Sri Lanka
Climate Resilience Multi-Phase Programmatic Approach (CRes MPA) Restructuring

Disclosure of Updated Safeguards Instrument - Executive Summaries of

- Environment Assessment and Management Framework (EAMF)
- Social Management Framework (SMF)
- Resettlement Policy Framework (RPF)

Disclosure Period of Original Documents: December 2018 - January 2019
Disclosure of Updated Documents in Line with Project Restructuring: July 20, 2021

As part of the Original CRes MPA, the Government of Sri Lanka (GoSL) has prepared a Strategic Environmental Assessments (SEA) and a Strategic Social Assessments (SSA) for the Kelani Basin Flood and Drought Mitigation Investment Plans. The SEA and SSA have informed and guided the preparation of the program-specific Environment Assessment and Management Framework (EAMF), Resettlement Policy Framework (RPF) and Social Management Framework (SMF) for the CRes MPA. Together, these instruments serve as a guidance document that outlines the requisite due diligence processes in line the World Bank's Safeguard Polices and National Environmental and Social Regulations of the Government of Sri Lanka. The EAMF, SMF and RPF will guide the process of environmental and social screening, assessment, monitoring and reporting throughout project implementation.

All three documents were consulted and disclosed by the GoSL and by the World Bank for the original CRes MPA on December 20, 2018 (EAMF) and January 23, 2019 (RPF and SMF).

With the changes to the original scope of the CRes MPA on request of the GoSL, especially the cancellation of flood embankments and the related land acquisition and resettlement-related activities as well as the changes to the phasing of the project interventions, the EAMF, RPF and the SMF have been amended accordingly. Public feedback for these revised instruments was solicited by uploading them on the Ministry of Irrigation's website and inviting comments from all stakeholders. As elaborated in the revised safeguards instruments, additional consultations are planned following the COVID-19 related guidelines issued by the World Bank, the World Health Organization and the national health agencies.

The updated EAMF, RPF and the SMF were cleared and re-disclosed by the World Bank and the GoSL on July 20, 2021 via Ministry of Irrigation website and social media platforms.

The enclosed Executive Summaries present a comprehensive but brief overview of the contents of the updated EAMF, RPF and SMF.

Summary of CRes MPA Project Description

The three safeguards documents, EAMF, RPF, and SM, have an introduction Chapter and/or section on CRes MPA project description. For the Executive Summary, this will be captured in the below section of project summary.

Introduction

Climate-related hazards pose a significant threat to economic and social development in Sri Lanka. The changing climate has increased the frequency and severity of extreme events[1] in Sri Lanka over the past two decades. During 2000-10, floods cumulatively affected more than 8.5 million people, while droughts affected more than 5 million[2]. During the 2010 to 2018 period, 5.2 million people were affected from floods and 6.7 million from drought.

Sri Lanka has experienced increasing and unplanned expenditure for recovery and reconstruction efforts due to these recurrent disaster events. After the country suffered from a number of events in 2011, 2012, 2014[3], most recently, the floods and landslides consecutively hit the country in May 2016 and 2017 and resulted in estimated reconstruction needs of US$ 960 million and US$ 790 million. In May 2016, Tropical Storm Roanu hit the country and caused widespread flooding and landslides in 24 out of 25 districts in the country. An estimated 500,000 people were affected by this disaster, including at least 21,484 people who were displaced from their homes. As a result of the events, 623 houses were completely destroyed, and more than 4,400 homes were damaged. In May 2017, a southwest monsoon brought heavy rains and strong winds which provoked flash floods and landslides in 15 out of 25 districts. Approximately 230,000 families got affected, and 88,000 houses were partially or fully damaged. Lately, the country observes slow onset and evolving impact of drought in Northern, Eastern and Central regions, and estimated affected population has reached more than 1,900,000 people in 17 districts as of September 2017. This exacerbation of risk and increase in recovery costs visibly pressured national economy. This was reflected in the Global Climate Risk Index (CRI). While Sri Lanka ranked only 48th place on the average CRI ranking from 1997 to 2016, the most recent 2018 ranking puts Sri Lanka in 4th place largely due to the floods in 2016. Potential impacts due to climate change are foreseen as a 1.2 percent loss of annual GDP by 2050, direct economic impacts in various sectors.

The Sri Lanka Fiscal Disaster Risk Assessment (2016) estimates, in the long term, the government needs to allocate at least US$ 380 million each year to deal with natural disasters[4]. Almost two thirds of this annual allocation would be required for flood related events. However, when infrequent disasters such as cyclones or severe floods occur, their economic footprint is much larger than the annual allocation. To mitigate the increasing costs of disasters among many other reasons, investment in disaster risk reduction, therefore, is a critical area for priority. Otherwise, the progress and gains to accelerate poverty eradication and to boost shared prosperity would also be jeopardized.

Recent floods left distinct impacts on key economic sectors. Recent floods impacted Agriculture, Transport, Irrigation, Industry and Commerce sectors, following the impact to the housing sector the most[5]. Loss in such sectors, predominantly private sector, directly impacted the quality of lives of those living on these sectors. Agriculture sector was significantly impacted due to drought, combined with

[1] The National Adaptation Plan for Climate Change in Sri Lanka (2016-2025)[1] highlights that three major types of changes the country is facing: a) gradual increase in ambient air temperature; b) changes in distribution pattern of rainfall; and c) increase in frequency and severity of extreme weather events. In addition, changes in oceanic environment, such as sea level rise, seem to create significant impacts over Sri Lanka.

[2] Proposed Development Policy Loan with a Catastrophe Deferred Drawdown Options Program Document (http://documents.worldbank.org/curated/en/444991468303013994/pdf/862250PAD0P146010Box385166B00OUO090.pdf)

[3] The estimated economic impact of the flood and landslide events during last three from 2011, floods affected more than a million people in the Northern, North Central and Eastern provinces, and caused more than US$ 600 million in direct damages. Floods in 2012 and 2014 affected nearly a half a million and 1.2 million people.

[4] https://www.gfdrr.org/sites/default/files/publication/fiscal-disaster-risk-assessment-financing-options.pdf

[5] Two PDNA reports in 2016 and 2017 in the above footnotes.

floods. The rice production in 2017 during the Maha and Yala seasons, the main cropping seasons in Sri Lanka, was halved compared to previous years, assessed as a result of disaster events.

Institutional context

State Ministry of National Security and Disaster Management of the Ministry of Defense ~~is~~ the government entity mandated for policy guidance and oversight for disaster management of the country. It implements its mandate through four leading government agencies, which have mandates and responsibilities to provide timely, accurate and useful forecasts and warnings of hydrological and meteorological hazards in Sri Lanka: i) the Department of Meteorology (DoM) for managing Sri Lanka's meteorological network, monitoring weather, forecasting extreme weather events, and early warning services on meteorological hazards and tsunamis; ii) the hydrology division of the Irrigation Department (ID) for managing Sri Lanka's Hydro-Meteorological Information System (HMIS), observation network, and data base and issuing flood forecasts and warnings on major rivers; iii) the National Building Research Organization (NBRO) for landslide monitoring and risk mitigation; and iv) Disaster Management Center (DMC) for disaster early warning and response, including floods.

Modernization of Hydro-Meteorological Systems to strengthen hydrological and meteorological forecasting, disaster early warning systems and weather services is an urgent priority in the face of the increasing climate change and its increasing damages and losses and impacts on the economy and people. There is a strong demand for better meteorological and hydrological services evidenced by the responses from disaster management, water management, hydropower, agriculture, health, and other clients following the impact of the 16 May 2016 flood event and related landslides. At present, many constraints hinder efficient and effective hydro-meteorological services, including early warning on extreme weather events and disasters to different economic sectors of the country and communities. The meteorological and hydrological services have limited capacity and capability to provide quantitative information to guide timely decision making in disaster management. A major reason is the inadequacy of the technological capabilities, staff capacities and skills in the mandated institutions in forecasting and early warning that are in line with standards of many developed and developing countries. There is an urgent need to adopt state-of art technology and available international products by the country to ensure trustful and accurate early warning to public and economic sectors and appropriate public response to extreme weather events, in order to ensure appropriate public response to warnings.

There is an urgent need to establish and operationalize a user driven, long-term national strategy for meteorological and hydrological services. Early warning services in Sri Lanka remain separate within the four agencies and uncoordinated. Close coordination among the four lead agencies is necessary to access the up to date, real-time meteorological and hydrological data and information for successful and effective impact based forecasting and early warning to minimize adverse impacts of extreme weather events to the economy, infrastructure and people of extreme weather events. Moving beyond weather and hydrological forecasting to provide efficient early warning services requires effective partnerships not only among the four government agencies mentioned above but also with many other different government agencies, as well as civil society organization, non-governmental organizations, and communities.

The Government is keen and committed to take proactive actions for flood and drought risk mitigation in the country over the coming years. The MI carried out comprehensive flood and drought risk modeling in ten river basins[6] which are most vulnerable to flood and drought risks under the Climate Resilience Improvement Project (CRIP) funded by the World Bank, leading to the development of basin level flood and drought risk mitigation investment plans. It also extended the basin planning to carry out feasibility studies of most urgent flood risk interventions in critical basins, began with the studies for the two reservoirs of the upper Kelani basin recommended in the basin

[6] The ten river basins are: Kelani ganga, Attanagalu Oya, Mahaweli ganga, Malwathu oya, Gin ganga, Nilwala ganga, Kala oya, Deduru oya, Maha oya and Gal oya.

planning for the Kelani basin. The MI extended the flood and drought risk modeling to several other basins to prepare investment plans for those basins. The Government intends to complete detailed engineering designs supported by a feasibility study to be able to implement feasible interventions in parallel with more broader water resources development interventions in the basin for agriculture development and drinking water supply.

Historically, the ID has a proven track record and experience in the design, construction, operation, and maintenance of large flood control projects, and continue to enhance its attention to address flooding in major river basins. The existing flood protection works of the Kelani river basin has been a long-standing product of the ID. However, it had been designed to provide a much lower level of protection in the lower Kelani basin at a time when the basin is less developed and inhabited. The capital city of Colombo and its sub urban areas of the lower Kelani basin has rapidly developed over the last 2-3 decades, making the area as the center of gravity of trade and commerce and home for a large population. This pace of development is likely to continue and if not accelerate over time. The Ministry of Megapolis and Western Region Development has future plans to undertake several social and economic development plans in the lower Kelani basin. With these expectations and the escalated frequency of flooding in the lower Kalani basin and resulting average annual loss to the economy over the recent years, the MI and the ID, under the direction of the high levels of the Government, are looking forward to increasing the level of protection in the lower Kelani basin with the flood risk mitigation interventions proposed under this MPA. In the 1980s and 1990s, the ID successfully implemented the construction of two large flood control projects in Gin ganga and Nilwala ganga basins and is currently responsible for their O&M. The MI/ID completed the flood and drought risk mitigation basin plans for these two basins under the ongoing CRIP, with a long-term view to upgrade the level of protection in those two basins to appropriate levels with new flood protection interventions as the funding is available.

The ID has taken further initiatives recently to enhance its capacity and effectiveness in flood and drought risk management to be able to meet the challenges of increasing incidence of flood hazards. The preparation of flood and drought risk mitigation basin investment plans for ten vulnerable basins was a major initiative toward this end. In addition, during the foregoing years the hydrology division of the ID strengthened its hydro-meteorological information system under the Dam Safety and Water Resources Planning Project (DSWRPP), funded by the World Bank. It is gradually built the capacity of a group of young engineers for state-of-art flood and drought risk modeling by engaging them as full-time counterpart staff over the last four years to work with the international consultant of CRIP preparing basin investment plans for the ten river basins. The MI and the ID are preparing a new Flood Management Act, replacing the outdated Flood Protection Ordinance no 22 enacted in 1955 to cater to the present and future flood management requirements. It recently established a new flood control and drainage unit within the ID to enhance its effectiveness in flood risk management.

DRM as a National Priority

Addressing these evolving impacts of climate-induced disasters, the Government set high priority for disaster management to underpin sustainable development, and highlighted in Vision 2025[7], the Government's latest development planning document. The GoSL partnered with the World Bank to further improve fiscal and physical resilience of the nation. To address comprehensive DRM challenges, the GoSL designed Climate Resilience Multi-phased Programmatic Approach (CRes MPA) to scale up the precedent efforts implemented as the Comprehensive Climate and Disaster Resilience Program which aimed at fundamental changes in and mainstreaming of disaster risk management (DRM) practices in priority sectors to improve the resilience of the country. The program integrated two Bank-financed lending and several technical assistance (TA) activities whose synergies maximize the overall outcomes and strengthen the resilience of Sri Lanka. To operationalize this program, the Bank approved two projects in 2014: a) CRIP and b) Development Policy Loan with a Catastrophe Deferred Draw-Down Option (CatDDO) (US$102 million) which is a contingent line of

[7] http://www.pmoffice.gov.lk/download/press/D00000000061_EN.pdf

credit to provide the country with access to immediate financial resources during a major disaster to enable efficient response and recovery. The DPL with CATDDO closed in May 2017, after the successful withdrawal of full loan amount following the floods and landslides in 2016[8]. Building on the initial outputs, the GoSL and the Bank has advanced the dialogue to mainstream DRM further into various sectors. To strengthen the fiscal resilience, a new Advisory Services and Analytics (ASA): Disaster Risk Financing and Insurance in Sri Lanka (P166332) has started to strengthen disaster risk financing and support sustainable instruments to manage disaster related contingent liabilities. Similarly, another ASA: Adaptive Social Protection System (P166770) was initiated to advance the design of a disaster-linked social protection mechanism, which would allow the Government to quickly identify, enroll and compensate the disaster-affected households.

This project will increase weather and climate change adaptation and resilience – better managing water resources – through non-structural and structural measures investment measures as well as the modernization of Sri Lanka's weather, water and climate services infrastructure, leading to improved monitoring, prediction and assessment of severe weather events, and climate variability and change. The project will have social and economic benefits by managing flood risks in prioritized basins and providing information for more efficient operation of weather-and climate-dependent sectors. This would be achieved by strengthening the capacity of the institutions responsible for production and delivery of weather, climate and hydrological information and services, institutions which are the main users of this information and end-users, in particular women and vulnerable communities.

Project Restructuring and Background

The Board approved Phase I of CRes MPA on June 25, 2019 as a three phased program for a loan amount of US$ 310 million (Loan Number 8996 LK). The, 2019 approved Project Appraisal Document dated May 31, 2019 (Report No; PAD2176) provides a detailed description of the overall scope of the approved CRes MPA, approved Phase I project and components and subcomponents of the Phase I project. However, on request of the Government, the scope of the approved CRes MPA is restructured by reducing the scope and estimated financial envelopes of its three phases. A detailed description of the scope of the three phases of the restructured CRes MPA and of the Phase I project is given below.

Revised CRes MPA Program Development Objective
The revised Program Development Objective of this MPA is to increase the number of people benefiting from improved weather and flood warnings, and multi-purpose water infrastructure for climate resilience.

