Republic of Malawi
Ministry of Finance and Economic Affairs

Regional Climate Resilience Program for Eastern and Southern Africa
Series of Projects 2 (P181308)
Malawi

Environmental and Social Management Framework (ESMF)

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Abbreviations and Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AIP	Annual Investment Plans
AUC	African Union Commission
BDA	Biodiversity Assessment
BMP	Biodiversity Management Plan
BoQ	Bill of Quantity
CAP	Corrective Action Plan
CCDR	Climate Change and Development Reports
CEDAW	Convention on the Elimination of all Forms of Discrimination Against Women
CERC	Contingency Emergency Response Component
C-ESMP	Contractor's Environmental and Social Management Plan
CLC	Customary Land Committee
CoC	Code of Conduct
CR	Critically Endangered
CSO	Civil Society Organization
CRW	Crisis Response Window
DDF	District Development Fund
DEHO	District Environmental Health Officer
DoCCMS	Department of Climate Change and Meteorological Services
DoDMA	Department of Disaster Management Affairs
E&S	Environmental & Social
EDO	Environmental District Officer
EHS	Environment, Health and Safety
EHSG	Environmental Health and Safety Guidelines
EIA	Environmental Impact Assessment
EIS	Environmental (and Social) Impact Statement
EN	Endangered
ENTRO	Eastern Nile Technical Regional Office
ESCOM	Electricity Supply Corporation of Malawi
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESP	World Bank Environment and Social Policy
ESIA	Environmental and Social Impact Assessment
ESIRT	Environmental and Social Incident Response Kit
ESS	Environmental and Social Standards
FM	Financial Management
FMU	Forest Monitoring Unit
GDP	Gross Domestic Product
GBV	Gender-Based Violence
GESD	Governance to Enable Service Delivery
GHG	Greenhouse Gases

GIIP	General International Industrial Practice
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
HIV	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
HOC	Hierarchy of Control
HSE	Health, Safety and Environment
HSSE	Health, Safety, Social & Environmental
IASC	Inter-Agency Standing Committee
ICR	Implementation Completion Report
IDP	Internally Displaced Person
IEC	Information, Education and Communication
IFC	International Financial Cooperation
ILO	International Labor Organization
IPV	Intimate Partner Violence
IUCN	International Union for Conservation of Nature
JHA	Job Hazard Analysis
JSA	Job Safety Analysis
LAPA	Local Authority Performance Assessment
LMP	Labor Management Plan
M&E	Monitoring and Evaluation
masl	meters above sea-level
DoA	Department of Antiquities
MEPA	Malawi Environment Protection Authority
MERA	Malawi Energy Regulatory Authority
MIS	Management Information System
MoA	Ministry of Agriculture
MoFEA	Ministry of Finance and Economic Affairs
MoNRCC	Ministry of Natural Resources and Climate Change
MoWS	Ministry of Water and Sanitation
MPSR	Malawi Public Service Regulations
MRV	Monitoring, Reporting, and Verification
MSDS	Material Safety Data Sheet
NCIC	National Construction Industry Council
NEP	National Environmental Policy
NGO	Non-Governmental Organization
NLGFC	National Local Government Finance Committee
NT	Near Threatened
OHS	Occupational Health and Safety
O&M	Operation & Maintenance
OSHA	Occupational Safety and Health Administration
PAD	Project Appraisal Document
PBG	Performance Based Grant
PCB	polychlorinated biphenyls
PDO	Project Development Objective
PEP	Exposure Prophylaxis

POM	Project Operations Manual
POP	Persistent Organic Pollutants
PPE	Personal Protective Equipment
PSEA	Prevention of Sexual Exploitation and Abuse
PCN	Project Concept Note
RAP	Resettlement Action Plan
RCA	Root Cause Analysis
RCRP	Regional Climate Resilience Program
RPF	Resettlement Policy Framework
RSC	Regional Steering Committee
SADC	Southern African Development Community
SDS	Safety Data Sheet
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SOP	Series of Projects / Standard Operating Procedures
STI	Sexually Transmitted Infection
TA	Technical Assistance
TLMA	Traditional Land Management Areas
TOR	Terms of Reference
TP	Third Party
TSMP	Traffic Safety Management Plan
UNDP	United Nations Development Programme
USD	United States Dollar
VU	Vulnerable
WB	World Bank
ZAMCOM	Zambezi River Basin Commission

Executive Summary

The World Bank will be supporting The Republic of Malawi and specifically the Ministry of Finance and Economic Affairs in implementing the Regional Climate Resilience Programme for Southern and Eastern Africa (RCRP) Series of Projects 2 in Malawi. The Project Development Objective (PDO) is *to improve the resilience to water-related climate shocks in Malawi and in the Eastern and Southern Africa region*. The Project will include the following activities: Component 1: Risk Management and Climate Financing; Component 2. Infrastructure Investments and Sustainable Asset Management for Climate Resilience; Component 3. Adaptive Climate Services for Resilient Communities; Component 4. Project Management; and Component 5. Contingent Emergency Response Component.

The project activities will take place at the national level, in the all districts of the country, and some activities will focus on the Shire River Basin and the Central and Southern regions of Malawi. Specific locations of subproject activities are not known at this stage.

This Environmental and Social Management Framework (ESMF) has been prepared to identify the potential environmental and social risks and impacts of proposed Project activities and propose suitable mitigation measures to manage these risks and impacts. It maps out the country laws and regulations and the World Bank standards appliable to the Project, and describes the principles, approaches, implementation arrangements, and environmental and social mitigation measures to be followed.

The environmental and social risk classification for the project is *High*. The environmental risk is *High* due to the cumulative context of low borrower capacity to adequately assess risks and impacts and commitment to implement appropriate management measures, and the site, system, and cumulative impact of the multiple civil works at various locations and on already degraded and sensitive ecosystems. The vulnerability to natural disasters / climate change also contribute to the high-risk rating. The proposed hydraulic infrastructure (i.e., river training, riverbank protection, drainage, dykes etc.) includes potential impacts from civil works: loss of riverine, woodland and remnant rainforest resulting in more loss of dwindling habitat for endemic and migratory species and contribution to climate change; spillage and increased sediment load into water courses during construction activities and loss of riparian buffers; wash bays for cleaning construction equipment discharging into watercourses; inadvertently promoting illegal river sand mining which further undermines existing and new structures; creation of borrow pits as a result of excavation construction materials such as gravel; occupational and community health and safety risks working next to water especially in the wet season, and traffic safety for pedestrians and other road users during construction; impacts associated with informal vending around construction sites such as poor sanitation, Sexually-transmitted Infections (STIs); poor waste management and illegal disposal; increased deforestation for fuelwood/charcoal for cooking for laborers and informal vendors; and others.

The social risk is *High* due to the scope of the proposed activities, including Technical Assistance (TA) activities and proposed civil works across multiple sites and due to the limited capacity to manage social risks in Malawi. Social risks related to land acquisition include loss of land or other assets, social and gender exclusion, inadequate consultations and engagement, lack of compensation at replacement cost, lack of access to grievance mechanisms, and failure to restore livelihoods. The activities may also create or exacerbate the existing tension and conflicts, between communities and households over access to resources and project benefits.

To assist in the mitigation of key risks and impacts and to comply with the World Bank's Environmental and Social Framework (ESF) and Malawi legislation, the recipient has prepared an Environmental and Social Commitment Plan (ESCP); this Environmental and Social Management Framework (ESMF); a Stakeholder Engagement Plan (SEP), and a Resettlement Policy Framework (RPF). The ESMF includes a Traffic Safety Management Framework, an Occupational Health and Safety Framework, A Waste Management Framework, a Hazardous Substance Management Framework, Labor Management Procedures, a Sexual Exploitation and Abuse / Sexual Harassment (SEA/SH) Action Plan, and a Biodiversity Management and Rehabilitation Framework.

The risks and impacts will be managed through the mitigation hierarchy approaches (avoid, minimize, mitigate and compensate) included in this ESMF and subsequently in all site-specific Environmental and Social Management Plans (ESMPs), during the implementation stage once the detailed characteristics of sub-project sites are confirmed.

This ESMF sets forth the basic principles and prerogatives that the Project will comply with during implementation once the physical footprints are known, including site-specific environmental and social (E&S) screening, the preparation of site-specific instruments. All E&S instruments will be the subject of consultation with the beneficiaries and institutional stakeholders, to the satisfaction of the World Bank. All E&S instruments will be publicly disclosed both in-country and on the project and World Bank website prior to the physical start of project or activity implementation.

The Ministry of Finance and Economic Affairs will take on the overall lead and coordination role of the Project. It will set up a Project Coordination Unit (PCU) that will be responsible for coordination, monitoring and reporting for the project. The PCU will work closely with other Ministerial teams to coordinate implementation, build capacity of Ministry teams and District teams for implementation, facilitate support for compliance with environment and social requirements for the project, collect and compile data from the project results framework and manage communications for the Project.

The PCU will be responsible for the main monitoring and supervision of the implementation of this ESMF and subsequent E&S instruments. It will implement monitoring site visits, receive monthly E&S reporting from contractors and digest all findings in a quarterly E&S Progress Report to the World Bank.

A separate Stakeholder Engagement Plan (SEP) has been prepared for the Project, based the World Bank's Environmental and Social Standard 10 on Stakeholder Engagement. It includes the provision of a Grievance Redress Mechanism (GRM) to all stakeholders. The GRM will be a distinct mechanism that will allow stakeholders at all levels to provide feedback on project activities, its impacts and subsequent social and environmental mitigation measures.

1. Introduction

Climate change threatens the Eastern and Southern Africa region's long-term development objectives, particularly poverty reduction, and it is thus urgent to boost climate resilience and adaptation. As the recent Climate Change and Development Reports (CCDRs) show, boosting climate resilience and adaptation is an urgent and integral part of development and poverty reduction, especially in low-income countries. More resilience can be achieved through a three-pronged approach, involving rapid and inclusive development, especially poverty reduction and universal access to infrastructure and social services; a whole-of-society approach to resilience and adaptation, to ensure climate risks are considered in all decisions and investments; and a set of targeted sectoral interventions covering human capital, infrastructure, and various economic sectors.

Within the region, Malawi is highly vulnerable to climate change and variability – affecting the poorest groups in particular. Malawi experienced a series of major flooding events in the last five decades, and eight catastrophic droughts, which hampered development efforts. In the last few years, the impact of these water-related climate shocks in Malawi has intensified costing an estimated 1.7 percent of its GDP annually. Weather shocks have caused four Malawians to fall back into poverty for every three who moved out of it between 2010 and 2019.[1] Malawi is ranked 5th out of 189 nations for the proportion of poor people exposed to floods, with 12 percent of those living on less than US$ 1.90 per day.[2]

Uncontrolled development, excessive deforestation, and weak institutions have led to a reduction of the natural buffers that used to limit the impact of these water-related shocks. Overreliance on natural resources has led to severe catchment degradation. Without action, climate modeling shows that damage from inland flooding could increase by up to 25 percent by 2050 due to increased land degradation (under a Business-as-Usual scenario)[3]. Moreover, weak institutions with lack of accountability and unclear responsibilities often struggle to allocate operation and maintenance (O&M) funds to manage protective and water storage infrastructure that is already depleted, and inadequate quality control in construction activities results in sub-standard buildings prone to damage and collapse. The integration of resilience considerations into the planning, design, and operation of critical infrastructure is limited. This leads to structures that are vulnerable to damage by climate shocks, as the devastating impacts of the recent Tropical Cyclone Freddy shows. Urgently needed is the restoration of degraded landscapes through improved planning and strengthening institutions responsible for managing water and land resources and related infrastructure.

Climate models suggest that Malawi will see increasing climatic variability, higher temperatures, longer dry periods, and more erratic and intense rainfall events – all this risks further multiplying these already significant losses unless remedial action is taken.[4] The recent CCDR for Malawi showed that without strategic investments in development and resilience, climate change could reduce GDP by 3 to 9 percent by 2030, 6 to 20 percent by 2040, and 8 to 16 percent by 2050.[5] The impacts of extreme climate-related events – more frequent and intense floods and droughts - may cause 23 million additional people to be

[1] World Bank. 2022. "Malawi Poverty Assessment: Poverty Persistence in Malawi - Climate Shocks, Low Agricultural Productivity, and Slow Structural Transformation"
[2] Rentschler, J. and M. Salhab. 2020. "People in Harm's Way: Flood Exposure and Poverty in 189 Countries." Policy Research Working Paper No. 9447. Washington, DC: World Bank. doi:10.1596/1813-9450-9447.
[3] World Bank Group, 2022, Malawi Country Climate and Development Report (CCDR).
[4] Government of Malawi (2017). Strategic Program for Climate Resilience: Pilot Program on Climate Resilience (PPCR).
[5] World Bank Group. 2022. "Malawi Country Climate and Development Report (CCDR)", https://openknowledge.worldbank.org/handle/10986/38217

pushed below the poverty line by 2030 and approximately 90 million people regionally may be forced to migrate by 2050, potentially intensifying regional fragility, conflict, and violence.

Proposed is a second operation of the Regional Climate Resilience Program for Eastern and Southern Africa (RCRP) Series of Projects (SOP) to help countries better prepare for and manage the increasing frequency, intensity, and impact of climate shocks on people, livelihoods, infrastructure, and ecosystems. The RCRP SOP is structured as a 10-year Series of Projects (SOP) that tackles common challenges amongst countries in the region while benefiting from a programmatic framework that will allow scalability and economies of scale. The first operation under the series was approved in May 2023 (P180171) and details the overall approach (referred to as the 'Program'). RCRP-1 includes four countries (Mozambique, South Sudan, Madagascar, and Comoros), two regional organisations (the Eastern Nile Technical Regional Committee (ENTRO), and the Southern Africa Development Community (SADC). The proposed second operation under the SOP (SOP-2, or RCRP-2, or the 'Project') includes Malawi and the Africa Union Commission (AUC) and scales up RCRP-1 with complementary investments.

The overarching Development Objective of the Series of Projects (SOP) is to strengthen the resilience to water-related climate shocks in Eastern and Southern African countries. The overarching Development Objective of the SOP will be achieved by: (i) strengthening participating countries and regional organizations' capacity to manage disasters risk, including via improved national and regional early warning systems (EWS); (ii) improving access to climate financing to finance climate adaptation investment; (iii) mainstream climate resilience in water infrastructure planning, and generally in water institutions; (iv) increase infrastructure resilience, including by improving O&M systems, with focus on large storage and flood risk management infrastructure; and (v) improve community-level awareness and response capacity, including by establishing/strengthening adaptive social protection systems.

In Malawi, the proposed project will both rehabilitate critical infrastructure impacted by Tropical Cyclone Freddy using Crisis Response Window (CRW) resources and address the more chronic vulnerabilities in the Shire River Basin by investing in critical infrastructure at national and district level; strengthening institutional frameworks and accountability; incorporating climate considerations into the planning, implementation, and operation and maintenance of new infrastructure; and strengthening community resilience and social protection system consistent with SOP 1. This will build a situation whereby people can live sustainably with the flood/drought risk, through a properly overseen and managed basin in terms of its competing uses. The emergency works will include the reconstruction of needed connectivity (roads, bridges, culverts), hydraulic and other critical infrastructure.

1.1 Project Components

The Project Development Objective (PDO) is *to improve the resilience to water-related climate shocks in Malawi and in the Eastern and Southern Africa region*. Resilience is defined as the capacity of vulnerable households, communities, and systems to withstand shocks effectively, and to recover and adapt sustainably. The RCRP-2 focuses on building resilience by going beyond emergency response, via reducing risk. Water-related climate-related shocks and associated impacts include tropical cyclones, floods, droughts, rainfall variability, and other climate events exacerbated by climate change.

The Project components are as follows:

Component 1. Risk Management and Climate Financing. The objective of this component will be to build regional and national institutional capacity and to strengthen cooperation on climate and disasters risk management and climate financing.

Sub-component 1.1. Strategy development. The RCRP will promote a reorientation of development in the larger basins under an integrated management strategy, including a vision on how to live sustainably with floods. Key strategic plans and instruments include:

Catchment Management Strategies. The activity will support the development of a river basin knowledge base and strategic framework, allow citizen engagement and Catchment Management Committee meetings for broad-based legitimacy of the plan priorities, and support ongoing discussions on water allocations, operational decision support for protection from water risks and enable optimization of water-related development in these Basins. This will include management of a geo-database, updating of hydrological and flood risk modeling, improvements to existing decision support systems, and technically inform activities b and c below. The development of new basin plans of and update of the existing ones will be led by National Water Resource Authority in close coordination with the relevant departments and in unison with lower-tier district development plans, physical development plans and village level action plans.

Land and forest restoration planning and prioritization for coordinated action in priority degradation hotspot areas. The activity will update the National Forest Landscape Restoration Strategy (NFLS) which identified forest and land degradation hotspot areas in the country. For each basin, a restoration workplan and budget will be established to facilitate attaining the goals set out in NFLS and meet commitments under Bonn and integrate with District-Led Resilience Building sub-component below, the Village Level Action Plans, and the World Bank financed Climate-Smart Public Works Project.

Flood-risk *mapping and zoning*. This activity will update flood hazard modeling and mapping and adopt an operational flood zoning protocol with land use guidance, hotspot strategies including nature-based solutions and land use restrictions. These maps and zones will become underlying documents for District Physical Development Plans. Spatial solutions within flood zones will aim at “making room for the river” and promoting “living with floods” principles; strengthening infrastructure; integrating early warning, and protecting settlements, allowing for safe flooding.

Sub-component 1.2. Emergency Preparedness and Response & Early Warning Systems (EWS). This activity will support the institutionalization of Government-led emergency management and disaster response capacity at the national, sub-national level and local. At the national level, the component will develop and deploy a government-led Incident Command System (ICS) directed through a National Emergency Operations Center (NEOC), to coordinate disaster response. At the district level, the component will ensure availability of robust sub-national coordination facilities providing links to the NEOC and provide the appropriate equipping and capacity support. At the local level, the component will support local level response teams and community volunteers through equipment and training, in high flood risk areas. A National Disaster Center building, a floor of which will house the NEOC, will be constructed to house the Department of Disaster Management Affairs (DoDMA), the Department of Climate Change and Meteorological Services (DCCMS) and potentially the Department of Water Resources (DWR). The three agencies, all involved in the monitoring, forecasting and dissemination of early warning services in Malawi will be housed together to further coordination in both periods of disaster and non-disaster. The component will finance key inputs to the Early Warning System, based on an ongoing diagnostic and implementation roadmap which will highlight crucial investments for strengthening and modernizing the

EWS system and ensuring appropriate linkage to response operations. Malawi will further benefit from the regionality of the program through data sharing with neighboring countries and regional counterparts on hydromet. Investments in core-network hydromet instrumentation, and communication and better integration on data-sharing will be preceded by the legal adoption of national protocols and standards and adequate staffing and budgeting of recurrent cost by relevant departments. The project will strengthen the functions and coordination of the Department of Climate Change and Meteorological Services, the Department of Water Resources and the Department of Disaster Management Affairs (DODMA) to coordinate effectively in responding to disasters.

Sub-component 1.3. National Monitoring, Reporting, and Verification (MRV) system. This component will support the establishment of the MRV system for tracking land-use change, forest degradation and deforestation, and associated carbon emissions. The MRV will be centered around strengthening monitoring systems, verification, and reporting procedures for natural resource management, forest degradation and deforestation, and other land-use change related to carbon emissions.

Biophysical and ecological monitoring: The project will enhance and expand the current biophysical and ecological monitoring system. This will be achieved by utilizing advanced ICT-based monitoring tools and GIS systems. These systems will streamline the collection of spatially referenced data on soil erosion, sediment load, and biophysical effects. Practical and cost-effective monitoring techniques, including remote sensing, aerial vehicles, and mobile-based reporting, will be applied. The placement of ground monitoring stations and/or community-led monitoring protocols will be prioritized near the river discharge to the Lake and other sensitive areas. Activities will include technical support and capacity building aimed at scaling up the GIS-centered biophysical and ecological monitoring system, including spatially map interventions that have been implemented across the Basin for baseline monitoring. Impact assessments will also be conducted. This activity will establish the basis for impact verification for activities under Component 2 and general monitoring of state of the environment.

Carbon monitoring and reporting: The project will build the long-term MRV for tracking forest degradation and deforestation as a start but with aim at expanding it to other sectors in the future. The MRV will be based on the existing knowledge base and will use the monitoring for multiple purposes besides climate finance: performance management, prioritization of interventions, and coordination beyond this project. The Forest Monitoring Unit (FMU), housed within the Department of Forestry, will function as the MRV lead implementer for forest degradation and deforestation.[6] The project support will include equipment, learning, and targeted technical assistance.

Component 2. Infrastructure Investments and Sustainable Asset Management for Climate Resilience. This Component aims to address the gap in critical infrastructure for climate resilience and catchment management, and to establish a strong institutional framework that incorporates climate considerations into the planning, implementation, and operation and maintenance of infrastructure and catchments. In Malawi, this component will adopt two implementation approaches. The first at basin level and the second at a district level. At both scales, this component will finance activities to strengthen the construction and catchment management and regulatory systems to ensure construction and land restoration works are of better quality and standards to withstand recurring weather events.

Sub-component 2.1. Basin-Level Infrastructure Development: This sub-component focuses on the identification, design, and implementation of key infrastructure. The strategic interventions will

[6] The FMU was established in February 2023 with support from USAID.

incorporate improved design standards, risk responsive design, network redundancy, and coordinated planning. The activities will include two main approaches:

(i) *Rapid reconstruction and rehabilitation of critical connectivity (roads/bridges) and critical hydraulic infrastructure in disaster affected regions*. This rapid reconstruction will be financed with CRW resources. An initial pipeline of required investments has been identified to expediate commencement of implementation. The needs will likely exceed the funds available under the project. Therefore, priority will be given to restoring critical structures and connectivity in the Shire Basin and Blantyre City, which were greatly affected by Tropical cyclone Freddy; and

(ii) *New hydraulic infrastructure development*. Construction of longer-term flood resilient hydraulic infrastructure (i.e., river training, riverbank protection, drainage, dykes etc.) that will be informed by the integrated flood risk management plan for key national basins, and with a particular focus on the Shire Basin.[7] An initial pipeline investment pipeline will be identified by an ongoing assessment funded under Malawi Resilience and Disaster Risk Management Project.

Sub-component 2.2. District-Led Resilience Building: The component consists of interconnected parts that target service delivery bottlenecks at national and local levels. At the local-level, the initiative employs a results-driven strategy to enhance infrastructure and landscape management across Malawi's twenty-eight district Local Authorities (LAs). It aims to encourage efficient and responsible performance on climate resilience by LAs in main areas: (a) executing high quality resilience projects that cater to local needs, (b) enhancing the planning, design, execution, and maintenance of vital infrastructure and spatial measures; (c) effective management of district technical and frontline extension service delivery staff; and (d) restoration of degraded forest and land in Malawi. This will be accomplished through Performance-Based Grants (PBGs), which will align with intergovernmental fiscal transfers, substantially increasing funding for development projects outlined in District Development Plans (DDPs). The amount of funding will correspond to each LA's particular risk profile (with larger corresponding PBG amounts expected for high flood risk areas within the Shire Basin), technical capacity for implementation determined through an annual performance assessment, and investment readiness.

The PBGs will operate through Government systems, with the Project introducing standards, guidelines, manuals and third party assistance to strengthen existing national and local Government systems. Similar to and aligned with the Governance to Enable Service Delivery (GESD) framework, the PBGs will complement and amplify the government-funded District Development Fund (DDF). The sub-component will finance PBGs for (a) development of flood hazard maps and flood zoning in support of physical development planning, and Village Level Action Plan development for areas with planned interventions; (b) capital investment projects aligned with LA DDP and Annual Investment Plans (AIP) and in accordance with the agreed investment menu, and (c) execution of O&M plans, seasonal and preventive repairs. The sub-component will be led by National Local Government Finance Committee, supported by relevant Departments, and will be complemented by a robust Technical Assistance engagement during the period of implementation. The component will be fully aligned with the GESD and Social Support for Resilience Livelihood Project and function as a platform for coordination, further strengthening joint Project outcomes, through overall district capacity improvements in spatial planning, service delivery and infrastructure management.

[7] The assessment for the Shire Basin is currently ongoing.

The selection and prioritization of investment interventions will be guided by the District Development Plans (DDPs) and pre-agreed menu of resilience interventions[8]. Based on strategic catchment management strategies, the thematic interventions will be identified and prioritized at the basin-level. District priority interventions are identified within the District Development Plan and Village Level Action Plan, which are informed by the larger strategic catchment management strategy as and when available. Landscape restoration activities will be prioritized by methodology following the NFLS and the National Catchment Management Guidelines.

Access to the PBGs will depend on the capacity of the districts to plan, implement, and monitor infrastructure and catchment management interventions. The first criterion is the need to have adequate technical staffing at district level. During the project implementation timeline, it is expected that the high vacancy rate for technical and extension staff is decreased to a sustainable level. To ensure that investment interventions are implemented in accordance with good practice, the PBGs will be accessible to districts with sufficient capacity for implementation, including technical and engineering, fiduciary, and E&S safeguards. Towards this end, the project will finance filling engineering positions at district level during the first year of implementation. The project will also carry out on-the-job training program for district staff, local contractors and unskilled laborers engaged in the activities. Investment proposals will undergo quality assurance processes through the Project Coordination Unit's clearing house and national guidelines where available, in consultation with the district level staff.

The second criterion is the development of implementable spatial plans and necessary flood maps that will ensure the necessary quality assurance and control mechanisms are in place. Development planning and community engagement at the District-level will be strengthened through structured assessments and planning exercises. The supported Districts will maintain an updated DDP outlining proposed investments and facilitate the inclusion of strategic investments, as well as community consultation. Based on strategic planning, restoration and flood-risk mapping, the local authority will develop fit for purpose plan. The preparation of the plans will allow for enhanced enforcement of flood zones, conservation areas and physical plans for efficient development. The project will develop a positive list of investments, including design procedures, standard designs, drawings and BoQs, typical OHS and E&S safeguards checklists, and O&M arrangements including incorporating these into Foreman training at National Construction Industry Council (NCIC). Infrastructure interventions will implement robust works standards and designs and operationalize good practice O&M for asset management, to embed flood resilient considerations into the siting, design, construction, and operation.

The menu of interventions will ensure focus, quality and manageability of district-level interventions and will broadly include activities that will (i) create space for the river and promote the concept of living with floods. Specific interventions will include, construction or rehabilitation of small flood dykes with safe spillways; expansion of flood bunds and barriers; clearing flood stream or flood plain obstacles; improving storm water drainage; elevating evacuation routes; strengthening river bank; river training, nature-based solutions for flood protection etc.; (ii) improve conservation, reduce sedimentation and flood peak-flows. The interventions will include construction of check dams and flood retention reservoirs, and rehabilitation of degraded landscape, and (iii) strengthen infrastructure and provide sustainable solutions through structured interventions, including construction and rehabilitation of drainage systems, access roads, evacuation centers etc.

[8] Initial menu provided below.

Allocation Formula between 'determined needs' and annual performance. To ensure that LAs receive allocations that reflect their relative needs and incentivize performance in delivery, the allocation formula for the PBG has two elements. The first element is allocated through application of a basic equitable needs-based formula. The design of the formula will be kept simple to promote transparency.

Table 1 Factors and weights for the basic need-based allocation formula

Factor	Weight	Rationale
Population	20%	A significant portion of the grant allocated according to population as the service delivery responsibilities / cost of services of a LA is closely related to the population it serves.
Poverty	20%	Ensure that differential levels of endowment across LAs are acknowledged, consistent with government policy commitments to equity of outcomes (30 percent poverty head count and 10 percent ultra- poor persons).
Land Area	20%	The relative cost of services on a unit and recurrent basis are approximate to LAs land areas
Flood-risk and land degradation profile	30%	Based on the level of recurrent flood-risk and land degradation, as determined by area with high erosion risk and high flood risk.
Equal (fixed) Share	10%	Very small LAs need a minimum allocation to make meaningful investments, carry out planned O&M, and pay for staff positions financed by the project.

