ESIA are to be translated to the local languages of Sinhala and Tamil.

All documentation will also be made available on the implementing agencies web site both in English and in local languages. Newspaper and other media outlets will alert the community to the availability of the documentation, an example of a public announcement on ESIA disclosure is presented in **Annex 26 of Volume II of the ESMF**. The website will also enable the community opportunity to provide comments electronically.

All E&S documentation will also be made available in the World Bank's external website.

All these procedures are stipulated in greater detail in the Stakeholder Engagement Plan (SEP) of the IRCDP Project.

9.1 Overall Project Implementation Arrangements

The Ministry of Highways (MoH) will be the implementing agency of the project. A dedicated Project Team (PT) will be appointed under the MoH within the RDA, which will be headed by a dedicated project director (already appointed), and will include a senior procurement specialist, a financial management specialist, technical officers and an adequately staffed Environment and Social Unit (ESU). It will coordinate with the Environmental and Social Division, Planning Division and Research and Development Division within the RDA for overall project management as necessary. These Divisions have adequate experience working on rural roads projects with recent good performance illustrated under the ADB funded iRoad Project.

All activities under Component 2 will be implemented by the PT under MoH in coordination and consultation with relevant stakeholder to identify and assess the investment requirements. The Governance Structure of the Matching Grants Scheme (MGS) would include the following institutional entities: a) Matching Grant Team under the MoH which will handle day to day administrative, management and monitoring functions; b) Approval Committee which take all decisions on awarding grants; c) a Technical Review Group (TRG) which will carry out technical, business and economic appraisal of the grant proposals and make funding recommendations to the PT; and d) an Appeals Body which will handle potential appeals, complaints and grievances from grant stakeholders. Detailed implementation arrangements, including the roles and responsibilities of the above entities will be outlined in a matching-grants Operations Manual, together with the detailed procedures for the identification, preparation, assessment, approval and implementation of projects supported under the scheme.

Project Implementation Units (PIUs) will be established under the PT at the regional level for either a single province or for a few provinces to coordinate project activities at the local level. PIUs will consist of technical officers and an Environmental Officer and a Social Officer appointed by the ESU and will be staffed through secondment from RDA or recruitment where necessary. Project Implementing Consultants (PIC) will be appointed for each region in line with the PIUs for the supervision of designs and civil works. PICs will include a Team Leader, Resident Engineers, Assistant Resident Engineers, Site Engineers, an Environment Specialist, a Social Specialist, Technical Officers and administration staff (Annex 2).

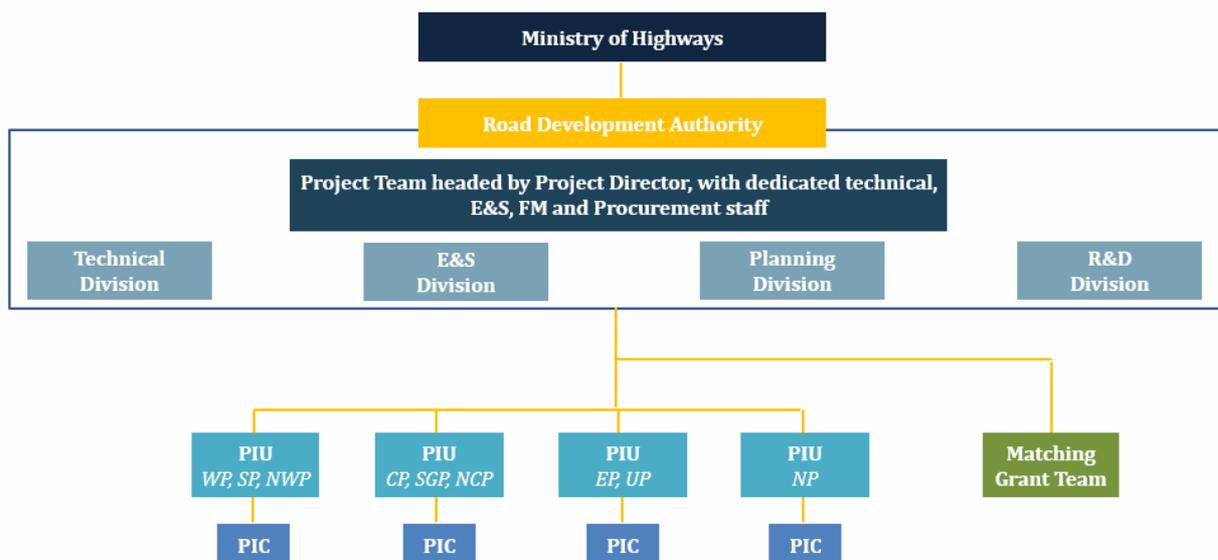
MoH will enter into memoranda of understanding (MoUs) with the provincial/local authorities to rehabilitate/improve and transfer the completed road sections and others to the relevant authorities. MoUs are expected to be signed before negotiations and if not will be laid out as dated covenants.