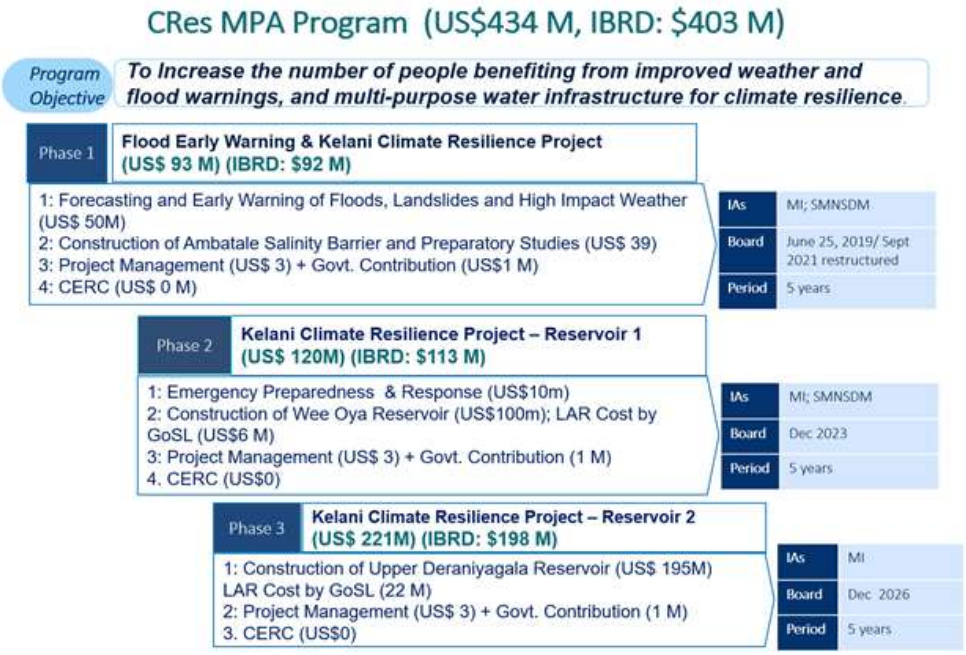
Restructured Scope and Project Description
Similar to the approved CRes MPA, the restructured CRes MPA will continue to consist of three distinct, inter-related and overlapping phases, but with revised scope, estimated costs, and time horizons (see Figure below). In summary, the restructured CRes MPA Phase I Project will include the following activities: i) Forecasting and Early Warning of High Impact Weather, Floods, and Landslide; ii) the Construction of Ambatale Salinity Barrier; and iii)Phase II and III Preparatory Studies. CRes MPA Phase II and III will support construction of two reservoirs in Kelani Basin as these could yield multiple benefits including flood mitigation and water supply for rapidly growing population of Colombo and Gampaha districts.

The following investments planned under the original three phases of the CRes MPA will be dropped from the restructured MPA: a) construction of flood embankments and pumping stations between Hanwella and Kaduwela of the Lower Kelani River Basin (under original Phase I, Component 2); b) land acquisition, resettlement assistance and safeguards implementation for flood protection infrastructure in the Lower Kelani River Basin (original Phase I, Component 3); c) construction of flood embankments and pumping stations in the remaining part of the lower Kelani basin between

[8] http://documents.worldbank.org/curated/en/674381528124689623/pdf/ICR00004342-05312018.pdf

Kaduwela and river mouth (under original Phase II); and d) construction of physical flood protection infrastructure in the downstream of Mundeni Aru basin (under original Phase III).

Figure 1: Restructured CResMPA Program



Phase I: Flood Early Warning Climate Resilience Project

The revised scope of CRes MPA Phase I Project is given below.

Table 1: Revised CResMPA Phase I Project Components and Budget

Components	**Total Estimated Cost (US$ Million)**	**IBRD (US$ Million)**	**GoSL (US$ Million)**
1. Forecasting and Early Warning of High Impact Weather, Floods and Landslides	50.00	50.00	0.00
2. Construction of Ambatale Salinity Barrier and Preparatory Studies	39.00	39.00	0.00
2.1 Construction of Salinity Barrier		*20.00*	0.00
2.2 Detailed designs of Wee Oya Reservoir, bidding documents, Resettlement Action Plan (RAP), Environmental and Social Impact Assessments (ESIAs)		*6.00*	
2.3 Feasibility studies and detailed designs for Upper Deraniyagala Reservoir, RAP and ESIA, bidding documents		*7.00*	
2.4 Pre-feasibility and Feasibility studies for trans-basin diversions from Kelani to dryer river basins		*1.00*	
2.5 Detailed Designs of Lower Kelani flood protection works		*5.00*	
3. Land Acquisition & Resettlement	*Dropped*		
4. Project Management	4.00	3.00	1.00
5. Contingency Emergency Response Component	0.00	0.00	
TOTAL	**93.00**	**92.00**	**1.00**

Component 1: Flood Forecasting and Early Warning in Priority Basins (US$50 million)

Sub-Component 1.1: Institutional Strengthening, Capacity Building and Project Management
This sub-component will aim to strengthen the working arrangements among the project's implementing institutions – the DMC, the DOM, the ID, and the NBRO and support the training of technical personnel, training support for main stakeholders and training activities for end-users, including agriculture, water resources, disaster risk management, energy and health. In addition, this sub-component will also support to build community resilience through the development of disaster management plans with the communities with clear community roles identified.

Sub-Component 1.2: Modernization of the Observing, Forecasting and Communication Systems Infrastructure
This sub-component will aim to upgrade and expand the meteorological and hydrological observation networks and ensure that these networks are well functioning and interoperable; modernize data management, communication and information and communication technology (ICT) systems; improve weather and hydrological forecasting processes and numerical prediction systems and refurbish DMC, DoM and NBRO offices and facilities. Two buildings are proposed: the National Flood Forecasting Center for the ID and the Disaster Analytics and Information Center for the DoM.

Sub-Component 1.3: Enhancement of Service Delivery Systems
This component will introduce severe weather and hydrological services and enhance end-to-end early warning systems and services, including impact-based flood forecasting services, flash flood guidance system, the establishment of a digital library of climate-relevant information for Sri Lanka, development of agriculture and climate advisory services and the creation of a National Framework for Climate Services (NFCS). The WMO Strategy for Service Delivery and its Implementation Plan9 provides in-depth and step- by-step guidance for the enhancement and development of service delivery. This component will be essential in improving the credibility and penetration of the government's climate forecasting and warning services to priority target end-users. The priority target end users and subsectors would initially include: (i) agriculture, (ii) fisheries; (iii) emergency and disaster risk management; (iv) water resource management; (v) land, sea, and air transport; and (vi) tourism industry.

Component 2: Construction of Ambatale Salinity Barrier and Preparatory Studies (US$39 million)

Subcomponent 2.1: Construction of Ambatale Salinity Barrier
This sub-component will finance civil and electro-mechanical works and consultancy services for construction supervision for the replacement of the existing salinity barrier across Kelani river at Ambatale. In 2002, the National Water Supply and Drainage Board constructed the existing structure to prevent the intrusion of saline water to the intake of the drinking water supply to metro Colombo and to maintain a high pool of the river water upstream of the barrier to enable the intake of freshwater water supply at high pumping efficiency. The original intention was to construct an inflatable dam mounted on an elevated concrete wall across the river, but the idea of constructing an inflatable (rubber) dam was subsequently dropped after the construction started, leaving an incomplete structure at the location. The current salinity barrier is a concrete filled sheet piled wall (weir) across the river, and for operational purposes, topped up by temporary sand-filled bags (sandbags) along the weir crest. Every year, the sandbags have to be removed just before the floods to allow safe passage of the river flood and during dry weather flow, reload the sandbags along the crest of the wall to prevent salinity ingression. Considering the increasing risks of salinity mix up with the rapidly increasing water supply demand of the Colombo metropolitan area and heavy annual expenditure and efforts required to place and replace the sandbags, the Government has decided to construct a new salinity barrier with gated control arrangements.

[9] *WMO Strategy for Service Delivery and its Implementation Plan (WMO 2015) WMO-No.1129*

Subcomponent 2.2 and 2.3: Preparatory Studies for Phase II and III
This sub-component will finance: i) detailed engineering designs and related environmental and social assessments, including environmental flows (eflows) and biodiversity surveys/ critical habitat assessment, land acquisition and resettlement action plans for construction of Wee Oya reservoir in upper Kelani basin to be undertaken in Phase II; and ii) feasibility studies, detailed designs, environmental and social impact assessments, including eflows and bio diversity surveys of the proposed Upper Deraniyagala reservoir, and iii) consultations, miscellaneous surveys and studies necessary for the construction of the two reservoirs. The reservoirs are to be constructed and existing infrastructure to be upgraded in Phase II and III of CRes MPA.

Subcomponent 2.4: Other Studies
This component will include: a) pre-feasibility level technical and socio-economic, environmental studies for trans-basin diversions from Kelani river; and b) assessments and facilitating consultations with key stakeholders for identifying next steps for improving local storm water management, flood plains or flood risk zone management in Lower Kelani Basin.

Subcomponent 2.5: Detailed Designs for Lower Kelani Flood Protection works
This subcomponent will finance all costs associated with detailed engineering designs, as well as associated social and environmental safeguards related studies for the flood protection works for the lower Kelani basin.

Component 3: Project Management (US$4.0 million)

This Component will finance expenditure related with activities required for implementation support in the areas of project management, procurement administration, financial management, social and environmental safeguards management, auditing, project supervision, and monitoring and evaluation.

Component 4: Contingent Emergency Response Component (CERC) (US$0 million)

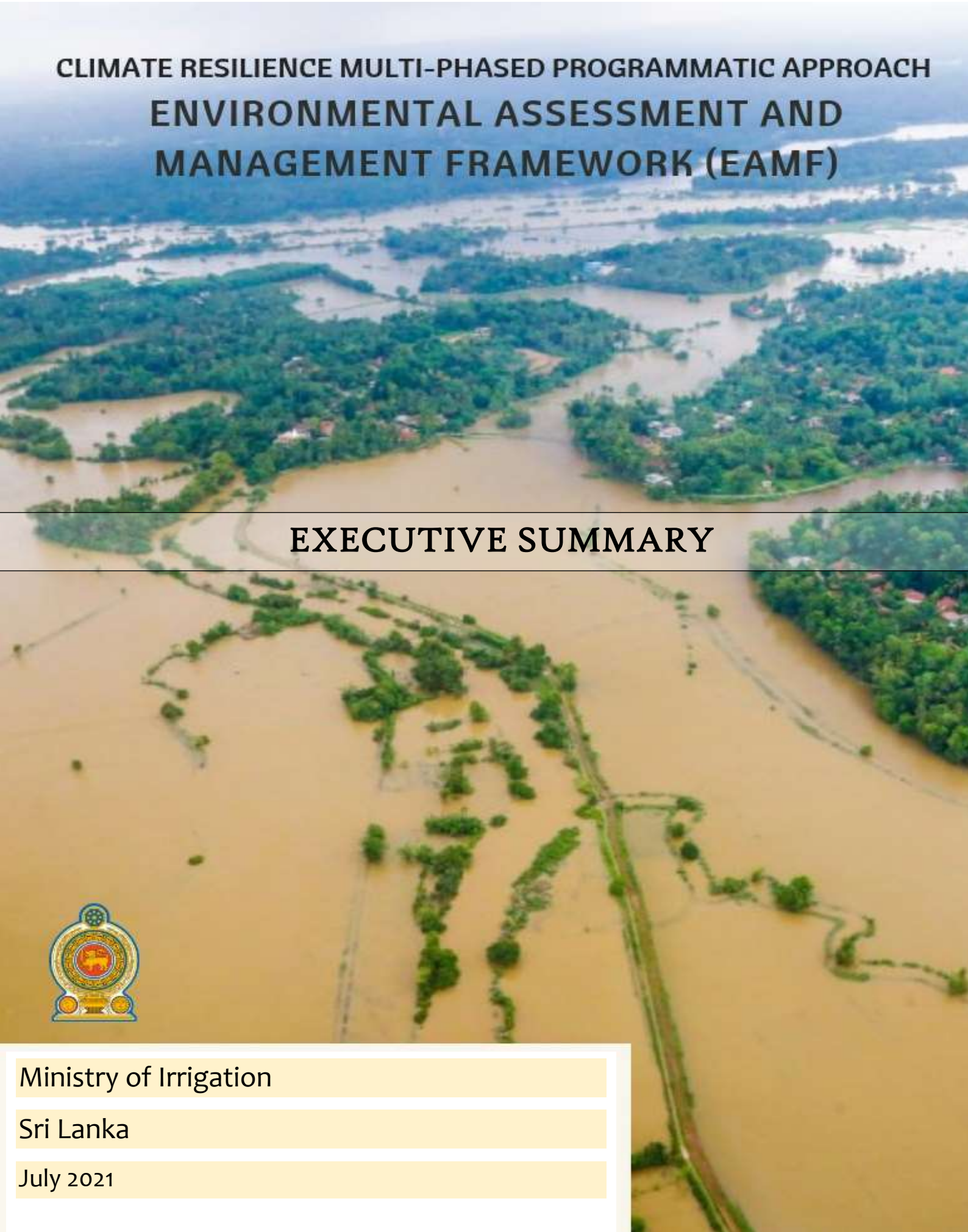
Disbursements under Component 4 will be contingent upon the fulfillment of the following conditions: (i) the Borrower as determined that an Eligible Crisis or Emergency has occurred and the World Bank has agreed and notified the Borrower; (ii) the Government of Sri Lanka has prepared and adopted the Contingent Emergency Response (CER) Implementation Plan that is agreed with the World Bank; and (iii) the Government of Sri Lanka has prepared, adopted, and disclosed safeguard instruments required, as per Bank guidelines, for all activities from the CER Implementation Plan eligible for financing under Component 5. Disbursements will be made against a positive list of critical goods or the procurement of works, and consultant services required to support the immediate response and recovery needs. All expenditures under this component, should it be triggered, will be in accordance with BP/OP 8.0 and will be appraised, reviewed, and found to be acceptable to the Bank before any disbursement is made.

Phase II: Kelani Climate Resilience Project – Reservoirs 1 (US$120 million; IBRDUS$113 million)

The scope of Phase II project will be: (i) construction of multi-purpose *Wee Oya* reservoir for flood risk mitigation in lower Kelani basin and augment drinking water supply to Colombo city; (ii) implementation of related environmental safeguards, land acquisition and resettlement assistance; and (iii) project management

Phase III: Kelani Climate Resilience Project – Reservoirs 2 (US$221 million; IBRD US$198 million)

The scope of Phase III project will be: (i) construction of multi-purpose Upper Deraniayagla reservoir for flood risk mitigation in lower Kelani basin with potential for hydropower generation; (ii) implementation of related environmental safeguards, land acquisition and resettlement assistance; and (iii) project management.