Component 3. Adaptive Climate Services for Resilient Communities. This Component aims to enhance community preparedness, engagement and mainstreaming the climate dimension in social protection policy design, operational and budgetary planning.

Sub-component 3.1 Expanding Social Registry in Urban Areas and Piloting Social Protection Public Works. In Malawi, the activities will focus on introducing urban social registry in the Central and Southern Regions (including in the transboundary Shire Basin), to include vulnerable urban populations in social protection programs. This sub-component will finance the design and development of guidelines and training materials for a new urban public works program and will run a small pilot. The guidelines and training materials will then he used to scale up climate smart social protection in urban areas and raise community awareness of climate resilience risks and community level adaptation works. The activity will aim to integrate urban public works social protection programs with regular and seasonal O&M needs of cities to devise a more sustainable and cost-effective approaches for maintaining optimal operations of urban infrastructure.

Component 4. Project Management. The project will be coordinated by a Project Coordination Unit (PCU), established under Economic Planning and Development department within the Ministry of Finance to ensure proper coordination between line ministries and between national and district level administrations. This component will finance all project management activities, including equipment and materials, technical assistance and compliance with fiduciary, procurement, and environmental and social risk management requirements, security planning and management, remote supervision, monitoring and evaluation (M&E), impact assessment, and knowledge management and communication, and support to technical activities and supervision through a Third Party firm(s) (TP). This component will also finance the participation of Malawi in the RCRP Regional Steering Committee (RSC) that has been established under

RCRP-1 to increase coordination across the region, primarily on the learning and knowledge program; and in other learning events.

Component 5. Contingent Emergency Response Component. This component will be included in the Malawi financing agreement. It will allow DODMA to respond to any eligible crisis or emergency in a timely manner.

The table below presents an indicative list of the types of Project activities and their technical complexity.

Table 2 Indicative list of subprojects

Component / Subcomponent	Type of Activity	Technical Complexity
Component 1. Risk Management and Climate Financing		
Sub-component 1.1. Strategy development	TA to support integrated management strategy	Low
	TA for Land and Forest restoration planning	Low
	TA for flood risk mapping	Low
Sub-component 1.2. Early Warning Systems (EWS)	TA to improve early warning system and collection of hydromet data	Low
Sub-component 1.3. National Monitoring, Reporting, and Verification (MRV) system	TA to support foundations for MRV system	Low
Component 2. Infrastructure Investments and Sustainable Asset Management for Climate Resilience.		
Sub-component 2.1. Basin-Level Infrastructure Development	Reconstruction and rehabilitation of critical connectivity (roads/bridges, culverts) and critical hydraulic infrastructure	High
	Construction of longer-term flood resilient hydraulic infrastructure (i.e., river training, riverbank protection, drainage, dykes etc.)	High
Sub-component 2.2. District-Led Resilience Building	Development of flood hazard maps and flood zoning in support of physical development planning, and Village Level Action Plan development for areas with planned interventions;	Low
	Execution of O&M plans, seasonal and preventive repairs.	Medium
	Construction or rehabilitation of small flood dykes with safe spillways	Medium

	Expansion of flood bunds and barriers; clearing flood stream or flood plain obstacles; improving storm water drainage; elevating evacuation routes; strengthening river bank; river training, nature-based solutions for flood protection etc.;	Medium
	Improve conservation, reduce sedimentation and flood peak-flows, including construction of check dams and flood retention reservoirs, and rehabilitation of degraded landscape	Medium
	Strengthen infrastructure and provide sustainable solutions through structured interventions, including construction and rehabilitation of drainage systems, access roads, evacuation centers etc.	High
Component 3. Adaptive Climate Services for Resilient Communities		
Sub-component 3.1 Expanding Social Registry in Urban Areas and Piloting Social Protection Public Works.	Expanding the urban social registry	Low
	TA for Guidelines and training Small pilot interventions to improve the design of the guidelines in 1-2 neighborhoods. This may include labor intensive small public works (cleaning drainage system, fixing access unpaved roads etc.)	Medium
Component 4. Project Management		
	Project management, including E&S risk mitigation	Low
	Participation of Malawi in the RSC	Low

Menu of Interventions for District-Level Resilience Building under Sub-Component 2.2.

A: Creating space to live with floods:

- Build/Repair Dykes around villages and other critical infrastructure (living with floods)
- Labor intensive low flood bunds (less than 1m high around settlement)
- Build safe crossings/spillways on dykes to enhance structural integrity in case of larger floods
- Moving dykes and embankments off the floodplain
- Lowering small-flood-dykes to makes space for large floods
- Remove flood stream obstacles (increase capacity of culverts and bridges)
- Build resilient drifts/Irish bridges instead of culverts on secondary roads (non-emergency access)
- Create “green rivers” – safe large flood storage/flow branches.
- Storm water drainage channel connected to dykes
- Elevating evacuation routes
- River Bank Sloping and Strengthening, river training (green measures, gabions/reno, cribs)

- Critical infrastructure protection with landscape measures (bunds/elevation/afforestation)
- Increasing natural storage in flood plain (raising outlets in selected natural depressions)
- Evacuation centers for >1:25 year floods

B: Improving conservation, reducing sedimentation and flood peaks

- Groundwater recharge swales
- Check dams and retention reservoirs (upstream)
- Environmentally friendly road construction/erosion prevention on roadsides

C: Menu of non-structural measures:

- Develop Flood Risk Maps and Flood Zoning with different hazards/flood frequency
- Marking flood plains (1:5 line, 1:50 line, 1:100 line) for land use planning clarity – with priority around settlements.
- Culvert cleaning
- Cutting back banks on smaller streams and drains/remove constrictions
- Catchment conservation (contour ridging, bunds, vegetation, grazing enclosures)
- Wetland protection for flood absorption
- Annual preventive maintenance
- Readiness: stock up bailey bridge parts and passenger ferry for island/Ruo access
- Non-structural: Trainings and awareness raising to strengthen Early Warning System and Response

1.2. Project Beneficiaries and Geographical Locations

The Project is expected to generate an important set of quantifiable and non-quantifiable benefits through its interventions. In particular, the project's investments are expected to generate several benefit streams for the targeted beneficiaries, including socio-economic benefits from improved adaptative social services, stronger transboundary cooperation and coordination, and overall prosperity and economic growth for all participating countries. At present no selection of particular locations has been undertaken. Component 1 and 4 will be covering the national level; Component 2 will focus on the transboundary Shire River Basin and Blantyre City as well as serve districts across the country; and Component 3 will focus on the central and southern regions of the country, including the transboundary Shire River Basin.

1.3 Objective of the ESMF

This ESMF has been developed as the E&S instrument for assessing, managing and monitoring E&S risks and impacts of the project. An ESMF has been selected given that the full nature, scope and geographical locations were not exactly known at the time of preparing the ESMF. The ESMF establishes the screening processes and tools as well as exclusion criteria for specific sub-projects - to be directly implemented by the Project Implementation Unit (PCU) and relevant ministry project technical teams in assessing the risks and impacts of the sub-projects or activity. This will facilitate the recommendation of appropriate mitigation and monitoring measures for each sub-project.

The ESMF describes the policy and legal framework in which the E&S Standards are embedded, including national legislation and policies, international commitments of Malawi, the World Bank Environmental

and Social Framework (ESF) and supporting instruments. It further lays out an environmental and socio-economic baseline; classifies the E&S risks and tables E&S risks and mitigation measures in the format of a generic Environmental and Social Management Plan (ESMP). The document then explains the institutional and implementation arrangements for the project and for the ESMF and lays out the Monitoring Plan for the ESMF. It also lists the Project Grievance Redress Mechanisms (GRM) and explains anticipated trainings and capacity development initiatives for E&S compliance. The ESMF further lays out how Environment, Social, Health, and Safety clauses and requirements will be incorporated in the contract bidding documents. Specific E&S instruments, designed for the risk mitigation of the Project will be annexed to this ESMF. These include a Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) risk assessment and Action Plan, and Labor Management Procedures (LMP). A Stakeholder Engagement Plan (SEP) and a Resettlement Policy Framework (RPF) have been prepared as a separate document.

1.4. Approach and Methodology

The methodology applied to develop this ESMF was based on a literature review and stakeholder consultations.

The literature review aimed to review relevant documentation and understand the context in which the ESMF is applied. The literature review included the review and consultation of the following:

- ESMF of similar projects in the region financed by the WB, in particular under the RCRP I, and previous projects within Malawi;
- Malawi's policies, laws, procedures, regulatory and administrative frameworks to determine the relevant legal requirements for the project;
- ESS of the WB in order to determine their applicability to the Project;
- Existing documents related to the Project, such as the RCRP Project Appraisal Document (PAD) and the Project Concept Note (PCN) for the RCRP II
- Draft Environmental and Social Commitment Plan - ESCP, Stakeholder Engagement Plan - SEP, and the C-ESRS
- Documents and literature on environmental and social aspects of the Project areas;
- Information on sensitive habitats and species.
- The following Good Practice Notes: Addressing sexual exploitation and abuse and sexual harassment (SEA/SH) in investment projects financing involving in major civil works, 2020; Addressing Gender based violence in Investment Project Financing involving major civil works, 2018; Gender, 2019; Road safety, 2019; Assessing and managing the risks and impacts of the use of security personnel, 2018; Managing the risks of adverse impacts on communities from temporary project induced labor influx, 2016.

This ESMF may be subject to change as additional assessments, information etc are undertaken, including in the E&S screening form and the sub-project exclusion list. Amendments to this document will be undertaken by the PCU. The document will then be resubmitted to the World Bank for clearance each time changes have been applied.

2. Policy and Legal Framework

This section provides a discussion of the policy and legal framework for environmental and social management and conservation in Malawi under the Project.

2.1 National Regulatory and Policy Framework

The Constitution of the Republic of Malawi (1995): The Constitution is the supreme law of the land. All other pieces of legislation or Acts of government are valid to the extent of their consistency with the Constitution. Several judgments of the High Court and even the Supreme Court confirm this position. Under Section 13 of the Constitution as part of the state responsibility of promoting welfare and development of the people of Malawi, the State has the responsibility to ensure gender equality, responsible environmental management, enhance the quality of life in rural communities, among others. The Constitution uniquely provides for the right to development in Section 30, which not only confers the right but also places responsibility on the State to take all necessary measures for the realization of the right to development.

The Constitution further provides for the principle on which land acquisition can occur in Malawi. Section 28 (2) states that "No person shall be arbitrarily deprived of property" and section 44 (4) states that "Expropriation of property shall be permissible only when done for public utility and only when there has been adequate notification and appropriate compensation, provided that there shall always be a right to appeal to a court of law for redress.

Environment Management Act (2017): the Act is the overarching legal framework on environmental management in Malawi and emanated from the Malawi National Environmental Policy (NEP, 2005). Both the EMA and the NEP provide for the protection and sound management of the environment, and conservation and sustainable utilization of natural resources. The Act provides the legal mandate for the Director-General of the Malawi Environment Protection Authority (MEPA) to carry periodic monitoring of the environmental management systems of any project to enforce Environmental Management Act. The Act further requires that project proponents must take all reasonable measures to mitigate undesirable effects arising from implementation of a project which could not reasonably be foreseen during project implementation. The Act also makes provisions for use of the Guidelines for Environmental and Social Impact Assessment (ESIA), which outline the process for conducting ESIAs and facilitating compliance with the ESIA process as provided for in the Act. The guidelines provide a list of prescribed projects for which an ESIA is mandatory. It is a requirement that project proponents submit ESIA/ESMPs to MEPA for review and approval. The Act is relevant for the Project, especially as the Project may need to comply with the ESIA guidelines.

The Land Act (2016 and Amendment Act 2022): The Act makes provision for land in Malawi and for all matters incidental or connected thereto. The Act deals with land access, rules for good land husbandry, use and disposal issues. The law categorizes land into public, private and customary land with public land including government and unallocated customary land used for benefits of a whole community. Private land is composed of freehold land, leasehold and customary estates. Customary land is used, occupied and held by chiefs. The Act also outlines the procedures for acquisition of customary land for public utilities and the conversion of customary land to registered land. It recognizes that every person has a natural dependence on land and that it is therefore important. The Act also sets out rules for good land

husbandry providing due regard for the character and situation of the land in question. The Act may be relevant for the Project as sub-projects may require land acquisition.

The Lands Acquisition (Amendment) and Compensation Act (2017): The Act provides powers to the Minister or local government authority to acquire land for public utility either compulsorily or by agreement and pay appropriate compensation thereof. This is the main Act that provides for land acquisition and compensation, to be administered by the Commissioner for Lands. Per Section 3 of this Act, the Minister responsible for land matters is given powers to acquire land either compulsorily or by agreement, where he is of the opinion that the land is required for public interest. Fair compensation is assured under Section 9, where the Act provides for payment of fair compensation for any land acquired by the minister with the provision for payment of compensation either as a lump sum or in instalments. Section 10 says that assessment for fair compensation would take into account the following:

a) Amount of money the person paid when acquiring the land;
b) The value of improvements to the land; and
c) Appreciation in the value of the land since the date of acquisition.

The Act says the assessment of compensation made by the Minister shall be final and not be subject to any appeal to, or to any review by any court. The Act may be relevant for the Project as sub-projects may require land acquisition.

Customary Land Act (2016): The new Customary Land Act (CLA) proposes the creation and registration of customary estates based on current, legitimate, customary land occupation within Traditional Land Management Areas (TLMAs) and transforms these holdings into private land, capable of being transacted (with certain limitations) and encumbered. It envisages identification and formalization processes that incorporate international best practice principles and lays the legal foundation for transparent and decentralized administration of these estates. Arrangements for local governance of land rights envisage formal approval and dispute resolution roles for the Traditional Authorities, and for new institutions to be established at Group Village Level. These comprise of Customary Land Committees (CLCs), established in terms of section 5 of the CLA, which will have powers to make grants of customary estates. In addition, the current regional land registry will be decentralized to district level. Each TLMA will also have a Customary Land Tribunal (CLT) with responsibilities for hearing appeals and resolving disputes as a forum of first instance, and to be chaired by the Traditional Authority. The establishment of these Group Village CLCs and TLMA CLTs is a conscious attempt to institute greater legitimacy in decisions regarding the application of customary norms to land management. Whilst formalizing the roles of the Traditional Authorities in this regard, the CLA introduces a level of democratization; the CLCs will be chaired by the Group Village Headperson, ex oficio, but an additional six members shall be elected by people in the TLMA, three of whom must be women. The Act may be relevant for the Project as sub-projects may require land acquisition.

Water Resources Act (2013): The Act governs water rights, water abstraction, pollution control, building of dams and water resource planning and development. The Act further prohibits any person to divert, dam, store, abstract or use public water for any other purpose except in accordance with the provisions of this Act. Part VIII, Section 89 (1) of the Act makes it an offence for any person to interfere with, alter the flow of, or pollute or foul, any public water. The Act defines pollution or fouling of public water to mean the discharge into or near public water or in a place where public water is likely to flow, of any matter or substance likely to cause injury whether directly to public health, livestock, animal life, fish,

crops orchards or gardens which such water is used or which occasions, or which is likely to occasion, a nuisance.

Section 10. Powers and functions of the Authority

- (1) The Authority shall have the following powers and functions—
- (a) to develop principles, guidelines and procedures for the allocation of water resources;
- (e) to regulate and protect water resources quality from adverse impacts;
- (f) to manage and protect water catchments;
- (i) to liaise with the relevant stakeholders for the better regulation and management of water resources;
- (j) to advise the Minister concerning any matter in connection*(sp)* with water resources;

Section 25. Catchment areas

- (1) In accordance with the National Water Policy, the Authority may, by notice published in the *Gazette*, designate a defined area from which rainwater flows or drains into a watercourse, to be a catchment area for the purposes of this Act.
- (2) A catchment area designated under this section may include two or more sub-catchment areas.

Section 26. Establishment of catchment management committees

- (1) A catchment management committee may be established for a specific catchment area, after public consultation, on the proposal of the community and stakeholders concerned, or the Authority may establish a catchment management committee on its own initiative.

Section 28. Composition of a catchment management committee

- (1) The members of a catchment management committee shall be chosen from among—
    - (a) representatives of ministries, departments or other public bodies responsible for matters relating to water resources in the catchment area;
    - (b) representatives of any regional development authorities and local authorities whose areas of jurisdiction or any part thereof fall within the catchment area concerned;
    - (c) representatives of farmers within the catchment area concerned;
    - (d) representatives of the business community operating within the catchment area concerned;
    - (e) representatives of the non-governmental organizations engaged in water resources management programmes within the catchment area concerned; and
    - (f) other persons who have demonstrated competence in matters relating to the management of water resources.

Section 29. Functions of catchment management committees

- (1) Without prejudice to the provisions of section 25, a catchment management committee shall, in relation to the catchment area for which it is appointed, advise officers of the Authority at the appropriate regional office concerning—
    - (a) water resources conservation, use and allocation;
    - (b) the grant, adjustment, cancellation or variation of any licence and permit under this Act; and
    - (c) any other matters pertinent to the proper management of water resources.
- (2) Subject to the relevant Catchment Management Strategy, a catchment management committee may also undertake, on its own initiative and with funding received pursuant to section 31, water resources conservation activities and works..

"**catchment**", in relation to a watercourse or any part thereof, means the area from which any rainfall will drain into, the watercourse or part of the watercourse through surface flow to a common point;

“water resource" means any lake, pond, swamp, marsh, stream, watercourse, estuary, aquifer, artesian basin or other body of flowing or standing water, whether above or below ground.

Given that the Project will finance flood-risk mitigation sub-projects, water rights will be applicable.

Forestry Act (2016): The Forestry Act provides for participatory forestry, forest management, forestry research, forestry education, forest industries, protection and rehabilitation of environmentally fragile areas. The act among other things seeks to: augment, protect and manage trees and forests on customary land in order to meet basic fuelwood and forest produce needs of local communities and for the conservation of soil and water; promote community involvement in the conservation of trees and forests in forest reserves and protected forest areas; prevent resources degradation and to increase socio-economic benefits; promote community involvement in conservation of trees and forests; promote optimal land use practices through agroforestry in small holders farming systems; protect fragile areas such as steep slopes, river banks, water catchment and to conserve and enhance biodiversity.

Section 26. Declaration of protected forest areas

- (1)Where the Minister finds that the protection of soil and water resources, outstanding flora and fauna requires that any area of land be maintained or established as a forest, the Minister may, by order published in the *Gazette*, after consultations with the Minister responsible for land matters, the Minister responsible for physical planning, the Minister responsible for agriculture, the Minister responsible for Irrigation and Water Development, the owner or occupier and, in case of customary land, the traditional authority, declare such land to be a protected forest area.
- (2)Where the Minister considers that land which requires protection as a forest reserve or protected forest area, is liable to serious degradation if not immediately protected, the Minister may declare such land to be a protected forest area for such period not exceeding one year as may be necessary to complete the consultations required by section 22 or subsection (1).

Section 31. Forest management agreement

- (1)For the proper management of village forest areas, the Director of Forestry may enter into a forest management agreement with a management authority providing for—
  (a)the specifications of the nature of the forestry and other practices to be followed;
- (b)the assistance to be provided by the Department of Forestry and provision for use and disposition of the produce and revenue therefrom.
- (c)allocation of land to individuals or families for afforestation and revocation of such allocation if applicable provisions of the agreement are not adhered to by the occupier of the land so allocated;
- (d)formation of village natural resources management committees for the purposes of managing and utilizing village forest areas.

Section 32. Minister may make rules

- (1)The Minister may make rules which shall apply to all customary land outside forest reserves and protected forest areas.(2)In particular and without prejudice to the generality of the foregoing power, such rules may—
  (a)provide for the protection of water catchment and fragile areas, rehabilitation of degraded areas and any other activity which would be conducive to good land husbandry;
- (b)facilitate the establishment and management of forest by village natural resources management committees for the benefit of local communities;
- (c)encourage local government authorities, non-governmental organizations and the private sector to contribute towards the provision of forestry extension services, as well as the

establishment and management of plantations in accordance with guidelines provided by the Department of Forestry;

- (d)provide for the establishment and maintenance of nurseries to provide seedlings for tree planting programmes;
- (e)authorize the payment, of grants or bonuses out of public funds for the encouragement of forestry;
- (f)provide for the declaration of endangered or essential tree species and their management;
- (g)prescribe a mechanism for sharing costs and benefits between the Department of Forestry and village natural resources management committees in regard to forest produce confiscated from customary land forests.

The Project will conduct forest restoration planning and therefore this Act will be applicable.

Irrigation Act (2001): The Act provides for the sustainable development and management of irrigation, protection of the environment from irrigation related degradation, establishment of the National Irrigation Board, the Irrigation Fund and other matters related to irrigation development in Malawi. It mandates farmers to maintain irrigation canals, drains and other associated infrastructure in their holdings and prohibits people from engaging in practices which are destructive or potentially destructive to the catchment area of a river that provides water for irrigation. It goes further and prohibits livestock grazing, setting or causing to set fire on irrigation schemes or farms. Recognizing the destructive effects of fires, puts the responsibility for averting, fighting or extinguishing fire on irrigation schemes or farms in the hands of everybody. Although the Act is silent on the maintenance of buffer zones along riverbanks, it prohibits any actions that are destructive to the catchment. Since the Project and its flood risk management activities will affect irrigation structures, this Act is applicable.

Occupational Safety, Health and Welfare Act (1997): Section 66 of the Occupational Safety, Health and Welfare Act (1997) defines the procedure to be followed in case of the occurrence of an accident which either causes loss of life or disables a person from carrying out the normal duties at which he is employed. Furthermore, it stipulates measures that relate to work in confined spaces (section 55), measures taken to prevent and deal with fire (section 56), matters relating to bulk storage of dangerous materials, matters dealing with noise (section 63) and general matters relating to health and safety. The project will include public works, making this Act relevant.

National Construction Industry Act (1996) (NCIC) for the promotion and development of the construction industry in Malawi, for the registration of persons engaged in the construction industry, for the co-ordination of training of persons engaged in the construction industry and generally for matters incidental thereto. Since the Project will include public works, relying on the construction industry, this Act is applicable.

Physical Planning Act (2016): The Act provides for physical planning and the orderly and progressive development of land in both rural and urban areas and for issues relating to the grant of permission to develop land and for other powers of control over the use of land. The Act is administered by the Commissioner for Physical Planning and also provides for the establishment of the Physical Planning Council. The Act provides for development permission including application forms, processing and revocation. Section 54 provides that a person shall not commence the development of any subdivision of any land unless he first obtains a grant of development permission. In addition, a person applying for the registration of any land under the Registered Land Act must attach a copy of the grant of development permission in order for his documents to be considered.

Part VII of the Act deals with acquisition of land and compensation. The section provides that the Minister may acquire any land, either compulsorily or by agreement if it is considered desirable or expedient in the interests of the implementation of any plan of the proper control and furtherance of development of any land under the Act. Compensation will be paid in accordance with the Lands Acquisition Act as amended. Section 68 of the Act provides for occasions when compensation is payable for planning actions, section 69 deals with how compensation can be assessed and section 70 provides for how a claim for compensation can be made. The Second Schedule of the Act is on the calculation of compensation under section 68. The Act provides for circumstances when an appeal can be made and the fact that an appeal can be made to the Council. A person aggrieved by a decision of the Council may apply to the High Court for judicial review. The Project may trigger land acquisition for the implementation of sub-projects, making this Act applicable.

National Parks and Wildlife Act (2017): The Act was amended in 2017 to replace the National Parks and Wildlife Act of 1992 with an aim to curb the rising number of illegalities in the protected areas. All protected species are now referred to as endangered or listed in line with IUCN classification. Part IV of the Act, provides for the conduct of environmental and social impact assessment (ESIA) for activities that may occur in protected areas. This may be initiated by any person with sufficient grounds that such actions may have an adverse effect on any wildlife species or community. At this point it is not anticipated that the Project will impact protected areas.

Pesticides Act (2000). This Act provides for the control and management of the import, export, manufacture, distribution, storage, disposal and use of pesticides and makes a provision for the Pesticide Control Authority. The Act also establishes the Pesticides Control Board that enforces the provisions of the Act relating to pesticides and other incidental matters. It therefore protects the importation and use of expired products that can be hazardous to the environment and human health. Since the Project will impact irrigation measures, and indirectly contrinubting to agricultural activities, this Act applies.

Malawi Cultural Policy of (2015): The Policy formally establishes the mechanism that the Malawi Government must follow to adequately fulfil its program to deliver Cultural Services to all Malawians in line with the need to strengthen our cultural identity in the face of foreign influences. It takes into account the need to support poverty reduction initiatives. The Policy also takes into account the need to preserve the natural environment and protect it from further degradation. The objectives of the policy include: a) To develop a system that would capably and adequately research, develop, preserve, protect, maintain and promote Malawi's cultural heritage; b) To provide adequate facilities for the efficient dissemination of information on culture; c) To provide suitable education and training to young people for the proper observance of moral values, positive traditional beliefs, self-reliance, patriotism and service to the community d) To promote environmental and biodiversity conservation and preservation methods that are in harmony with cultural beliefs e) To promote nation-wide participation in cultural programs for national unity and socio-cultural awareness f) To develop a mechanism for the development and promotion of literature, folklore, storytelling, and fine and performing arts g) To take into account cultural factors in development projects, policies and programmes for the nation. The Policy is relevant for the Project, as public works may impact cultural heritage and as it stipulates environmental protection.

Public Health Act (1948): The Act provides the legal framework for planning and management of a wide range of health-related issues including environmental health, occupational health, and solid waste management. It stipulates the requirements for separate toilets for both female and male persons in

public buildings or buildings which would be used by both male and female employees, which is relevant as the Project will include public works and deploy workers.

Workers Compensation Act (2000). The Workers' Compensation Act provides for compensation for injuries suffered or diseases contracted by workers in the course of their employment or for death resulting from such injuries or diseases; it provides for the establishment and administration of a Workers' Compensation Fund; and it provides for matters connected therewith or incidental thereto, key of which are the following: Eligibility for Compensation in Case of Injury other than the Contraction of a Scheduled Disease; Compensation for Injury Caused otherwise than by the Contraction of a Scheduled Disease; Calculation and Distribution of Compensation; Medical Aid; Compensation for Injury due to the Contraction of a Scheduled Disease; Procedure for Obtaining Compensation; and Administration 8. Workers' Compensation Fund. The Act is relevant as the Project will finance public works.

The Employment Act (2000): The Employment Act establishes, reinforces, and regulates minimum standards of employment with the purpose of ensuring equity necessary for enhancing industrial peace, accelerate economic growth and social Justice and for matters connected therewith and incidental thereto. The Act covers: Administration; Employment of Young People; Contracts; Hours of Work, Weekly Rest and Leave Wages; and Discipline and Dismissal. The Act is relevant, as the Project will include the employment of a variety of Project workers.

The Labor Relations Act (2000): The Act promotes sound labor relations through the protection and promotion of freedom of association, the encouragement of effective collective bargaining and the promotion of orderly and expeditious dispute settlement, conducive to social justice and economic development. The act covers the following: Freedom of Association; Trade Unions and Employers' Organizations; Collective bargaining and Organizational Rights; Dispute Settlement; Tripartite Labour Advisory Council; and Establishment of Industrial Relations Court. The Act is relevant, as the Project will employ a variety of workers.