Project Implementing Consultant (PIC) or an Engineer will also be appointed for each region in line with the PIUs to support respective region in supervising the designs and civil works of the contractors. Headed by a Team Leader, each PIC will have Resident Engineers, Assistant Resident Engineers, Site Engineers, Technical Officers and administration staff. The PICs will also have an Environment Consultant (ESC) and Social Consultant (SSC) who will review and approve E&S documents prepared by contractor/s (method statements, and any other document related to environment management), monitor E&S instrument implementation, instruct, assist contractor/s to rectify any non-compliance issue and prepare periodic environment and social compliance monitoring reports. ESC and SSC will be assisted by Field Assistants who will also responsible for environmental and social compliance at ground level. These Assistants will be appointed on a district basis (i.e. one assistant per district) and will operate from Resident Engineer's office which will also be established on a district basis.

Appointed civil work contractors will be directly responsible to execute environment safeguard measures at site level. E&S management measures will be as per the measures outlined in the Method Statement prepared against the respective ESMP. Each contractor will appoint a qualified and experienced person to work as the Environment and Social Safeguards Officer (ESSO) who will implement the E&S management measures at site level. ESSO will be appointed on a Contract Package basis so that each contract package will have a dedicated ESSO. Project Manager and/ or Contract Representative of each contractor will provide all necessary inputs (including personnel and machinery) to the ESSO to effectively execute the mitigation measures at site. The ESSO will be assisted by an officer who will be responsible for safety (personnel as well as site) and public relations.

In addition to the ESU of PMU, RDA is equipped with a separate division named; Environmental and Social Development Division (ESDD) which is responsible for overall monitoring of the implementation of the E&S compliance. ESDD also assists PMU in meeting E&S compliances in environmental and social screening of subprojects, reviewing E&S documents, monitoring of E&S compliance and also will conduct training sessions to the E&S staff of the contractor on E&S considerations of IRCDP.

Organization Structure of the Implementing Agency



9.2 Requisite Staff Positions and Institutional Arrangement for Implementation of E&S Instruments

The RDA ESU will need to second/hire separate social and environmental specialists to focus on the tasks and responsibilities outlined in the ESMF, RPF, SEP, LMP, among others, in the role of a (i) Senior Environmental Specialist (SES) and (ii) Senior Social Specialist (SSS), who will form part of the PMU within the RDA.

9.2.1 Senior Environmental Specialist (SES) and Senior Social Specialists (SSS), PMCU
 He/She will report to the Project Director (PMU), under the Secretary (MOH) and will separately be responsible for the overall management of environmental and social issues of the project and the

implementation of the project specific E&S instruments. The E&S instruments include the ESMF, RPF, LMP, SEP, and all subsequent ESF instruments prepared during project implementation. He/she will be in charge of the overall management of E&S issues that will be implemented by the implementing agencies and will partake in the following responsibilities.