CLIMATE RESILIENCE MULTI-PHASED PROGRAMMATIC APPROACH

ENVIRONMENTAL ASSESSMENT AND MANAGEMENT FRAMEWORK (EAMF)

EXECUTIVE SUMMARY

Ministry of Irrigation

Sri Lanka

July 2021

1. INTRODUCTION

1.1 Objective of the Environmental Assessment and Management Framework (EAMF)

Projects and Programs financed with World Bank resources need to comply with World Bank Operational Policies. Therefore, components and related activities eligible for funding under this project will be required to satisfy the World Bank's safeguard policies, in addition to conformity with environmental legislation of the GoSL.

The CResMPA is categorized as an Environmental Category A program based on the potential risks associated with project interventions that would involve the establishment of hydrometeorological and early warning systems, flood and drought management planning and the construction of a Salinity Barrier, and detailed technical designs and environmental and social assessments for flood mitigation infrastructure in the lower Kelani basin and two reservoirs in the upper Kelani basin. While the overall program is expected to be environmentally beneficial as the major investments aimed at improving flood warning and flood protection, ensuring asset management and public safety, and providing multiple benefits reducing water-induced hazards to the physical environment and improving water supply, the planning, design, and eventual construction of new infrastructure is likely to result in significant environmental impacts that will need to be mitigated at the basin level and across the detailed design and implementation phases of the investments. The following environmental safeguard policies are applicable under the project, Environmental Assessment OP/BP 4.01, Natural Habitats OP/BP 4.04, Forests OP/BP 4.36, Physical Cultural Resources OP/BP 4.11, and Safety of Dams OP/BP 4.37. Potential environmental impacts associated with each of the Phases of the program are presented below.

Since details of sites and specific investments of the project are not available at this stage, site-specific Environmental and Social Assessments cannot be conducted. 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, as and when the need arises.

Therefore, the purpose of this document is to outline a framework for environmental assessment and management, giving details of potential environmental issues and guidelines on what type of environmental 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 Management Plans (ESMPs), Resettlement Action Plans (RAPs), and other relevant safeguard instruments. As stated earlier, it is being submitted in lieu of a project environmental and social assessments and has formed the basis for appraising the environmental and social aspects of the project. It will be made available for public review and comment in appropriate locations in Sri Lanka and in the 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 for sites and/or 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) where applicable, or any other agency, as applicable, under prevailing national environmental legislation in Sri Lanka.

In addition, for all physical activities, prior to the approval of disbursement of funds, the World Bank will also clear all safeguards documentation including, but not limited to site specific ESIAs, ESMPs, RAPs, EPR, BMPs, and others deem relevant.

The objectives of this Environmental Assessment and Management Framework 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 generic 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 EAMF
e. To provide practical resources for implementing the EAMF
f. To outline and sequence safeguard activities that will commence with project implementation

1.2 Structure of the EAMF

The EAMF has 7 chapters including the first chapter is an Introduction that provides the background to the program, program structure and objectives, program phases and a detailed description of the phase 1 project, with component descriptions and the reason for the preparing an EAMF. The chapters 2-7 cover the following:

- Environmental baseline conditions for the Kelani River Basin
- Environmental legislation, regulatory and institutional framework in Sri Lanka
- Applicability of World Bank's environmental and social safeguard policies
- Potential environmental and social impacts and mitigation measures associated with the proposed program
- The Safeguards due diligence process to be followed within the framework of the operation.
- Implementation arrangements under this project

The EAMF is supplemented by a Second Volume that contains the following Annexes that provides further information and guidance:

- Annex 1: Suggested Format for Environmental Screening Form
- Annex-2: Policy Framework: Environmental Assessment and Impact Mitigation
- Annex 3: Basic Information Questionnaire for the CEA
- Annex 4: Generic Terms of Reference for Environmental Assessment
- Annex 5: Terms of Reference for Environmental Assessment for sub-projects involving major dredging
- Annex 6: Generic Terms of Reference for Strategic Environmental Assessment (SEA) to be undertaken for Basin Investment Plans
- Annex-7: Format for Environmental Management and Monitoring Plan (EMMP)
- Annex 8: Generic Environmental Management Plan (ESMP) for Construction of Flood Mitigation Infrastructure and Works on Existing Structure on Water Ways.
- Annex 9: Generic Environmental Management Plan (ESMP) for Construction of Ancillary Facilities as New Infrastructure and/or Rehabilitation of Existing Infrastructure such as office buildings and pump houses.
- Annex 10: Guidance Note on Selecting Mitigation Measures to be Included in the Environmental Management Plan for Construction Projects in Sri Lanka
- Annex 11: Guidelines for the Rehabilitation of Burrow Pits
- Annex 12: Environmental Guidelines for Decommissioning and Demolition of Existing Buildings
- Annex 13: Guidelines for Health and Safety of Workers, Communities and Visitors
- Annex 14: Guidelines for the relocation of living and non-living articles of conservation value
- Annex 15: Procedures for Physical Cultural Resource Impact Screening, Assessment & Management
- Annex 16: Guidance Document on Managing Environmental Impacts via Design Recommendations for Physical Interventions on Water Ways
- Annex 17: Guidance Note on Identifying Human Elephant Conflict Issues and Recommended Actions
- Annex 18: Special Monitoring Checklist for Ensuring Safe Conditions for Workers

- Annex 19: Format for Environmental Management and Monitoring Plan
- Annex 20: Generic Monitoring Plan for Environmental Parameters for Construction Phase of Subprojects
- Annex 21: Terms of Reference for Recruitment of Contractor Environmental Safeguard Officer
- Annex 22: Terms of Reference for the Project Level Environmental Audit
- Annex 23: Environmental Safeguards Preparatory Tasks Tracking Sheet
- Annex 24: Generic Session Plan for Project Implementation Agency Staff Training on EMF and Environmental Safeguard Instrument Implementation, Monitoring and Reporting.
- Annex 25: Example of Disclosure Advertisement for Safeguards Instrument
- Annex 26: Consultation Notes on EAMF Consultations
- Annex 27 Resource List: COVID-19 Guidance

2 Introduction to Prevailing Environmental Conditions in Project Area

2.1 Baseline Information of the Kelani River Basin

2.1.1 Geographic Location and Salient Features

The Kelani River is a 145-kilometre-long (90 mi) river in Sri Lanka. Ranking as the fourth-longest river in the country, its basin stretches from the Sri Pada Mountain Range to Colombo. It flows through and in some locations borders the districts of Nuwara Eliya, Ratnapura, Kegalle, Gampaha and Colombo. The river flows through the capital of Sri Lanka, Colombo, ending at the coast in Modara.

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Kelani basin can be divided in to three distinct topographical units of lower (below 100m AMSL), middle (100 to 300m AMSL) upper peneplains (above 300m AMSL). The Kelani River Basin landforms vary significantly and includes 11 landforms, namely, Mountain, Escarpment, Hill and Ridge, Ridge and Valley, Hill and Valley, Mantled Plain (gently undulating to rolling plains), Rock Knob Plain (rough and broken relief of extensive tracts), Erosional Remnant (isolated, steeply rising bedrock controlled hills and ridges), Flood Plain, Coastal Plain, Sand Dune and Beach (Cooray, 1984). Slope steepness in the Kelani River Basin ranges from steep slopes with 25- 30 percent slopes in the Eastern parts to flat terrain in the lower Western portions.

The Kelani basin can be divided into three distinct topographical units that encompasses three peneplains i.e. lower (below 100m AMSL), middle (100 to 300m AMSL) upper (above 300m AMSL) (Cooray, 1984). This topographical variation occurring from the interior hilly terrain to coastal flat lands has resulted in the Kelani River Basin covering a range of landforms, from hillocks, ridges in its upper reaches to flood plains and coastal plains in the lower reaches. Although the flow of the river is influenced by the rainfall and tends to be torrential during the monsoonal periods, since the river basin is located within the wet zone there is considerable flow throughout much of the year in the main river as well as in its tributaries.

The area where the proposed interventions would occur falls primarily within the districts of Kegalle, Gampaha and Colombo. The fact that the entire area lies within the wet zone and spans across an elevational gradient, means that the Kelani river basin supports three main vegetation formations i.e. tropical wet evergreen forest (lowland rainforests) in its lower to mid reaches, and the sub-montane and montane forests at higher elevations (Jayasuriya, Kichener & Biradar, 2006). Rainforests are markedly stratified and characterized by tall and dense canopies. Lianas are an essential floral component here, while epiphytes, mainly composed of ferns, orchids, lichens, fungi and bryophytes, are also abundant. Numerous epiphyllous mosses and liverworts add diversity to its plant life forms. The sub-montane

forests have less distinct strata. Species here are more or less those found in the lower regions. Montane forests occur above 1500 m in the Central Highlands in the Upper Kelani river basin. Thus, cool and wet conditions that prevail here along with abundant mist, relatively strong winds and elevated solar radiation determine the nature and form of the vegetation at the higher altitudes. The trees are generally short in stature and branched and have microphyllous and leathery leaves (Rajakaruna, 2015).

The Kelani River is the third largest watershed in the country. The importance of the river in terms of habitats and biota, is partly due to its spread through a multitude of streamlets and smaller tributaries which in turn nourishes and creates smaller river basins. It is reported that around 117 micro-catchments are supported by the Kelani River. Many of the streams and river networks are lined by strips of riverrine vegetation. The lower reaches include areas within the Colombo district which passes through Kaduwela, Sri J'pura Kotte and Kolonnawa. These areas comprise low lying flood retention zones which are essentially marsh habitat. The sustenance of these urban wetlands is heavily dependent on the inflow from the Kelani River. These lowland areas wetlands are now severely fragmented.

Apart from the natural land use types, many anthropogenic land use types are found in the area. Among these are rural home gardens (mainly in mid and upper reaches), settlements in the lower reaches and plantations consisting paddy, rubber and tea and other minor crops. Several large and medium scale privately owned tea and rubber estates are located in the Kelani river basin. Further, there is a large number of small and medium scale plantations of coconut and cloves located within the Kelani river basin. Rambutan and Durian are two of the major fruit crops grown in the Kelani valley. Additionally, banana, pineapple and a range of other vegetables are grown in the Kelani river basin. About 34 percent of the Kelani river basin falls within the Western Province, where the population density is at its peak. Therefore, in comparison to the other areas of the basin, here a significant proportion of the natural habitats have been cleared for human settlements, roads and infrastructural facilities.

As is the case in the entire wet zone, much of the natural habitats, particularly the lowland rainforests, are highly fragmented and remain as pockets in an urbanized landscape. Any remnant forest patch here would hold high levels of biodiversity and hence warrants strict protection. Many of the forests here are under the Jurisdiction of the Forest Department or the Department of Wildlife Conservation (DWC). Overall the Kelani catchment has three wildlife sanctuaries (7,518 ha), 16 proposed forest reserves (11,423 ha), 13 forest reserves (2,585 ha) and a catchment area of 2,304 ha allocated for drinking water reservoirs. The majority of these are under the jurisdiction of the Forest Department which is also said to be in the process of expanding these reservations. At the lower most extreme, particularly within the Colombo area, the SLLRDC proposes to holistically manage the urban wetlands as a protected area, particularly to safeguard flora and fauna displaced as a result of urbanization.

Throughout the Kelani river basin, progressive expansion of human settlements, industries and the road network has resulted in the replacement of natural habitats by human modified environments. The population in the western parts of the basin is expected to expand with the new development initiatives including the Western Region Megapolis Plan. Low lying areas will be increasingly filled for settlements and for infrastructural facilities such as roads and bridges. While such alterations within the river basin are inevitable, the sustainability of the natural resources and ecosystem services would be vital to ensure the sustainability of the new initiatives. This would, therefore, necessitate more stringent conservation actions. The loss of biodiversity and the displacement of fauna together with other issues such as the spread of invasive, soil erosion and pollution are also increasingly threatening the remnant natural habitats and water courses particularly within the lower reaches of the Kelani River Basin.

2.1.2 Generic Salient Features of the Lower Reaches of the Kelani Basin

The Area from Hanwella to the river mouth, is fairly built up with anthropogenic land use along the 40km corridor of the project area currently proposed. Within the project footprint area the land use varies significantly however, the majority of the land is residential in particular private dwellings and houses. As you move downstream the density of the built up area along the embankments increase, with low income housing and privately owned commercial buildings and housing, including home gardens. Other significant land uses include agriculture and small plantations, manufacturing plants and low

income housing. Two land uses that are sensitive in particular include land belonging to religious establishments and cemeteries. Several cemeteries are located on the riverbank. The river is also used as the key water source for the CMR, there is one existing water treatment plant at Ambatale, and a proposed new one at Biyagama, as well as three river gauging stations, at Hanwella Ambatale and Nagalagam Street. Those who live close to or on the riverbank use the river for several purposes. Some of these uses include small scale fishing, bathing, relaxation, washing clothes, washing vehicles. Bank areas close to the sea are also used as docking points for fishing boats and small yachts. Locals require access to the river for all these activities and several steps and paths accessing the river. Some of these access points are also depicted below.

2.1.3 Key Environmental Issues in the Lower Reaches of Kelani Basin

While slope steepness varies from 0-5 along the lover Kelani basin, frequent flood incidents and fluctuations in flow levels and speeds, have led to erosion of the riverbanks. Some areas of the banks have been impacted by erosion with some locations already having bank protection in place to prevent further erosion, however, there have not been comprehensive management of erosion along the riverbanks which has added to the sediment loads. Conversion of low-lying land, such as wetland along the bank via filling for other uses is also commonly practiced.

However, the main environmental issue in the lower reaches of the Kelani is water pollution. In addition to sedimentation from infrastructure development and run off from areas along the banks as well. According to the Central Environmental Authority (CEA), most of the pollution comes from liquid waste discharged by the rapidly expanding industries that operate alongside the river, as well as agricultural runoff and domestic and municipal waste. Sewage from low-income settlements and industrial effluents (especially from tanning and metal finishing and processing industries) from a large number of industries are discharged conveniently to the Kelani River. An estimated 3,000 businesses that are required to have an environmental pollution license are located on the banks of the river. According to water tests conducted by the CEA near industrial locations, basic safe water quality limits are constantly exceeded, including chemical oxygen demand (36-37% below acceptable standards), dissolved oxygen (27-43% below acceptable standards), biological oxygen demand (7-13% over), and heavy metals (7% over). Due to this growing threat, local industries need to do more to comply with regulations to ensure wastewater discharged into the river is safe. While existing policy and legislation for curtailing industrial pollution exists in Sri Lanka, more effective enforcement is needed, as well as highly stringent monitoring mechanism to verify that all standards are met. The discharge of wastewater into the environment from industrial activities is regulated by the Environmental Protection Licenses (EPL) schemes implemented under the provisions of the section 23 (a) of the National Environmental Act of 1980. As specified in the Act it is mandatory to obtain an EPL to discharge wastewater into the environment from an industry. Industries which discharge wastewater into the environment are required to treat their wastewaters up to the relevant standards to be qualified basically to obtain an EPL. The licenses so issued will specify the standard and criteria to be met by the respective industry discharging its effluent into the environment. Even though the industries are covered with environmental protection licensing schemes, there is no regular monitoring mechanism to evaluate their meeting of discharge criteria and to control the pollutant loads discharged into the Kelani river. Studies conducted over the last decade have confirmed that while the 40-kilometer stretch between the town of Avisawella and the river outfall north of Colombo as the most polluted area, there is a fair amount of dilution that does not impact the water quality at one given point as would be expected, 150 sources of pollution, primarily from industries involved in tanning, oil refining, beverages, textiles and clothing, rubber, ceramics, food production, fertilizers, and plastics were identified.