Gender Equality Act (2012): The Act promotes gender equality, equal integration, influence empowerment, dignity and opportunities, for men and women in all functions of society, to prohibit and provide redress for sex discrimination, harmful practices and sexual harassment, to provide for public awareness on promotion of gender equality and to provide for connected matters. Section 6(1) of the Act states that a person who commits an act of harassment if he or she engages in in any form of unwanted verbal, non-verbal or physical conduct of a sexual nature in circumstances, would have anticipated that the other person would be offended, humiliated or intimidated, and (2) a person who sexually harasses another in terms of the foregoing subsection is liable to a fines and imprisonment specified under subsection (2). The Act makes provision for Government to take active measures to ensure that employees have developed and are implementing appropriate policy and procedures aimed at eliminating sexual harassment in the workplace. The Act is relevant, as the Project will employ a variety of workers, including women and men.

National Environmental Policy (2004): The Policy aims at narrowing the gap between the degradation of the environment and depletion of the natural resources on one hand and development on the other. The Policy promotes sustainable social and economic development through sound management of the environment and natural resources. The policy has the following guiding principles with regards to water:

a) All people should have access to clean potable water in order to reduce the incidence of water borne diseases and reduce the time devoted by individuals to water collection,

b) In planning and providing water supply services, consideration should be given to safe disposal of the resultant wastewater,
c) The precautionary approach to water quality management shall be pursued with a focus on pollution minimization and prevention,
d) To improve human welfare and sustainable environment and natural resources management.

National Water Policy (2005): The policy goal is sustainable management and utilization of water resources, to provide water of acceptable quality in sufficient quantities. It aims at ensuring efficient and effective provision of potable water and sanitation that meets the basic needs of every Malawian. The overall policy objective supports the right to life where it states to ensure that all persons have convenient access to sufficient quantities of water of acceptable quality and the associated water-related public health and sanitation services at any time and within convenient distance.

National Irrigation Policy (2016): The National Irrigation Policy goal is to contribute to sustainable national economic growth and development through enhanced irrigated agriculture production and productivity. The policy is supplemented by the Environmental Impact Assessment (EIA) Guidelines for Irrigation and Drainage Projects (2002) that guides development of ESIA in the irrigation sector. The policy aspires to attain the following outcomes: Increased irrigated agriculture production and productivity for local and export use using irrigation technologies that consider climate change; Improved national and household incomes, food and nutritional security; Improved irrigation service delivery; Increased employment opportunities; and Enhanced land and water productivity through sustainable land tenure arrangements, catchment management and water harvesting.

National Forest Policy (2016): Forestry resources play a major part in supporting livelihoods, infrastructure development and energy besides providing habitat for animals and providing protection for soil and water resources for agriculture and domestic use. The ecological services provided by forests in providing protection of watersheds that supply water to irrigation schemes are very important for sustainable irrigation development in Malawi. The 2016 National Forestry Policy calls for conservation, establishment, protection and management of trees and forests for the sustainable development of Malawi.

The 2017 Forest Strategy seeks to reinforce landscape governance by strengthening local bylaws for the use and management of trees and other natural resources; expand communication and outreach to share information broadly about restoration techniques and benefits, and to mobilize a restoration movement; ensure increased socioeconomic benefits accrue to communities and individual households investing in implementing restoration; and mainstream integrated landscape management approaches and increased support for implementing restoration in development programs at all levels.

National Disaster Risk Management Policy (2015): The overall goal of the Policy is to sustainably reduce disaster losses in lives and in the social, economic and environmental assets of communities and of the nation. The policy aims at creating and providing enabling framework for the establishment of a comprehensive disaster risk management system in Malawi. The priority areas of the policy focus on including mainstreaming of disaster risk management into sustainable development, establishment of comprehensive system for disaster risk identification, assessment and monitoring, development and strengthening of a people centered early warning system, promotion of a culture of safety, adoption of resilience enhancing interventions and the reduction of underlying risks. The strategies to implement the policy cut across several sectors including infrastructure development, agricultural diversification, microfinance initiatives, disaster risk insurance, social support schemes, reforestation and river training.

National Wildlife Policy (2000) The Policy aims at ensuring proper conservation and management of the wildlife resources in order to provide for sustainable utilization and equitable access to the resources and fair sharing of the benefits from the resources for both present and future generations. It recognizes that wildlife forms the basis for the tourism industry in Malawi which is overwhelmingly nature-based and has potential for increased contribution to GDP. The Policy seeks to meet a number of objectives including ensuring adequate protection of representative ecosystems and their biological diversity through promotion and adoption of appropriate land and water management practices that adhere to the principles of sustainable use and enhancing public awareness and understanding of the importance of wildlife conservation and management and its close relationships with other forms of land use.

National Gender Policy (2008): The Policy appreciates that gender inequality is a significant constraint to socio-economic growth and poverty reduction. The policy specifies that Government has a responsibility to integrate gender into the development, design, implementation, and monitoring of different development programs. According to this Policy, Government of Malawi is expected to implement a constitutional obligation of building a society where men, women, boys and girls equally and effectively participate in and benefit from different development processes.

National Land Policy (2002): The Policy guides land management and administration in Malawi. It introduces major reforms intended for land planning, use, management and tenure and provides clear definition of land ownership categories addressing issues of compensation payment for land. The policy has provisions for environmental management, urban management of solid and liquid waste, protection of sensitive areas, agricultural resource conservation and land use, community forests and woodland management.

The National Land Policy refers to matters relating to land acquisition. It alludes to necessity of having provisions in the land law that would give the Government the opportunity to acquire any piece of land required for public services following guidelines such as:

a) Clearly spelling out or specifying the purposes for which Government may require the land in order to prevent possible abuse of the power of eminent domain;
b) Payment of compensation in the event of the repossession of a leasehold interest on Government land, to be limited to the negotiated value of improvements made by the leaseholder; and
c) No compensation to be paid for the land, when the private user rights granted as a result of the lease are terminated. Government ownership of the land remains throughout the term of the lease.

The Land Policy recognizes Government's duty to protect the free enjoyment of legally acquired property rights on land and a landholder's entitlement to fair and adequate compensation where the Government acquires property for public use. It further stipulates that compensation valuation for customary land, at the time of acquisition by the Government, be based on the open market value of the land and all improvements carried out on the land. The Policy notes that the inadequacy of compensation is always a direct result of excluding certain items or qualities from the factors considered when determining the value; and delays in payment of compensation.

Land Resources Management (2000): The overall goal of this policy is to promote the efficient, diversified and sustainable use of land based resources both for agriculture and other uses in order to avoid sectoral land use conflicts and ensure sustainable socio-economic development. Some of the selected policy objectives are to promote integrated land conservation measures in all forms of agricultural practices,

and to protect and preserve environmentally fragile areas such as steep slopes, stream banks, water sheds and dambos. The policy is not explicit on the issue of riverbank cultivation as it provides no guidance on the size of buffer zones along rivers and the recommended management practices of such zones.

Fisheries and Aquaculture Policy (2016): The goal of the Policy is to promote sustainable fisheries resource utilization and aquaculture development in order to contribute to food and nutrition security and economic growth of the country. The policy objectives hinge on increasing annual fish production from capture fisheries; increasing aquaculture production; strengthening participatory fisheries management regimes; reducing fish post-harvest losses; increase annual fish exports; increasing per capita fish consumption; improving decent employment in fishing communities for youth, women and men and to reduce the number of child laborers; promotion of applied research in fisheries and aquaculture and monitor the impact of pollution and environmental changes including climate change; and developing capacity of the Government and local management institutions to serve the industry.

Climate Change Policy (2015): Malawi's policy commitments to address climate change and build resilience, as set-out in Malawi's Nationally Determined Contribution (NDC) document submitted to the United Nations Framework Convention on Climate Change in 2015 sets the country's top adaptation priorities that include addressing land and watershed degradation and specifically the loss and degradation of forests, improving the resilience of the agriculture sector to climate change through development of irrigation and climate smart agriculture and improved management of fisheries and natural ecosystems.

Biodiversity Strategy and Action Plan (2015-2026): The goal of the Plan is to enhance the management of biodiversity for economic growth and wellbeing of the present and future generations. To realize the goal, the Plan will pursue the following strategic objectives: Improved capacity and knowledge on biodiversity issues; Increased mainstreaming of biodiversity management into sectoral and local development planning; Reduced direct pressures on biodiversity; Improved status of biodiversity by safeguarding ecosystems, species and genetic diversity; and Enhanced access and benefit sharing from biodiversity and ecosystem services.

National HIV and AIDS Policy (2016): The Malawi National HIV and AIDS policy was adopted by the Government in 2003 to prevent HIV infections, reduce vulnerability to HIV, improve the provision of treatment, care and support for people living with HIV and AIDS and mitigate the socioeconomic impact of HIV and AIDS on individuals, families, communities and the nation. Chapter 7 of the Policy observes that in workplaces unfair discrimination against people living with HIV and AIDS has been perpetuated through practices such as pre-employment HIV and AIDS testing, dismissal for being HIV and AIDS positive and the denial of employee benefits if known to be infected. HIV and AIDS affects every workplace. Absenteeism and death impact on productivity, employee benefits, production costs and workplace morale.

Administrative Framework: The Environment Management Act and the EIA Guidelines provide for the administrative framework of the ESIA process. The ESIA process is managed by the Malawi Environment Protection Authority (MEPA). The Authority works with other line Ministries/agencies and stakeholders. Under section 31 (2) of the Environment Management Act, no one shall undertake any project for which an Environmental and Social Impact Assessment is required without the written approval of the Authority, and except in accordance with any conditions imposed in that approval. Section 31 (3) also states that any other licensing authority shall not grant a permit or license for the execution of a prescribed project unless

an approval for the project is granted by the Authority, or the grant of the permit or license is made conditional upon the approval of the Authority being granted.

The Director-General is empowered under the Act to require changes to a project in order to reduce environmental impact and to reject a project, if, in his view, the project will cause significant and irreparable injury to the environment. A person not satisfied with the decision of the Director may appeal to the Environmental Appeals Tribunal. The EMA in section 25 stipulates that the Authority may establish an advisory committee as may be deemed necessary and appropriate for the conduct of its regulatory responsibilities. In reference to this, the Authority has in place the Advisory Committee on Environmental and Social Assessment that provides technical advice on ESIA reports submitted for its approval. Through this committee, member agencies are informed about projects being appraised; develop project approval terms and conditions; and recommends courses of action to the Authority. The Authority is not bound by the advice of the Committee to arrive at any action that may be considered necessary.

2.2 International Conventions Signed and Ratified

The 1992 United Nations Framework Convention on Climate Change. The primary purpose of the Convention is to establish methods to minimize global warming and in particular the emission of greenhouse gases. The Convention was adopted in 1992 and came into force in 1994. Malawi signed the Framework in 1992.

The 1992 United Nations Convention on Biological Diversity. The Convention has three main goals which are: The conservation of biological diversity or biodiversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from genetic resources. Malawi ratified the Convention in 1994.

The Ramsar Convention for the Conservation and Sustainable Utilization of Wetlands: The Convention is an international treaty for the conservation and sustainable utilization of wetlands, recognizing the fundamental ecological functions of wetlands and their economic, cultural, scientific and recreational value. Malawi ratified the Convention in 1997.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted on 22 March 1989. The overarching objective of the Basel Convention is to protect human health and the environment against the adverse effects of hazardous wastes. Its scope of application covers a wide range of wastes defined as “hazardous wastes” based on their origin and/or composition and their characteristics, as well as two types of wastes defined as “other wastes” - household waste and incinerator ash. The provisions of the Convention center around the following principal aims:

- the reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal;
- the restriction of transboundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management; and
- a regulatory system applying to cases where transboundary movements are permissible.

Convention on the Rights of the Child: The Convention on the Rights of the Child from 1989 is the most comprehensive compilation of international legal standards for the protection of the human rights of

children. It acknowledges children as individuals with rights and responsibilities according to their age and development, as well as members of a family or community. This includes non-discrimination, the best interest of the child, the right to life, survival and development and the right to participation. Malawi signed the Convention in 1991.

ILO 182 Worst Forms of Child Labor Convention (1999). The convention calls for immediate action to prohibit and eliminate the worst forms of child labor. The predefined forms of child labor include all forms of slavery, trafficking of children, debt bondage or any other form of bonded labor, forced or compulsory labor, commercial sexual exploitation of children, prostitution and the production of pornography, as well as work that is likely to harm the health, safety or morals of children. Malawi ratified the convention in 1999.

ILO Convention 138, Minimum Age. The convention provides for the possibility of initially setting the general minimum age at 14 (12 for light work) where the economy and educational facilities are insufficiently developed. Malawi signed the Convention in 1999.

Constitution of the International Labor Organization: The constitutional principle is that universal and lasting peace can be established if it is based on social justice. The ILO has generated such hallmarks of industrial society as the eight-hour work day, maternity protection, child labor laws, and a range of other principles. Malawi has been a member of the ILO since 1965.

ILO Convention 029 on Forced Labor. The Objective of the convention is to suppress forced labor in all its forms. Malawi ratified the Convention in 1999.

ILO Convention 100 on Equal Remuneration. The convention aims at equal remuneration for work of equal remuneration between men and women. Malawi signed the convention in 1965.

ILO Convention 111 on Discrimination. The convention calls upon states to enable legislation prohibiting all forms of discrimination and exclusion on any basis, including race, sex, religion, etc. Malawi ratified the convention in 1965.

Convention on the Elimination of all forms of Discrimination against Women. CEDAW places explicit obligations on states to protect women and girls from sexual exploitation and abuse. Malawi signed the Convention in 1987.

Convention on the Elimination of all forms of Discrimination against Women. CEDAW places explicit obligations on states to protect women and girls from sexual exploitation and abuse, among other issues. Malawi ratified the CEDAW in 1987. The accession to CEDAW enabled the country to address issues of customary law involving women's right to inherit and own productive assets, as well as their lack of voice and decision making in family and community matters and the denial of their right of choice to found a family especially in rural settings.

The Beijing Declaration and Platform for Action (1995) is an agenda for women's empowerment, which consists of 12 areas of concerns, including women and the environment, women in power and decision-making, the girl child, women and the economy, women and poverty, violence against women, human rights and women etc… Malawi committed to the implementation of the Declaration.

The Protocol to the African charter on Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol) is an international human rights instrument established by the African Union, which came into effect in 2005. Malawi ratified the Charter in 2005.

2.3 World Bank Environmental and Social Management Framework and Relevant Standards (ESS)

The Environmental and Social Framework (ESF) sets out the World Bank's commitment to sustainable development through a Bank Policy and a set of Environmental and Social Standards (ESSs) that are designed to support borrowers' projects with the aim of ending extreme poverty and promoting shared prosperity. The short summary of several relevant ESSs from the Bank's ESF are presented below.

The ESSs set out the requirements for borrowers relating to the identification and assessment of environmental and social risks and impacts associated with projects and sub-activities supported by the Bank through Investment Project Financing. The Bank believes that the application of these standards, focusing on the identification and management of environmental and social risks, will support borrowers in their goal to reduce poverty and increase prosperity in a sustainable manner for the benefit of the environment and their citizens.

The standards will:
(a) support borrowers to achieve good international practice relating to environmental and social sustainability;
(b) assist borrowers to fulfil their national and international environmental and social obligations;
(c) enhance nondiscrimination, transparency, participation, accountability and governance;
(d) enhance the sustainable development outcomes of projects through ongoing stakeholder engagement.

The relevant ESS that the borrower and the project will meet through the project life cycle, are as follows:

ESS 1: Assessment and Management of Environmental and Social Risks and Impacts. ESS1 sets out the borrower's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with ESSs.

The E&S assessment will be based on current information, including a description and delineation of the project and any associated aspects and environmental and social baseline data at an appropriate level of detail sufficient to inform characterization and identification of risks and impacts and mitigation measures. The assessment will evaluate the project's potential environmental and social risks and impacts, including cumulative impacts where applicable, with a particular attention to those that may fall disproportionally on disadvantaged and/or vulnerable social groups; examine project alternatives; identify ways of improving project selection, siting, planning, design and implementation in order to apply the mitigation hierarchy for adverse environmental and social impacts and seek opportunities to enhance the positive impacts of the project. The environmental and social assessment will include stakeholder engagement as an integral part of the assessment, in accordance with ESS10.

According to ESS1 the borrower will manage E&S risks and impacts of the project throughout the project life cycle in a systematic manner, proportionate to the nature and scale of the project and the potential risks and impacts. The borrower is thereby responsible for cascading compliance with standards along the chain of implementing partners, contractors and subcontractors. The Project is subject to ESS1 and will follow it through during preparation, design and implementation.

ESS 2 – Labor and Working Conditions. ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. ESS2 applies to project workers including fulltime, part-time, temporary, seasonal and migrant workers.

The Borrower will develop and implement written labor management procedures (LMP) applicable to the project. These procedures will set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS as well as requirements in the World Bank Environmental, Health and Safety (EHS) guidelines for managing occupational health and safety. The procedures address the way in which this ESS applies to different categories of project workers including direct workers, contracted workers and community workers, and the way in which the Borrower will require third parties to manage their workers in accordance with ESS 2. The LMP will further include an Occupation Health and Safety (OHS) Framework, and a grievance redress system which allows workers to raise their grievances.

ESS 3 – Resource Efficiency and Pollution Prevention and Management. ESS 3 recognizes that economic activity and urbanization often generate pollution to air, water and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle consistent with GIIP.

This ESMF includes sections on resource efficiency and pollution prevention and management. Assessment of risks and impacts and proposed mitigation measures related to relevant requirements of ESS3, including raw materials, water use, air pollution, hazardous materials and hazardous waste are included within scope of the ESMF, and ESIAs/ESMPs as relevant.

ESS 4 – Community Health and Safety. ESS4 recognizes that project activities, equipment and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities including disaster risk and emergency preparedness.

ESS 4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. While not explicitly mentioned, prevention and mitigation of different forms of gender-based violence, specifically SEA/SH, is covered by ESS4. This ESMF includes mitigation measures for anticipated risks in relation to ESS4. A SEA/SH Action Plan will be prepared to mitigate SEA/SH risks.

ESS 5 – Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement. ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood), or both. The term "involuntary resettlement" refers to these impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement.

Experience and research indicate that physical and economic displacement, if unmitigated, may give rise to severe economic, social and environmental risks: production systems may be dismantled; people face impoverishment if their productive resources or other income sources are lost; people may be relocated to environments where their productive skills are less applicable and the competition for resources greater; community institutions and social networks may be weakened; kin groups may be dispersed; and cultural identity, traditional authority, and the potential for mutual help maybe diminished or lost. For these reasons, involuntary resettlement should be avoided. Where involuntary resettlement is unavoidable, it will be minimized and appropriate measures to mitigate adverse impacts on displaced persons (and on host communities receiving displaced persons) will be carefully planned and implemented.

ESS 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources. ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems. Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services.

ESS 6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. Habitat is defined as a terrestrial, freshwater or marine geographical units or airways that supports assemblages of living organisms and their interactions with the non-living environment. All habitats support complexities of living organisms and vary in terms of species diversity, abundance and importance. This ESS also addresses sustainable management of primary production and harvesting of living natural resources.

ESS 6 recognizes the need to consider the livelihood of project-affected parties whose access to, or use of, biodiversity or living natural resources may be affected by a project. The potential, positive role of project affected parties in biodiversity conservation and sustainable management of living natural resources is also considered including rehabilitation of project sites to restore biodiversity and ecosystem services.

ESS 8 – Cultural Heritage. ESS8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. People identify with cultural heritage as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. Cultural heritage, in its many manifestations, is important as a source of valuable scientific and historical information, as an economic and social asset for development, and as an integral part of people's cultural identity and practice. ESS8 sets out measures designed to protect cultural heritage throughout the project

life cycle. Given the planned construction under the Project, this ESS is applicable. A Chance Find Procedure is included in this ESMF (See Annex 2).

ESS 10 – Stakeholder Engagement and Information Disclosure. This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance and make a significant contribution to successful project design and implementation.

The borrower will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a timeframe that enables meaningful consultations with stakeholders on project design. The nature, scope and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts.

Stakeholder engagement is an inclusive process conducted throughout the project life cycle. Where properly designed and implemented, it supports the development of strong, constructive and responsive relationships that are important for successful management of a project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process and is an integral part of early project decisions and the assessment, management and monitoring of the project's environmental and social risks and impacts.

In consultation with the Bank, the borrower has prepared a Stakeholder Engagement Plan (SEP) proportionate to the nature and scale of the project and its potential risks and impacts. Disclosure of information shall be undertaken through the implementation of the SEP. The SEP also outlines the establishment of a functioning GRM.

Project on International Waterways (OP7.50). Where a project affects an International waterway, the World Bank requires appropriate notification to be provided to the riparian users. Owing to the Shire River being an integral part of the Zambezi River Basin, the Government of Malawi will consult the riparian states of the basin through Zambezi River Basin Commission (ZAMCOM) of its intention to implement the Project.

2.4. WB Environmental, Health and Safety (EHS) Guidelines and Technical Notes

The project will further apply the WB General EHS Guidelines from 2007, which are guidelines that contain the performance levels and measures that are acceptable to the WB and reflect good international industry practice. Where the national regulations differ from the levels and measures presented in these guidelines, the project will aim for whichever is more stringent.

The following Good Practice Notes were also consulted to ensure that mitigation measures developed are aligned with best industry practices: Addressing sexual exploitation and abuse and sexual harassment (SEA/SH) in investment; Projects financing involving in major civil works, 2020; Addressing Gender based violence in Investment Project Financing involving major civil works, 2018; Gender, 2019; Road Safety, 2019; and Managing the risks of adverse impacts on communities from temporary project induced labor

influx, 2016, and assessing and managing the risks of the use of security personnel, 2018; ESF Advisory Note for Technical Assistance.

2.5. Gap Analysis between National Legislation and WB Standards

The following Table presents a gap analysis between national legislation and WB ESS and proposes measures where gaps have been identified.

Table 3 Gap Analysis WB ESS and national legal framework

GAP Analysis World Bank ESS and National Legal Framework			
ESF Objectives	**National Laws and Requirements**	**Gaps**	**Recommended Actions**
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts			
Objectives of ESS 1 are: To identify, evaluate and manage the environmental and social risks and impacts of the project in a manner consistent with the ESSs. To adopt a mitigation hierarchy approach to: (a) Anticipate and avoid risks and impacts (b) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels (c) Once risks and impacts have been minimized or reduced, mitigated; and (d) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable and they are not disadvantaged in sharing development benefits and opportunities resulting from the project. To utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate.	The overarching Act related to this standard is the Environment Management Act (2017)	There is no provision for environmental and social screening of projects in which activities and locations are not known. ESIA study screening and scoping do not guarantee coverage of all ESS standards in the assessment. The stakeholder engagement during the conduct of the ESIA is limited and the ESIA report is not disclosed.	To resolve this gap the project has prepared the ESMF to provide guidance in situations where these gaps exist to the satisfaction of the Bank.

ESS 2: Labor and Working Conditions			
The Objectives of ESS 2 are: To promote safety and health at work. To promote the fair treatment, non-discrimination and equal opportunity of project workers. To protect project workers, including vulnerable workers such as women, people with disabilities, children (of working age, in accordance with this ESS) migrant workers, contracted workers, community workers and primary supply workers, as appropriate. To prevent the use of all forms of forced labor and child labor. To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law. To provide project workers with accessible means to raise workplace concerns.	Occupational Safety, Health and Welfare Act (1997): Section 66 of the Occupational Safety, Health and Welfare Act (1997) defines the procedure to be followed in case of the occurrence of an accident which either causes loss of life or disables a person from carrying out the normal duties at which he is employed. Labor Relations Act: The act covers the following: Freedom of Association; Trade Unions and Employers' Organizations; Collective bargaining and Organizational Rights; Dispute Settlement; Tripartite Labour Advisory Council; and Establishment of Industrial Relations Court	The Act does not specifically require that development be assessed and reviewed in terms of labor and working conditions including OHS requirements before approval. The Act does not require development projects to prepare LMP or Occupational Health and Safety (OHS) Plans.	The project will prepare an LMP that will guide compliance with ESS2 to the satisfaction of the Bank.
ESS 3: Resource Efficiency and Pollution Prevention and Management			

The Objectives of ESS 3 are: To promote the sustainable use of resources, including energy, water and raw materials. To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities. To avoid or minimize project-related emissions of short and long-lived climate pollutants. To avoid or minimize generation of hazardous and non-hazardous waste.	National Environmental Policy (2004) aims at narrowing the gap between the degradation of the environment and depletion of the natural resources on one hand and development on the other. Environment Management Act (2017) Environmental Management (Waste Management and Sanitation) Regulations, (2008)	Existing energy and water conservation policies, laws and regulations do not require development projects to assess resource efficiency issues and incorporate resource efficiency measures in their E&S risk management plans. The national legislation mostly focuses on pollution prevention and less on aspects of resource efficiency	The project will promote the sustainable use of resources and avoid or minimize adverse impacts on human health to the satisfaction of the Bank
ESS 4: Community Health and Safety			
The Objectives of ESS 4 are: To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life-cycle from both routine and non-routine circumstances. To avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials. To have in place effective measures to address emergency events. To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities. To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams	The provisions related to ESS4 are taken care of under the Environment Management Act (2017) Public Health Act (1948): provides the legal framework for planning and management of a wide range of health-related issues including environmental health, occupational health, and solid waste management. National Gender Policy (2008): appreciates that gender inequality is a significant constraint to socio-economic growth and poverty reduction. The Occupational Safety, Health and Welfare Act, (1997) Malawi National HIV and AIDS Policy (2016): The Malawi National HIV and	The Occupational Safety, Health and Welfare Act, (1997) does not focus much on community health and safety, emphasis is on workers. The policies do not indicate the need to develop the GBV Prevention and Management Plan	The project will ensure that ESS4 requirements are included in the E&S instruments to the satisfaction of the Bank, including a SEA/SH Action Plan

	AIDS policy was adopted by the Government in 2003 to prevent HIV infections, reduce vulnerability to HIV, improve the provision of treatment, care and support for people living with HIV and AIDS and mitigate the socioeconomic impact of HIV and AIDS on individuals, families, communities and the nation.		
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement			
The Objectives of ESS 5 are: To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives. To avoid forced eviction. To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by providing timely compensation for loss of assets at replacement	The Land Act (2016) makes provision for land in Malawi and for all matters incidental or connected thereto. The Lands Acquisition and Compensation (Amendment) Act (2016) provides powers to the Minister or local government authority to acquire land for public utility either compulsorily or by agreement and pay appropriate compensation thereof. National Land Policy (2002): The policy guides land management and administration in Malawi Lands Acquisition and Compensation Act (2016) Customary Land Act (2016) Physical Planning Act (2016) Land Survey Act (2017)	The national legislation does not require the preparation of a RAP; Does not provide compensation or assistance to those who do not have formal legal claim to the land; Does not provide transitional allowances for restoration of livelihoods for informal settlers; Relies on cash compensation, no developmental objectives; No provision to give special attention to the vulnerable groups Valuation of lost asset is not based on "replacement cost' standard	The Project will prepare a Resettlement Policy Framework (RPF) that will guide procedures in addressing the identified gaps to the satisfaction of the Bank.
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources			

The Objectives of ESS 6 are: To protect and conserve biodiversity and habitats. To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity. To promote the sustainable management of living natural resources. To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.	Water Resources Act (2013): governs water rights, water abstraction, pollution control, building of dams and water resource planning and development. National Water Policy (2005) The overall policy goal is sustainable management and utilization of water resources, to provide water of acceptable quality in sufficient quantities Environment Management Act (1996) Parks and Wildlife Act (1997) National Biodiversity Strategy and Action Plan	Laws and policies have no equivalent requirements on: The application of hierarchy of measures. The preparation of Biodiversity Management Plans. Differentiated measures on types of habitats. Conduct of due diligence on primary suppliers.	The Project will avoid any encroachment into any sensitive habitat and/or protected areas. The project will ensure that ESIA and ESMP documents are developed in line with ESS6 to the satisfaction of the Bank.
ESS 8: Cultural Heritage			
The Objectives of ESS 8 are: To protect tangible and intangible cultural heritage from the adverse impacts of project activities and support its preservation. To address cultural heritage as an integral aspect of sustainable development. To promote meaningful consultation with stakeholders regarding cultural heritage. To promote the equitable sharing of benefits from the use of cultural heritage.	Monuments and Relics Arrangement of Sections (1992) Arts and Crafts Act (1991)	Laws and policies have no requirements on: The application of hierarchy of measures. The development of Cultural Heritage Management Plan. The development and adoption of project-specific Change Find Procedures. The engagement of cultural heritage experts.	The Project will implement chance find procedures, to the satisfaction of the Bank, to protect cultural or archeological findings during project activities, as per the Chance Find Procedure in Annex 2 The Project will further conduct community consultations (as per SEP) prior to project activities to ensure protection of other

			tangible cultural heritage.
ESS 10: Stakeholder Engagement and Information Disclosure			
The Objectives of ESS 10 are: To establish a systematic approach to stakeholder engagement that will help borrowers to identify stakeholders and build and maintain a constructive relationship with them, project-affected parties. To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be considered in project design and environmental and social performance. To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them. To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format. To provide project-affected parties with accessible and inclusive means to raise issues and grievances and allow borrowers to respond to and manage such grievances.	The ESIA guidelines recommend public consultations during scoping and the preparation of the ESIA report. Environmental Management Act (2017) Local Government Act (1998) National Decentralization Policy (2000)	There is no further provision for any stakeholder engagements during project implementation except in the ESIA guidelines. No provision for development of the GRM	The Project will implement stakeholder consultations throughout the lifetime of the project to the satisfaction of the Bank, as per the SEP. The Project will implement a Project GRM (as described in the SEP) to allow project-affected parties to raise issues and grievances that can be managed by the PCU.