- Provide overall policy and technical direction for E&S management under the Project, as defined by the project environmental and social safeguards instruments.
- Co-ordinate closely with the Environmental and Social Officers in the team and RDA in planning and managing project implementation as per the E&S instruments; closely co-ordinate with the PMCU SSS/SES, procurement and technical teams and technical colleagues for timely preparation of ESIA, ESMPs or CESGPs for sub-projects, as necessary (depending on screening outcome); co-ordinate for hiring technical assistance, where necessary, and for review and endorsement of these E&S documents provide necessary technical assistance to facilitate the implementation, management and monitoring of environmental and social issues;
- Review the draft and final E&S instruments prepared for the project to ensure consistency with national environmental regulations and World Bank policy requirements as defined in this ESMF, RPF, LMP, SEP, etc; work with the PMU and RDA to obtain necessary clearances from local environmental/archaeological regulatory authorities for sub-projects, where applicable.
- Prepare terms of references to undertake requisite E&S assessments for complex activities that will warrant ESIA, RAP, environmental and social audit, etc., as per the environmental and social screening conducted and obtain necessary clearances from the World Bank and/or designated project approving agencies, and accordingly manage the consultants hired to undertake the preparation of these instruments, and where applicable, provide coordination support with implementation agencies and individuals
- Ensure that applicable measures in the ESMPs/CESGPs are included in the design, and conditions on compliance with ESMPs/CESGPs are included in the bidding documents; and ensure compliance with ESMPs/CESGPs, during the construction period and maintain close co-ordination with the technical teams of the RDA and/or supervision consultants who will conduct monitoring of the implementation.
- Develop, organize, and deliver environmental and social training programs and workshops for relevant stakeholders at the field level, contractors, field supervision staff and other implementing agency officials as needed, on E&S requirements and their management
- Ensure adequate public consultation during the preparation of E&S instruments; promote community participation in the process of planning, management, and monitoring of environmental/social impacts of sub-projects; provide guidelines on community participation in environmental/social monitoring to the RDA; and ensure public complaints relating to nuisance and inconvenience caused by sub-project implementation are addressed with corrective action and adequately documented
- Responsible for the overall environmental and social performance and compliance of the project as part of PMU's periodic progress reporting, including environmental and social audit; suggest/introduce corrective measures based on the findings of the monitoring and/or audit reports; maintain close cooperation with RDA to monitor the O&M during the operation of the project; report to the Project Director, Secretary of MOH and the World Bank on compliance, progress and issues relating to E&S management
- Liaise closely, where technical guidance is required, with the Social and Environmental Specialists assigned to the project as part of the Task Team of the World Bank task team.

The SES will need to have the following academic qualifications and experience.

- At minimum, a master's degree in a field related to Environmental Management, Environmental Engineering or a related field

- A Minimum of 8-10 years' professional national experience in environmental management, including extensive field experience, working with various government and private sector agencies and community organizations, especially in the field level.

The SSS will need to have the following academic qualifications and experience.

- At a minimum, a master's degree in Social Sciences, Economics, Public Administration/ Policy, or related field
- A minimum of 8-10 year's of professional experience in social risk management, including resettlement planning, community participation/engagement, working with various government and private organizations
- Prior experience in the transport, especially, road sector, an added advantage.

The SES and SSS will have a minimum of 3 environmental officers (EOs) and 3 social officers (SOs) in the PMU assigned respectively to assist in coordination and requisite field reviews etc. Similarly, each PIU shall also have an Environmental Officer and a Social Officer at the regional level. These EOs and SOs can either be seconded or assigned roles via the RDAs ESU these individuals who will share the role explained below, each officer will conduct the following tasks.

9.2.2 Environmental Officers (EOs) and Social Officers (SOs) at ESUPMU

Will have the following key roles and responsibilities to support the SES and SSS and will report directly to the SES and SSS. 2 Environmental Officers and 2 Social Officers will specifically focus on the subprojects under Component 2. The 3rd Environmental officer and the 3rd Social Officer will be hired to coordinate and assist the SES and SSS respectively on the due diligence procedures required in the planning and preparation community-development activities. These EOs and SOs may be either seconded from the RDA and trained for these duties or couple their activities with other tasks.

- Work with SES and SSS in conducting environmental and social screening and field monitoring and prepare the environmental and social screening reports as assigned, and take part in other tasks assigned during ESMF, RPF, SEP, LMP implementation.
- Conduct the necessary field work/ data collection for completion of environmental and social screening reports during sub project preparation and monitoring reports during sub project implementation.
- Coordinate with the project partner agencies to ensure timely delivery of E&S instruments and monitoring updates. Visit all project sites during implementation and prepare a monthly monitoring updates to be shared with the SES and SSS.
- Follow up with the RDA field staff, contractors and supervision consultants on handling of complaints and grievances on project monitoring.
- Conduct training on environmental and social requirements for contractors and contractor staff.