This remains a serious concern, as major part of the demand for pipe borne drinking water supplies of Colombo. Kelani River is an important source of drinking water for the Colombo District and there is a water supply intake point at Ambatale, 14 kilometres from the river mouth. Furthermore, the lower reach of the river has been subject to saline water intrusion from the ocean making the water non-potable due to excessive sand mining and lowering of river beds at the lower reaches in the Kelani River, where sand mining is particularly severe with the salt wedge has extended inwards to Ambatale

(about 14 km from its point of discharge) on several occasions. This is a serious concern as much of the potable water supply for Colombo is extracted from the Kelani River at Ambatale.

2.1.4 Salient Features of the Wee Oya Reservoir

The Wee Oya Reservoir in the Kegalle district lies in the Yatiyanthota area. The boulders and rocky nature of the stream bed has given it a unique morphology with fast flowing sections, deep pools, and shallow and slow flowing areas which in turn provide ideal habitats for freshwater fish, crabs and terrestrial and aquatic herpetofauna and invertebrates. The stream was also lined with somewhat disturbed but relatively thick riverine forest stretches. Home gardens and naturalized rubber plantations are found scattered along its banks. The habitats associated with Wee oya would be particularly important for fish, birds and small mammals and primates. A previous study in Wee Oya itself has reported a range of fish species which include many endemics and threatened species (Silva et al. 2015). This diversity could be expected to occur throughout the tributaries of the Kelani basin.

2.1.5 Salient Features of the Upper Deraniygala (Ruecastle Reservoir)

The Ruecastle Reservoir lies in Deraniyagala and will be constructed across the Seethawaka Ganga. This area is located in close to the Ruecastle estate. Much of the area is under tea and rubber with some coconut. Here too the importance of the existence of a healthy strip of riverine vegetation for the wellbeing of the stream cannot be over Emphasized.

3 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 Reclamation and Development Corporation, Urban Development Authority, Water Supply and Drainage Board, Water Resources Board and Irrigation Department.

The Local Authorities (LA) are 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.

3.1.1 World Bank Safeguard Policies

The World Bank has a number of Operational Policies (OPs) and Bank Procedures (BPs) concerning environmental and social issues, which together are referred to as the Bank's Safeguard Policies. If, during the development of a project, it is considered that it is possible that a proposed project activity could be the subject of one of the safeguard policies, that policy is considered to have been triggered '. In the subsequent development of the project, that activity must be considered in more detail to determine whether it is actually of no concern or adequate mitigation can be applied to address the concern, or the activity should be removed from the project (or the whole project should be dropped). The sections below address those Safeguard Policies that have been triggered by the program under review, and the actions that have been taken to ensure that the requirements of those policies will be satisfied in the further development of the project.

The Multiphase program under CRes MPA is categorized as an Environmental Category A project based on the potential risks associated with project interventions that would involve both the construction of and further feasibility assessment for flood mitigation infrastructure identified for the management of flood associated risks in the Kelani Basin across its three phases. While the overall program is environmentally beneficial as the major investments aim at mitigating basin-level flood risks, ensuring asset management and public safety, and reducing water induced hazards to the physical environment, the construction of new infrastructure and upgrading of existing infrastructure are likely to result in significant environmental impacts that will need to be mitigated across the detailed design and implementation phases of the investments. The following environmental safeguard policies are applicable under the project, Environmental Assessment OP/BP 4.01, Natural Habitats OP/BP 4.04, Forests OP/BP 4.36, Physical Cultural Resources OP/BP 4.11 and Safety of Dams OP/BP 4.37.

Safeguard Policies Triggered by the CResMPA	Yes	No
Environmental Assessment (OP/BP 4.01)	√	
Natural Habitats (OP/BP 4.04)	√	
Pest Management (OP 4.09)		√
Physical Cultural Resources (OP/BP 4.11)	√	
Involuntary Resettlement (OP/BP 4.12)	√	
Indigenous Peoples (OP/BP 4.10)		√
Forests (OP/BP 4.36)	√	
Safety of Dams (OP/BP 4.37)	√	
Projects in Disputed Areas (OP/BP 7.60)		√
Projects on International Waterways (OP/BP 7.50)		√

4 Assessment of Environmental Impacts

4.1 Overview

The program, via its three consecutive phases, is expected to bring an overall positive environmental benefit to the program areas through ensuring a holistic and sound system for the management of floods and climate change related environmental impacts. While the overall program is environmentally beneficial as the major investments under each of the phases aim at mitigating basin-level flood risks, ensuring asset management and public safety, and reducing water induced hazards to the physical

environment, the construction of new infrastructure and upgrading of existing infrastructure are likely to result in significant environmental impacts that will need to be mitigated across the detailed design and implementation phases of the investments.

In addition, there is also the uncertainty regarding the exact locations of activities to be carried out under the project and project interventions that will involve physical alterations to the environment. For the Kelani Basin investments, the priority investments are pre-identified via the River Basin Level Flood and Drought Mitigation Investment Plan and incorporated into the initial phases of the program. The project is expected to fund further study and prioritization of the most suitable interventions out of those proposed under the plan for Kelani Basin.

This EAMF has been designed to achieve sound environmental practice within the purview of the CRes MPA. The EAMF provides the mechanism to allow program implementation by screening out or enhancing acceptability of sub-projects based on environmental criteria. By a simple process of elimination, the first step in the screening process is to identify subproject activities not suitable for funding. All processes described in the EAMF can be adjusted based on implementation experience.
The EAMF will be a living document and will be reviewed and updated periodically as needed and updated at each Phase.
It is recommended that the following types of subprojects are not financed and therefore should be considered as a "Negative List":

- Sub-projects that involve the significant conversion or degradation of critical natural habitats such as documented 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 and activities that generate large quantities of pollutants.
- Activities that could dangerously lead to the exposure of sensitive/critical/vulnerable habitats
- The reclamation of Wetlands that are nationally or internationally protected.
- Construction of large/new infrastructure within or directly adjacent (in buffer zones) to the following
    - Designated Protected Areas including marine protected areas.
    - Designated Sites of Cultural heritage- Sacred Cities/ UNESCO World Heritage Sites
    - Known Elephant Corridors
- Illegal Activities as defined specifically under the Forest Ordinance and Fauna and Flora Protection Ordinance, as outlined in Chapter 3. under the Forest Ordinance and Fauna and Flora Protection Ordinance, as outlined in Chapter 3.

4.2 Key Recommendations from the Strategic Environmental Assessment (SEA) for the Flood and Drought Management Investment Plan for the Kelani Basin.

In January 2019 a SEA was completed for the Kelani Flood and Drought Investment Plan by the CRIP Project. This document was reviewed and disclosed by the GoSL and the World Bank during the preparation of the CRES MPA prior to the original board approval. The ID incorporated all recommendations of the SEA into the Flood modeling work and will continue to use the key recommendations across the design phase for all interventions. The SEA recommendations have also been incorporated into the design of the project and the due diligence process, proposed via this EAMF. The main thematic recommendations from the Kelani SEA that are associated with the Cres MPA financed interventions have also been incorporated to project design and are summarized below:

- The SEA proposed that a fully-fledged Environmental Unit is established at the Irrigation Department manned by suitably qualified environmental professionals.- This has been set up under the Project Implementing Arrangements as a specific Environmental Unit will be set up and trained via the project interventions within the ID.
- Detailed recommendations on the reduction of the length and height of the flood bunds, and potential design related impacts were provided- these were taken in to account in the flood modeling and will be used for the detail design phase of the project that will be undertaken at implementation.

- On the Trans-basin diversions whereby the use of flood water in drought-stricken areas, will be optimized, resulting in gainfully utilizing the flood waters rather than simply sending it to the sea, thereby gaining maximum returns on investment to the national economy. The SEA recommended that the proposed intervention to divert Kelani Water be investigated fully for its flood reduction potential as well as for potential environmental and social impacts, in order to decide on the most cost effective and sustainable solution. – This and provisions for studies is included as part of the project and will be further strengthened in Study Terms of References and associated ESIAs
- For the embankments and two reservoirs to be established in Wee Oya and Upper Deraniyagala the SEA specifically recommends that the processes of the National Environmental Act be followed as the proposed interventions are "Prescribed Projects" which require full scale Environmental Impact Assessments. Since the study of alternatives is a prerequisite of the ESIA process, the above-mentioned study of all potential alternatives for flood control in the Kelani River Basin, will also result in fulfilling this essential requirement of the ESIA process.
- For the Weeoya and Upper Deraniyagala Tanks, the needs for either the ESIA to incorporate Biodiversity Assessment Principles should be included or independent assessments should be taken to inform the ESIA process. Due to the limitation in data, maps and known sites where the presence of endemics/point endemic fish and aquatic plants can be present.- The Generic ESIA TOR presented in this EAMF covers the requisite analytics for biodiversity assessment and also provides additional guidance to ensure robust due diligence.
- The SEA confirmed more positive benefits from the flood and drought management interventions proposed vs negative and recommended the following actions be undertaken via the program. This is as the pristine nature of many pockets along the Kelani basin are still preserved from development due to the accessibility and nature of the river meanders and surrounding areas.
- The SEA did not indicate via the analysis the need for No-go zones or areas of significant risk. It recommended that due associated High biodiversity loss and the proximity to a designated PA the Nawathan Reservoir which was part of plan be dropped and the GoSL has taken this recommendation on board. For other project locations, including those to be financed under this project, the SEA confirms they are appropriate for the said intervention subject to detailed ESIA.

4.3 Program Specific Preliminary Assessment of Environmental Impacts, Proposed Management Actions and Timeline

	Project Phase and Components	Potential Environmental Impacts	Nature of Study and Instruments Required	Timeline
1.	**PHASE 1: FLOOD EARLY WARNING AND CLIMATE RESILIENCE PROJECT**			
	COMPONENT 1: Flood Forecasting & Early Warning in priority basins (US$ 50 m)			
1.1.	Sub-Component 1.1: Institutional Strengthening, Capacity Building and Project Management:	This sub-component will support the training of technical personnel, evaluation of opportunities to introduce new and innovative sustainable business models, training support for main stakeholders and training activities for end-users, including agriculture, water resources, disaster risk management, energy, and health. In addition, this sub-component will also support to build community resilience through the development of disaster management plans with the communities with clear community roles identified. No environmental impacts are attributed to the activities to be undertaken under this component.		
1.2.	Sub-Component 1.2: Modernization of the Observing, Forecasting and Communication Systems Infrastructure:	This sub-component will aim to upgrade and expand the meteorological and hydrological observation networks and ensure that these networks are well functioning and interoperable; modernize data management, communication and information and communication technology (ICT) systems; improve weather and hydrological forecasting processes and numerical prediction systems and refurbish DMC, DoM and NBRO offices and facilities. Two buildings for forecasting will be designed and built namely, the National Flood Forecasting Center for the ID and the Disaster Analytics and Information Center for the DoM. Establishment of the flood forecasting and early warning and communications system and associated capacity building of ID and other relevant agencies will have many positive environmental impacts on responding to incidents of intensive climate change. The procurement of ITC equipment and systems may lead to the generation E-waste during the end of lifetime decommissioning period that will be handled via the National E-waste management system which is well established within the government.	The component will not finance any specific physical interventions and the procurement of ITC equipment for this component will be done with contractual provisions made with the National Regulations on E-waste management.	During project implementation

	Project Phase and Components	Potential Environmental Impacts	Nature of Study and Instruments Required	Timeline
		.		
1.3.	Sub-Component 1.3: Enhancement of Service Delivery Systems:	This component will introduce severe weather and hydrological services and enhance end-to-end early warning systems and services, including impact-based flood forecasting services, flash flood guidance system, the establishment of a digital library of climate-relevant information for Sri Lanka, development of agriculture and climate advisory services and the creation of a National Framework for Climate Services (NFCS). The WMO Strategy for Service Delivery and its Implementation Plan provides in-depth and step- by-step guidance for the enhancement and development of service delivery. This component will be essential in improving the credibility and penetration of the government's climate forecasting and warning services to priority target end-users. The priority target end users and subsectors would initially include: (i) agriculture, (ii) fisheries; (iii) emergency and disaster risk management; (iv) water resource management; (v) land, sea and air transport; and (vi) tourism industry. There are no associated environmental impacts foreseen with this activity.		
	COMPONENT 2: CONSTRUCTION OF AMBATALE SALINITY BARRIER AND PHASE II AND III PREPARATORY STUDIES (US$ 39 MILLION)			
1.4.	Subcomponent 2.1: Replacement of the existing salinity barrier at Ambatale (US$ 20 million)	The proposed site in Ambatale has been anthropogenically altered via the construction of a weir, used for extraction of water to the Colombo metropolitan region. The existing salinity barrier at this location is a pair of concrete filled sheet pile walls across the river with a pile of moveable sandbags on top it to raise the water level upstream of the barrier. The existing salinity barrier had been constructed to address the threat of salinity intrusion to the water supply intake during dry weather and low downstream river flow periods. However, the modeling results indicates that the barrier causes a sizable increase of flood water levels upstream with its impact propagating several kilometers upstream of Ambatale before reducing to zero. It is now proposed to replace this structure with barrage with flap gates which will allow rapid river discharge during floods and arrest salinity intrusion during dry weather. The proposed new gated barrage (new salinity barrier) will be designed to serve as a major flood control structure, a salinity barrier, and a regulator to flush off salinity downstream of the intake during low flow periods. This will have positive impacts	An SEA was carried out and completed for the Kelani Basin Level Flood and Drought Mitigation Investment Plan in June 2018. The SEA identified the highlighted potential impacts as those that can result from the proposed intervention to be financed under this subcomponent. The subproject will be subject to a site-specific ESIA and subsequent ESMP. The findings from the SEA and recommendations have already been imported by the ID in to the process of feasibility modeling and physical intervention and operational designing processed areas that would face potential resulting hydrological impacts, identified via the SEA process,	A site-specific EA for the Salinity Barrier has been completed based on the preliminary designs in 2019 by the MI and cleared by the Central Environmental Authority of Sri Lanka and preliminary comments have also been provided by the World Bank. This document is to be updated when detailed designs for the intervention are finalized and will be subject to the Bank's clearance and incorporation of guidance provided in this EAMF.