3. Environmental and Socio-Economic Baseline

3.1 Environmental Baseline

The following section describes key environmental features of the country as the project activities shall be carried out in various areas of the country. Detailed baseline will be undertaken for the preparation of site-specific ESIAs or ESMPs.

Geography: Malawi covers 118.484 km^2, of which approximately 20 percent consists of the inland water of Lake Malawi. The shape of the country follows roughly the Rift Valley. It is elongated in North-South direction and measures about 900 km in length with a width varying between 80 and 160 km from east to west. The Shire River forms the outlet of Lake Malawi and flows about 400 km to connect the Southern end of Lake Malawi (457 m above sea level) to the Zambezi River in Mozambique. The Shire River leaves the country at the lowest point at 37 masl, while only 100 km north, Malawi's highest peak rises to 3000 masl in the Mulanje Mountains. The country is characterized by a north-south Valley system with the Lake and Shire River located in valley bottom and bordered east-west by an escarpment on either side rising up to 1000masl. Most of the land is slightly rolling and plateau land with elevations between 900 m and 1250 m, alternated with hilly and mountainous land rising up to 2500 m. The country is divided into three regions (northern, central and southern) and has 28 districts.

Climate: Malawi has a Tropical Continental Climate with two main seasons during the year: the dry and the wet season. The wet season lasts from November to May and the remainder of the year is dry, with temperatures increasing until the onset of the next rains. Temperatures in the Shire Valley can reach well into +40°C during summer months coupled with high humidity. The Shire Highlands ridge, by virtue of its height, is relatively cool for much of the year and, in the higher parts of the Thyolo and Mulanje districts, rainfall, during the dry season, is sufficient to support the cultivation of tea. The Phalombe and the Chileka Plains are located east and west of the Shire Highlands and have higher temperatures and lower rainfall than the highlands themselves.

Climate Change: The World Bank Country Environmental Assessment[9] reports that future climate change scenarios suggest that Malawi will see increasing climatic variability, higher temperatures, longer dry periods, and more erratic and intense rainfall events.[10] Data from Malawi's Department of Climate Change and Meteorological Services (DCCMS) show a noticeable increase in maximum and minimum temperatures over the last 20 years. Mean temperatures have risen by an average rate of 0.21 Celsius per decade, with comparative increases in evapotranspiration.[11] The largest shifts in maximum temperature are in November and December, with slightly lower increases in the late summer months of January and February. Changes in rainfall patterns are more variable. Northern and Southern Malawi have experienced a drying trend since the early 2000s, while the center of Malawi has seen slightly increased rains. Reports of extreme weather events (droughts, heavy rains, and floods) increased from just one during the 1970s to 19 between 2000 and 2016.[12]

[10] Government of Malawi, 2017. Strategic Program for Climate Resilience: Malawi, Pilot Program on Climate Resilience (PPCR).
[11] Vincent et al. 2014. Analysis of Existing Weather and Climate Information for Malawi.
[12] World Bank, Malawi Country Environmental Analysis, January 2019.; ActionAid. 2006. Climate Change and Smallholder Farmers in Malawi: Understanding Poor People's Experiences in Climate Change Adaptation.

More intense flood events may cause greater soil erosion and land degradation including landslides; hotter and drier periods will contribute to forest and grass fire risks; and prolonged droughts will negatively affect food production. Food production is further adversely affected by the floods as crops are washed away or heavy rains damage the plants. About 90 percent of Malawi's food production comes from one rainfed crop, which means that droughts can rapidly have an adverse impact on food security. Increased poverty then results in greater demands for more land and natural resources. Climate shocks affect all economic sectors and geographical areas. For example, losses for agricultural GDP due to droughts are estimated to range from 1.1 percent to 21.5 percent for return periods of 5 and 25 years, respectively[13]. The sector is the most at risk from direct climate change stressors because it is highly sensitive to changes in temperature and precipitation.

These weather events occur in increased frequency and therefore increase these types of impacts. Between 2015 and 2017, floods in Malawi's southern districts were followed by countrywide drought conditions, with the resulting loss and damage estimated at USD 335 million.

Disaster Vulnerability: Malawi is ranked among the countries most at risk of natural disasters in the world. After the floods of 2015, Malawi was categorized by the Climate Change Index as the third-most vulnerable country to climate change,[14] and the country is ranked as the 16th most vulnerable country globally for humanitarian crisis and disasters in the INFORM's Global Risk Index 2017.[15] Between 1980 to 2017, Malawi has experienced eight major droughts and 33 floods. The floods of 2015 were the worst in 50 years and this was followed by a drought in 2016–17. This drought affected 6.5 million people, which is over a third of the total population, many of which live in the densely populated southern region (placing themselves at risk by living in floodplains and other sensitive areas).

Natural disasters, such as extreme weather and recurring floods and droughts, put economic growth and people's livelihoods at risk, and add strain to environmental resources and ecosystem services. Other natural disasters, such as hailstorms, lightning, earthquakes, pest infections, and wildfires increase these risks. These disasters are also hard to predict, manage, and recover from. In addition, Malawi's women and children are particularly vulnerable to natural disasters such as droughts due to disproportionate gendered responsibilities for food production and livestock.[16]

Mineral Resources: Malawi's mining sector accounts for 1 percent of GDP. The government projects that mining will grow by five percent in the near future. Malawi has several minerals with economic potential, such as: uranium, phosphates (apatite), bauxite, kaolinitic, coal, kyanite, limestones, rare earths (including strontianite and monazite), graphite, sulphides (pyrite and pyrrhotite), titanium minerals, and vermiculite. Most of these minerals were evaluated in the past by either Ministry of Mining (through Geological Survey Department) or private companies. Only phosphate, coal, limestone, uranium, iron ore, rock aggregate, and precious stones have been exploited. Several rare earth and niobium projects are planned, with anticipated start dates in the next 2 years. Artisanal and small-scale mining in Malawi is carried out through labor-intensive mining methods for lime production, clay for pottery, and gemstones.

[13] Pauw et al. 2011. The Economic Costs of Extreme Weather Events: A Hydro-Meteorological CGE Analysis for Malawi.
[14] Kreft et al. 2017. GLOBAL CLIMATE RISK INDEX 2017—Who Suffers Most from Extreme Weather Events? Weather-related Loss Events in 2015 and 1996
to 2015.
[15] INFORM. 2017. Malawi.
[16] GoM. 2015(a). Malawi 2015 Floods Post Disaster Needs Assessment Report.

Soils: According to the Soil and Terrain database of the Republic of Malawi, Lixisols is rather well distributed from north to south over the country and is not particularly concentrated in a certain region. The second largest RSG, Luvisols, occurs more frequently in the central region, while Cambisols are found frequently in the northern and southern regions (see Figure below). Strongly weathered and leached soils, such as the Ferralsols and Acrisols are found on stable, old and often strongly undulating lands, such as the Nyika and Viphya plateaus in the northern region. These soils also occur on the south slopes of the Mulanje Mountain massive in the southern region.

A relatively high percentage of Fluvisols, Gleysols, Vertisols, Planosols and Solonetz are found in the southern region. Their occurrence is related to present and former levels of Rift Valley lakes, such as Lake Malawi and Lake Chilwa, and to the sediments of the Shire River before joining the Zambezi River in Mozambique.[17]

[17] ISRIC, World Soil Information, Soil and Terrain Database of the Republic of Malawi, Wageningen 2016, accessed at: https://www.isric.org/sites/default/files/isric_report_2016_01.pdf

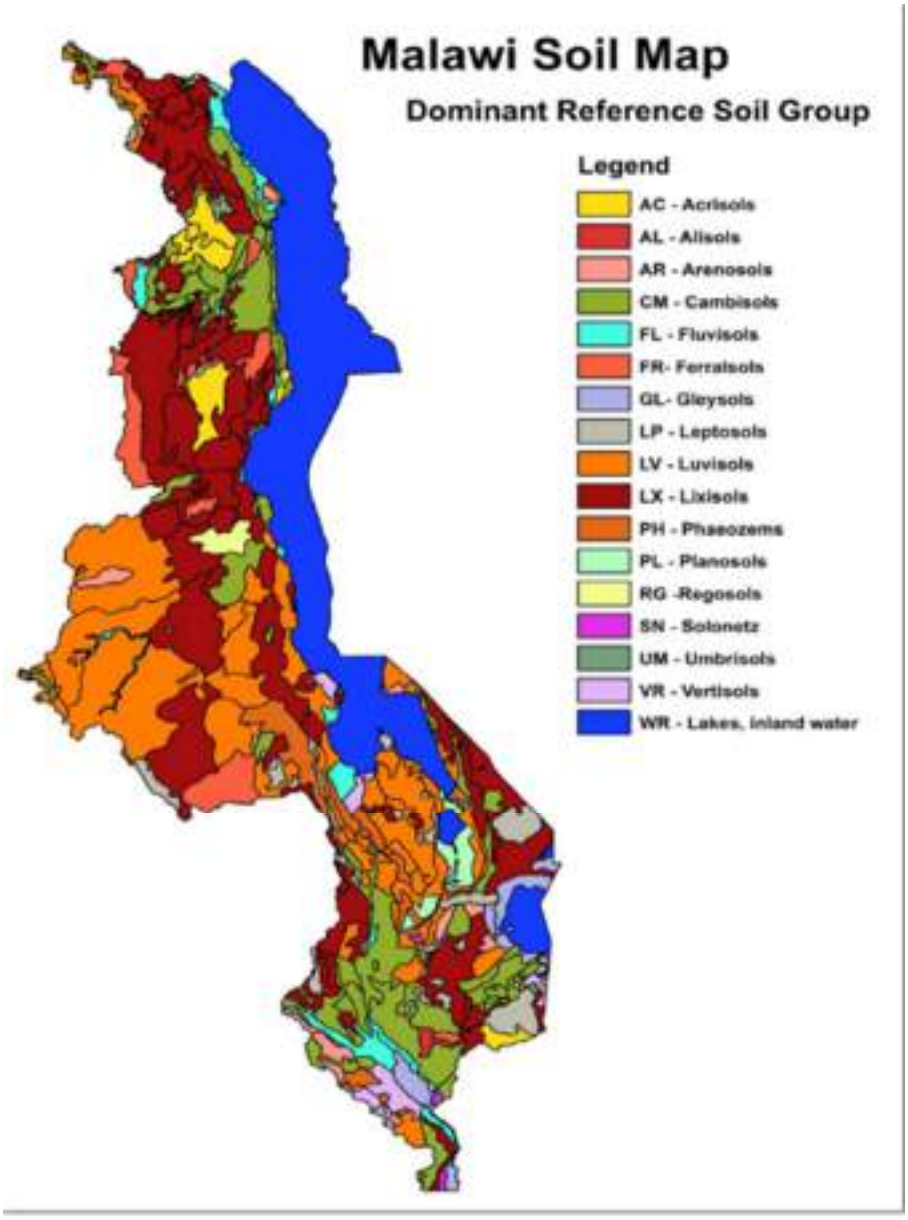


Table 4 Malawi Soil Map

Fauna and Flora / Biodiversity: The dominant vegetation is Miombo woodland characterized by broadleaved Brachystegia species. It is relatively moist woodland that intergrades into savannah. In southern Malawi the relatively dry, broadleaved mopane woodland is more common, often intergrading into savannah vegetation.

One century ago, the Shire Highlands was mostly covered with closed evergreen forest, fringing the many perennial streams and capping hills and mountains above 1370 m. Due to considerable clearing and cultivation during the intervening years, only scattered fragments of the original Rainforest and Brachystegia woodland remain, mostly on private estates and the lower slopes of rocky hills. As much a feature of the landscape today are the many plantation of the exotic trees and particularly the ubiquitous Blue Gum (*Eucalyptus saligna x E. grandis*) and Mexican Pine *(Pinus patula).*

Widdringtonia whytei, the Mulanje cedar or Mulanje cypress, is a species of conifer native to Malawi[18], where it is endemic to the Mulanje Massif at altitudes of 1,830–2,550 m. It has become endangered as a result of over-harvesting for its wood, and an increase in the frequency of wildfires due to human activity. The tree is now Critically Endangered and at risk of becoming extinct in its natural habitat.[19]

Riverine forest still occurs, but where heavy felling has taken place or where cultivation has been taken right up to the bank, the forest has degenerated completely and all that is left consists of isolated tall trees standing on an eroding gulley. The value for the riverine forest, in holding the banks of the streams and in preventing scouring and erosion during floods, is important, as well as providing habitat to endemic bird species, amongst others. Typical species of the riverine forest are: *Khaya nyasica* (*mbawa*), *Parkia filicoidea* (mkundi), *Albizzia glabresscens*, *Ficus vallischoudae*, and the palms *Raphina vinifera* (*ciwele*), *Adina microcephala* (*mweya*), and *Phoenix reclinata* (*kanjedza*).

According to the World Bank's Country Environmental Analysis, much of Malawi's biodiversity key taxa are in decline. Most species of national and international conservation significance are increasingly restricted to protected areas. Malawi has one of the highest numbers of threatened species in the region, and the expanding population and increased demand for agricultural land and sources of protein are causing a steady decline in Malawi's biodiversity assets. However, the GoM has also made substantial recent progress in tackling wildlife crime.

Terrestrial biodiversity: According to the IUCN Red List of Threatened Species[20], Malawi has 150 critically endangered, endangered, or vulnerable animal species. Over 50 percent of Malawi's elephant population has been lost in the last 25 years, including the African elephant (*Loxodonta Africana*) and other important species. Current estimates put the national elephant population close to 2,000 individuals.[21] Other species of international conservation concern have also declined or are now extinct in Malawi. For example, African Wild Dogs (*Lycaon pictus*) are known to still exist in Kasungu National Park and Nyika National Park, but they are subject to high levels of human encroachment and poaching. The cheetah (*Acinonyx jubatus*) was reported as almost extinct in Malawi in 1996 and, with the exception of small numbers that have recently been reintroduced into Majete Wildlife Reserve and Liwonde National Park. Malawi Hills in the Southern region is home to the rare and endemic Chapman's chameleon.

Avifaunal biodiversity: Key Biodiversity Areas located across the southern region provide habitat to both endemic and migratory species, including the rare and endemic Chapman's chameleon; several endemic bird species found in mid-altitude and montane forests including White-winged Apalis, the Yellow-throated Apalis, Thyolo Alethe; and the Green-headed Oriole and White-backed Night heron, which are found in remnant forests in the tea estates of Thyolo. Also migratory bird and bat species including IUCN Vulnerable listed Red-Footed Falcon, which migrates from Eastern Europe can be found. The destruction of the montane and riverine forests damaged through floods e.g. bank erosion and flood debris also contributes to further decline in habitat.

Aquatic ecosystems: Aquatic ecosystems cover about 20 percent of the total surface area of Malawi and are habitats to an astonishing diversity of fish and other aquatic fauna and flora. It is the ninth-largest lake

[18] Source: Wikipedia. https://en.wikipedia.org/wiki/Widdringtonia_whytei
[19] Source: https://www.bgci.org/wp/wp-content/uploads/2023/02/Mulanje-Cedar-Global-Trees-PDF-version.pdf
[20] IUCN. 2017. The IUCN Red List of Threatened Species.
[21] GoM. 2015(d). National Elephant Action Plan for Malawi 2015–2025.

in the world and the third-largest in Africa. It is over 2 million years old and a center of endemism for Cichlid fish. There are at least 800 species of Cichlids in Lake Malawi, of which 117 are classified as threatened by the IUCN. The lake contains the largest number of freshwater fish species in the world, 30 percent of all known cichlid species,[22] and 4 percent of the world's fish species. Of particular significance, however, is the decline of the endemic Chambo, of which there are three species: (i) *Oreochromis lidole*, (ii) *Oreochromis karongae*; and (iii) *Oreochromis squamipinnis*. The former is endemic to Lake Malawi, Lake Malombe, and the Shire River and is harvested extensively in Lake Malawi for food, sale, and trade. It is now listed in the IUCN Red List as an endangered species on account of its precipitous decline.

Wetlands: Elephant Marsh was designated a Ramsar wetland of conservation value in 2017. Eight of the waterbird species that have been recorded at Elephant Marsh or at least in the lower Shire River area are globally threatened species. These are: Madagascar Squacco Heron, Lesser Flamingo, Wattled Crane, Southern Crowned Crane, Great Snipe, Bar-Tailed Godwit, Curlew Sandpiper and African Skimmer. However for only one of these species, African Skimmer, does the Elephant Marsh appear to be a significant locality. Otherwise, the value of Elephant Marsh lies in its supporting a wide diversity of waterbirds and, more especially, particularly high numbers of aquatic birds.[23] Originally home to more than 800 Elephants, hence the name, now none remain.

Wetlands, such as Lake Chilwa and the Elephant Marsh, are important for livelihoods and climate resilience. They support important fisheries, livestock grazing, and agriculture, especially during dry periods where water elsewhere in the landscape is scarce.[24] Malawi's wetlands support populations of internationally significant water bird populations, including both resident and migratory populations. It also supports populations of hippopotamus, and several species of fish and aquatic invertebrates, including the newly identified sub-species of the butterfly Colotis amata that breeds exclusively on the lake edge surrounded by the evergreen shrub Salvadora persica. The Elephant Marsh also plays an important role in flood storage and attenuation and for purifying sediment-rich water flowing through the Shire system.

Ecology, Biodiversity and Protected Areas: Multiple Key Biodiversity Areas aim to prevent the rapid loss of biodiversity by supporting nationally led efforts to identify places that are critical for the survival of unique plants and animals, and the ecological communities they comprise. Malawi has 96 protected areas, comprising forest reserves, national parks, and wildlife reserves. These cover a total of 10,585 km^2—or 11.2 percent of Malawi's total land area.[25] National parks include the Kasungu Nationa Park, Lake Malawi National Park, Lengwe National Park, Liwonde National Park, and Nyika National Park. Game and wildlife reserves include the Majete Wildlife Reserve, Mwabvi Wildlife Reserve, Nkhotakota Wildlife Reserve and Vwaza Marsh game Reserve. All, northern, central and southern region comprise a number of Forest Reserves each. Forest reserves are managed by the DoF and national parks and wildlife reserves by the DNPW. Many of these protected areas are also categorized as important bird areas. These areas face considerable challenges with illegal logging and encroachment, poaching for ivory, traditional-muti, and hunting for bush meat. This contributes to significant declines of native species of tree, especially the Mulanje Cedar, the national tree of Malawi.

[22] UNESCO. 2018. Lake Malawi National Park.
[23] Anchor Environmental, Climate Resilient Livelihoods and Sustainable Natural Resource Management in The Elephant Marsh. Sub-Study 4, Biodiversity of the Elephant Marsh, 2016, page 140.
[24] Arthur and Hara. 2017. Climate Resilient Livelihoods and Sustainable Natural Resources Management in the Elephant Marshes—Livelihoods Report.
[25] GRID-Arendal. 2013. Zambezi River Basin—Atlas of the Changing Environment.

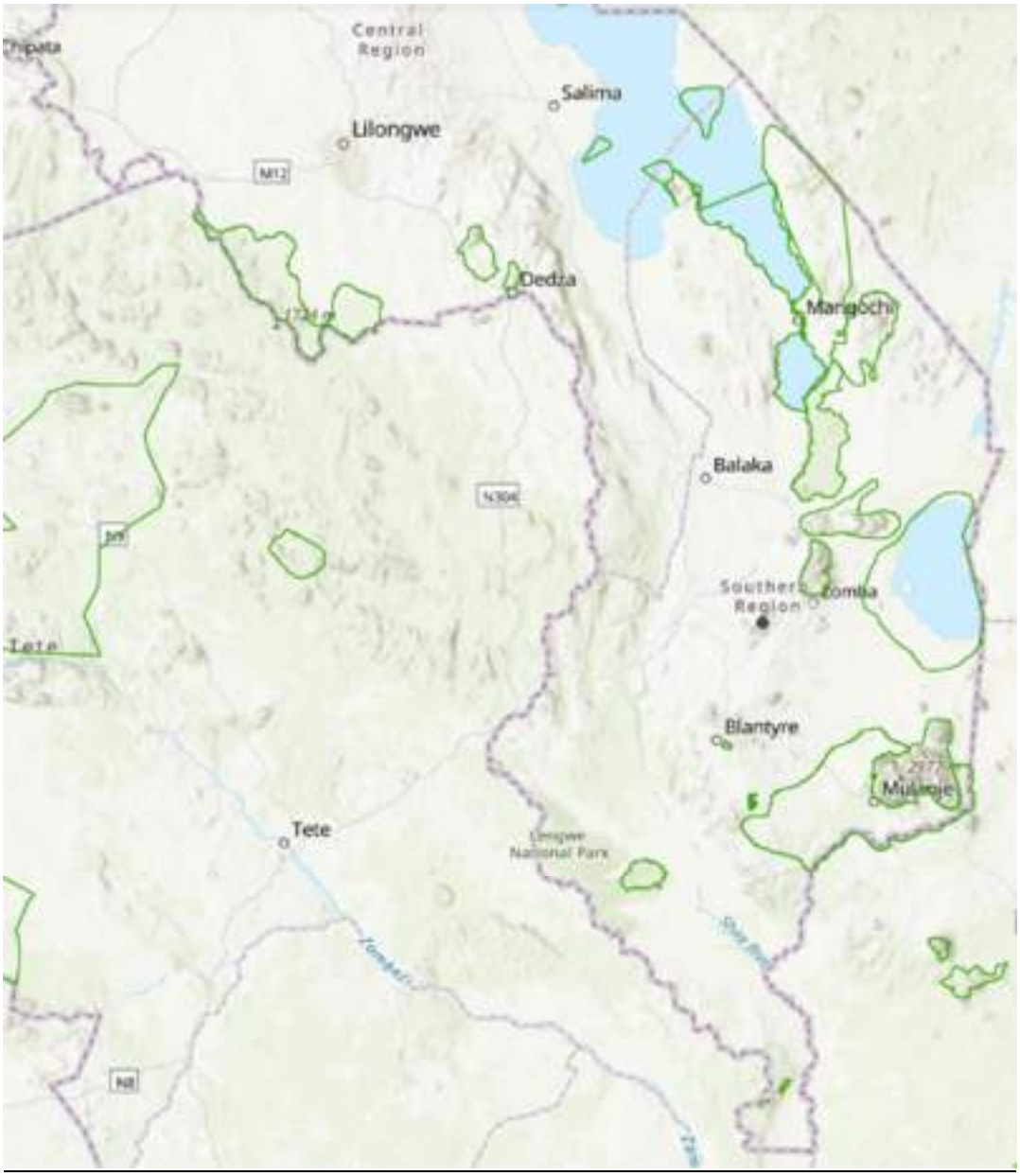


Figure 1 Key Biodiversity Areas in the Central and Southern Region[26]

Hydrology: Malawi has abundant surface water resources, both Lake Malawi and many large perennial rivers flowing from the highland areas. Despite abundance becoming a water scarce country.

Surface Water: Lake Malawi is the largest water body in Malawi, and is the dominant control on the surface water drainage network in the country. The only river flowing out of Lake Malawi is the Shire River, which flows south into Mozambique, where it flows into the Zambezi River. The main rivers flowing into Lake Malawi are the Songwe, South Rukuru, North Rukuru, Dwangwa, Linthipe and Bua. The Songwe river marks Malawi's northern boundary with Tanzania, and flows into Lake Malawi at its northern end. The

[26] Source: keybiodiversityareas.org

South Rukuru river is the main river in the Northern region of Malawi, flowing though the Nyika Plateau to the lake. The Bua and Dwangwa rivers flow through central Malawi into the lake. Rua River forms south eastern border of the country with Mozambique, flows into the Shire River in the Elephant Marsh. River suffers significant flooding during tropical storms and cyclones and channel-relocation affecting the international boundary.
These major rivers typically drain wide 'dambos' in the plateau areas, which have steep valley sides that become less steep as they reach the rift valley. The upper Shire Valley has a wide alluvial plain, changing to a narrower valley with gorges and rapids in the lower part.

The next largest lake in Malawi is Lake Chilwa, which forms an internal drainage basin and mainly drains the northern uplands. Rivers flowing into the Chilwa basin tend to be ephemeral in their lower courses, losing water to permeable valley alluvial deposits. Recent years, Lake Chilwa has dried out during dry season.

Groundwater: The natural quality of groundwater across much Malawi is thought to be generally suitable for drinking. However, groundwater chemistry is highly dependent on aquifer lithology (rock type and mineralogy), and so it is highly variable spatially. Groundwater in alluvial aquifers is generally more mineralized than that in basement aquifers, and a number of boreholes in alluvial aquifers have been abandoned due to high salinity. The revised National Water Master Plan (Republic of Malawi 2014) states that the priority for consumptive water use is for domestic water, irrigation and livestock. There is little information or knowledge about environmental water flows or how groundwater supports environmental flows, or any guidelines for estimating them.