EOs/SOs will need to have the following academic qualifications and experience.

- At minimum, a Master's Degree in a field related to environment and natural resource management for EO and social sciences for SO.
- A Minimum of 2 years' professional national experience in environmental and social management, including extensive field experience, working with various government and private sector agencies and community organizations, especially at the field level.

9.2.3 Sub project Engineers

The RDA project engineers overseeing project works in sites will be directly responsible for ensuring compliance of contractors in line with the ESMPs, CESGPs, RAPs and other procedural instruments as per the ESMF. He/She will take proactive efforts during monitoring/reporting on compliance of due diligence mechanisms set forth in the ESMF. As these officers, will be based in the field and directly supervise contracts they will be required to conduct regular monitoring visits and facilitate good communication between contractors and PMU on E&S implementation issues and provide guidance to the contractors. In addition, they will also conduct awareness and training programs among the contractor staff and labors on the respective subproject implementation.

9.2.4 Contractors Hired to Implement Project Financed Works

Implementation of measures laid out in the ESMPs/CESGPs from the preconstruction, during, and to the close of construction will largely be the contractor's responsibility (apart from those provisions relating to technical designs and other specified tasks indicated in the ESMPs/CESGPs) and for this the contractor will nominate a safeguard officer (as requested in the ESMP/CESGPs) as the focal person who will be directly responsible for ensuring compliance with the ESMPs/CESGPs during construction. The requisite qualifications for the environmental officer to be appointed by the contractor are presented in the Term of Reference in *Annex 22 of Volume II of the ESMF*.

9.2.5 Consultants Hired to Conduct E&SD Due Diligence

The PMU will hire environmental consultants to provide technical support the PMU where specialized services are required. Some of the consultancies identified include:

- Preparation of ESIAAs, ESMPs, CEGPs, Environmental and Social Audits and other requisite safeguard assessments for sub projects as outlined in the ESMF and finalized via the Environmental and Social Screening to be conducted for each activity.
- Conducting systemic Project Level Environment and Social Audits outlined in the ESMF

9.3 The Roles and Responsibilities of the Ministry of Highways

Will be responsible for ensuring the following

- Make final decision on roads to be included under the investment program
- Maintain overall responsibility for project design, feasibility, construction and operation and guide RDA to play its role as the IA.
- Ensure that sufficient funds are available to properly implement all agreed ESF measures as per the ESCP, ESMF, RPF, LMP and SEP of the IRDCP operation
- Ensure that all projects and roads, regardless of financing source, complies with the provisions of the ESCP and ESMF and GoSL's environmental laws and regulations as best practice for the sector.
- Ensure that tender and contract documents for civil works include all relevant parts of the ESCP and ESMF and other project ESF overarching documents.
- Ensure the Implementation Arrangements outlines in the ESMF are adhered to and that requires staffing is in place to facilitate project implementation.

9.4 The Roles and Responsibilities of the Road Development Authority as the main Implementing Agency

- As the safeguards unit within RDA, ESDD shall closely monitor that Project complies with the ESCP, ESMF, RPF, LMP and SEP and GoSL laws and regulations on E&S.
- Ensure that the project complies with all ESF requirements as given in this ESMF.

- Ensure that tender and contract documents for civil works include all relevant parts of the environmental and social safeguards instruments
- Ensure all E&S due diligence procedures from screening to monitoring and reporting are incorporated into project implementation as per the ESMF.
- The RDA will be responsible for ensuring that the team assigned from the RDA's ESU to the PMU will be well facilitated to ensure the ESMF is implemented accordingly.
- Ensure the formal secondment/and or recruitment of staffing on E&S as outlined in Chapter 9 of this ESMF is met.

9.5 The Roles and Responsibilities of World Bank

The World Bank project task team, specifically the environmental and social specialists, will provide close supervision and necessary implementation support by reviewing and providing guidance on conducting screening, and the preparation of relevant E&S instruments as well as providing training for trainer's programs for E&S and PMU teams and other programs identified in the ESMF;

- Undertake prior review and provide feedback on all E&S instruments, review of monitoring updates and other relevant E&S documents.
- Ensure regular missions to review overall E&S performance and provide further implementation support
- Share knowledge on technologies and best practices
- Provide guidance on handling complaints and grievances from a technical standpoint.
- Provide training support on Bank's ESF requirements for the project.