	Project Phase and Components	Potential Environmental Impacts	Nature of Study and Instruments Required	Timeline
		on the ecosystem as it will ensure that the impacts of salinity intrusion are managed. Potential environmental impacts due to the structure include potential hinderances to movement of aquatic species and fish migration and requires specific design measures to be incorporated to ensure there are no access restrictions. Annex 16 presents guidance on the design of structures to mitigate potential impacts on fish and fish migration in water ways. Construction stage impacts: All physical interventions under this subcomponent will lead to site-specific and temporary impacts associated with construction work, highlighted in detail in Section 4.3 of the EAMF, and impacts due to use of construction material such as sand, gravel and metal. Some of the requirements identified for investments are also due to inadequate operation and maintenance of infrastructure. Hence there is a necessity to develop and agree on an operation and maintenance system that is cost-effective and includes a plan to obtain regular resources for the purpose.	have been included as part of the project area as well. Site specific ESIA are required to further study the nature of potential impacts under that may occur based on the final designs of this activity that are to be undertake as specific project locations, when they are identified, and designs have been completed.	
1.5.	Subcomponent 2.2 and 2.3: Preparatory studies for Phase II and Phase III (US$ 13 million)	This sub-component will finance: i) detailed engineering designs and related environmental assessments, land acquisition and resettlement action plans for construction of Wee Oya reservoir in upper Kelani basin to be undertaken in Phase II; and ii) feasibility studies, detailed designs, bio diversity surveys, environmental impact assessments of the proposed Upper Deraniyagala reservoir, and iii) consultations, miscellaneous surveys and studies necessary for the construction of the two reservoirs. The activities itself will not have specific Environmental impacts as they will be designs and assessments.	Environmental Screening and EAs will be undertaken for these interventions during Phase I, when preliminary designs are available under the activities specified for Component 2.2 for the Wee Oya and Upper Deraniyagala Reservoirs. Specific Terms of Reference will be developed for the studies to meet the requirements of the World Bank and National legislations.	Environmental Screening of the project site should be conducted as soon as the draft preliminary design is available to understand what sort of due diligence assessments are required for the two sites, followed by the development of a Terms of Reference for these assessments as guided by this EAMF, that should be conducted prior to inform the detailed designing process for both reservoirs to bring in principles of avoidance and mitigation via design as much as possible.

	Project Phase and Components	Potential Environmental Impacts	Nature of Study and Instruments Required	Timeline
1.6.	Subcomponent 2.4: Other studies (US$ 1 million):	This sub-component will finance: a) pre-feasibility level technical and socio-economic studies for trans-basin diversions from Kelani river; and b) assessments and facilitating consultations with key stakeholders for identifying next steps for improving local storm water management, flood plains or flood risk zone management in Lower Kelani Basin. While the activities itself will not have specific Environmental impacts as they will be assessments the Terms of References (TORs) of the pre-feasibility studies will be assessed to incorporate as much as possible Nature Based solutions for managing flood risks where possible to bring out more positive outcomes.	Review of TORs to understand and present the need for any supplementary ESIA.	At the point TORs
1.7.	Subcomponent 2.5: Detailed Designs for Lower Kelani Flood Protection works (US$ 5 million)	This subcomponent will finance all costs associated with detailed engineering designs, as well as associated social and environmental safeguards related studies for the flood protection works for the lower Kelani basin. The activities financed itself will not have specific Environmental impacts as they will be designs and assessments.	Environmental Screening and ESIAs will be undertaken for these interventions during Phase I, when preliminary designs are available under the activities specified for Component 2.5 for the flood protection infrastructure for the lower Kelani Basin. The GoSL has a preliminary EIA done in line with the requirements of the CEA and World Bank under the CRIP project which will be updated in to a joint ESIA. Specific Terms of Reference will be developed for the studies to meet the requirements of the World Bank and National legislations.	Environmental Screening of the project site should be conducted as soon as the draft detailed design is available to understand the depth of due diligence assessments needed to be conducted and followed by the development of a Terms of Reference for these assessments as guided by this EAMF, that should be conducted prior to inform the detailed designing process to bring in principles of avoidance and mitigation via design.
1.8.	**COMPONENT 3: PROJECT MANAGEMENT (US$ 4.0 million)**	This Component will finance expenditure related with activities required for implementation support in the areas of project management, procurement administration, financial management, social and environmental safeguards management, auditing, project supervision, and monitoring and evaluation. No environmental impacts are attributed to the activities to be undertaken under this component.		

	Project Phase and Components	Potential Environmental Impacts	Nature of Study and Instruments Required	Timeline
1.9.	**COMPONENT 4: Contingent Emergency Response Component (CERC) (US$ 0 million)**	Disbursements will be made against a positive list of critical goods or the procurement of works, and consultant services required to support the immediate response and recovery needs. All expenditures under this component, should it be triggered, will be in accordance with BP/OP 8.0 and will be appraised, reviewed, and found to be acceptable to the Bank before any disbursement is made. While no-specific activities are identified at this point, this component will support recovery and reconstruction activities followed by a natural disaster event. In such situations the project will use generic ESMPs to undertake reconstruction work of the first year following the disaster event and any activity that will be financed the second year onwards will follow the requirements laid out for the nature of interventions as per the EAMF. However, in the event a dam is breached based on the scope and complexity of the dam, the requirements described under OP 4.37 will need to be followed.		
2.	**PHASE II: Kelani Climate Resilience Project – Reservoirs 1 (Cost US$ 120 m; IBRD US$ 113m)**			
2.1.	The scope of Phase II project will be: 1) construction of multi-purpose Wee Oya reservoir for flood risk mitigation in lower Kelani basin and augment drinking water supply to Colombo city; ii) implementation of related environmental safeguards, land acquisition and resettlement assistance; and (iii) project management	While exact impacts cannot be assessed at this point the Phase-I will finance detailed Environmental Assessments will be conducted for the said interventions and all associated facilities. The associated impacts with Phase II will be further assessed via ESIA and other due diligence instruments to put in place the requisite measures for management of risks and implementation of the mitigation hierarchy in line with the proposed activities. The SEA for the Kelani basin summaries the following as areas of impacts that need to be considered in the due diligence and planning and design process of these investments, under PHASE I. Wee-Oya Reservoir Wee-Oya Reservoir is the smallest of the four reservoir interventions proposed to construct across Wee-Oya tributary of Kelani River with a catchment area of 53 km2, it is in North-East of Kelani River Basin and is smaller in size in comparison to other reservoirs presented in flood. Wee-Oya basin also has the similar rural agriculture setting. It is a rather small size reservoir and has a positive impact in the form of relieving the flood victims in the downstream to a limited extent and maintain a high-water table in the surrounding area making it suitable for agro-based livelihoods in the immediate surroundings. The main negative impacts include the following; clearance of a significant area of land, loss of limited agricultural area of around 162 ha, presently under Paddy, Rubber, Minor Export Crops and Homesteads, relocation of 550 persons (110 families) taking away their present livelihoods, which call for systematic resettlement, and loss of 4 commercial buildings and 110 residential buildings. The area around the Wee Oya Reservoir has also documented the presence of a number of endemic fish species via studies conducted by local universities and therefore the ESIA study will warrant detailed assessment focused on assessing and understanding any potential impacts via project interventions to natural habitats, biodiversity and environmental services. Potential impacts from the interventions include but are not limited to the following. • Loss of riverine forests due to inundation • Population reduction in river associated biota and riverine species • Increase in saltwater intrusion downstream		

	Project Phase and Components	Potential Environmental Impacts	Nature of Study and Instruments Required	Timeline
		• Hinderance movement of fish and other aquatic species along river • Degradation of water quality down stream • Dam break risk, flood wave releases to downstream • Excess recharge of groundwater can negatively impact due to possible contaminations • Loss of agricultural and homestead area • Relocation and/or resettlement of people. • Construction stage impacts associated with physical interventions. • Operational impacts associated with water balance and management. The ESIA should inform the design of the project via the mitigation hierarchy, via ensuring principles of avoidance where possible and design alterations where possible are taken into consideration, as well as the incorporation where possible Nature Based solutions and infrastructure.		
3.	**PHASE III: Kelani Climate Resilience Project – Reservoirs 2 (Cost US$ 221 m; IBRD US$ 198 m)**			
	The scope of Phase III project will be: i) construction of multi-purpose Upper Deraniayagla reservoir for flood risk mitigation in lower Kelani basin and hydropower generation; ii) implementation of related environmental safeguards, land acquisition and resettlement assistance; and (iii) project management.	While exact impacts cannot be assessed at this point the Phase-I will finance detailed Environmental Assessments will be conducted for the said interventions and all associated facilities. The associated impacts with Phase II will be further assessed via ESIA and other due diligence instruments to put in place the requisite measures for management of risks and implementation of the mitigation hierarchy in line with the proposed activities. The SEA for the Kelani basin summaries the following as areas of impacts that need to be considered in the due diligence and planning and design process of these investments, under PHASE I. Upper Deraniyagala Reservoir (Formally Reu Castle) The Upper Deraniyagala Reservoir is a medium size reservoir intervention proposed to be constructed across Seethawaka River (a main Tributary of Kelani River) with a catchment area of 184 km2; it is located in South of Kelani River Basin, in Deraniyagala DSD. Rucastle has the similar rural agriculture setting of plantation nature (Rubber, MEC), paddy and mixed garden and, on the left bank of the river. Being a medium size reservoir, it has positive impact in the form of relieving the flood victims in the downstream and maintain high water table in the surrounding area making it suitable for agro-based livelihoods for the potential inhabitants. The main negative impacts include, loss of vast agricultural area of over 2,681 ha, presently under Paddy, Rubber, Minor Export Crops and Homesteads, b) relocation of 9,550 persons (1,950 families) taking away their present livelihoods, which call for systematic resettlement, and c) loss of 692 commercial buildings and 1,910 residential buildings. Potential impacts from the interventions include but are not limited to the following. • Loss of riverine forests due to inundation • Population reduction in river associated biota and riverine species		

	Project Phase and Components	Potential Environmental Impacts	Nature of Study and Instruments Required	Timeline
		• Increase in saltwater intrusion downstream • Hinderance movement of fish and other aquatic species along river • Degradation of water quality down stream • Dam break risk, flood wave releases to downstream • Excess recharge of groundwater can negatively impact due to possible contaminations • Loss of vast amounts agricultural and homestead area • Relocation and/or resettlement of a significant amount of people. • Construction stage impacts associated with physical interventions. • Operational impacts associated with water balance and management. The ESIA should inform the design of the project via the mitigation hierarchy, via ensuring principles of avoidance where possible and design alterations where possible are taken into consideration, as well as the incorporation where possible Nature Based solutions and infrastructure.		

5 Environmental Management Framework

5.1 Environmental Safeguards Processing Steps

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

1. Step 1: Environmental Screening of Identified Physical Subprojects
2. Step 2: Preparing Environmental Safeguard Assessments, Management and Monitoring Instruments
3. Step 3: Concurrence and Clearance
4. Step 4: Inclusion of Environmental Specifications and Environmental Management Plan in bid documents
5. Step 5: Environmental Method Statements and ESHS Performance Clauses (for large investments)
6. Step 6: Compliance Monitoring and Reporting

5.2 Environmental Screening of Identified Physical Subprojects

Environmental screening is counted to be a useful tool in identifying safeguard issues in large investment programs consisting of many sub-projects. The main objective of Environmental screening of sub-projects will be to (a) determine the anticipated environmental/social impacts, risks and opportunities of the sub-project (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.
The main objective of Environmental Screening of sub-projects will be to (a) determine the anticipated environmental impacts, risks and opportunities of the sub-project (ii) determine if the anticipated impacts and public concern warrant further environmental analysis, and if so to recommend the appropriate type and extent of Environmental Assessment needed. The previous chapter provides recommendation on the level of environmental analysis for selected activities as broad guidance; however, the final judgment will be made post the screening exercise. Screening should go hand in hand with project concept development. This way 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 screening report should be prepared by the environmental expert/s of the PMU with field visits and available data and information (*implementation arrangements are given in the subsequent chapter*). Where required they may seek the assistance of expert environmental consultants to facilitate the screening process. Once the report is ready it will be made available to the project implementing agency to take necessary actions particularly in relation to the recommendation given in the report. All Environmental screening reports are subject to world bank review and clearance prior to the preparation of identified instruments.

5.2.1 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.

5.3 Preparing Environmental Safeguard Assessments, Management and Monitoring Instruments

5.3.1 Environmental and Social Impact Assessment (ESIA)/Initial Environmental Examinations (IEE)

ESIA 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 ESIA/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 assessment the first step will be to provide CEA the preliminary information on the proposed project, in order for the process to be initiated. 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 screening is conducted for the subproject the following steps need to be taken.

- For sub-projects that require ESIA\ 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 safeguards requirements as per the EMF 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 Environmental Assessment as per World Bank Policy OP4.0, the PMU Safeguards team in collaboration will produce a Terms of Reference which will be reviewed and cleared by the ISA Task team prior to commencement of the study.

5.3.2 Guidance on Biodiversity and Habitat Assessments

Via the project environmental screening it will be deduced if standalone biodiversity and/or habitat assessments are needed for project activities as part of the due diligence mechanism. The findings of the SEA for the Kelani Basin will be taken as the basis of guidance to make this deduction as well. Where it is deduced that stand alone assessments are required the guidance below will be used to develop site specific Terms of References for these activities and where the process can be incorporated with the ESIA/IEE process they will be used to define the specific nature of assessment required and guide the assessment process.

While the If during the Environmental Screening process any significant impacts on natural and critical habitats and ecosystem services is identified, the baseline should include field surveys over multiple seasons, to be undertaken by competent professionals and with the involvement of external experts, as necessary. Field surveys and assessments should be recent, and data should be acquired for the direct project footprint, including related and associated facilities, the project's area of influence, and potentially beyond.

5.3.2.1 Guidance for conducting Assessments on Biodiversity and Habitats as part of ESIAs, IEEs or as stand-alone assessments.

All studies should be informed by a literature review and initial desktop analysis. The extent of the literature review will depend on the sensitivity of the biodiversity attributes associated with the project's area of influence and the ecosystem services that may be affected. Literature reviews could include sources such as the following at minimum (i) peer-reviewed journals, (ii) regional assessments, (iii) national or regional

planning documents (for example, the National Biodiversity Strategy and Action Plan and Local Biodiversity Action Plans), (iv) assessments and studies in the location of the project and its area of influence, (v) web based data such as information provided in the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, (vi) national Red Books and Lists, (vii) landscape prioritization schemes including Key Biodiversity Areas, (viii) systematic conservation planning assessments and plans, and (ix) masters and doctoral theses , among others the Integrated Biodiversity Assessment Tool (IBAT) as well.