Deforestation: Malawi's natural capital is degrading, with implications for agricultural productivity and economic growth. With 97–98 percent of households relying on solid biomass—mainly firewood and charcoal— for cooking, typically on inefficient traditional stoves, fuelwood harvesting has been identified as a major driver of deforestation and forest degradation in Malawi. Unsustainable farming and grazing practices have also contributed significantly to land degradation, resulting in reduced vegetation cover and growing areas of bare land. A 2017 study found 7.7 million hectares—more than 80 percent of Malawi's land area—could benefit from land restoration interventions. An economic analysis found that, because topsoil loss harms crop productivity, just a 10 percent increase in topsoil loss could affect maize yields enough to reduce Malawi's GDP by 1 percent. Watershed degradation has also affected the availability and quality of water resources.[27]

Restoring degraded landscapes is crucial to preserving Malawi's natural capital, boosting crop productivity, and building climate resilience—and reduce GHG emissions. Malawi has lost large shares of its forests to clearing for cropland and through fuelwood harvesting, and unsustainable farming and grazing practices have further degraded the land. Land degradation is reducing land fertility and vital ecosystem services, such as water regulation, flood mitigation, erosion control, pollination, biodiversity, and carbon storage. Efforts to address land degradation have been anchored in the 2016 Malawi National Forest Landscape Restoration Strategy. The World Bank-financed Malawi Watershed Services Improvement Project, launched in 2020, is already supporting the promotion of sustainable landscape management practices in targeted watersheds. Malawi's pledge to restore 4.5 million hectares under the Bonn Challenge and the African Forest Landscape Restoration Initiative will further increase areas under

[27] World Bank Group, Country Climate and Development Report: Malawi, October 2022, Page 19.

improved management. Energy sector interventions are also expected to significantly reduce pressure on forests.[28]

Another key benefit of improved land management is a reduction in flood risks. When torrential rains come, healthy forests and other natural landscapes can significantly mitigate flood risks, as they can hold large amounts of water. The vegetation cover also protects the soil from being carried away. Figure 5 shows the projected loss of capital from a once-in-10-years flood in two climate scenarios relative to current conditions, reflecting the benefits of both development measures (the improved land management practices included in the ASP scenario), and of complementary adaptation measures. In the high-emissions scenario (RCP8.5), in 2050, increased land degradation and climate change impacts combined increase losses by almost 25 percent. Improved land conditions in the ASP and RES scenarios significantly reduce flood-related losses.[29]

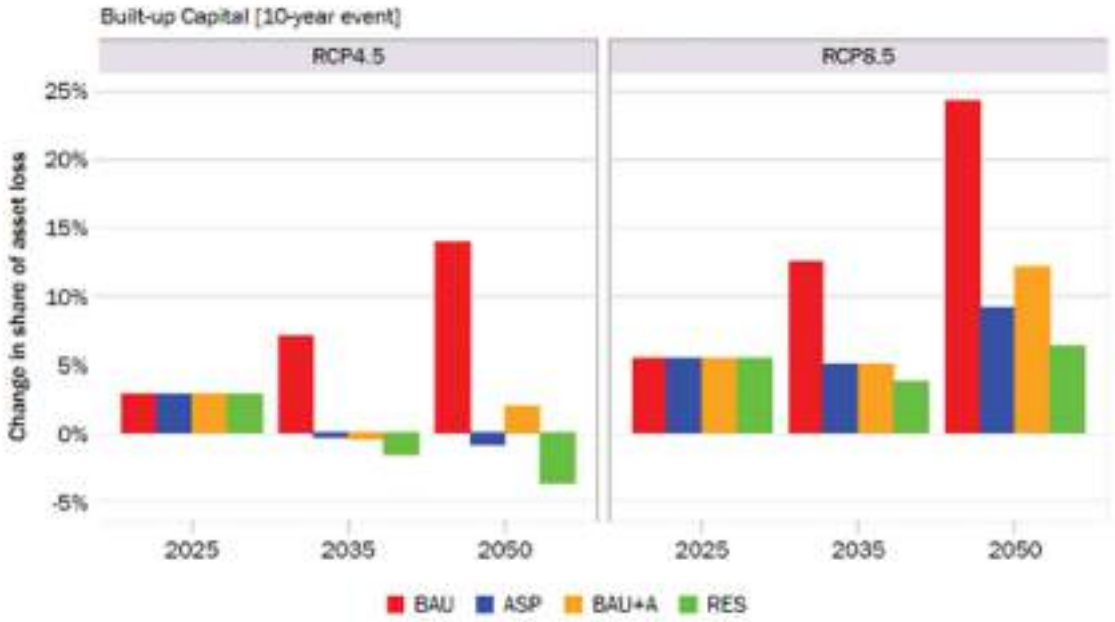


Figure 2 Projected change in asset losses from inland flooding in different policy scenarios[30]

3.2 Socioeconomic Baseline

Economic Outlook and Macroeconomic Performance: Malawi is one of the poorest countries in the world, ranked 170 of 188 countries on the Human Development Index, by UNDP. More than 70 percent of the population lives below the international poverty line of USD 1.90 per capita per day and GDP per capita is just USD 372 (2015). Both inequality and poverty rates are high. About 20.7 percent of people are so poor that they cannot afford to eat a minimum daily recommended food intake, and at least 37 percent of children under five are chronically undernourished and stunted (low weight for age). Poverty is also unequally distributed. The intra-regional variation is more pronounced in the south, where some districts have poverty rates over 80 percent and others under 20 percent.[31]

[28] World Bank Group, Country Climate and Development Report: Malawi, October 2022, Page 15.
[29] Ditto, Page 40.
[30] Ditto, p. 40
[31] World Bank 2019.

According to the World Bank's Malawi Economic Monitor, the economy has had a difficult start in 2023. Economic growth is only expected to increase slightly to 1.4 percent in 2023. The trajectory is driven by long-standing macroeconomic imbalances, an ongoing debt and balance-of-payments crisis and the impacts of Tropical Cyclone Freddy. The latter is estimated to have caused production losses equivalent to USD $ 36.4 million.[32]

Population: According to the World Bank's Environmental Country Analysis, over the past 20 years, Malawi has faced rapid population growth and steadily increasing population density.[33] The population is growing quickly. It has increased from just under 3 million in 1950 to over 18 million in 2017. It is anticipated that by 2050 the population will be over 40 million.[34] Population density has also grown. Apart from Rwanda and Burundi, Malawi has the highest population density in the region, currently over 180 people per square kilometer. The population is also very young with a median age of 16.5.[35] With the increase in child survival seen in recent decades and persistently high fertility, Malawi's age structure is young.[36] However, adult survival in Malawi continues to improve, and current estimates suggest that 74 percent of 15-year-olds will survive until age 60.[37]

Malawi is urbanizing at a slower rate than other countries in the region. According to the 2020 Malawi Integrated Household Survey, the majority of the population (84.4%) are still rural based while only 15.6% are in urban areas. It is anticipated that only 20 percent of Malawi's population will live in an urban environment by 2040.[38] 83 percent of Malawi's poor live in rural parts of the country and these numbers are rising. Some regions face greater poverty issues than others and nearly half of Malawi's poor population live in the southern part of the country.

Governance: Despite a weak fiscal position, Malawi has a multiparty, democratic political system. The present government is implementing a series of institutional and fiscal reforms to improve service delivery. Malawi has significant governance and institutional challenges that limit delivery of basic services needed to develop human capital, including health and education services. With the process of devolution partially underway, responsibility for basic service delivery increasingly resides with 35 local authorities, which do not have full administrative and financial powers.[39]

Education: Literacy is defined as the ability to read and write. Specifically, this analysis classifies all those who can read and write in Chichewa or English or any other language as being literate. Among males, almost 76 percent are literate while half of females are literate. Education services are provided by the government. Free education has led to 88 percent net enrollment in primary schools. However, the completion rate of Primary School is just 33 percent. According to a UNICEF report, girls, children in urban areas and the wealthiest households have a better chance of completing primary school than

[32] World Bank Malawi Economic Monitor, 2023 accessed at: https://www.worldbank.org/en/news/press-release/2023/07/19/new-afe-malawi-economic-update-calls-for-urgent-action-to-address-macroeconomic-imbalances-and-increase-energy-access
[33] World Bank, Malawi: Environmental Country Analysis, January 2019.
[34] United Nations. 2017. World Population Prospects 2017.
[35] World Population Review. 2018. Malawi Population 2018.
[36] World Bank. Policy Brief: Demographic Challenges and Opportunities in Malawi, 2018.
[37] World Bank Group, Overcoming Challenges to Transforming Human Capital in Malawi. Human Capital Review Report, September 2022, p.47.
[38] World Bank. 2017(a). Malawi Economic Monitor: Harnessing the Urban Economy.
[39] World Bank Group, Overcoming Challenges to Transforming Human Capital in Malawi. Human Capital Review Report, September 2022, p.25.

boys, children in rural areas and children in poor households. Of children of lower secondary school age, only 12 percent attend the lower secondary school or a higher level.[40] Access to tertiary education has been increasing in the country, yet enrollment rates are among the lowest in the world. Between 2017 and 2018, enrollment in public higher education increased from 25,000 to 30,975.[41]

Health: The health situation in Malawi is characterized by a high prevalence of communicable diseases like HIV/AIDS, malaria, tuberculosis, cholera high incidence of maternal and child health problems. An increasing burden of non-communicable diseases including protein energy malnutrition, road traffic accidents, and hypertensive heart disease.[42] and resurgence of tropical diseases is also noted. Access to essential health care and essential medicines is also limited.

The maternal mortality ratio is 347 deaths per 100,000 live births, which is lower than the sub-Saharan average (534 deaths per 100,000 live births), but it is higher than in the neighboring countries Mozambique and Zambia. A mix of supply-side (health systems) and demand-side factors increase the risk of obstetric complications leading to maternal mortality. Maternal and neonatal health services are provided in all 28 districts, but limited coverage and access to health services, essential equipment and medications, and socioeconomic factors contribute to maternal mortality. The direct cause of maternal mortality in Malawi is often obstetric complications compounded by limited access to health services.[43]

Livelihoods and Poverty: More than 20 percent of the population of Malawi is 'ultra-poor' and over 50 percent is considered moderately poor. The impacts of poverty are exacerbated by limited access to education, employment, and markets, as well as high prevalence of diseases such as malaria and HIV /AIDS. Natural resources are the main source of livelihood for most families. The majority of rural families depends heavily on natural resources for their livelihoods, in particular woodlands and forests, for the provision of wood fuel, enhancing soil fertility, generating cash income and supplying protein. Most Malawian households, including most of the poorest ones, are involved in agriculture, 85 percent of the population depend on farming.

The economy depends heavily on agriculture, which employs nearly 80 percent of the population, and 82.5 percent of the population resides in rural areas.[44] Its gross domestic product has historically been correlated with climate shocks.[45]

Malawi's fisheries sector provides an important livelihood for many Malawians, and protein consumed through fish is particularly important for a lot of poor households. Figures for total landed catches are increasing and now stand at around 199,454 tons per year (2017), with a rapid increase since 2014. The reasons for this apparent increase are complex, reflecting changes in species composition of harvests, increasing fishing effort, and changes in the way in which fish stocks have been monitored.

[40] UNICEF, School-Age Children, Quality Learning and Protection, 2022, accessed at: https://www.unicef.org/malawi/school-age-children
[41] World Bank Group, Overcoming Challenges to Transforming Human Capital in Malawi. Human Capital Review Report, September 2022, p.46.
[42] WHO, WHO Country Cooperation Strategy 2017-2022, Malawi.
[43] World Bank Group, Overcoming Challenges to Transforming Human Capital in Malawi. Human Capital Review Report, September 2022, p.31.
[44] World Bank, Malawi Economic Monitor, December 2021.
[45] World Bank, Malawi and Southern Africa: Climate Variability and Economic Performance, 2003.

The Table below shows that among rural populations 89 percent of income derive from crops, 20 percent from livestock, and 47 percent from agricultural wages. Despite the large numbers of people engaged in farming, agriculture contributes just 30 percent of gross domestic product (GDP). Urban households' income sources are more diverse, with most income coming from wage labor and self-employment. The overall picture confirms the importance of agriculture to rural and urban household incomes. It is a major driver of the continued pressure on land and other natural resources across the country, and this pattern does not appear to be changing at present.

Table 5 Proportion of households obtaining income from the various sources, 2004, 2010, and 2013 (%)

	Malawi			Urban Areas			Rural Areas		
	2004	2010	2013	2004	2010	2013	2004	2010	2013
Agricultural									
Crop	77.2	85.9	83.8	35.7	43.1	52.2	83.4	93.2	89.3
Livestock	58.4	18.1	20.6	12.7	6.5	7.9	65.2	20.02	22.8
Agricultural wage	50.8	44.6	47.0	26.8	30.1	39.4	54.4	47.04	48.3
Nonagricultural									
Nonfarm wage	21.1	21.4	19.3	53.8	58	48.6	16.2	15.2	14.2
Self-employment	30.6	22.2	30.8	35.9	38.2	49.7	29.8	19.5	27.5
Transfers	85.9	28.4	36.5	64.4	34.1	52.2	89.1	27.5	33.8
Other	9.5	6.2	7.6	24.7	19.6	22.2	7.3	3.9	5.0

Source: World Bank. 2017(a). Malawi Poverty Assessment team calculations based on IHS2 and IHS3.

Poverty is persistent and widespread in the Shire River Basin, with poverty rates exceeding 60 percent in several districts.[46] High population density and high poverty levels in the Basin lead to significant human pressure on its natural resource base. Unsustainable management of its natural resources has led to severe landscape degradation, which in turn increases flood incidences. Today, more than half a million people currently reside in areas adjacent to the river in the lower Shire, making them vulnerable to both droughts and floods.

The skilled workforce in the country is inadequate, mostly because of limited skills development and learning opportunities that are critical to increasing productivity, income, and employment, especially for youth and women. The labor force participation rate is high, but there are gender gaps in economic opportunities. The total labor force participation rate in Malawi is 76 percent, compared to 60.9 percent globally and 67.9 percent in Sub-Saharan Africa. Female labor participation is 72.5 percent, compared with 80.4 percent for men, and female wage workers earn about 64 cents for every dollar that men earn. Female entrepreneurs have less access to capital and hire fewer workers, which limits their earnings; there are also more salaried men than women in Malawi.[47]

Gender Equality Dynamics: Malawi has achieved gender parity with respect to primary school enrolments, which indicates an improvement in attitudes towards girls' education. However, according to

[46] Caruso, G. and L. Cardona Sosa. 2022. "Poverty Persistence in Malawi: climate shocks, low agricultural productivity and slow structural transformation" Malawi Poverty Assessment. Washington, DC: World Bank Group. https://documents1.worldbank.org/curated/en/099920006302215250/pdf/P174948072f3880690afb70c20973fe214d.pdf.
[47] World Bank Group, Overcoming Challenges to Transforming Human Capital in Malawi. Human Capital Review Report, September 2022, p.45.

the World Bank's Country Environmental Analysis, the majority of women in Malawi are informally employed in the natural resource sector, and their livelihood and food security are more likely to be adversely affected by deforestation, land degradation, and resource depletion. 90 percent of women above the age of 15 state they are reliant on natural resources for domestic activities (for example, collecting firewood, fetching water, and wild fruits for home consumption) in comparison to 24 percent of men. 24 percent of households in Malawi are female-headed. When resources are scarce, these households are disproportionately affected and more likely to fall into the poverty trap. Malawi ranks 145 of 188 countries on the United Nations Gender inequality Index and 116 of 153 on the Global Gender Gap Index.[48]

It is estimated that gender inequality in the agriculture sector alone is costing the country USD 100 million and 7.3 percent in crop production annually. Closing this gap has the potential to alleviate poverty for as many as 238,000 people.[49] The World Bank Gender Assessment in Malawi indicated that the total conditional gender gap in agricultural productivity is 31 percent. Drivers of the gender gap include: that women are less likely to farm cash crops; women farmers have less access to male labor; and women have less access to agricultural technology and mechanization – which is especially detrimental given women's greater childcare and domestic responsibilities, which leave them in more need of labor-saving options. Women entrepreneurs' sales are 46 percent less than those of male entrepreneurs because men are more likely to use their own agricultural savings as startup capital, reflecting their greater agricultural productivity which allows them to save, and to have workers and to pay them more. Women wage workers receive lower wages and are more likely than men to not be paid for their work, because women are more likely to have time constraints due to performing unpaid domestic and care work, and they are more likely to work in the informal sector due to lower educational attainment and skill levels.[50]

Furthermore, high levels of adolescent marriage and childbearing limit girls' ability to obtain an education and gain skills needed to compete in the global market, which limits their economic opportunities and income.[51]

Women and girls are subject to high levels of Gender-Based Violence: 42 percent of girls in Malawi experience physical violence before the age of 18. 42 percent f women are married before the age of 18, and 9 percent are married before the age of 15. 38 percent of ever-partnered women aged 15-49 years experienced intimate partner violence at least once in their lifetime, and 24 percent in the last 12 months. This makes Malawi features among the 20 countries in the world with the highest incidence of IPV. 1 in 5 women have experienced sexual violence, and 14 percent have experienced sexual violence in the past year. 49 percent of women who experienced physical or sexual violence have never sought help nor told anyone about it.[52]

Energy and Electricity: Malawi's power sector is one of the most severely constrained in sub-Saharan Africa. Access to electricity remains at just 13.4 percent of the population of 18 million. For the 80 percent of the people living in rural areas, access to electricity is barely existing, rather relying on biomass as fuel wood or charcoal as energy sources for cooking and heating. The total installed capacity for power

[48] UNDP 2019. Human Development Report 2019: Inequalities in Human Development in the 21st Century; WEF. 2020. Global Gender Gap Report 2020. See also: https://evaw-global-database.unwomen.org/en/countries/africa/malawi.
[49] World Bank. 2015. The Cost of the Gender Gap in Agricultural Productivity in Malawi, Tanzania, and Uganda.
[50] World Bank Group, Malawi Gender Assessment, Eastern and Southern Africa Gender platforms, 2022, p.10.
[51] World Bank Group, Overcoming Challenges to Transforming Human Capital in Malawi. Human Capital Review Report, September 2022, p.19.
[52] Malawi National Statistical Office (NSO). Malawi Demographic and Health Survey 2015-2016.

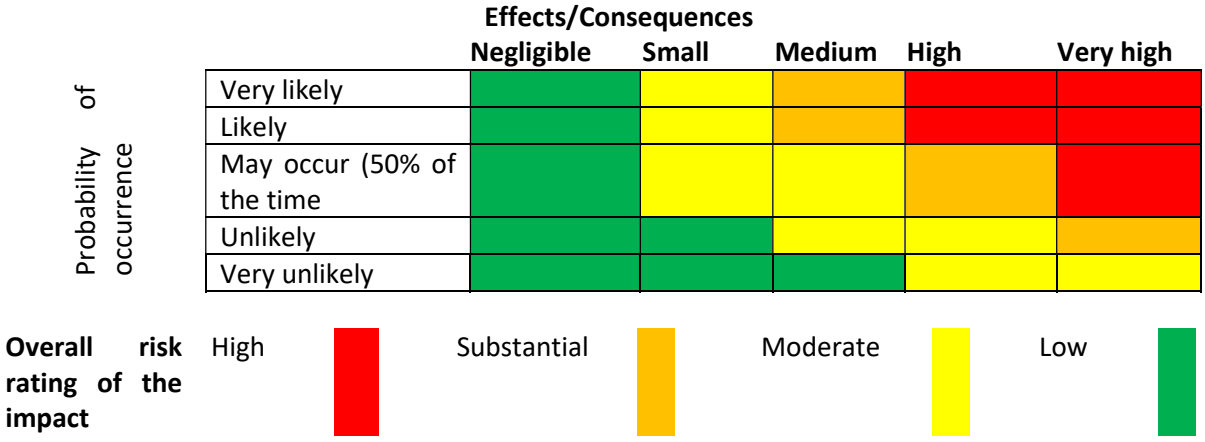
generation in the interconnected grid of Malawi operated by the Electricity Supply Corporation of Malawi (ESCOM) is approximately 362 megawatts (MW), of which 351 MW is hydropower and 11 MW is reciprocal engines (diesel sets). Some off-grid photovoltaic installations exist but they are very few. With the majority of Malawi's hydropower generation derived from the Shire River located south of Lake Malawi, the hydrology of the river determines, to a great extent, the available output of electricity at any time. Estimates indicate that shortage of capacity frequently exceeds 60 MW, or over 17 percent of peak demand in Malawi. With no reserve margin and a stressed system, the reliability and quality of electricity supply is poor. Malawi depends on domestic generation, as there are currently no significant interconnections to neighboring countries.

4. Environmental and Social Risk Classification

4.1 Risk and Impacts Assessment Methodology

The assessment of impacts is an iterative process underpinned by four key questions: **Prediction:** what change to the physical, chemical or social environment will occur if the project is implemented?; **Evaluation:** what are the consequences of this change? How significant will its impact be on human and biological receptors; **Mitigation***:* if it is significant, can anything be done about it?; **Residual Impact:** is it still significant after mitigation? Where significant residual impacts remain, further options for mitigation will be considered and where necessary impacts are re-assessed until they are reduced. The figure below shows the methodology that will be used to assess impacts.

Table 6 Risk assessment methodology



4.2 Identification and Assessment of Risks and Impacts

The environmental and social risk classification for the project is *High*.

Environmental Risks and Impacts: The environmental risk is *High* due to the cumulative context of low borrower capacity to adequately assess risks and impacts and commitment to implement appropriate management measures, and the site, system, and cumulative impact of the multiple civil works at various locations and on already degraded and sensitive ecosystems. The proposed hydraulic infrastructure (i.e., river training, riverbank protection, drainage, dykes etc.) includes potential impacts from civil works: (i) loss of riverine, woodland and remnant rainforest resulting in more loss of dwindling habitat for endemic and migratory species and contribution to climate change; (ii) spillage and increased sediment load into water courses during construction activities and loss of riparian buffers; (iii) wash bays for cleaning construction equipment discharging into watercourses; (iv) inadvertently promoting illegal river sand mining which further undermines existing and new structures; (v) occupational and community health and safety risks working next to water especially in the wet season, and traffic safety for pedestrians and other road users during construction; (vi) impact of informal vendors around construction sites including sanitation, waste, and STIs; (vii) poor waste management and illegal disposal; (viii) increased deforestation

for fuelwood/charcoal for cooking for laborers and informal vendors; (ix) exacerbation of existing erosion problems especially along water courses; (x) cumulative impacts of floods and construction debris downstream into Elephant Marsh and other key biodiversity areas; (xi) poor or inefficient design and poor construction resulting in future structure failure; (xii) impacts/damage to other infrastructure such as water supply pipes, sanitation pipes, irrigation infrastructure, and footpath/access routes; (xiii) ineffective community sensitization resulting in damage to structures to re-instate access routes for farming, livestock watering, access for washing or construction of dwellings; (xiv) continued poor/lack of runoff management within catchments; (xv) creation of borrow pits. There are operational concerns associated with inadequate risk and impact identification, assessment, mitigation and monitoring/ supervision including ESMP and C-ESMP implementation and construction processes across multiple sites, and weak regulatory and technical oversight capacity at national and district level. Without adequately addressing the challenges of runoff across the landscape and land uses, implementing runoff reduction measures, infrastructure will continue to be damaged, and communities will continue to be flooded resulting in loss of crops and infrastructure.

Social Risks and Impacts: The social risk is *High* due to the scope of the proposed activities, including TA activities and proposed civil works across multiple sites and due to the limited capacity to manage social risks in Malawi. Social risks related to land acquisition include loss of land or other assets, social and gender exclusion, inadequate consultations and engagement, lack of compensation at replacement cost, lack of access to grievance mechanisms, and failure to restore livelihoods. The activities may also create or exacerbate the existing tension and conflicts, between communities and households over access to resources and project benefits. Potential social risks relate to: (i) insufficient community and other stakeholder engagement; (ii) social tensions/conflicts induced by competition over project benefits including employment opportunities; (iii) labor influx and associated risks including risks on community health and safety, SEA/SH and other forms of GBV; (iv) operational concerns associated with monitoring and supervising social risks including grievance management; and (v) weak implementation capacity at the national and district level. Other social risks include the failure to comply with labor standards notably working hours and timely payment of compensation. These risks also need to be considered in the context of the preparation and implementation of a number of other donor funded projects. TA activities are mainly to build resilience through capacity building, and institutional strengthening activities that will help enhance ability of selected entities and communities to prepare for and respond to climate risks. This will bring benefits to these communities but there is also the potential for elite capture and the exclusion of vulnerable groups including women especially in relation to component 3 activities.

SEA/SH Risks: The SEA/SH risk rating is considered to be *Substantial*. Malawi has high rates of GBV, including intimate partner violence (IPV) and sexual violence[53]. Key drivers for GBV and Intimate Partner Violence (IPV) include high rates of early marriage and childbirth, low levels of economic independence and low levels of education. While legislation exists to prevent and respond to GBV, there is weak enforcement and critical national action plans on GBV require updating. Resources to address GBV are also limited and fragmented in the Southern Region. Labor influx is anticipated during construction with works located close to rural villages. This includes risks of workers subjecting community members including minors to SEA/SH. This may take the form of rape as well as transactional sexual relations. SEA/SH may also occur on worksites, in workers' camps or in exchange for employment opportunities on the Project. The Project will be implemented over a dispersed geographical footprint with multiple sites where male and female workers may be in close proximity or where male workers will be close to communities with limited supervision.

[53] Malawi Gender Based Violence Assessment, World Bank March 2022

4.3 Identification of Risks and Impacts

The below Table presents the potential risks and impacts as per Component and assessment of the risk.