9.6 Stakeholder consultations

Stakeholder consultations were held in April- May, as well as during the project appraisal in July 2021 including key stakeholders and communities in the project area. The consultation notes and list of participants is presented in **Annex 27**. Further, the procedure and guidelines for carrying out additional consultations during the entire project cycle, is presented in the Stakeholder Engagement Plan (SEP) prepared separately for IRCDP.

9.7 Rough Cost Estimates for ESMF implementation

Drawing from the project experience and current indicative costs of substantial risk and similar ESMFs projects the following table provides a rough estimation of costs for E&S management and ESMF implementation under Phase I of the program. In terms of costs, competition and an increase in the number of players in the consultancy market within the country has led to drops in preparation costs since 2016 when done by local consultants. All E&S instruments have been built in to the project modality and will be financed via the project and detailed project cost tables will include the necessary costs accordingly.

The associated cost to implement ESIA/ESMPs/CESGPs as well as training for project staff, contractors etc. have been integrated into the project budget. The project will ensure that all works contracts will include the ESMPs/CESGPs and the cost of implementing the ESMPs/CESGPs will be identified as an item in the Bill of Quantities for each respective contract accordingly.

Activity	Quantity	Unit Rate in US\$	Total in US\$
Environmental and Social Staff			
Senior Environmental Specialist and Senior Social Specialist	5 years in to 2 persons	1800/per month	216,000
Environmental Officers and Social Officers at PMCU- 14 Persons	5 years in to 14 persons	1200/per month	432,000
Project Engineers- Part of overall project costs- Minimum of 30 Persons all Island	5 years in to 30 persons	500/per month	900,000
Sub Total			1, 548,000
Capacity Building (short-term and long-term)			
ESMF and ESF: to cover management, instrument preparation and monitoring during project implementation and reporting- (including refresher)- Training for Trainers for PMU/RDA Staff	3	5000	15,000
ESMF and E&S Implementation Training: to cover world bank environmental safeguards, management, instrument preparation and monitoring during project implementation and reporting- (including refresher)- For project Engineers	10	5000	50,000
Training on implementation of ESMPs/CESGPs in construction contracts- focused on contract management	3	5000	15,000
Training on implementation of ESMPs/CESGPs Based on the subproject specifics for each of the contracts	Lump sum		50,000
Certificate Best Practice training on Environmental and Bioengineering Solutions	2	10,000	20,000
Preparation of E&S Instruments			
Environmental and Social Screening of subprojects by PMU Team, including travel	Lump sum		500,000
Recruitment of consultants to prepare stand-alone ESIA's ESMPs, CESGPs and other requisite safeguards instruments- if required	Lump sum		300,000
Consultancy for project level environmental audit - One at MTR one close to project closure and two additional	4	50,000	200,000
Environmental and Social Monitoring			
Environmental and social monitoring that includes sampling and laboratory testing as outlined in ESMPs, ESIA's or CESGPs.	lump sum		200,000
Environmental and social screening and compliance monitoring by project staff (will be part of transport and operational budget of the overall IRDCP)	lump sum		300,000

Activity	Quantity	Unit Rate in US\$	Total in US\$
<i>Costs associated with mitigation measures identified in respective safeguards instruments</i>	<i>To be included in the construction costs</i>		
Contingencies (10% of total)	3,198,000		319,800
TOTAL ESTIMATED FOR PROJECT PHASE-I			3,517,800

All annexes aforementioned in this document are presented in the form of Volume II of this ESMF of the IRDCP that is disclosed in conjunction with this document and should be read in unison when seeking guidance.

Volume II contains a list of the following Annexes, referred to in this document and the corresponding page numbers have also been indicated below.

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Annex 25: Generic Session Plan for Project Implementation Agency Staff Training on ESMF and Environmental and Social Instrument Implementation, Monitoring AND REPORTING.
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Annex 26: Example of Disclosure Advertisement for ESF Instruments

Annex 27: Consultation Notes on ESMF Consultations

Annex 28: Resource List and Guidance Documents for Response and Management of COVID-19 with Projects