The respective ESIA, IEE or other assessments should spell out project-related direct, indirect, and residual impacts on species, ecosystems, and ecosystem services identified in the baseline studies. Direct impacts might include (i) disturbance or reduction in species' populations or their habitats; (ii) effects from emissions and effluents, (iii) alterations of surface hydrology, land forms, and coastal processes; (iv) competition by invasive species, edge effects, and migration barriers; and (v) reduced access to ecosystem services, including loss or degradation. Indirect impacts might include project-induced access by third parties, in-migration, and associated impacts on resource use, including land conversion, hunting and wildlife trade, and spread of invasive alien species. Mitigation and management measures should then be defined to address adverse impacts to biodiversity or ecosystem services. Residual Impacts are those that might remain after measures are taken to avoid and minimize impacts on biodiversity and ecosystem services and/or to restore viability. It should be noted that a reliable determination of residual impacts on biodiversity needs to take into account uncertainties in the effectiveness of proposed mitigation measures. This is especially relevant with respect to the projects ability to ensure adequate restoration of biodiversity and ecosystem services. Where there is significant uncertainty, the project should take a conservative approach in ascertaining the significance of residual impacts.

5.3.3 Environmental Management Plans (ESMPs)

Certain activities will have explicit impacts on the natural environment and thus require a specific plan to institute and monitor mitigation measures and take desired actions as timely as possible. An Environmental and Social Management Plan (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

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.

The PAA will request the project proponent to prepare an Environmental Management Plan (ESMP), to address any potential environmental and social issues as well as incorporate the PAA/CEA's approval conditions. Ideally, all ESIAs and IEEs which identifies adverse environmental impacts should prepare an ESMP as part of the report.

In World Bank, funded projects, a standalone ESMP is only considered appropriate in situations where a detailed environmental analysis is not required.

As per the nature of the physical interventions identified, it will be Mandatory that all proposals/ physical interventions implemented will require an ESMP 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 will be implemented by the respective contractors implementing the subproject and monitored accordingly by the project implementing agency during the construction phase.
In addition, ESMPs will require to have specific impacts identified regarding operational impacts that may occur during the operation of solid waste management A comprehensive set of Generic ESMPs and guidelines to facilitate sound ESMP preparation during the project implementation stage are presented in Volume II of the EAMF.

In addition, Volume II of the EAMF also 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.

5.4 Management of Impacts on Physical Cultural Resources

5.4.1.1 Physical Cultural Resources Safeguard Processing Steps

Implementation of the PCR Safeguards requirements will follow the steps presented below closely linking with activity planning, design, and implementation steps.

1. The Environmental Screening Form, Generic EA and SEA Terms of Reference presented in Annex 1, 4 and 5 respectively, include adequate provisions for the identification of any potential impacts on PCRs. The project shall make every effort to avoid the removal and/or destruction of any property of cultural, archeological or heritage significance.
2. In the event the site-specific ESIA clearly identified unavoidable impacts and recommends the relocation of any property of physical cultural resource (PCR) of archeological/cultural importance the provisions with regard to Physical Cultural Resources, presented in Annex X: Guidelines for the relocation of living and non-living articles of conservation value, should be implemented prior to commencement of any work on the site.
3. For any proposed project intervention to be conducted **either within or in close proximity to a known heritage asset**, either locally, nationally, or internationally designated, should follow the procedure of due diligence outlined in **Annex 15, in addition to the Environmental Screening Process.**
4. All works contracts regardless of locations will include in the ESMP the measures outlined in section 5.5.2.2 on precautionary procedures for the management of chance found physical cultural resources.

5.4.2 Ensuring Compliance with Safety of Dams (OP 4.37)

For any large dams (which are normally 15 meters or greater) and dams below that height but are considered to be complex from a design and management point of view either be rehabilitated of constructed under the program, as per OP/BP 4.37 requires that investigations, designs, construction and operation of the dam be reviewed by an independent panel of experts.

1. The panel should also review detailed preparation and implementation plans, construction supervision plans, quality assurance plans, O&M plans, and an emergency preparedness plan. The panel's inputs will be required for prequalification of bidders and during procurement as well as for periodic safety inspections after the completion of the civil works.
2. The Panel will consist of three or more experts, appointed by GoSL and acceptable to THE World Bank, with expertise in the various technical fields relevant to the safety aspects of the particular dams. The primary purpose of the panel is to review and advise the implementing agency of GOSL on matters relative to dam safety and other critical aspects of the dam, its appurtenant structures, the catchment areas, the area surrounding the reservoir and downstream areas. The Panel should also review and evaluate the implementing agency's operation and maintenance procedures and recommend improvements if necessary.

3. The ID, one of the concerned dam owner agencies is also the responsible implementing agencies of CResMPA and has prior experience under the DSWRPPP on carrying out similar work thus should lead the process on brining the panel together.
4. Once the panel membership is established, it should be sent for World Bank clearance and concurrence.

5.5 Management of Any Potential Impacts on Forested Areas

The project environmental screening mechanism already included 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 guidance presented I the EAMF s and submitted for World Bank clearance.

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

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 comings time at CResMPA 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).

5.6.1 Concurrence and Clearance

5.6.1.1 Environmental Clearances

As per National Regulations: As per the 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

5.6.1.2 Clearance Procedures with the World Bank

All safeguards instruments listed below will be subject to World Bank prior review and clearance by the World Bank safeguards specialist assigned to the CResMPA. Only cleared safeguards instruments can be included in bidding documents and other procurement instruments. No work can commence on project sites without due clearance of the respective safeguards instrument.

- All Environmental Screening Reports

- All TORs for EAs
- All EAs, and ESMPs
- Panel membership names for any Dam Safety Panels established.

Upon project commencement the safeguards specialist will be required to prepare a table, tracking all requisite safeguards instruments for sub-projects. This sheet should be continuously updated and managed by the project PMU and shared with the World Bank safeguards specialist every quarter or when requested.

5.7 Inclusion of Environmental Specifications and Environmental Management Plan in bid documents

It is important to ensure the environmental 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 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 environmental officer(s) will be responsible for this step.

With the revision to the World Bank's Standard Bidding Documents in January 2017, Environmental and Social Health and Safety (ESHH) requirements are now more clearly defined in the document and there is also the need for a ESHS Performance Security to be incorporated in to 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.

5.8 Compliance Monitoring and Reporting

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

- Determine whether the project is being carried out in conformity with environmental safeguards and legal agreements
- Identify issues as they arise during implementation and recommend means to resolve in 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. An appropriate environmental supervision plan will be developed aiming to ensure the successful implementation of the ESMP across the project and will be shared with the World Bank.

The environmental specialist and the environmental safeguards team based in the PMU will be responsible for overall monitoring of the ESMPs up to the project closure and transfer for management to the designated authority.

Regular World Bank missions will include specialists to monitor the project's compliance with World Bank safeguard policies. The progress of environmental 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 quarterly basis from the commencement of the contract.

5.8.1 Project Level Environment Audit

Most of the development projects in Sri Lanka follow EAMFs 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. This could be achieved through regular environmental audits which will look at the experience of incorporating environmental safeguards.

The purpose of the environmental 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

An environmental audit for CRMPA 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 EAMF. 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.

5.8.2 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 EAMF and all Environmental Assessment documentation, including ESIAs, and ESMPs, 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 ESIAs 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. The website will also enable the community opportunity to provide comment electronically.

All safeguards Documentation will also be made available in the Sri Lanka World Bank external website.

5.8.3 Grievance Redressal Mechanism

The implementing agencies, both the Project Coordination Team and implementation units, will establish a grievance mechanism to receive and facilitate resolution of the affected communities' concerns and about the implementing agency's environmental and social performance during project implementation.

The ESMP and its management program will establish a mechanism to address concerns raised promptly that is readily accessible to all segments of the affected communities, at no cost and without retribution.

For the grievances, the project implementation and/or supervision team at site will keep a feedback register and let the local stakeholder know that they can register their project related complaints or comments or

suggestions. The project team will review the feedback and take appropriate actions. The overall environmental grievance process will be in line with the social grievance process proposed.

5.8.4 Consultation Plan

The CRes MPA has undertaken several consultations during project preparation on the overall planned interventions to be financed by the project. Instrument wise consultations need to be taken around each project site and as well as consultations on the EAMF. These should be duly documented in the respective outputs of the consultancies. In addition, the MI and IAs will conduct continuous consultations with stakeholders and report as part of safeguards monitoring. In this line at project implementation a detailed consultation plan will be prepared and endorsed by the World Bank task team during project preparation.

The plan will outline dates of consultations, locations, and other information as relevant to the subprojects and the consultation notes will be documented and shared with World Bank. Consultations programs should first provide information in the form of briefs and relevant documents to the group being consulted at minimum at least 2 weeks prior to the date of consultation. The feedback and concerns raised on environmental safeguards issues, during consultations are to be thoroughly evaluated and any issues and concerns, once verified and where practically possible in the context of the project, should be mitigated via the relevant environmental safeguards instrument.

Consultations are inbuilt in the project planning, design, and implementation approach. Prefeasibility and feasibility team will conduct and record consultations with the local stakeholders and project affected persons. During construction, the site supervision team will consult regularly with the affected people/community as well as local stakeholders for their observations and feedback.

5.8.4.1 Post Project Restructuring Consultations of EAMF during the Covid Lock Down Period

While the project scope has been reduced, no new interventions have been included into the original program which was widely consulted during preparation and prior to board approval. EAMF has been consulted and disclosed by the GoSL and by the World Bank in December 20, 2018. Considering the proposed alternations to the phasing of project interventions and removal of other identified interventions, the EAMF has been amended to reflect the phasing of the due diligence process and project scope as well as the new project implementing arrangements, while other contents have remained the same. The original detailed consultation notes are presented in Annex 26 of Volume 2 of the EAMF.

Due to the Covid-19 Pandemic related lock down in Sri Lanka the EAMF updates in line with the project restructuring could not be widely consulted due to the provisionary conditions issues by Health Authorities in line with Lock down in the Western Province and Island wide. Due to this a specific consultation plan was prepared in June 2021 as part of the Social Management Framework. The EAMF consultations will be aligned and coordinated with the same timelines.

5.9 Safeguards Training

The be trained by the Environmental Specialist and Social Specialist of the World Bank project team on the EAMF implementation, safeguards, and procedural requirements of the World Bank.

Training will be provided for the Implementing Agencies on how to monitor and report on environmental and social safeguards requirements by the E&S Coordinator. They will be also provided training on the use of Grievance Redressal mechanism, consultations. The generic scope required for such trainings are presented in the Session Plan presented in Annex 24.

All contractors are expected to disseminate and create awareness within the workforce ESMP compliance, and any staff training necessary for their effective implementation. Where contractors do not have existing

environmental staff, the Project Coordination Senior Environment Specialist and Safeguards Coordinator (SESSC) and IAs will plan for adequate capacity building within the workforce to be involved.
Training on safeguards regarding operation of waste management systems and facilities and associated safeguards will be provided to the designated authority officials who will in due course manage the operation and are inbuilt into the project modality.

6 Institutional Arrangements for Implementation of the Project

Institutional Arrangement for Implementation of the EAMF
The ESU to be established within the MI will need to second/hire environmental specialists to focus on the tasks and responsibilities outlined in the EAMF in the role of the Senior Environmental Specialist and Safeguards Coordinator (SESSC) to lead on all due diligence processes on Environmental aspects as outlined in the EAMF.

The SESSC the ESU; He/She will report to the Project Director (Project Coordination Team), under the Secretary (MI) and will be responsible for the overall management of environmental safeguards of the project and the implementation of the project specific safeguards instruments. The safeguards instruments include the EAMF and all subsequent ESIAs, ESMPs and safeguard instruments prepared during project implementation. He/she will be in charge of the overall management of safeguards that will be implemented by the implementing agencies.

Environmental Officers at ESU; Will have the following key roles and responsibilities to support the SESSC and will report directly to the SESSC. Ideally, two Environmental Officers will specifically focus on the subprojects for the Kelani Basin. The third Environmental officer will be hired to coordinate and assist the ESU's SESSC on the due diligence procedures required in the planning and preparation for Phase 2 and 3 of the programs. These Environmental officers may be either seconded from the MI and trained for these duties or couple their activities with other tasks.

Environmental Safeguards Focal Points at IAs; These focal points will be staff seconded by the relevant IA to the project implementation Cells to be established. They will be responsible for ensuring activities implemented by their respective IAs as per the EAMF are well managed and report to the EHSC based in the PC. They will assist in providing data and the timely completion of environmental screening reports and instruments and will collaborate with the Project Coordination ESSO to ensure these assessments are completed in a timely manner. The Implementing Agencies are responsible for managing procurement and implementation of subprojects assigned to them while overall supervision will be conducted by the Project Coordination.

Contractors: Implementation of measures laid out in the ESMPs 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) and for this the contractor will nominate a safeguard officer (as requested in the ESMP) as the focal person who will be directly responsible for ensuring compliance with the ESMP during construction. The requisite qualifications for the environmental officer to be appointed by the contractor are presented in the Term of Reference in Annex 21.

Consultants: The Project Coordination will hire environmental consultants to provide technical support the Project Coordination where specialized services are required.

Climate Resilience Multi Phased Programmatic Approach (CRes MPA)

Social Management Framework

Ministry of Irrigation

Sri Lanka

June 2021

Executive Summary

Objective of the SMF

The purpose of this Social Management Framework (SMF) is to outline a framework for preparing site specific/sub-project specific social assessments and management plans to ensure that the social risks and potential impacts associated with each phase and components of the CRes MPA are identified, and all the key principles and policy requirements for the sound management of these risks and impacts are in place to ensure that the program is carried out in a sustainable manner, and in accordance with the national as well as the World Bank's social safeguards policies.

It is envisaged that the investments under Phase I Project will have to comply with the World Bank's Operational Policies, OP 4.01 (Environmental Assessment), OP 4.11 (Physical Cultural Heritage), and OP 4.12 (Involuntary Resettlement). Phase II will have to comply with the World Bank's newly introduced Environmental and Social Framework (ESF) and Environmental and Social Standards (ESS). In addition to this SMF, a separate Environmental Assessment and Management Framework (EAMF) and a Resettlement Policy Framework (RPF) have been prepared as part of the safeguards instruments to be adopted under the Project.

Socio-Economic Conditions in the Project Impact Area

Project Area: The Kelani River Basin area covers 7 Districts, 38 Divisional Secretariat Divisions (DSDs), and 1,091 Grama Niladhari Divisions (GNDs), on 234,010 hectares of land area. Although there are 1,091 GNDs in the Kelani River Basin area, only 98 GNDs of the 13 DSDs of Colombo, Gampaha, and Kegalle Districts are affected by the CRes MPA.

Land use patterns: Colombo lies in the Kelani river basin and is the largest commercial and administrative hub of the country. Significant climatic and topographic variation is observed throughout the watershed resulting in entirely different land use systems. The upper catchment area is more rural and is used primarily for plantation and agricultural land, and the lower catchment area is built-up land with modern towns and cities. Notably, except for areas near Colombo, large scale human settlement activities did not take place in this area for a long time due to flood risks; but this situation has changed during the last three or four decades with the establishment of the Free Trade Zone (FTZ) in the area, declaration of Sri Jayawardanapura Kotte as the Administrative Capital of the country, and the construction of factories and warehouses surrounding the FTZ. Changes in land use from agriculture to industrial, commercial, and residential activities, has mostly been haphazard thus leading to heavy property damage even after a minor flood and other extreme weather events.