Table 7 Potential E&S Risks and Impacts

Component and Subcomponent	Activities	Potential Risks and Impacts	Risk Assessment [54]
Component 1. Risk Management and Climate Financing Sub-component 1.1. Strategy development Sub-component 1.2. Early Warning Systems (EWS) Sub-component 1.3. National Monitoring, Reporting, and Verification (MRV) system	TA to support integrated management strategy TA for Land and Forest restoration planning TA for flood risk mapping TA to improve early warning system and collection of hydromet data TA to support foundations for MRV system	***Environmental Risks:*** TA may pose downstream environmental risks, such as lack of environmental protection and waste management, etc… (ESS3)	
		Social Risks: TA may pose downstream social risks, such as land acquisition, lack of stakeholder consultations, etc… (ESS5, ESS10)	
		Lack of adequate understanding of risks and impacts of sub-projects (ESS1)	
		Lack of adequate access to grievance redress mechanisms (ESS10)	
		Inadequate stakeholder engagement (ESS10)	

[54] (red = high; orange = substantial; yellow = moderate; green = low)

Component 2. Infrastructure Investments and Sustainable Asset Management for Climate Resilience <u>Sub-component 2.1. Basin-Level Infrastructure Development</u> <u>Sub-component 2.2. District-Led Resilience Building</u>	Reconstruction and rehabilitation of critical connectivity (roads/bridges) and critical hydraulic infrastructure Construction of longer-term flood resilient hydraulic infrastructure (river training, riverbank protection, drainage, dykes etc.) <u>Creating space to live with floods:</u> Build/Repair dykes around villages and other critical infrastructure; Labor-intensive low flood bunds (less than 1m high around settlement); Construction of safe crossings/spillways; Moving dykes and embankments off the floodplain; Lowering small-flood-dykes to makes space for large floods; Remove flood stream obstacles (increase capacity of culverts and bridges); Build resilient drifts/Irish bridges; Create "green rivers" – safe large flood storage/flow branches; Storm water drainage channel connected to dykes; Elevating of evacuation routes; River Bank Sloping and Strengthening, river training (green measures, gabions/reno, cribs); Critical infrastructure protection with landscape measures (bunds/elevation/afforestation); Increasing natural storage in flood plain (raising outlets in selected natural depressions); Evacuation centers for >1:25 year floods	***Environmental Risks:*** Lack of capacity to adequately assess risks and impacts (ESS1)	
		Inadequate risk and impact identification, assessment, mitigation and monitoring/ supervision including ESMP and C-ESMP implementation and construction processes across multiple sites (ESS1)	
		Weak regulatory and technical oversight capacity at national and district level (ESS1 and ESS3)	
		Noise pollution and vibration linked to machinery (ESS4 and ESS2)	
		Occupational Health and Safety risks from handling equipment (ESS2)	
		Inadequate PPE (ESS 2)	
		Inadequate understanding of EHS risks and impacts and of mitigation measures leads to accidents and health impacts (ESS2)	
		Risks from natural hazards (flooding) during construction (ESS2)	
		Occupational and community health and safety risks working next to water especially in the wet season (ESS2 and ESS4)	
		Poor waste management and illegal disposal (ESS3)	
		Hazardous waste (ESS3)	
		Air pollution through dust and emissions from machinery and vehicles (ESS3)	
		Soil and water contamination and degradation of water bodies caused by discharge of waste (ESS3)	
		Pollution of local surface water sources (ESS3)	
		Soil erosion (ESS3)	
		Spillage and increased sediment load into water courses during construction activities and loss of riparian buffers (ESS3)	

	Improving conservation, reducing sedimentations and flood peaks: Groundwater recharge swales; Check dams and retention reservoirs (upstream); Environmentally friendly road construction/erosion prevention on roadsides Non-structural measures: Develop Flood Risk Maps and Flood Zoning; Marking flood plains; Culvert cleaning; Cutting back banks on smaller streams and drains/remove constrictions; Catchment conservation (contour ridging, bunds, vegetation, grazing enclosures); Wetland protection for flood absorption; Annual preventive maintenance; Stock up bailey bridge parts and passenger ferry for island/Ruo access; Trainings and awareness raising to strengthen Early Warning System and Response	Wash bays for cleaning construction equipment discharging into watercourses (ESS3)	
		Promotion of illegal river sand mining which further undermines existing and new structures (ESS3)	
		Groundwater contamination through open channels (ESS3)	
		Risks of pollution of surface and groundwater through leaking bunds (ESS3)	
		Risks from natural hazards (flooding) during operation (ESS4)	
		Vehicular traffic during facility construction and operation may potentially cause congestion on the local routes, generate noise, and pose safety hazards for the local population, particularly for children and elderly people (ESS4)	
		Construction/rehabilitation and structural safety risks (ESS4)	
		Impact of informal vendors around construction sites including sanitation, waste, and STIs (ESS4)	
		Poor or inefficient design and poor construction resulting in future structure failure (ESS4)	
		Impacts/damage to other infrastructure such as water supply pipes, sanitation pipes, irrigation infrastructure, ESCOM structures, and footpath/access routes (ESS4)	
		Ineffective community sensitization resulting in damage to structures to re-instate access routes for farming, livestock watering, access for washing or construction of dwellings (ESS4)	
		Ineffective implementing runoff reduction measures, infrastructure will continue to be damaged, and communities will continue to be flooded resulting in loss of crops and infrastructure (ESS4)	
		Continued poor/lack of runoff management within catchments (ESS4/ESS6)	
		Cumulative impact of the multiple civil works at various locations and on already degraded and sensitive ecosystems (ESS6)	

		Introduction of non-native species through afforestation may lead to increased water requirements or outcompeting of indigenous trees (ESS6)	
		Risk of reduced water flow velocity and increased sediment deposition through check dams (ESS6)	
		Loss of riverine, woodland and remnant rainforest resulting in more loss of dwindling habitat for endemic and migratory species and contribution to climate change / habitat loss for plants and animals, e.g. through dykes (ESS6)	
		Increased deforestation for fuelwood/charcoal for cooking for laborers and informal vendors (ESS6)	
		Exacerbation of existing erosion problems especially along water courses (ESS6)	
		Cumulative impacts of floods and construction debris downstream into Elephant Marsh and other key biodiversity areas (ESS6)	
		Human Wildlife Conflict (ESS6)	
		Social Risks: Lack of capacity to adequately assess risks and impacts (ESS1)	
		Inadequate risk and impact identification, assessment, mitigation and monitoring/ supervision including ESMP and C-ESMP implementation and construction processes across multiple sites (ESS1)	
		Weak regulatory and technical oversight capacity at national and district level (ESS1)	
		Downstream social risks emanating from TA (ESS1)	
		Violations of labor and working conditions (ESS2)	
		Risk of Child labor (ESS2)	
		Risk of Forced Labor (ESS2)	
		Failure to comply with labor standards notably working hours and timely payment of compensation (ESS2)	

		SEA/SH for project workers and community members (ESS2 and ESS4)	
		Discriminatory practices in accessing project services, and benefits (ESS4)	
		Lack of adequate budgets for O&M (ESS4)	
		Labor influx and associated risks including risks on community health and safety, SEA/SH and other forms of GBV (ESS4)	
		Social tensions/conflicts induced by competition over project benefits including employment opportunities (ESS4)	
		Operational concerns associated with monitoring and supervising social risks including grievance management (ESS4)	
		Physical displacement	
		Loss of or loss of access to land or other assets used to support livelihoods	
		Social and gender exclusion, inadequate consultations and engagement in relation to land loss (ESS4 and ESS5)	
		Lack of compensation at replacement cost (ESS5)	
		Permanent impacts on private land and structures along the river (ESS5)	
		Impacts on trees and crops on private land or public land along the river (ESS5)	
		Impacts on existing irrigation infrastructure, well etc.. through flood risk mitigation infrastructure (ESS5)	
		Failure to restore livelihoods (ESS5)	
		Lack of access to grievance redress mechanisms (ESS10)	
		Exclusion of vulnerable groups from Project activities and consultations (ESS10)	
		Inadequate stakeholder engagement (ESS10)	
	Expanding the urban social registry	***Environmental Risks:*** TA may pose downstream environmental risks (ESS3)	

Component 3. Adaptive Climate Services for Resilient Sub-component 3.1 Expanding Social Registry in Urban Are and Piloting Social Protection Public Works.	TA for Guidelines and training Small pilot interventions to improve the design of the guidelines in 1-2 neighborhoods. This may include labor intensive small public works (cleaning drainage system, fixing access unpaved roads etc.)	Occupational Health and Safety risks from handling equipment (ESS2)	
		Inadequate PPE (ESS 2)	
		Occupational and community health and safety risks working next to water especially in the wet season (ESS2 and ESS4)	
		Poor waste management and illegal disposal (ESS3)	
		Soil and water contamination and degradation of water bodies caused by discharge of waste (ESS3)	
		Risks from natural hazards (flooding) during operation (ESS4)	
		Human Wildlife Conflict (ESS6)	
		Social Risks: Inadequate understanding of risks and impacts of sub-projects (ESS1)	
		Risk of Child labor (ESS2)	
		Risk of Forced Labor (ESS2)	
		Failure to comply with labor standards notably working hours and timely payment of compensation (ESS2)	
		Bias and corruption in the selection of institutions and trainees/beneficiaries (ESS4)	
		Lack of adequate budgets for O&M (ESS4)	
		Social tensions/conflicts induced by competition over project benefits including employment opportunities (ESS4)	
		Lack of access to grievance redress mechanisms (ESS10)	
		Exclusion of vulnerable groups in project activities and consultations (ESS10)	
		Social tensions/conflicts induced by competition over project benefits including employment opportunities (ESS4)	
		Inadequate stakeholder engagement (ESS10)	
		Lack of access to grievance redress mechanisms (ESS10)	

		Downstream social risks emanating from TA (ESS1)	
		Elite capture and the exclusion of vulnerable groups including women (ESS4 and ESS10)	

5. Project Mitigation Measures and Management of Risks and Impacts

In line with ESS1, for the elaboration and implementation of the environmental and social mitigation measures, the project is adopting the following mitigation hierarchy approach:

1. Anticipate and avoid risks and impacts;
2. Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels;
3. Once risks and impacts have been minimized or reduced, mitigate;
4. Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.

The below generic Environmental and Social Management Plan (ESMP) lists the prevention, minimization, mitigation and compensation activities for each activity's risks and impacts. It disaggregates them by ESS. The generic ESMP presents standardized management and mitigation procedures for handling environmental and social risks resulting from the project in the local context. The generic ESMP should therefore serve as a reference on risks and impacts during construction and operational phases and in regards to the associated international industry best practices and mitigation measures that can be planned and implemented throughout the project life cycle. The items in the generic ESMP can serve as a template for site-specific mitigation and monitoring measures to be included in subproject-specific ESIAs/ESMPs.

5.1 Environmental and Social Management Plan (ESMP)

Table 8 Project ESMP and Monitoring Table

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
ESS 1: Environmental and Social Assessment										
Inadequate capacity to adequately assess risks and impacts	Screen each subproject prior to implementation Prepare all relevant E&S instruments to mitigate risks and impacts Raise awareness of E&S risks among all implementers Recruitment of qualified personnel on E&SS	X			% of subprojects that have been screened # of additional E&S instruments prepared	X			Implementation: PCU Monitoring: PCU	Monitoring costs: Included in staff time
Inadequate risk and impact identification, assessment, mitigation and monitoring/ supervision including ESMP and C-ESMP implementation and construction processes across multiple sites	Screen each subproject prior to implementation Ensure rigorous monitoring of rehabilitation and construction through field visits and spot checks		x		% of subprojects that have been screened % of sub-project visited per month	x			Implementation: PCU Monitoring: PCU	Included in staff time Travel budget

[55] The costs cannot be fully determined at this stage. They will be calculated for each activity in the activity-specific ESMPs.

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
Weak regulatory and technical oversight capacity at national and district level	Create regulatory and technical awareness among respective institutions at national and district level through provision of awareness sessions Provide E&S capacity building sessions at all levels		x		# of awareness sessions at national and district levels # of capacity building exercises at all levels			x	Implementation: PCU Monitoring: PCU	Included in staff time Travel budget
Downstream E&S risks emanating from TA	Include all relevant E&S provisions into every Request for Proposals or TOR, and in every contract	X			% of RFPs or TOR contain all relevant provisions on E&S	X			Implementation: PCU Monitoring: PCU	Monitoring costs: Included in staff time
ESS 2: Labor and Working Conditions										
Occupational Health and Safety risks from handling construction equipment	Train workers appropriately on OHS risks, hazards and safe handling of equipment and procedures, based on EHS Guidelines on OHS[56] Provide appropriate PPE, continuous reminders to use PPE, use of signage and continuous	X	X		# of safety incidents # of workers' grievances filed % of workers with adequate PPE		X		Implementation: Contractor Monitoring: PCU	Monitoring costs: Included in staff time Travel costs for monitoring activities

[56] IFC, Environmental, Health and Safety Guidelines, accessed at: https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at ifc/policies-standards/ehs-guidelines

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	supervision, based on EHS Guidelines on OHS Recruit qualified and licensed drivers and machine or plant operators Communicate and implement workers' GRM Develop and implement C-ESMP including OHS Implement Labor Management Procedures (LMP) Contractor bid and contract to include various OHS requirements Report significant OHS incidents				% of bids with adequate OHS provisions listed % of drivers with appropriate qualifications and licenses # of OHS incidents timely reported, Root Cause Analysis (RCA) developed, Corrective Action Plan (CAP) identified and implemented # of registered cases of incidents are closed.					
Safety risks for workers through Inadequate PPE for workers	Provide appropriate PPE Continuous reminders to use PPE, use of signage and continuous supervision of availability and use of PPE, based on EHS Guidelines on OHS		X		# of safety incidents # of workers grievances filed % of workers with appropriate PPE		X		Implementation: Contractor Monitoring: PCU	Monitoring costs: Included in staff time Travel costs for

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Communicate and implement workers' GRM									monitoring activities
Risk of lack of understanding of EHS risks and impacts and of mitigation measures may lead to accidents and health impacts	Assess capacity of construction company on EHS/OHS Train workers on EHS/OHS through toolbox talks		X		% of construction companies whose capacity has been assessed. # of toolbox talks conducted # of trainings provided		x		Implementation: Contractor/PCU Monitoring: PCU	Monitoring costs: Included in staff time Travel costs for monitoring activities
Risk of failure to comply with labor standards, including working hours and timely payment of compensation	Establish and operationalize workers GRM Introduce transparent procedures for hiring and advertise job opportunities widely		x		# of workers grievances filed # of available GRM for workers		x		Implementer: Contractor/PCU Monitoring: PCU	Monitoring costs: Included in staff time
Risk of child labor and forced labor	Comply with minimum age set for all types of work (in compliance with national laws and ESS2) and document age of workers upon hiring (see LMP) Verify age of workers with communities where required		X		# of workers violations (child, forced labor) # of existence/maintenance of a labor registry		X		Implementer: Contractor/PCU Monitoring: PCU	Monitoring costs: Included in staff time

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Conduct a track record search of the contractors at the bidding process (documents related to workers' rights violations, etc.) Raise awareness of communities to not engage in child labor				% of workers with age verification # of awareness campaigns at community level					
Risks of labor influx	Set up local workforce minimum content for the contractors Disclose to communities local workforce content requirement Investigate possibility of providing training to local communities on general jobs during the planning phase Maximize the use of local suppliers (for food, water, services etc.)		X		% of local workforce hired # Number of sensitization/awareness events within communities # of local suppliers used		x		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time
Risk of SEA/SH violations among project workers	Provide awareness session for workers Every worker to sign Code of Conduct (CoC) Provide training on CoC for workers		x		% of workers that signed CoCs # of trainings on CoC for workers		x		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
Risks from natural hazards (flooding and lack of water due to droughts) during construction for workers and community members Occupational and community health and safety risks from working next to water especially in the wet season	Prepare community health and safety program Develop and implement a program of flood awareness for adjacent community members Truck water during times of drought Ensure that relevant work sites are protected from flooding during construction Prepare and adopt sub-project specific Disaster risk Assessment and Emergency Preparedness Plan and Response Procedures, (Risk Assessment to include consideration of climate change effects on future rainfall, quantitative analysis of flooding scenarios and other relevant GIIP. Findings and recommendations to be included into the site management and implementation procedures, design considerations, community early warning (as per		x		# of community health and safety programs prepared # of Programs of floods awareness for community members prepared and implemented % of facilities have sufficient water available during times of drought % of facilities have a response plan for flooding # of Emergency Preparedness Plans prepared			x	Implementer: Contractor Monitoring: PCU	Staff costs Costs of trucking of water

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	ESCP ESS4), and other ESF instruments) (see Annex 15)									
ESS 3: Resource Efficiency and Pollution Prevention and Management										
Risk of TA posing downstream environmental risks and impacts, such as lack of environmental protection and waste management, etc…	Ensure TOR for TA include provisions on E&S requirements	x			% of TOR for TA that contain provisions on E&S requirements	x			Implementer: PCU Monitoring: PCU	Included in staff time
Generation of waste and its illegal disposal	Implement Waste Management Plan as part of C-ESMP		x		# of contractors that have prepared a C-ESMP		x		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time
Generation of Hazardous waste	Prepare and implement Hazardous Waste Management Plan as part of ESMPs	x	x		# of Hazardous Waste Management Plans prepared		x		Implementer: PCU Monitoring: PCU	Monitoring costs: Included in staff time
Risks of spillage and increased sediment load into water courses during construction activities and loss of riparian buffers	Avoid spillage and increased sediment load into water courses through trapping of sediment Remove sediment where already trapped Plant plants and trees along water margins and banks.		x		# of incidents recorded # of sites with plants and trees planted		x		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Prepare a Rehabilitation Plan taking into consideration vegetation and habitat rehabilitation, planting timing, density objectives, species selection, and ongoing management – to be adopted as part of the ESMP.				# of Rehabilitation Plans adopted as part of ESMPs					
Risk of wash bays for cleaning construction equipment discharging into watercourses	No wash-water containing any cleaning agents should be discharged into water courses Only discharge water into sewers Only wash construction equipment at designated wash bays		x		# of incidents recorded or grievances filed # of designated wash bays available at construction site		x		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time
Risk of promotion of illegal river sand mining further undermines existing and new structures	Prevent or stop any illegal river sand mining takes place Only obtain sand from designated place as laid out in the C-ESMP		x		# of grievances filed # of C-ESMPs containing provisions on where to mine sand		x		Implementer: contractor Monitoring: PCU	Monitoring costs: Included in staff time Travel costs for monitoring activities

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
Risk of air pollution	High level maintenance of the vehicles to reduce the vibrations Installing suitable mufflers on engine exhausts and compressor components Equipment casing Suitable wet suppression techniques need to be utilized in all exposed areas All unnecessary traffic must be strictly limited on site speed controls are to be enforced Monitor exhaust emissions to ambient air, waste pollutant releases to land and water.		x		% of vehicles that have been recently maintained % of vehicles with mufflers installed # of community consultations around planning		x		Implementer: contractor Monitoring: PCU	Monitoring costs: Included in staff time Travel costs for monitoring activities
Soil and water contamination leading to degradation of water bodies caused by discharge of waste	Untreated waste effluents from the construction sites shall not be released into drinking water sources, cultivation fields, irrigation channels or critical habitats. Adopt and implement GRM		x		# of GRM cases filed # of incidents of water contamination based on regular testing		x		Implementer: contractor Monitoring: PCU	Monitoring costs: Included in staff time Travel costs for

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
										monitoring activities
Increased risk of Soil erosion	Spoils and excess soil if generated will be disposed of appropriately. Borrow areas will be dressed to minimize safety hazards and soil erosion Avoid working on wet soil Cover soils with vegetation or mulch		x		% of appropriate designs prepared % of soil covered with vegetation		x		Implementer: contractor Monitoring: PCU	Monitoring costs: Included in staff time
ESS 4: Community Health and Safety										
Risk of air pollution through dust and emissions from machinery and vehicles	Suppress dust during construction by water spraying and dampening where necessary Suitable wet suppression techniques need to be utilized in all exposed areas All unnecessary traffic must be strictly limited on site speed controls are to be enforced		X		% of vehicles that have been recently maintained % of vehicles with mufflers installed # of community consultations around planning		X		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time Travel costs for monitoring activities

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Monitor exhaust emissions to ambient air, waste pollutant releases to land and water. Practice good general housekeeping at the work site sweep off the drilled-out materials Provide fit to work PPEs (dust masks) for all workers involved in the construction/rehabilitation Implement speed limit for the heavy machinery Cover trucks carrying soil, sand and stone with tarpaulin sheets to dust spreading									
Risk of noise and vibration linked to machinery	High level maintenance of the vehicles to reduce the vibrations Selecting equipment with lower sound power levels Installing suitable silencers/mufflers on engine exhausts and compressor components		x		# of vehicles with recent maintenance record # of equipment with lower sound power levels # of equipment cased		x		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time Travel costs for monitoring activities

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Equipment casing Planning activities in consultation with local communities so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance.				# of community planning sessions conducted					
Bias and corruption in the selection of institutions and beneficiaries	Transparency and communication/public disclosure of beneficiary selection criteria (SEP) Communicate and implement GRM	x	x		# of communication events as per SEP implemented as compared to planned events # of GRM cases filed		x		Implementer/ Monitoring: PCU	Monitoring costs: Included in staff time
Discriminatory practices in accessing project services, and benefits	Transparency and communication/public disclosure of beneficiary selection criteria (SEP) Communicate and implement GRM	x			# of communication events as per SEP implemented as compared to planned events # of GRM cases filed		x		Implementer/ Monitoring: PCU	Monitoring costs: Included in staff time
Community conflicts over beneficiary selection	Transparency and communication/public disclosure of beneficiary selection criteria (SEP)		x	x	# of communication events as per SEP implemented as compared to planned events			x	Implementer/ Monitoring: PCU	Monitoring costs: Included in staff time

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Communicate and implement GR8uity6gyh78M				# of GRM cases filed					
Increase in vehicular traffic	Prepare traffic safety management plan (TSMP), based on EHS Guidelines on Traffic Safety (set out management and mitigation measures for traffic and road safety to be implemented across all sub-projects, contractors and service providers on the project, including inter alia consideration of the road worthiness of vehicles, and competence of vehicle operators, signage, pedestrian movement around construction sites and access roads to sites, line with the ESSs, the WB Environmental, Health and Safety Guidelines (EHSGs), and other relevant Good International Industry Practice (GIIP), etc.) Hold community consultations before the construction Safety signage will be erected at appropriate places		x		# of traffic safety incidents # of grievances filed # of community consultations held # of safety signage erected		x		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time Travel costs

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Safe driving practices will be promoted among the drivers, including training to drivers, limiting of max. speed Adopt and implement GRM									
Risks of sanitation challenges, additional waste, and spreading of STIs through informal vendors gathering at the site	Fencing off of construction site Hold community awareness sessions		x		# of fences or barriers erected # of community awareness sessions held		x		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time Travel costs
Risk of poor or inefficient design and poor construction resulting in future structure failure	Ensure appropriate designs for structure Ensure design details are included in bidding documents and budgeted correctly	x			# of designs that are technically sound # of bidding documents containing appropriate designs and budgets	x			Implementation / Monitoring: PCU	Monitoring costs: Included in staff time
Risk of damage to other infrastructure such as water supply pipes, sanitation pipes, irrigation infrastructure, and footpath/access routes	Adopt and implement C-ESMP Where damage has been done, ensure that it is fixed Adopt and implement GRM		x		# of contractors with C-ESMP in place # of grievances filed in relation to damages			x	Implementation: Contractor Monitoring: PCU	Monitoring costs: Included in staff time

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
					# of grievances solved in a satisfactory manner					
Risk that ineffective community sensitization results in damage to structures re-instating access routes for farming, livestock watering, access for washing or construction of dwellings	Ensure appropriate community awareness and communication Adopt and implement GRM		x		# of awareness sessions held # of grievances filed and solved.		x		Implementation: Contractor Monitoring: PCU	Monitoring costs: Included in staff time
Risk that implementing runoff reduction measures, infrastructure will continue to be damaged, and communities will continue to be flooded resulting in loss of crops and infrastructure Continued poor/lack of runoff management within catchments	Ensure appropriate initial design of infrastructure Ensure design details are included in bidding documents and costed appropriately Adopt and implement GRM	x	x		# of sub-projects with appropriate design # of bidding documents with appropriate design that is costed correctly # of grievances filed		x		Implementation / Monitoring: PCU	Monitoring costs: Included in staff time
Risk of discriminatory practices in accessing project services, and benefits (ESS4)	Ensure stakeholder communication through implementation of SEP Adopt and implement GRM		x		# of community consultations implemented # of grievances filed		x		Implementation: Contractor / PCU Monitoring: PCU	Monitoring costs: Included in staff time

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
Lack of adequate budgets for O&M	Prior to bidding process, ensure availability of appropriate O&M budget	x			# of sites with appropriate O&M budget # of sites with O&M budget identified prior to construction / rehabilitation		x		Implementation: PCU Monitoring: PCU	Monitoring costs: Included in staff time
Risk of Labor influx	Implementation of LMP including signing of CoC by all workers at point of hiring Implementation of GBV Action Plan		x		% of workers that signed CoCs % of workers that completed GBV/SEA training			x	Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time
Risk of social tensions/conflicts induced by competition over project benefits including employment opportunities	Ensure stakeholder communication through implementation of SEP Adopt and implement GRM		x		# of community consultations implemented # of grievances filed			x	Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time
ESS5: Involuntary Resettlement										
Permanent impacts on private land and structures along the river	Avoid involuntary resettlement through identification of alternatives	X			# of RAPs audited and found to be implementated satisfactorily			x	Implementer: PCU/Local Government	See RPF

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Implement Resettlement Policy Framework (RPF) and prepare and implement Resettlement Action Plan (RAP) Accept Voluntary Land Donations where applicable								Monitoring: PCU	
Impacts on trees and crops on private land or public land along the river	Prepare and implement RAP or Livelihoods Restoration Plan as per RPF	x			# of RAPs audited and found to be implementated satisfactorily			x	Implementer: PCU/Local Government Monitoring: PCU	See RPF
Impacts on existing irrigation infrastructure, well etc.. through flood risk mitigation infrastructure	Prepare and implement RAP or Livelihoods Restoration Plan as per RPF				# of RAPs audited and found to be implementated satisfactorily			x	Implementer: PCU/Local Government Monitoring: PCU	See RPF
Lack of compensation at replacement cost	Conduct initial E&S screening of sub-project site Compensate all affected PAPs Prepare additional E&S instruments (e.g. Resettlement Action Plans – RAPs) according to Resettlement Policy Framework (RPF) where required	x	X		# of sub-projects that have been screened # of sub-project sites with appropriate additional E&S instruments # of grievances filed			X	Implementer: Contractor / PCU / local authorities Monitoring: PCU	See RPF

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Ensure proper implementation of additional E&S instruments Adopt and implement GRM									
Failure to restore livelihoods	Implement stakeholder consultations during planning phase Prepare additional E&S instruments (e.g. Livelihood Restoration Plans – LRPs) according to RPF where required Ensure proper implementation of additional E&S instruments Adopt and implement GRM	x	x		# of stakeholder consultations held at sub-project site # of LRPs prepared where appropriate # of grievances resolved		x		Implementation: Contractor / PCU / Local Authorities Monitoring: PCU	See RPF
ESS 6: Biodiversity Conservation and Sustainable Management of Living Resources										
Cumulative impact of the multiple civil works at various locations and on already degraded and sensitive ecosystems	Assess potential risks during E&S screening Prepare site-specific ESMPs designed to avoid impacts Ensure re-vegetation after completion of construction		X		# of sub-project sites screened # of sub-project sites with appropriate E&S instruments developed for them			X	Implementer: Contractor Monitoring: PCUs	Monitoring costs: Included in staff time Travel costs for monitoring activities

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
					# of subproject sites that have been re-vegetated after construction					
Risk of loss of riverine, woodland and remnant rainforest resulting in more loss of dwindling habitat for endemic and migratory species and contribution to climate change	Conserve riverine, woodland and remnant rainforest where possible at sub-projects (including re-vegetation) Screen out sub-projects with impacts on riverine, woodland and remnant rainforest Prepare Biodiversity Assessments and Management Plans (BMPs) where appropriate (describe baseline assessment, design of the infrastructure, access routes, and sourcing materials that minimized impacts to critical habitat and avoids fragmentation; measures to avoid temporary impacts from traffic, spoil deposition, direct land take and indirect impacts of noise, and visual intrusion, pollution or other forms of damage; monitoring of the site and implementation activities,	x			# of sites with re-vegetation conducted # of sub-projects likely to impact riverine, woodland and remnant rainforest # of BMPs developed and implemented			x	Implementation: Contractor / PCU / local authorities Monitoring: PCU	Monitoring costs: Included in staff time Travel costs for monitoring activities

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	including adaptive management as necessary)									
Increased deforestation for fuelwood/charcoal for cooking for laborers and informal vendors	Avoid collection of local firewood Apply zero tolerance for charcoal and/or firewood stoves for cooking at construction camps and by vendors at construction sites Conduct awareness sessions among workers Adopt and implement GRM		x		# of grievances filed # of awareness sessions conducted		x		Implementation: Contractor / PCU / local authorities Monitoring: PCU	Monitoring costs: Included in staff time
Exacerbation of existing erosion problems especially along water courses	Avid exacerbation of existing erosion problems through appropriate design of infrastructure Vegetate area where feasible	x			# of designs that avoid exacerbation of existing erosion # of vegetation exercises conducted		x		Implementation: Contractor / PCU / local authorities Monitoring: PCU	Monitoring costs: Included in staff time
Cumulative impact of floods and construction debris downstream into Elephant Marsh and other key biodiversity areas	Screen sub-projects prior to construction for potential creation of debris Conduct appropriate waste management procedures, included in C-ESMP		x		# of sub-project plans screened # of C-ESMPs that include waste management procedures		x		Implementer: Constructor Monitoring: PCU	Monitoring costs: Included in staff time

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
Risk of Human wildlife conflict	Prepare, adopt, and implement site-specific Human Wildlife Conflict Management Procedures (including crocodiles and snakes) and adopt as part of ESMPs (see Annex 16) Proactive prevention of bushmeat poaching.	x			# of Human Wildlife Conflict Management Procedures included in ESMPs		X		Implementer: Constructor / PCU Monitoring: PCU	Monitoring costs: Included in staff time
Risk of reduced water flow velocity and increased sediment deposition through check dams	Introduce stable slopes, appropriate internal drainage measures	x	x		# of sites with changed velocity			x	Implementer: Constructor / PCU Monitoring: PCU	Monitoring costs: Included in staff time
ESS 8: Cultural Heritage										
Risk of chance Finds	Implement chance find procedures (see Annex 2)		X		# of Chance find procedures implemented		X		Implementer: Contractor Monitoring: PCU	Monitoring costs: Included in staff time
ESS 10: Stakeholder Engagement and Information Disclosure										
Risk of exclusion of vulnerable groups in project activities and consultations	Implement SEP		x		# of marginalized communities assessed			x	Implementer / Monitoring: PCU	Monitoring costs:

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
	Identify minority, marginalized and disadvantaged communities in project sphere of influence. Establish and maintain continuous liaison with the communities including marginalised groups to sensitize them on the project objectives and design. Use innovative communication means to reach the communities with information on the project. Establish GRM structures in the communities and sensitize the communities on the project GRM. Apply local languages in communication				# Local languages used in communication					Included in staff time
Lack of access to GRM	stablish GRM structures in the communities and sensitize the communities on the project GRM. Adopt and Implement GRM	X	X	X	# of GRM awareness sessions held in community # of GRM cases filed and addressed	X			Implementer/ Monitoring: PCU	Monitoring costs: Included in staff time

Potential Risks and Impacts	Proposed Mitigation Measures	Phase			Indicators for monitoring	Frequency of Monitoring			Responsibility for implementation and monitoring	Estimated Cost (in USD) [55]
		Planning	*Construction*	*Operation*		*Continuous*	*Monthly*	*Quarterly*		
Risk of inadequate stakeholder engagement	Adopt and Implement SEP Include information Information dissemination and consultations of vulnerable groups	x	x		# of community consultations held # of vulnerable groups consulted	x			Implementer/ Monitoring: PCU	Monitoring costs: Included in staff time
Risk of elite capture and the exclusion of vulnerable groups including women	Adopt and Implement SEP Include information Information dissemination and consultations of vulnerable groups with a specific focus on women	x	x		# of community consultations held # of women consulted	x			Implementer/ Monitoring: PCU	Monitoring costs: Included in staff time

6. Institutional and Implementation Arrangements

Regional Steering Committee (RSC). A Regional Steering Committee has been established for the RCRP I. Malawi will join the RSC in order to strengthen coordination between countries and the regional organizations. The RSC meets on a bi-annual basis. The RSC has been established to increase overall regional coordination at the Program level and maximize the impact of the RCRP's framework approach. The RSC reinforces the role of the RCRP as a coordination platform expected to consolidate regional cooperation in climate governance in the Africa region by actively engaging stakeholders at multiple levels and encouraging communication and exchange. It includes heads of PCUs/PCU in the different participating countries, focal points from each participating Ministry/Implementation Agency, and convenes at least once a year to discuss implementation progress, and at least another time to discuss technical themes addressed by all countries of the Program.