Characteristics of the households: Approximately 76,300 households are estimated to be living in the impacted area of the Kelani River Basin which constitutes 15% of the total number of households in the respective DSDs of the various districts. The highest percentage of individuals in the project area represent the age group of 35-59 years (32%) but dependent population, comprising children below four years old and elders above 60 years old, constitutes a significant, 21% of the population. In terms of religion and ethnicity, the area is predominantly Sinhalese (81%), followed by Tamils (10%), and Sri Lanka Moors (8%). Likewise, 72% of the population is Buddhists followed by 9% Muslims, 6% Hindus and 10% Roman Catholic. While the Sinhala/Buddhist culture dominates the basin area, impacts of the Tamil/Hindu culture is more pronounced in the plantation areas, and through relatively small, the impacts of Islamic culture are very strong in the areas where the Muslims live.

Socio-economic status of households: Of the population above 5 years of age, the majority (approximately 97%) is educated and only 3% has no schooling/formal educational attainment. More than 43% of the households derive their income from wage earnings, 4% from agriculture, and 54% from nonagricultural activities. The average income in the project affected districts is higher than the national average presumably due to the commercial and industrial activities in the area. Yet, 18% of the total households in the impacted area are Samurudhi beneficiaries.

Gender and vulnerability: While the status of women, especially in terms of education attainment and labor force participation rate in the project area is comparable to the national data, women are more vulnerable to the consequences of natural disasters compared to men due to differences in employment status, income, gendered social roles, social norms, and restrictions governing their behavior. Likewise, vulnerable groups in the project area comprise of women-headed households, persons below the poverty level, the unemployed population, population who did not attend schools, differently abled population, children below four years old, and the elderly.

Commercial, industrial, and other development activities: Altogether, there are 9,777 industries and 2,666 registered commercial units in the impacted area of the Kelani River Basin. The river basin is also famous for gem and sand mining and clay extraction, though most of these extractions, particularly sand mining, are illegal and cause heavy damage to river embankments, the river bed, and even to water extraction facilities. Major ongoing development interventions in the basin area include flood protection works (dykes, bunds and gates), expansion of roads network, water intake structures, urban housing schemes, and drainage systems.

Project related impacts

The CRes MPA, via its three consecutives but overlapping phases, is expected to bring overall positive social and environmental benefits to the program areas by ensuring a holistic and sound system for the management of floods and climate change related impacts. Positive impacts of the CRes MPA include: (i) more accurate and timely weather and flood forecasting; (ii) enhanced inter-agency co-ordination; (iii) a service-delivery business model approach; (iv) better decision-making of government and citizens before and during disasters; and (v) increased protection of people and assets. Each phase and the overall program will generate social and economic benefits as per the GoSL's vision to protect life and assets while transitioning to a middle-income country status.

However, construction of new infrastructure and the upgrading of existing ones under the CRes MPA are likely to result in significant social impacts that will need to be mitigated during the design and implementation phases of the investments. Phase I Project of the original CRes MPA involved construction of embankmennts for which a Resettlement Action Plan (RAP) was prepared and disclosed in February 2019, and the land acquisition process initiated by issuing Section 2 of the Land Acqsution Act. Following the decision to remove the construction of flood embankments from CRes MPA until further notice, the land acqusiton process was annulled, and individual notifications sent to affected households in June 2021. Accordingly, the revised scope of the Phase I Project of the CRes MPA will only include construction of Ambatale Salinity Barrier which will not require acqusiton of land.

Project interventions, including the construction of Wee Oya and Upper Deraniyagala reservoirs in the mid-upper catchment, will require some acquisition of private land. As mentioned under Phase II and III of the CRes MPA, one of the objectives of land acquisition and resettlement financed under the project is to enhance the safety and security of communities living in the inundation area of the reservoirs from the perennial risks of floods and other extreme weather events but adverse impacts on households and businesses due to land acquisition and other project-related activities will be significant. Notable will be disruption on the activities of agriculture and plantation sectors, large and small-scale industries,

commercial units, and which will also lead to loss of income, livelihood and employment for household's dependent on these sectors.

Likewise, impacts on existing infrastructure and facilities, including roads located in the reservoir area, Mini hydropower project, water treatment plants, electricity supply, water supply lines, etc., and community resources such as bathing sites, public water facilities, etc., are also envisaged. Sites of cultural, archaeological, and religious significance will also be affected.

While there are no indigenous communities located in the intervention areas, vulnerable persons, and households such as women-headed households, those living below the poverty line, households with disabled family members, may suffer disproportionately due to resettlement and/or loss of livelihoods. Construction works is also likely to cause rapid migration to and settlement of workers and 'followers' in the project area which can lead to increased risks of social conflict, illicit behaviour, burden on and competition for public service provision, risk of communicable diseases, and gender-based violence, particularly in the form of inappropriate behaviour on the part of the laborers. Similarly, construction-related impacts such as traffic congestion, dust, noise, vibration are common issues that are likely to affect families/persons living in the immediate vicinity of the construction sites.

Policy, Regulatory and Institutional Framework

Sri Lanka has a complex legal system to manage land acquisition, regulate land use, address the issues of gender equality and inclusion, and consultations and information disclosure. Likewise, the World Bank Operational Policies which are relevant to the project include: OP/BP 4.01: Environment Assessment, OP/BP 4.12: Involuntary Resettlement and the Environmental and Social Framework. While some gaps exist between the GoSL's national legislation and systems, and the World Bank's requirements, all activities under the MPA will be consistent with the legal/regulatory framework of Sri Lanka and aligned with the World Bank policies and guidelines.

Gender and Inclusion

Issues relating to gender, vulnerability, and inclusion will be considered from various perspectives within the context of the CRes MPA and this SMF, including: (i) gender-sensitive analysis and identification of risks and benefits associated with activities under the CRes MPA; (ii) Project-specific gender considerations to enhance benefits to women, vulnerable groups, and local community members; (iii) measures for ensuring that any risks and impacts arising from prosed interventions that have differential impacts on women and other vulnerable groups, are identified and mitigated; (iv) enhancing the voice and representation of women, especially through continuous engagement and consultations with women, and (v) gender-disaggregated monitoring indicators.

Specifically, as part of the implementation plan, a detailed baseline analysis will be carried out to understand how communities obtain climate and disaster related information, and how these different communities, including women, people with disabilities, the elderly, or any other such vulnerable groups, can be effectively informed about such information availed through the CRes MPA. Based on the findings of the assessment, an action plan for addressing inclusion issues, including gender, will be prepared. Activities to enhance gender considerations into the CRes MPA include: focused information dissemination and awareness raising for female citizens on flood early warning and impact-based forecasting; support for the preparation of community disaster management plans in the project sites; use of citizens' monitoring committees that review and follow up on quality, safety, and progress aspects of the interventions; options for women to have joint ownership or independent ownership of the land and house among the resettled households; orientation trainings on gender for the Project Coordination team (PC) team and other decision-makers; and development of a robust Grievance Redressal Mechanism (GRM) that is sensitive to the needs of women and other vulnerable groups.

Managing the Risks of Adverse Impacts from Labour Influx

To address the impacts from labor influx on communities, the project will: tap into the local workforce, to the extent possible; assess and manage labour influx risks based on appropriate instruments; and incorporate social and environmental mitigation measures, including those relating to Gender Based Violence (GBV), into the civil works contract. Further, it will be the contractor's obligation to prepare and submit a plan that outlines code of conduct for workers, worker camp management plan and measures to address GBV. Prior to starting construction, the Contractor will also be required to prepare and submit its own ESMP/SIMP that will provide a detailed explanation of how the Contractor will comply with the Project's safeguards documents, including the RAP, ESMP, and SIMP, and demonstrate that sufficient funds are budgeted for that purpose. The Contractor's ESMP/SIMP will include management plans for: (i) work activities; (ii) traffic management; (iii) occupational health and safety; (iv) environmental management; (v) social management; (vi) labour influx and worker camp management plan; (vii) code of conduct for workers, including measures to address GBV; and (vii) chance-finds, where relevant.

Social Management Planning

Social management planning includes developing strategies and principles for: identifying project affected individuals, families, and communities; assessing potential social impacts of sub-projects; and suggesting measures to avoid/minimize and manage any adverse impacts. For all physical activities carried out under the Project, an Environment and Social Management Plan (ESMP) or a Social Impact Mitigation Plan (SIMP) that also includes monitoring indicators will be developed. Such safeguards management plans will address the relevant findings and draw on the conclusions of the screening/assessments as they relate to non-land related impacts of the project interventions. The SIMP 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. These actions will be costed and reflected as part of the contractual documents of the civil works contractors, wherever relevant. Further, for activities that involve land-based losses, a separate A-RAP or RAP will be prepared in accordance with the RPF developed under the Project. All the safeguards' instruments prepared under the project will be reviewed and cleared by the head of the SRU and the World Bank before the start of the civil works.

Consultations, Information Disclosure, Grievance Redress Mechanism (GRM)

Consultations were carried out in 21 Divisional Secretary Divisions (DSD), representatives from eight national agencies, and the affected community from September-December 2018 to disseminate information about the original scope of the CRes MPA, understand the socio-economic situation in the project areas, seek inputs for the safeguard's management plans, and verify the roles and responsibilities of various stakeholders in the project. Summaries of the issues discussed during these consultations and meetings were included in the previous version of the SMF disclosed in January 2019 as per the original scope of the CRes MPA as well as the in current version.

At the time of project restructuring, additional consultations could not be carried out to reflect on the revised scope of the CRes MPA Phase I Project, due to the COVID-19 pandemic, particularly, the lockdowns that have been imposed. The draft version of the SMF was posted on the Ministry's website from 1-10 July 2021, to solicit comments, and revisions, if relevant, will be done accordingly. The Project Coordination team will also advertise in the national newspapers soliciting feedback from the public. Additional consultations are being planned as per World Bank's guidelines on 'Public Consultations and Stakeholder Engagement in WB-supported operations when there are constraints on conducting public meetings' between July 2021 to 2023.

Similar consultations with affected parties and other relevant stakeholders will be carried out throughout the project cycle. During project implementation, up-to-date information will be provided on the Project website, social media and local radio and television stations. A Public Information Booklet (PIB) will be delivered to each household in the immediately affected area which will include among others relevant

information on the project and the rights of the affected people, including the compensation and rehabilitation measures, and provide information on who to contact in case of doubts or queries. The PIB will be translated into Sinhala and Tamil.

Since no major resettlement impacts are anticipated during Phase I Project, there will be only a two-tier grievance handling mechanism for receiving and resolving complaints through a process of mutual understanding and consensus with the relevant parties. The first tier of the GRM would function at the Divisional Secretariat level and chaired by the District Secretary. The second tier of the GRM would be at the national level which would be chaired by the Secretary to the Ministry of Irrigation. However, the project would establish a multi-tier GRM in the subsequent phases of the project as resettlement impacts of complex nature are anticipated during Phase II and III. The establishment of this GRM will follow the requirements of the ESF.

Implementation Arrangements and Monitoring

The Project Coordination team set up for the CRes MPA will be responsible for the overall social safeguard's management. Phase I Project of the CRes MPA does not involve any land acquisitions and hence no major resettlement impacts are anticipated. At the commencement of the Phase 1, the project coordination team of the Ministry of Irrigation will include a full time and dedicated senior and experienced social development specialist. However, the project activities expand with the commencement of the construction activities of the Ambatale salinity barrier and social assessments. consultations and preparation of RAP for the flood risk mitigation interventions of the lower Kelani basin, mainly flood embankments and pumping houses, the project coordination team will be reinforced with additional safeguard officers and support staff and will engage individual consultants and local consultant firms to handle the increased work related to social safeguards management.

However, significant resettlement impacts are anticipated in the subsequent phases which include construction of two reservoirs requiring extensive land acquisitions. Therefore, in the second phase of the project, the Project Coordination team will establish a Social and Resettlement Unit (SRU) under its purview which will be responsible for managing land acquisition, resettlement activities, and other social impact mitigation strategies, etc., at each stage of the project. The SRU will be adequately staffed with experienced, as well as new staff, who will be responsible for co-ordination with the relevant ministries and affected parties, and management of the day-to-day activities related to land acquisition and resettlement. Field offices will be set up at the start of the sub-projects to facilitate resettlement activities and to provide easy access for people who have concerns or grievances, or who want to discuss specific aspects of the land acquisition and resettlement program. The field offices will be staffed by land acquisition assistants, resettlement assistants, and community development assistants from the social/resettlement unit of the project coordination team and may be supported by consultants. Additionally, a National Project Steering Committee (NPSC) will also be established to (i) monitor the overall implementation of ongoing sub-projects, based on progress reports; (ii) resolve problems of implementation; and (iii) co-ordinate with other national government agencies connected to project implementation.

A monitoring system comprising both internal monitoring as well as external monitoring and evaluation will be established to track the progress on social management, including land acquisition and resettlement programs. The Management Information System (MIS) system will be designed such that it can generate real-time consolidated reports on the land acquisition, resettlement programs, and other type of social impact mitigation activities. The system will be housed in the offices of the Project Coordination team but will be accessible from the Project's site offices. Consolidated reports on the progress of the land acquisition and resettlement programs will be made available in the project website and also shared with the World Bank on a regular basis.

This SMF is disclosed in the project website and the World Bank's external website.

Climate Resilience Multi -phased Programmatic Approach (CRes MPA)

Resettlement Policy Framework

Ministry of Irrigation

Sri Lanka

July 2021

Executive Summary

Objective of the RPF

The purpose of this Resettlement Policy Framework (RPF) is to outline a framework for preparing site specific/sub-project specific social assessments and management plans, including resettlement action plans to ensure that the social risks and potential impacts associated with each phase and components of the MPA are identified, and all the key principles and policy requirements for the sound management of these risks and impacts are in place to ensure that the program is carried out in a sustainable manner, and in accordance with the national as well as the World Bank's social safeguards policies.

It is envisaged that the investments under Phase I will have to comply with the World Bank's Operational Policies, OP 4.01 (Environmental Assessment), OP 4.11 (Physical Cultural Heritage), and OP 4.12 (Involuntary Resettlement). Phase II will have to comply with the World Bank's newly introduced Environmental and Social Framework (ESF) and Environmental and Social Standards (ESS). In addition to this RPF, a separate Environmental Assessment and Management Framework (EAMF) and a Social Management Framework (SMF) have been prepared as part of the safeguards instruments to be adopted under the Project.

Existing Socio-Economic Conditions in the Project Impact Area

Project area: The Kelani River Basin area covers 7 Districts, 38 Divisional Secretariat Divisions (DSDs), and 1,091 Grama Niladhari Divisions (GNDs) spread over 234,010 hectares of land area. Although there are 1,091 GNDs in the Kelani River Basin area, only 98 GNDs of the 13 DSDs of Colombo, Gampaha, and Kegalle Districts will be affected by the CRes MPA interventions.

Land use patterns: Colombo lies in the Kelani river basin and is the largest commercial and administrative hub of the country. Significant climatic and topographic variations are observed throughout the watershed resulting in entirely different land use systems. The upper catchment area is more rural and is used primarily for plantation and agricultural land, and the lower catchment area is built-up land with modern towns and cities. Notably, except for areas near Colombo, large scale human settlement activities did not take place in this area for a long time due to flood risks; but this situation has changed during the last three or four decades with the establishment of the Free Trade Zone (FTZ) in the area, declaration of Sri Jayawardanapura Kotte as the Administrative Capital of the country, and the construction of factories and warehouses surrounding the FTZ. Changes in land use from agriculture to industrial, commercial and residential activities, has mostly been haphazard thus leading to heavy property damage even after a minor flood and other extreme weather events.

Characteristics of the households: Approximately 76,300 households are estimated to be living in the impacted area of the Kelani River Basin which constitutes 15% of the total number of households in the respective DSDs of the various districts. The highest percentage of individuals in the project area represent the age group of 35-59 years (32%) but dependent population, comprising children below four years old and elders above 60 years old, constitutes a significant, 21% of the population. In terms of religion and ethnicity, the area is predominantly Sinhalese (81%), followed by Tamils (10%), and Sri Lanka Moors (8%). Likewise, 72% of the population is Buddhists followed by 9% Muslims, 6% Hindus and 10% Roman Catholic. While the Sinhala/Buddhist culture dominates the basin area, impacts of the Tamil/Hindu culture is more pronounced in the plantation areas, and though relatively small, the impacts of Islamic culture are very strong in the areas where the Muslims live.

Socio-economic status of households: The majority (approximately 97%) of the population is educated, and only 3% have no schooling/formal education attainment. More than 43% of the households derive their income from wage earnings, 4% from agriculture, and 54% from nonagricultural activities. The average income in the project affected district is higher than the national average presumably due to the commercial and industrial activities in the area. Yet, 18% of the total households in the impacted area are Samurudhi beneficiaries.[10]

Gender and vulnerability: While the status of women, especially in terms of education attainment and labor force participation rate in the project area is comparable to the national data, women are more vulnerable to the consequences of natural disasters compared to men due to differences in employment status, income, gendered social roles, social norms, and restrictions governing their behavior. Likewise, vulnerable groups in the project area comprise women-headed households, households living below the poverty level, the unemployed population, population who did not attend schools, differently abled population, children below four years old, and the elderly.

Commercial, industrial and other development activities: Altogether, there are 9,777 industries and 2,666 registered commercial units in the impacted area of the Kelani River Basin. The river basin is also famous for gem and sand mining and clay extraction, though most of these extractions, particularly sand mining, are illegal and cause heavy damages to river embankments, the riverbed, and even to water extraction facilities. Major ongoing development interventions in the basin area include flood protection works (dykes, bunds and gates), expansion of roads network, water intake structures, urban housing schemes, and drainage systems.

Project related impacts

The CRes MPA, via its three consecutives but overlapping phases, is expected to bring overall positive social and environmental benefits to the program areas by ensuring a holistic and sound system for the management of floods and climate change related impacts. The positive impacts of the CRes MPA include: (i) more accurate and timely weather and flood forecasting; (ii) enhanced inter-agency coordination; (iii) a service-delivery business model approach; (iv) better decision-making of government and citizens before and during disasters; and (v) increased protection of people and assets. Each phase and the overall program will generate social and economic benefits as per the GoSL's vision to protect life and assets while transitioning to a middle-income country status.

However, construction of new infrastructure and the upgrading of existing ones under the CRes MPA are likely to result in significant social impacts that will need to be mitigated during the design and implementation phases of the investments. Phase I of the original MPA involved construction of embankments for which a Resettlement Action Plan (RAP) was prepared and disclosed in February 2019, and the land acquisition process initiated by issuing Section 2 of the Land Acquisition Act. Following the decision to remove the construction of flood embankments from CRes MPA until further notice, the land acquisition process was annulled, and individual notifications sent to affected households in June 2021. Accordingly, the revised scope of the CRes MPA will only include construction of Ambatale Salinity Barrier which will not require acquisition of land.

Project interventions, including the construction of Wee Oya and Upper Deraniyagala reservoirs in the mid-upper catchment, will require some acquisition of private land. As mentioned under Phase II and III of the CRes MPA, one of the objectives of land acquisition and resettlement financed under the project is to enhance the safety and security of communities living in the inundation area of the reservoirs from the perennial risks of floods and other extreme weather events but adverse impacts on households and

10 Food subsidies and other assistance provided by GOSL for households living below the official poverty line.

businesses due to land acquisition and other project-related activities will be significant. Notable will be disruption on the activities of agriculture and plantation sectors, large and small-scale industries, commercial units, and which will also lead to loss of income, livelihood and employment for household's dependent on these sectors. Likewise, impacts on existing infrastructure and facilities, including roads located in the reservoir area, Mini hydropower project, water treatment plants, electricity supply, water supply lines, etc., and community resources such as bathing sites, public water facilities, etc., are also envisaged. Sites of cultural, archaeological, and religious significance will also be affected.

While there are no indigenous communities located in the intervention areas, vulnerable persons and households such as women-headed households, those living below the poverty line, households with disabled family members, may suffer disproportionately due to resettlement and/or loss of livelihoods. Construction works is also likely to cause rapid migration to and settlement of workers and 'followers' in the project area which can lead to increased risks of social conflict, illicit behavior, burden on and competition for public service provision, risk of communicable diseases, and gender-based violence, particularly in the form of inappropriate behavior on the part of the laborers. Similarly, construction-related impacts such as traffic congestion, dust, noise, vibration are common issues that are likely to affect families/persons living in the immediate vicinity of the construction sites.

Policy, Regulatory and Institutional Framework

Sri Lanka has a complex legal system to manage land acquisition, regulate land use, address the issues of gender equality and inclusion, and consultations and information disclosure. Likewise, the World Bank Operational Policies which are relevant to the project include: OP/BP 4.01: Environment Assessment, OP/BP 4.12: Involuntary Resettlement and the Environmental and Social Framework. While some gaps exist between the GoSL's national legislation and systems, and the World Bank's requirements, all activities under the CRes MPA will be consistent with the legal/regulatory framework of Sri Lanka and aligned with the World Bank policies and guidelines.

Resettlement Planning: Preparation, Review and Approval of RAPs

The key steps in resettlement planning are social screening, social impact assessment, inventory and valuation, determining eligibility and entitlements, consultation and disclosure of findings, preparation of resettlement instruments (abbreviated or full resettlement action plan), consultation and finalization of the RAPs, development of resettlement sites, disclosure of the final RAPs.

The process of resettlement planning will start with a screening, assessment, and categorization of impacts. If the Social Screening indicates that the intervention involves risks and impacts associated with 'involuntary resettlement,' the Project Coordination Team will carry out a Social Impact Assessment (SIA) including 100 percent census survey of affected households once the cut-off date has been announced prior to the beginning of the census survey. The SIA will provide information on the losses and damages incurred by individuals or households, and communities, impacts on women and vulnerable communities, etc. The census and socio-economic surveys will also involve systematic consultation, disclosure, orientation, and coordination with the Divisional Secretaries, Planning Directors, Grama Niladharis, Community Based Organizations, Non-Governmental Organizations, and community members, including women and other vulnerable groups.

A full Resettlement Action Plan (RAP) or an abbreviated Resettlement Action Plan (A/RAP) will be prepared for each phase of the CRes MPA, covering all relevant interventions. Consultations will be held with the affected persons, especially over resettlement options, during the preparation of the RAP/ARAP as well as prior to its finalization. The draft RAP/ARAP will be reviewed and approved by the PCT and will form part of the land acquisition request proposal to be submitted to the Ministry of Land and the

clearance from the Central Environment Authority. The draft RAPs will also be submitted to the World Bank, which will review compliance with Bank's policy OP 4.12 and ESF prior to granting clearance for the RAP. The approved RAPs by both the GOSL and the Bank will be posted in the project website as well as the World Bank's external website.

Asset Valuation, Compensation and Entitlements

Entitlements: The entitlements, compensation, and eligibility, including preparation of the Entitlement Matrix (EM), is guided by the provisions in the LAA of 1950 and LAR of 2008, together with the principles of the NIRP and the relevant WB policies. The EM also draws from the practices and entitlements that have been applied in other development projects that are already in execution in the Kelani River Basin.

Valuation and Compensation: Sri Lanka has an advanced system for valuation of properties, and there are state and registered private valuation officers. Compensation for all the losses will be at replacement cost as per LAR 2008 and the World Bank's guidelines, as laid out in the EM.

Eligibility: All project affected persons will be informed about the project and the RAP process, and a cut-off date will be established as part of determining APs eligibility. Under this Project, the cut-off date for eligibility of entitlements is either the start date of the census survey of the affected population or the date of Section 2 notification under the Land Acquisition Act No. 9 of 1950.

Site selection, preparation, and relocation

The CRes MPA in Kelani Basin will ensure that full compensation and other resettlement benefits and assistance are paid/granted to the displaced persons/households prior to their displacement. Where it is necessary for affected persons to vacate the affected area before the date specified in the Section 38(a) order, an allowance for temporary accommodation will be provided as set out in the EM. The affected persons who are relocated will also be provided with additional allowances such as for transport of their household goods and materials, vulnerability allowances etc. as stipulated in the 2008 Regulations and as set out in the EM. The Project Coordination Team will coordinate with the Divisional Secretaries in which the resettlement sites are developed, or with the UDA, in the case of housing units, to provide the resettled households with certificates of ownership. This activity will take place in parallel with the activities related to the payment of compensation.

The relocation of businesses will follow the same procedures as set out above for households. However, some businesses may be entitled to additional allowances such as for transport of goods and materials, restoration of utility services, re-fixing of fixtures and fittings, and advertising etc. as well as allowances to be paid to the employees as specified in the EM. The relocation of infrastructure facilities and public utility services will be undertaken by the agencies responsible for them (e.g., National Water Supply and Drainage Board in the case of water distribution lines) but with funds provided by the Project.
Relocation of cultural heritage sites and sites of cultural and/or religious significance: If any places of cultural or religious significance are affected due to project interventions, the project will first consider design changes to avoid such important places. If unavoidable, measures will be taken for their relocation in consultation with their custodians and community members.

Consultations, Information Disclosure, Grievance Redress Mechanism (GRM)

Consultations were carried out in 21 Divisional Secretary Divisions (DSD), representatives from eight national agencies, and the affected community from September-December 2018 to disseminate information about the original scope of the CRes MPA, understand the socio-economic situation in the project areas, seek inputs for the safeguard's management plans, and verify the roles and responsibilities of various

stakeholders in the project. Summaries of the issues discussed during these consultations and meetings were included in the previous version of the RPF disclosed in January 2019 as per the original scope of the CRes MPA as well as the in current version.

At the time of project restructuring, additional consultations could not be carried out to reflect on the revised scope of the CRes MPA due to the COVID-19 pandemic, particularly, the lockdowns that have been imposed. The draft version of the RPF was posted on the Ministry's website from 1-10 July 2021, to solicit comments, and revisions, if relevant, will be done accordingly. The Project Coordination team will also advertise in the national newspapers soliciting feedback from the public. Additional consultations are being planned as per World Bank's guidelines on 'Public Consultations and Stakeholder Engagement in the World Bank-supported operations when there are constraints on conducting public meetings' between July 2021 to 2023.

Similar consultations with affected parties and other relevant stakeholders will be carried out throughout the project cycle. During project implementation, up-to-date information will be provided on the Project website, social media and local radio and television stations. A Public Information Booklet (PIB) will be delivered to each household in the immediately affected area which will include among others relevant information on the project and the rights of the affected people, including the compensation and rehabilitation measures, and provide information on who to contact in case of doubts or queries. The PIB will be translated into Sinhala and Tamil.

Since no major resettlement impacts are anticipated during Phase 1 of the project, there will be only a two-tier grievance handling mechanism for receiving and resolving complaints through a process of mutual understanding and consensus with the relevant parties. The first tier of the GRM would function at the Divisional Secretariat level and chaired by the Divisional Secretary. The second tier of the GRM would be at the national level which would be chaired by the Secretary to the Ministry of Irrigation. However, the project would establish a multi-tier GRM in the subsequent phases of the project as resettlement impacts of complex nature are anticipated during Phase II and III. The establishment of this GRM will follow the requirements of the ESF.

Implementation Arrangements and Monitoring

The Project Coordination Team set up for the CRes MPA will be responsible for the overall social safeguard's management. Phase I of CRes MPA does not involve any land acquisitions and hence no major resettlement impacts are anticipated. At the commencement of the Phase 1, the Project Coordination Team of the Ministry of Irrigation will include a full time and dedicated senior and experienced social development specialist. However, the project activities expand with the commencement of the construction activities of the Ambatale salinity barrier and social assessments. Consultations and preparation of RAP for the flood risk mitigation interventions of the lower Kelani basin, mainly flood embankments and pumping houses, the Project Coordination Team will be reinforced with additional safeguard officers and support staff and will engage individual consultants and local consultant firms to handle the increased work related to social safeguards management.

However, significant resettlement impacts are anticipated in the subsequent phases which include construction of two reservoirs requiring extensive land acquisitions. Therefore, in the second phase of the project, the Project Coordination Team will establish a Social and Resettlement Unit (SRU) under its purview which will be responsible for managing land acquisition, resettlement activities, and other social impact mitigation strategies, etc., at each stage of the project. The SRU will be adequately staffed with experienced, as well as new staff, who will be responsible for co-ordination with the relevant ministries and affected parties, and management of the day-to-day activities related to land acquisition and resettlement. Field offices will be set up at the start of the sub-projects to facilitate resettlement activities and to provide

easy access for people who have concerns or grievances, or who want to discuss specific aspects of the land acquisition and resettlement programme. The field offices will be staffed by land acquisition assistants, resettlement assistants, and community development assistants from the social/resettlement unit of the project coordination team and may be supported by consultants. Additionally, a National Project Steering Committee (NPSC) will also be established to (i) monitor the overall implementation of ongoing sub-projects, based on progress reports; (ii) resolve problems of implementation; and (iii) co-ordinate with other national government agencies connected to project implementation.

A monitoring system comprising both internal monitoring as well as external monitoring and evaluation will be established to track the progress on social management, including land acquisition and resettlement programmes. The MIS system will be designed such that it can generate real-time consolidated reports on the land acquisition, resettlement programmes, and other type of social impact mitigation activities. The system will be housed in the office of the Project Coordination Team but will be accessible from the Project's site offices. Consolidated reports on the progress of the land acquisition and resettlement programmes will be made available in the project website and shared with the World Bank on a regular basis.

This RPF will be disclosed in the project website and the World Bank's external website.