Project Coordination Unit (PCU): the Project in Malawi will be implemented by a PCU sitting in the Ministry of Finance and Economic Affairs in the Department for Economic Planning, and Development (EP&D). The PCU will be led by a Project Coordinator, and will be responsible for the implementation of Components 1, 3, 4, and Sub-Component 2.1 (b); and the coordination of Component 2. The PCU will consist of an Operations Team (2 Procurement Specialists, Financial Management Specialist; 2 Environmental Safeguards Specialists; 2 Social Safeguards Specialists; 1 OHS Specialist, 2 Project Civil Engineers, , 1 M&E Specialist; 1 Communications Specialist; and 1 Project Admin Assistant) and a Technical Team (Technical Coordinator for District Level Investments; Technical Coordinator for Infrastructure; Technical Coordinator for Catchment & Water Resources Management; and Technical Coordinator for Disaster Risk Management). The PCU will also manage the contracting and supervision of all third-party firms hired under the Project.

Project Implementation Units (PIUs): A PIU located in the Roads Agency in the Ministry of Transport and Public Works and led by a Deputy Project Coordinator will be responsible for the Roads Funds Administration, Sub-Component 2.1 (a). It will consist of an Operations Team (Procurement Specialist, Financial Management Specialist, Environmental Safeguards Specialist, Social Safeguards Specialist, and an OHS Specialist and a GBV Service Provider) and a Technical Team (Transport / Civil Engineer, Technician/Surveyor, other technical positions). A second PIU will be located in the National Local Government Finance Committee (NLGFC) in the Ministry of Local Government and Rural Development with environmental safeguard, social safeguard, and occupational health and safety specialists. It will be led by a Deputy Project Coordinator and will be responsible for the 28 district councils and the implementation of Sub-component 2.2. It will include a RCRP Team at District level (Technical and Safeguards) and GESD enabled Team at District level (Directors of Finance and Accounting Officers).

Figure 3 Project Implementation Arrangements

The PCU will include qualified staff and resources to support the management of all E&S risks and impacts of the Project. For this purpose, the PCU will recruit 2 Environmental Safeguards Specialists and 2 Social Safeguards Specialists. All of them will be full time project staff. The Environmental and the Social Safeguards Specialists will be responsible for the monitoring of the compliance with this ESMF, the SEP, and the LMP and sub-project specific E&S instruments. An OHS Specialist will be responsible for the monitoring and supervision of all OHS related matters. Where necessary, they will discuss corrective measures with Project management and implementers where appropriate. A team of consultants recruited by the PCU will assist with the preparation of additional E&S instruments, such as ESIAs, ESMPs or RAPs for sub-projects. The PCU will oversee the preparation of the instruments and be responsible to submit them to the World Bank for clearance.

The Environmental and Social Specialists at the PCU will be responsible for the monitoring and supervision of the subproject-specific E&S instruments, where applicable through the E&S Specialists at the two PIUs. They will assist in the preparation of bidding documents and ensure that all subproject-specific requirements are included in the bidding documents and that the construction companies have the respective capacity to implement the requirements. They will undertake field monitoring missions and review documentation in order to monitor the implementation of the E&S requirements, and they will train ministerial staff at all relevant levels in the implementation and monitoring efforts, especially the PIU staff implementing Component 2.

The Social Safeguards Specialist, in addition, will ensure the implementation of all stakeholder engagement requirements, and the implementation of the GRM. The SEA/SH Specialist will ensure the implementation of all SEA/SH related prevention and mitigation measures, as well as handle any SEA/SH complaints made through the GRM, with the assistance of the E&S Specialists at the PIU level for Component 2 activities.

The E&S Specialists at the PCU and PIU (for Component 2 activities) will receive monthly reports from construction companies, Roads Authority, and the NLGFC and will prepare the E&S inputs for the Project Quarterly Progress Report to the World Bank. While the OHS Specialist will in particular focus on any occupational health and safety tasks, the Environmental Specialist will focus on environmental and community health and safety aspects, the Social Development Safeguards Specialist will be responsible for any aspects regarding social issues, labor risk management, as well as stakeholder consultations and the GRM.

The PCU and PIU staff will flag any performance concerns or non-compliance with the PCU leadership.

At the local level, the PCU staff will play a critical role in ensuring local governments and PIU staff are fully aware of the project and its activities. The PIU staff at the local level will work closely with the PCU Environmental and Social Safeguards Specialists and will be trained in the monitoring of relevant E&S risk mitigation measures.

The PCU E&S Team will further work closely with the PIUs and district governments to ensure compliance with all E&S mitigation measures under Sub-Component 2. The PBGs will operate through Government systems, with the Project introducing standards, guidelines, manuals and third party assistance to strengthen existing national and local Government systems. Access to the PBGs will depend on the capacity of the districts to plan, implement, and monitor infrastructure and catchment management interventions. The first criterion is the need to have adequate technical staffing at district level. During the project implementation timeline, it is expected that the high vacancy rate for technical and extension staff is decreased to a sustainable level. To ensure that investment interventions are implemented in accordance with good practice, the PBGs will be accessible to districts with sufficient capacity for implementation, including technical and engineering, fiduciary, and E&S risk management. Towards this end, the project will finance filling engineering positions at district level during the first year of implementation. The project will also carry out on-the-job training program for district staff, local contractors and unskilled laborers engaged in the activities. The PCU E&S team, specifically will be responsible for the provision of E&S training and capacity building at the District level as required. Training may be implemented through consultants recruited by the PCU.

The PIUs will deploy E&S Specialist responsible to work closely with the district governments in the preparation of proposals, the preparation of ESIAs or ESMPs where required, and the Specialist will be responsible for monitoring E&S compliance of district governments and will report on the district governments' E&S performance to the PCU. Investment proposals will undergo quality assurance processes through the PCU's clearing house and national guidelines where available, in consultation with the district level staff. This process includes review of proposals and site-specific E&S instruments (ESIAs, ESMPs, RAPs,) through the PCU E&S Team.

Contractors: Contractors will be implementing E&S mitigation measures as laid out in this ESMF and subsequent ESIAs/ESMPs. Mitigation measures required will be included in all procurement and bidding documentation, including in Bills of Quantities (BoQs), and will be costed in agreements with the contractors. The contractors will be obliged to ensure that staff with EHS experience and capacity is involved in construction works and can fulfill the reporting requirements on E&S, and can guide and supervise all workers, including community workers.

The PCU and PIUs will develop and implement procedures for managing contractors and subcontractors recruited to carry out civil works including: ensuring compliance with the national laws, e.g., licenses to

operate and excavate any sites for project purposes; relevant E&S requirements to be included in the procurement and contracting process including bidding documents, contracts and subcontracts consistent with the requirements of ESSs; contractors to adopt the relevant aspects of the ESMF and implement the E&S requirements specified in the bid document and must show that they have sufficient staff and capacity to carry it out; Codes of conduct (CoCs) to be required for contractors, subcontractors, and their workers covering conditions of service, OHS, and SEA/SH requirements; preparation of a detailed contractor-ESMP (C-ESMP) that is costed, with sufficient budget to mitigate E&S risks; monitoring contractor commitment and compliance with as per the Project specific E&S instruments and requirements; provision of GRM for contractor and subcontractor, primary suppliers, communities and other stakeholders as well as employees; ensuring contractors and primary suppliers provide details on their oversight on environmental, social, health and safety (ESHS) performance and adequate mechanisms for serious incident reporting should it be required; and monitoring of the performance of the contractors and primary suppliers to ensure that they comply with the WB Environmental, Health and Safety Guidelines (EHSGs) of their respective contracts in accordance with the ESMF, LMP, and SEA/SH Action Plan.

7. Environmental and Social Management Process

7.1 Screening Process

The PCU and PIUs respectively be responsible for the screening of all physical project activities.The E&S screening will be based on the Environmental and Social Screening Guidance and Form (see Annex 1). The Safeguards Specialists will be responsible for all E&S screening of activities in close coordination with the respective project engineers working on sub-project planning and design, to the satisfaction of the World Bank.

All proposed sub-projects will be subjected to a screening process to determine and assign an environmental and social risk rating to each activity / sub-project. The screening will also assist in further identifying potentially sensitive environmental and social receptors likely to be negatively impacted. The outcome of the screening will determine:

a) whether the sub-project contains activities included in the list of exclusions and therefore has to be screened out (see Section 7.3 for a list of exclusions),

b) whether an Environmental and Social Impact Assessment (ESIA) (for *high or substantial* sub-projects), an Environmental and Social Management Plan (ESMP) is required (for *moderate* subprojects), or

c) whether the subproject does not require any additional E&S instrument rather an E&S consideration with the relevant mitigation measures listed in this ESMF (for *low* risk subprojects).

The types of ESIAs/ESMPs to be prepared will depend on the complexity of the sub-project, it can either be a simplified ESMP, a detailed ESMP done internally, an ESMP that is prepared by a consultant, or a full ESIA prepared by a consultant. It is expected that all construction sub-projects will require at least an ESMP. ESMPs may include other sub-project relevant instruments, such as hazardous substances Management Plans, Waste Management Plans, Cumulative Impact Assessments, Biodiversity Management Plans, etc… as set out in the Annexures of this ESMF, and address all supporting activities including quarries, borrow pits, camp sites, road access, power supply, water supply, storage areas, etc.

The screening report will further help to determine which ESF standards are applicable, other national EIA and legislative requirements, and which steps need to be taken and which provisions or procedures apply, as laid out in this ESMF. This will include the process of identifying if the sub-project needs to develop Resettlement Action Plans (RAPs) in line with the RPF.

The E&S screening process involves: a) reconnaissance of the subproject areas/routes and their surroundings, b) identification of the major subproject activities and c) preliminary assessment of the impacts of these activities on the ecological, physicochemical and socio-economic environment of the sub-project surrounding areas.

The screening form may need to be reviewed and updated during the process to accommodate other variables.

Where site-specific ESIAs/ESMPs (along with any other safeguards instruments) are required, the costs to prepare and implement these plans are budgeted for in the budgets of the respective activity.

Following the screening process, the PCU will assign each proposed sub-project/activity an E&S risk levels (*High, Substantial, Moderate, Low*), aligned with the ESF risk classification. In terms of social risks, some mitigation measures will be implemented independent from the size and environmental category of the

physical infrastructure; this includes stakeholder engagement activities, and SEA/SH related requirements.

Table 9 Risk Categories

Risk Category	Nature of Risk and Impact	Examples
Low Risk	Activities that do not have a physical footprint and/or no civil works (including refurbishment and/or renovations). These may not require E&S instruments preparation, however, E&S clauses in the contract are recommended (to be prepared by the PCU prior to bidding process)	Small training and workshops; TA activities
Moderate Risk	Activities that have low to moderate E&S risks and impacts, including those that are site-specific, temporal and reversible in nature. In addition to the E&S clauses in the contract, these activities may require a simplified or detailed ESMP. Contractors will also be required to prepare C-ESMPs. Furthermore, activities may require risk mitigation measures in regards to SEA/SH, LMP, etc…	Activities that may spark intra-communal conflict over allocation of resources
Substantial Risk	Activities that have substantial E&S risks and impacts, including those that are not as complex as high risk projects, and more predictable and potentially reversible. This category includes risks of social conflict, and impacts on human security; impacts that are medium in magnitude, medium to low probability of serious adverse effects to human health and/or environment, or risks to biodiversity and habitats. These activities will require an ESIA, a detailed ESMP or a Biodiversity Management Plan.	Rehabilitation or construction of infrastructure; activities that include potential conflict risks; activities that could lead to SEA/SH (e.g. significant labor influx); activities leading to involuntary resettlement, land acquisition and restrictions to land use; activities posing substantial risks to biodiversity and/or critical habitats.
High Risk	Subprojects that contain significant environmental and social risks impacts. These activities will require an ESIA compiled by an international consultant.	Rehabilitation or construction of infrastructure in sensitive areas; activities in critical habitats/biodiversity and protected areas; activities involving significant quantities of hazardous substances.

Note: In all these classification categories, National EIA guidelines will also be applied accordingly in tandem with this ESMF.

7.2 E&S Documentation, Approval and Disclosure

The main responsibility for the preparation of subproject-specific E&S instruments (ESIAs/ESMPs/RAPs) will rest with the PCU and respective PIU. Following the E&S screening process, where applicable, the PCU or respective PIU will prepare the respective E&S instruments either through their Environmental and Social Safeguards Specialists with policy and technical guidance from staff from the Environmental Affairs Department or through consultants. ESIAs/ESMPs will be based on the table presented in Annex 6. E&S

instruments will be submitted to the World Bank for clearance prior to approval by MEPA. No works can commence prior to clearance.

The World Bank disclosure standards require that the ESMF for the Project is made available to project-affected groups, local NGOs, and the public at large. A summary version will be translated into the main local languages. Public disclosure of ESIAs/ESMPs/RAPs is also a requirement. The PCU will disseminate ESIAs/ESMPs/RAPs at strategic locations and offices of the ministries and according to the SEP. A GRM will be in place for complaints on non-compliance with the disseminated documentation.

ESIAs/ESMPs will be prepared in line with para 13 and 14 of ESS1 of the World Bank's ESF ('indicative outline of ESMP') and the project-specific requirements outlined in the Environmental and Social Commitment Plan (ESCP). Annex 6 provides an indicative outlines for ESIAs/ESMPs. RAPs will be prepared as will be outlined in the RPF and in line with the requirements of ESS5. Stakeholder consultations will be conducted as part of the E&S screening and the preparation of the ESIAs/ESMPs/RAPs – as will be laid out in the SEP – and shall identify any E&S related concerns from project-affected parties.

The ESIAs/ESMPs shall be included in the procurement and contracting of contractors - including bidding documents for potential civil works, as well as other WB standard EHS terms and conditions for procurement and any subproject-specific requirements. Codes of conduct (CoC) shall be required to be signed by all workers of contractors, subcontractors, primary suppliers, and their workers.

7.3 List of Exclusions

Subprojects to be excluded from financing include the following:

- Activities that may cause long term, permanent and/or irreversible (e.g. loss of major natural or critical habitat) impacts.
- Activities that have high probability of causing serious health and safety adverse effects to human health and/or the environment.
- Activities that may have significant adverse social impacts and may give rise to significant social conflict.
- Activities that would result in significant levels of involuntary resettlement (physical and/ or economic).
- Dams with the objective of water storage and irrigation schemes, including construction, upgrade, expansion, etc. thereof, including small dams with safety risk as per definition in ESS4 Annex 1.
- Activities that may have risk/impact on cultural heritage.
- Activities that may require use/deployment of Military.
- Activities in contravention of international conventions and treaties to which Malawi is a Party.

- Activities that cause or lead to child abuse, child labor exploitation, forced labor or human trafficking

- Activities that result in involuntary restrictions on land use or access to legally designated parks and protected areas

- Activities that involve the transformation or degradation of critical habitats and may result in the loss of biodiversity, including any official protected natural areas, such as national parks and other protected areas including culturally protected areas, or can cause degradation of critical habitats

- Activities including the construction of large dams as well as high-risk prone dams as per definition in ESS4 Annex 1.

8. Monitoring Plan and Reporting

8.1 Regular Monitoring and Inspection for Compliance

The goal of monitoring activities is to measure the success of the activities, determine whether interventions have prevented or mitigated negative risks and impacts and to determine whether further interventions are required to mitigate adverse impacts or monitoring is to be extended in some areas. The goal of regular inspection is to ensure that sub-component activities comply with the plans and procedures laid out in this ESMF and in potential ESIAs/ESMPs prepared for sub-projects.

The main monitoring responsibilities and inspection activities will sit with the PCU, which will administer the overall project-related E&S monitoring and implementation as laid out in this ESMF. The PCU will have overall responsibility for the implementation of the E&S mitigation measures, as well as for monitoring for compliance. The E&S Specialists in the PCU will handle all monitoring, inspection and reporting aspects on a day-to-day basis. E&S-related monitoring will focus on compliance by its contractors, sub-contractors and suppliers, as well as capturing baseline information including spatial data of project sites. In regard to sub-component 2.2, the NLGFC is responsible for the monitoring of E&S implementation at the district level.

The PCU will make use of the Kobo-tool Geo-Enabled Monitoring System (GEMS) to enhance Monitoring and Evaluation (M&E). This is achieved by building capacity among partners on the ground, to leverage field-appropriate technology for digital data collection and analysis. Using these tools and methods allows operations to enhance the transparency and accuracy of M&E and increase the accountability of third-party monitoring (TPM). At the same time, GEMS provides platforms for remote supervision and portfolio mapping for coordination across projects and partners.

The PCU E&S Specialists and NLGFC E&S Specialist respectively will assess progress of activities against the ESCP, ESMF, and the SEP, and subsequent ESIAs/ESMPs/RAPs, and will report any non-compliance to the respective Project Manager. Indicators for mitigation measures are identified in the above generic ESMP, they will be used as a baseline for assessing progress on the ESMF implementation. Monitoring indicators will further depend on specific activity contexts and will be developed as part of the sub-project specific E&S instruments. Additional indicators will be included as needed in the site-specific instruments.

The PCU or NLGFC respectively will supervise the preparation of C-ESMPs by contractors and will be responsible for the monitoring and supervision of contractors and sub-contractors and suppliers. If monitoring and supervision results in findings of non-compliance by contractors, the PCU / NLGFC will discuss and oversee the implementation of corrective actions of the contractor.

In addition, the Ministry of Labor, Department of Health and Safety, the Ministry of Water and Sanitation, and the Ministry of Natural Resources and Climate Change, National Construction Industry Council (NCIC) have regulatory duties to undertake site visits of construction areas. The PCU will collaborate closely with these entities and provide support in order for them to fulfill their duties.

8.2. Reporting

The PCU will provide quarterly reports covering environmental, social, health and safety performance of the project no later than 14 days after the end of the quarter (see Annex 7). The reports will include the status or preparation and implementation of E&S instruments, stakeholder consultations, and results of the grievance redress mechanism (GRM) and other items listed in the ESCP.

The PCU will receive monthly reports from contractors in regard to their implementation of E&S mitigation measures. It will further receive quarterly reports from the NLGFC in regard to sub-component 2.2 activities. These report contents will feed into the quarterly progress report on E&S.

The GRM will further help track complaints and effectiveness of interventions, including those with E&S impacts and the quarterly monitoring reports will provide summaries and statistics on the GRM.

Six months prior to completion of the project, the PCU will submit an assessment of the success of the ESMF and include relevant information in the Implementation Completion Report (ICR). If any key objectives of the ESMF were not achieved then follow-up measures will be developed to remedy the situation prior to the closure of the project. This is also applicable for site-specific ESIAs/ESMPs.

8.3 Incident and Accident Reporting

Incidents that will be reported to the WB include the following types: Fatality, Lost Time Injury, Acts of Violence/Protest, Disease Outbreaks, Displacement without Due Process, Child Labor, Forced Labor, Unexpected impacts on heritage resources, unexpected impacts on biodiversity resources, environmental pollution incident, dam failure, violence on the basis of Sexual Orientation and Gender Identity (SOGI), Discrimination on the basis of SOGI, Sexual exploitation, Sexual Abuse, Sexual Harassment.

The World Bank needs to be notified promptly (within 48 hours) of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, communities, the public or workers, including, inter alia, cases of SEA/SH and accidents that result in death, serious or multiple injuries (by the PCU). The PCU will need to provide sufficient detail regarding the scope, severity, and possible causes of the incident or accident, indicating immediate measures taken or that are planned to be taken to address it. The report should also include any information provided by any contractor or supervising entity. A record of indicative incidents is still required to identify any potential trends to be mitigated, e.g. repetitive similar incident, or repeat offender contractor, etc.

Key information in the incident report should respond to the following questions (the information given regarding the accident should be enough to conduct the Bank's ESIRT internal procedures):

- *What was the incident? What happened? To what or to whom?*
- *Where and when did the incident occur?*
- *What is the information source? How did you find out about the incident?*
- *Are the basic facts of the incident clear and uncontested, or are there conflicting versions?*
- *What were the conditions or circumstances under which the incident occurred?*
- *Is the incident still ongoing or is it contained?*
- *Is loss of life or severe harm involved?*
- *How serious was the incident? How is it being addressed? How is the response?*
- *What, if any, additional follow up action is required, and what are the associated timelines?*

With respect to SEA/SH, the Project Manager will confirm if an investigation of SEA/SH misconduct will be carried out, after considering whether it will be safe to investigate and whether the employer's misconduct (accountability and response framework) investigation process is appropriate for undertaking the investigation in a survivor-centric manner. The Bank will not request or be given an investigation report from the employer but will use the records available from the Project Manager for the ESIRT process.

For all other incidents, the PCU will provide the information to the task team as quickly as possible and ideally within 10 days. The task team will review the investigation report and updated incident form, and if necessary, will request further clarification or information with respect to the causes of the incident

9. Stakeholder Engagement

A consultation mission was undertaken from 5 to 9 June 2023 to define the concept of the program, including its development objective, components and activities, as well as implementation arrangements, timeline and roadmap for preparations, and necessary analytical work in support of integrated approaches to floods, catchment and basin climate resilience. Consulted stakeholders included officials from the Ministry of Finance and Economic Affairs (MoFEA), the Ministry of Water and Sanitation (MoWS), Department of Disaster Management Affairs (DODMA), Ministry of Natural Resources and Climate Change (MoNRCC), Ministry of Agriculture (MoA), and from the Ministry of Transport and Public Works and Roads Authority (see Annex 4). Considering that stakeholders engagement is a continuous process, consultations will continue to be done throughout the project cycle.

Consultations clarified the required rationale of the Project. Stakeholders pointed out that Malawi is exposed to several hydro-meteorological hazards including floods, droughts, hailstorms, strong winds and landslides, and geo-hazards, notably earthquakes. Between 1980 to 2017, Malawi experienced eight major droughts and 33 floods. The drought in 2016 affected 6.5 million people, which is over a third of the total population. Since the devastating 2015 cyclone Chedza, the country has experienced Cyclones Idai (2019), Ana, Gombe (2022) and most recently, Tropical Storm Freddy (2023), all of which have led to significant loss of life, loss of livelihoods, and damage to infrastructure. Given these trends there is an urgent need to develop a program, breaking the cycle of recurrent reconstruction projects, blending needed critical infrastructure and cyclone recovery with a longer-term resilience and institutional strengthening agenda.

It was further decided that the proposed operations will build on foundation laid by the Shire River Basin Management Program (SRBMP – P117617 - closed) and Malawi Flood Emergency and Recovery Project (MFERP - 154803) on basin planning, hydromet services improvement and flood Management. The Project will further coordinate with Malawi Watershed Improvement Project (MWASIP - 167860) and Malawi Resilient and Disaster Risk Management Project (MRDRMP - 161392). Flow of resources to District Council will follow Governance to Enable Service Delivery (GESD – P164961) approach.

Key principles of engagement discussed for the Project included that with increased climate volatility, as well as mounting land use pressures, limited progress in reducing vulnerability, the frequency and intensity of water-related disasters, and associated recovery and reconstruction needs have increased over the years, so much so that a “new normal” has been created. The aim for this Project is to respond to the current cyclonic event, while also zooming out and providing a reset in the way disasters are anticipated, managed, and averted. Based on experience of the last decade, the planned interventions, as well as the implementation arrangements, are designed to: a) Advance a vision of “Living with floods”: Bring back a coherent vision for natural resources management/water resources management and flood risk management for the Shire Basin and indeed the country as a whole. This vision should integrate spatially different functions, needs and risks of natural resource use and flood risk management; b) Design a “GESD for climate resilience”: Decentralize implementation and accountability to communities at risk and embed climate resilience capacity within districts, building on other project experience; c) Integrate “Performance-based lending”: Reward performance and pay for results (within the World Bank IPF) and build capacity for increased performance-based lending; d) Establish “Rules of the game”: Focus on enforcement of rules (e.g., flood zoning), and sustainable O&M; and d) Secure “High level commitment”: A series of investments without accompanying policy and commitment to enforcement will not bring desired results.

Further stakeholder consultations were undertaken at the local level, including with District Councils and NGOs in September 2023. Consultations were held in the southern regions, central region and northern region (see Annex 4 for stakeholder details). A summary of the issues raised during the consultations and the responses from the Project preparation team are listed in the table below.

Table 10 Local stakeholder consultation inputs

	Main issues raised Comment	**Response**	**Institution that raised the issue or comment**
1	There is need to provide clarity on whether the financial resources for project implementation are a loan or grant or both.	The project is a grant.	Chiradzulu District Council
2	It is proposed that through this Project, District Councils should be capacitated to respond to disasters as quickly as possible. In addition, other institutions, like Malawi Defense Force should also be assisted so that it is able to respond to disasters as well.	This proposal has been noted. Under the project, there is a component to promote n early warning system that can also assist councils to timely respond to disasters, especially floods.	Phalombe District Council
3	Some districts, like Phalombe, are prone to disasters caused by landslides. There is a need to conduct studies on the geology of such districts so that people are well informed to take precautionary measures.	This request is noted. The studies however will depend on the availability of resources and time.	Phalombe District Council
4	One of the reasons why most of the infrastructure in District Councils does not withstand disasters, such as floods is the poor workmanship. As the rehabilitation of infrastructure affected by Cyclone Freddy will be carried out, there will be a need to ensure that well-qualified engineers have been engaged. In addition, there is a need to ensure that affected District Councils have qualified engineers to supervise the works. The government, through District Councils, should find a way of providing incentives to engineers so that they can work in councils and rural areas.	Contractors who will be hired to rebuild or rehabilitate damaged infrastructure will have requisite qualifications and experience. Likewise, supervising engineers will have the required experience and qualifications.	Kaume DPD
5	One of the proposed activities under the RCRP is carrying out GIS mapping of the flood-prone areas in the districts. This will assist Councils to come up with proper settlement plans. Without this mapping, people will be constructing houses in flood-prone areas.	This has been noted. There is, however, a need to come up with a proper justification to ensure that the proposed activity is in line with the Project Development Objective (PDO).	Blantyre District Council
6	District Councils need guidance on how much resources will be allocated to them. This information will assist Councils in coming up with activities.	The amount that will be allocated to Councils will depend on the cost of rehabilitation of damaged infrastructure after assessments.	Ganizani Nkhwazi
7	Most of the District Councils in Malawi do not have Environmental District Officers.	This is noted. RCRP will have a management unit that will engage an	Rumphi District Council

	Main issues raised Comment	Response	Institution that raised the issue or comment
	The government should therefore assist in the recruitment of Environmental District Officers to ensure that applicable environmental and social standards are being followed during project implementation.	Environmental Safeguards Specialist who will work with District Councils to ensure that applicable environmental and social standards are being followed during project implementation.	
8	Extension workers in District Councils that will be implementing infrastructure projects under RCRP should be assisted with motorcycles to ease mobility challenges.	This will depend on the availability of resources.	Rumphi District Council
9	One of the proposed activities under the project is the development of *'District Development Plans'*. This will ensure that infrastructure is resilient to floods and other disasters such as earthquakes	This has been noted. There is a need however to come up with proper justification to ensure that the proposed activity is in line with the Project Development Objectives (PDO).	Mzimba District Council
10	The development of the Environmental and Social Framework (ESMF) is critical to the successful implementation of the project. As such respective District Councils should be engaged more so that they have input in its development.	Consultations with various stakeholders during the preparation of safeguard instruments including ESMF is an ongoing process. Engagement with stakeholders, including district councils and beneficiary communities will continue till the instruments are finalized.	Chitipa District Council
11	Forest Landscape Restoration Plan. How can this be integrated into the RCRP?		Mzimba District Council
12	The implementation of the RCRP should also take into consideration the cultural aspect of the beneficiary communities.	During project implementation, cultural aspects of beneficiary communities will be considered. Issues of culture will also be covered in the code of conduct that will be signed by workers including migrant workers under the project.	Kasungu District Council
13	During cyclone Freddy some people were displaced. Will these be compensated under the RCRP?	RCRP will mainly rehabilitate infrastructure damaged by Cyclone Freddy. However, issues of resettlement or compensation under the project will be guided by the Resettlement Policy Framework that has been developed under the project.	Rumphi District Council
14	Will the allocation of financial resources for RCRP depend on the size of the district?	The financial resources that will be allocated per district will be dependent on the amount of money that will be required to repair, rehabilitate rebuild infrastructure that was damaged by Cyclone Freddy.	Chitipa District Council

	Main issues raised Comment	Response	Institution that raised the issue or comment
15	Are councils going to be given ceilings?	There will be no ceilings provided. Councils should submit their prioritized initiatives for enhancing resilience and recovery. Resources to be allocated on a need basis	Mwanza District Council
16	Is the template going to be provided to guide the submissions?	A template will be circulated on the DPD's mailing list to guide the submissions,	Salima District Council
17	Some disasters are periodic and tricky. How is this going to be taken into account?	Councils are free to make proposals. In Chikwawa for example, Ministry of Lands piloted a District Development Plan and Local Land Use Plans to ensure coordinated land use and sustainable development incorporating periodic disasters	Ntcheu District Council
18	Are all Councils going to examine the three components presented?	Councils affected by Freddy will implement activities for recovery but also enhancing resilience to shocks. The other Councils will only focus on resilience building	Lilongwe District Council

The Project team has further prepared a Project-level Stakeholder Engagement Plan (SEP), which lays out stakeholder engagements throughout project preparation and implementation. The SEP maps applicable stakeholders, including vulnerable groups in the Project region. It lays out modalities through which these stakeholders can be reach in order to disseminate project-relevant information and to ensure continuous consultations on Project details as well as E&S measures.

10. Grievance Redress Mechanisms

During design and implementation of the Project activities, stakeholders may be adversely impacted directly or indirectly. The grievances that may arise might relate to social issues such as loss of land or restricted land use, involuntary resettlement, loss of crops, temporary or permanent loss of livelihoods, disruption of services and pathways, gender-based violence, and other social and cultural issues. Grievances may also be related to environmental issues such as excessive dust or noise generation, damages to infrastructure due to construction related vibrations or transportation of raw material, noise and traffic congestion among others. Should such a situation arise, there must be a mechanism through which concerns from affected parties are handled in an efficient, unbiased, transparent, timely and cost-effective manner. The project will therefore institutionalize a Grievance Redress Mechanism to address concerns and grievances that arise in connection with the project activities. Under the World Bank ESSs, Bank-supported projects are required to facilitate mechanisms that address concerns and grievances that arise in connection with a project.[57] This Project GRM should facilitate the project to provide a timely response to concerns and grievances of the project-affected parties related to the environmental and social performance of the project. The Project will provide mechanisms to receive and facilitate resolutions to such concerns. This section lays out the GRM for the Project.

The goal of the GRM is to strengthen accountability to beneficiaries and to provide channels for project stakeholders to provide feedback and/or express grievances related to project supported activities. By increasing transparency and accountability, the GRM aims to reduce the risk of the project inadvertently affecting citizens/beneficiaries and serves as an important feedback and learning mechanism that can help improve the project impacts.

The GRM will be operated in addition to a specific workers' GRM, which will be laid out in the Labor Management Procedures (LMP).

The GRM is designed to ensure that project related grievances and perceived injustices are timely and effectively handled by the Project. The Project will ensure that the GRM is efficient and accessible to project affected parties. The GRM shall have a well defined instutional framework, instruments and methodological approach that will guide the grievance resolution process. The GRM therefore provides an effective avenue for expressing concerns, providing redress, and allowing for general feedback from community members.

Information on the GRM will be readily available to all project-affected parties. The GRM is designed in a culturally appropriate and socially inclusive way and is able to respond to all needs and concerns of project-affected parties. The availability of the GRM does not prevent recourse to judicial and administrative resolution mechanisms.

The Social Safeguards Specialist recruited as part of the PCU will be responsible for ensuring that grievances are resolved. The Project GRM provides for multiple channels through which complaints can be registered in a safe and confidential manner can be enabled. The complaint should be related to the project activities and/or to its implementation and management. Any complaint not directly related to

[57] Under ESS 2 (Labour and Working Conditions), a grievance mechanism for all direct or contracted workers is prescribed, which is laid out in the Labour Management Plan (LMP). The World Bank's Good Practice Note on 'Addressing Gender Based Violence in Investment Project Financing involving Major Civil Works'[57] spells out requirements for a GBV grievance redress mechanism, which is laid out in a separate GBV/SEA and Child Protection Risks Action Plan.

the Project will be referred to the relevant Traditional or Government Authority. The Project GRM will involve the following main steps:

- Receipt of grievance: any stakeholder including people from the affected communities can submit a grievance (written, verbal, text message, telephone, etc. as appropriate for the complainant).
- Registering the complaint: the complaint will be registered in the GRM logbook.
- Referral and examination of complaints: a GRM Committee shall be established (comprising of members from representatives of implementing agencies, elders, community facilitators, etc.) who will examine the complaint, resolve, or escalate the grievance as needed.
- Notifying the complainant: the decision/solution/action by the grievance committee shall be communicated to the complainant as per the stipulated timeline for feedback.
- Closing the complaint: where the decision/solution of the complaint is accepted by the complainant, or complaint that is not related to the project or any of its components, or a complaint that is being heard by the judiciary will be closed following the appropriate procedure based on the acknowledge and signed of complainant.

The GRM will be promoted as much as possible as part of a communication campaign and trainings to community members so that beneficiaries of the Project are aware of channels through which they can voice their grievances and complaints. The Project will use various mechanisms to promote the availablity of the GRM. It will use radio, community meetings and other social gatherings as appropriate. The Project will also adequately communicate to the community about Project activities and the environmental and social risks as well as mitigation measures including the SEA/SH referral pathways. This will help aggrieved parties to decide whether they have a case to report or whether the available information clarifies their concern. This will allow the aggrieved party to decide on the appropriate next step in order to report a grievance, comment or provide feedback to the Project.

The PCU will have the responsibility of overseeing the resolution of all issues related to the project activities in accordance with the laws of Malawi and in line with the World Bank ESS through a clearly defined GRM that outlines its process and is available and accessible to all stakeholders. The community will be sensitized to put-forward their grievances or concerns about anyone or anything related to the project through appropriate channels of their choice which will include:

- Face- to-face meetings with GRM committee members, local government staff, and national staff during visits to the project site;
- Grievance boxes and desks;
- Written letters, E-mail or SMS and hotline services (when available)

Intake, Acknowledgements and Follow-Up: Regardlesss of the entry point all grievances will be acknowledged, logged, and followed up. The complainant has the right to remain anonymous, thus the name and contacts will not be logged and whistleblower protection for complaints raised in good faith will be ensured. The Social Safeguards Specialist will carry out training of all staff involved with the Project, and contractors on receiving complaints and referral and complaints handling and reporting and will oversee awareness raising on the GRM.

A grievance redress committee (GRC) will be established in relation to the sub-project implementation and therefore at the sub-project level. It includes local governments and the PCU, and relevant staff will be included as necessary depending on the complaint (procurement, finance, M&E, SEA/SH Specialist and communications). The GRC will meet regularly to review minor complaints, progress on complaints resolution, review the development and effectiveness of the grievance mechanism, and ensure that all

staff and communities are aware of the system and the project. Immediate meetings will be held in case of significant complaints to be addressed.

Verify, Investigate and Act: An acknowledgement of receipt will be sent to the complainant within 7 days of receipt of the complaint. At all times, the PCU will provide feedback promptly to the aggrieved party, for example through the phone or through the community structures established for addressing GRM. Feedback will also be communicated through stakeholder meetings and beneficiary meetings during Project activities. For sensitive issues, feedback will be given to the concerned persons bilaterally.

Where a negotiated grievance solution is required, the aggrieved party (or a representative) will be invited to decide on a solution, which is acceptable to both parties and allows for the case to be closed, if both parties agree. After deciding a case, an appeal mechanism is to be provided to the aggrieved party, which is constituted through the PCU. This is important in cases in which the aggrieved party is dissatisfied with the solution provided. In these instances, the PCU will step in and provide an appeals mechanism.

Monitor, Evaluate and Feedback: Records of all feedback and grievances reported will be established by the PCU. All feedback will be documented and categorized for reporting and/or follow-up if necessary. For all mechanisms, data will be captured in an excel spreadsheet. The information collected, where possible and for only for non-SEA/SH complaints, will include the name of the person reporting, district, contractor where applicable, project activity, and the nature of the complaint or grievance.

The PCU, specifically the Social Safeguards Specialist, will be responsible for monitoring the access to and implementation of the GRM. The Specialist will include the GRM in his/her supervision and monitoring missions to the field and conduct spot checks on its implementation, or, where access is difficult recruit local teams to do so.

The Social Safeguards Specialist will provide analytical synthesis reports on a quarterly basis to the PCU Project Manager, which will include the number, nature and status of grievances. These reports will form the basis of all regular reports from the PCU to the World Bank.

Appeals and Escalation Mechanism: Where no agreement on grievance resolution has been reached, the project team will offer the complainant with appeal options and processes available in the country.

Arbitration: If the GRC fails to address the issue an arbitrator who is external to the committee will be asked to help resolve the issue. The person chosen as an arbitrator will be well trained in peace and conflict management and resolution.

Court Option: Where the case was not closed, the affected parties shall be advised to seek justice from the Court of Law and the decision made by the Court of Law shall be final.

Criminal and Other Special Cases. All cases recorded by the GRM that are found to be criminal in nature shall immediately be reported to the police. Communities will also be sensitized to report criminal cases directly to the police.

The PCU will further provide an excel sheet summary of the feedback and grievances reported, which will be linked to the M&E Results Framework. It will further maintain a documented record of stakeholder engagements, including a description of the stakeholders consulted, a summary of the

feedback/grievances received during community consultations. The PCU will extract lessons from the GRM and conduct an analysis on the overall grievances, and share the results with all PCU staff.

SEA/SH: SEA/SH cases are substantively different from other complaints that are typically handled through the grievance redress mechanisms, their information will be handled in a special way within the GRM to ensure that the information is confidential.

Cases of SEA/SH can be reported through the general Project GRM. However, additional channels for reporting SEA/SH complaints will be identified and integrated into the GRM. The survivor has the freedom and right to report an incident to anyone: community member; project staff; GBV case manager; or service provider. Given to the sensitive nature of GBV complaints, the GRM will provide different ways to submit grievances such as phone, text message and email. All relevant staff of the PCU will receive training on handling SEA/SH complaints and referral systems, ideally during the project initiation phase and as part of the staff welcome package. GRM-relevant staff will be trained on key protocols including referral, reporting and informed consent protocols to receive those cases in an appropriate manner and immediately forward them to the SEA/SH referral system. The GRM staff will ensure appropriate response by: (i) providing a safe caring environment and respect the confidentiality and wishes of the survivor; (ii) if survivor agrees, obtain informed consent and make referrals; and (iii) provide reliable and comprehensive information on the available services and support to GBV survivors.

The GRM proposes the following key features on preventing SEA/SH: (i) identify a female focal person in in the community level grievance management; (ii) provide multiple channels to receive complaints (channels to be determined after community consultation); (iii) resolve complaints at the point of service delivery to reduce information and transaction costs and gender sensitive independent channels for redress; and (iv) communicate GRM services at the community level to create SEA/SH awareness and enable project-affected persons to file complaints.

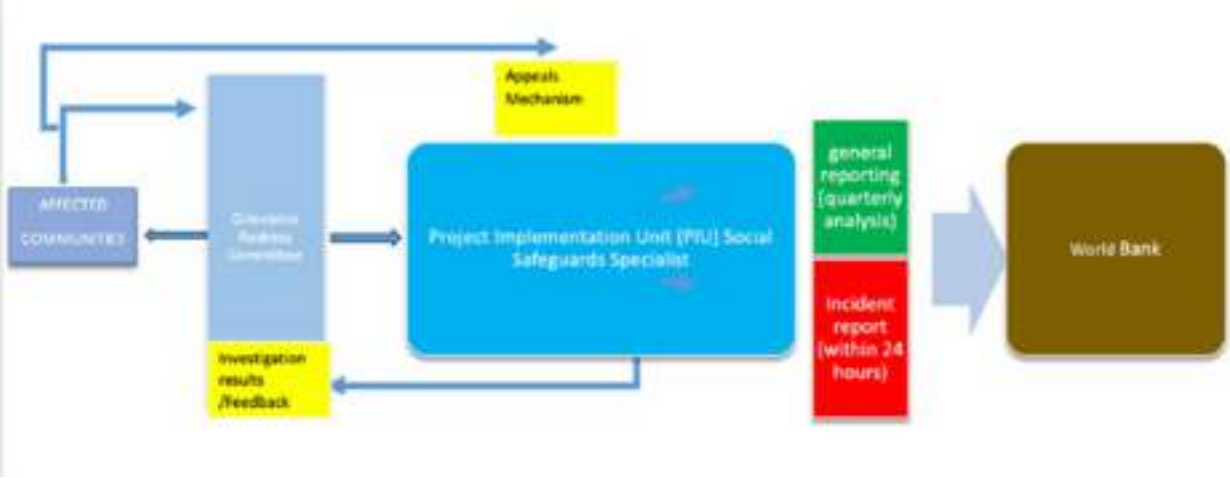
Beneficiaries and communities will generally be encouraged to report all SEA/SH cases through the dedicated SEA/SH referral system and complaints resolution mechanism. This will be made explicit in all community awareness sessions, as well as be part of the publicly disclosed information. The SEA/SH referral system will guarantee that survivors have access to necessary services they may need, including medical, legal, counselling, and that cases are reported to the police should the survivor choose to do so or if the case requires mandatory reporting.

If a SEA/SH case is reported through the Project GRM, the Social Safeguards Specialist will report the case within 24 hours to the PCU, and the PCU is obliged to report this case to the WB within 24 hours. Furthermore, cases of SH will be reported through the workers' GRM, if it concerns a direct worker or a worker from a contractor, following a survivor-centered approach. The PCU will be in charge of holding sensitization sessions for contractors regarding the CoC obligations and awareness raising activities in communities. All reporting on SEA/SH will limit information in accordance with the survivor's wishes regarding confidentiality and in case the survivor agrees on further reporting, information will be shared only on a need-to-know-basis, avoiding all information which may lead to the identification of the survivor and any potential risk of retribution.

Monitoring: Effectiveness of the GRM should be monitored on a regular basis. This is important because it helps find solutions to challenges as they arise and dealing with them promptly. Some of the measures put in place for this include a quarterly report on the number of grievances received, those resolved and the ones outstanding to ensure there is a continuous flow of the project. This will be undertaken and

reported to PCUs. As part of stakeholder engagement and consultation, involving the views of the stakeholders for whom the Grievance Mechanism is designed will be part of PCU Monitoring.

Table 11 Flowchart GRM



11. Capacity Development and Training Schedule

Capacity building and training will be provided to the PCU, NLFGC and the E&S staff, contractors, beneficiary communities and key stakeholders to ensure the project is implemented in compliance with the ESCP and this ESMF.

Training will be based on the results of a capacity assessment that will be undertaken in advance. The PCU will administer the capacity assessment of its contractors.

Table 12 Capacity development and training plan

Objectives	Issues for engagement	Method of engagement	Stakeholders/target population and area	Responsible entity	Time frame	Budget in USD
WB ESF	ESF	Training	PCU staff, NLFGC	WB	At commencement of activities	WB staff time Staff Travel costs
Stakeholder mapping and engagement	SEP	Meeting	PCU and NLFGC staff Contractors Consultants	PCU	Prior to commencement of sub-projects	E&S Specialist staff time Meeting costs
The ESMF and specific aspects of E&S assessment including preparation of E&S instruments such as ESIAs/ESMPs, RAPs etc…	ESMF and E&S processes	Training	PCU and NLFGC staff Contractors District governments/District Staff	PCU	Prior to commencement of sub-projects	E&S Specialists staff time Meeting costs
OHS issues (such as OHS measures in construction activities and Job Hazard Assessments Emergency Preparedness and Response Community Health & Safety	OHS risk management	Meeting at sub-project site	PCU and NLFGC staff especially E&S staff, contractors/sub-contractors, beneficiaries, communities that will be part of the operational phase District government / District staff	PCU	prior to construction works	E&S Specialists staff time Meeting costs Staff travel costs
GRM	GRM	Meeting: Plenary discussion with questions and answers, informatio	Contractors, sub-contractors, Beneficiary communities District governments / District staff	PCU / NLFGC	Continuous	E&S Specialists staff time Meeting costs Staff travel costs

		n materials, website				
Climate change adaptation and mitigation	Climate Change	Training	PCU and NLFGC staff	Consultant	Prior to planning and design of subprojects	Consultant costs
SEA/SH prevention and response	GBV risks	Meetings at site	Contractors, sub-contractors, Beneficiary communities District government / District staff	PCU / NLFGC	Prior to commencement of sub-projects	GBV Specialists staff time Meeting costs Staff travel
Resettlement Planning and implementation	Involuntary Resettlement	meetings	Contractors, Community members, District government / district staff	PCU / NLFGC	Prior to commencement of sub-projects	E&S Specialists Meeting costs Staff travel
Emergency Preparedness and Response Sustainable use and maintenance of flood protection structures Community health & safety	Community level risks	Meetings	Community members Beneficiaries District government/District staff	PCU / NLFGC	Prior to commencement of sub-projects	E&S Specialists Meeting costs Staff travel

12. Resources and Budget

The below table presents the estimated costs for the implementation of the ESMF. It includes costs for the implementation of the SEP.

Table 13 Estimated Costs of ESMF implementation

	Required Resources	USD	
Risk Management Unit / PCU – Monitoring of E&S			
1.	Human Resources:		
	2 Social Safeguards Specialist	Incl. in PCU staff costs	
	2 Environmental Safeguards Specialist	Incl. in PCU staff costs	
	1 OHS Specialist	Incl. in PCU staff costs	
	2 Project Civil Engineers	Incl. in PCU staff costs	
	1 Communication specialist	Incl. in PCU staff costs	
2.	Logistics / Travel for monitoring and supervision	200,000 per annum	
Grievance Redress Mechanism			
3.	Outreach material	50,000	
	Travel costs	50,000	
	Meeting costs	50,000	
Implementation of Risk Mitigation Measures			
4.	Preparation of ESMPs and ESIAs	1,000,000	
5.	Contractor E&S staff	Incl. in contractor budget	
6.	Risk Mitigation Measures (estimates based on other project implementation)	500,000	
7.	SEP implementation	500,000	
8.	Trainings and Capacity Building	500,000	
	SEA/SH Action Plan	500,000	
	TOTAL	**3,350,000**	

ANNEX 1: Environmental and Social Screening Report

Adapted from the World Bank Technical Note: Environmental and Social Framework for IPF Operations. Screening and Risk Classification under the ESF. October 2020.

Concepts for Screening

- **Environmental or social impact** refers to any changes, potential or actual, in environmental and social receptors, in space and time, resulting from the project activities to be supported. These baseline receptors include those from the physical environment (e.g., air and atmosphere; water resources and water bodies; soil and geology; climate; energy, i.e., light, noise, vibration), natural environment (e.g., flora, fauna, biodiversity); cultural environment (e.g., cultural heritage); and socio-economic environment (e.g., demography of surrounding community: population structure, types and trends; economic base: direct employment, labor supply and demand, other services; housing, transport and recreation; socio-cultural: health, lifestyle, social problems, community stress and conflict).(adapted from definition presented in ESP[58], footnote 6).
- **Impact assessment** is a process to identify and predict the potential impacts on people (including disadvantaged or vulnerable individuals and/or groups) and the environment resulting from project activities. It includes screening, scoping, impact prediction and evaluation, impact mitigation planning and recommendations for decision making, with stakeholder engagement and consideration of alternatives potentially incorporated in all the stages of the process (adapted from definition presented in Annex 1 of ESS 1, paragraph 5).
- **Environmental or social risk** refers to any potential adverse effect resulting from human and non-human exposure to hazardous agents or situations. This includes but it is not limited to ecological risks (e.g., release of contaminants to air or water due to chemical spill), social, health and safety risks (e.g., labor influx, GBV, injuries, disease transmission, illness and decrease of well being due to contaminated water, air pollution, traffic, loss of biodiversity and/or critical habitat, etc.). It is a combination of the probability of certain hazard occurrences and the severity of the effects resulting from such an occurrence (adapted from definition presented in ESP, footnote 5).
- **Risk assessment** is a process that aims at identifying, analyzing and controlling effects from hazardous agents or risky conditions as a result of project activities. Apart from assessing social, health and safety risks, the Bank also requires a hazard or risk assessment for projects involving certain inflammable, explosive, reactive, and toxic materials when they are present in quantities above a specified threshold level. It includes hazard identification, exposure assessment, risk estimation, risk evaluation and risk management. Existing risk or hazardous assessment tools can be incorporated in the ESA process and requires knowledgeable expertise not commonly deployed in impact assessment (adapted from definition presented in Annex 1 of ESS 1, para. 5).
- **Direct impact** – are the result of a cause-and-effect relationship between a project activity and a specific environmental/social component.
- **Indirect impact** – result from a direct impact on a component of the environment/social, and/or from other direct or indirect impacts.
- **Induced impact** – result from the existence of a project activities, and not necessarily from its direct or indirect impacts e.g. growth inducing effects e.g. on population density, waste generation.

[58] The World Bank Environment and Social Policy (ESP) is included in the ESF document.

- **Cumulative impacts** - result from the environmental impacts of a project/activity combining with impacts of other past, existing or reasonably foreseeable future projects or activities including those that may be enabled by the project/activity.
- **Contextual risks** refer to events, factors or dynamics occurring in the broader environment which can exacerbate ES risks and impacts and affect the delivery of the ES mitigation measures and overall ES performance. This includes considerations relating to existing tensions, conflict and instability (e.g., war, insurrection and civil unrest); area of high crime or other issues that pose any risk to public security; political uncertainty; lack of social cohesion; history of environmental or social activism in the project area; illicit activities in the project vicinity that pose a risk to project execution (e.g., mining, forestry, crops); legacy issues from previous projects; and climate risks or natural hazards (e.g., earthquake, land or mudslides, floods, volcanos, storms, etc.), competition for resources, that could affect project viability or present an increased safety concern to project-affected communities.

PROCESS

The objective of this E&S screening is to assist in the evaluation of planned rehabilitation and construction of infrastructure. The form is designed to place information in the hands of implementers and reviewers so that risks and impacts, and their mitigation measures, if any, can be identified and/or that requirements for further environmental impact assessment be determined.

The form contains information that will allow reviewers to determine the characterization of the prevailing local bio-physical and social environment with the aim to assess the potential impacts of the activities on this environment.

The form is completed by the PCU in coordination with project engineers and E&S staff, after field visit and consultations with local authorities in the respective sub-project sites. The screening is used to determine risk classification and which environmental and social risk assessment instrument is appropriate for assessing the risk and impacts.

Information Needed for Screening1

The type of information relevant for screening is listed below:

1. Characteristics of the Proposed Project

- Brief description of the proposed project focusing on the components that are relevant to the screening exercise. This also includes, if applicable, the status of any works or activities that are ongoing or complete.

- Reasons for proposing the project.

- A plan showing the boundary/footprint of the project, including any land required.

- Physical form of the developments proposed (e.g., layout, buildings, structures, construction materials, etc.).

- Description of the main processes and technology including size, capacity, etc.

- Any proposed ancillary facilities (e.g., new access arrangements or changes to existing road layout, quarries, waste disposal sites, etc.).

- Associated facilities likely to occur as a consequence of the project, as per the criteria under para. 11 of the ESP (e.g., generation or transmission of power, provision of new water supply, etc.).

- Resources to be used in construction and operation (materials, water, energy, etc.).

- The relationship with other existing/planned projects.

- Information about alternatives under consideration or to be considered.

- Information about mitigating measures being considered, as per the mitigation hierarchy.

2. Project location and sensitivity of the receiving environment (overview of geographic, environmental, social and contextual aspects)

- Geographical location of the project, including maps and photographs showing the location of the proposed project relative to surrounding physical, natural and manmade features (e.g., sensitive areas, closest communities, capital cities, landmarks, etc.).

- Socio-economic aspects, including presence of Indigenous Peoples and/or vulnerable/disadvantage groups, existing land uses on and adjacent to the site and any future planned land uses (if known), labour conditions, labor influx, transport routes, etc.

- Habitat types and sensitive areas, including protected areas and/or features (e.g., national parks, areas with high biodiversity value, cultural heritage sites, community/cultural protected areas, critical habitats, key biodiversity areas, etc.).

- Existing ambient conditions (i.e., the relative abundance, quality and assimilative capacity of natural resources in the area).

- Details of any alternative locations that have been considered.

- Contextual events, factors or dynamics occurring in the receiving environment and beyond the control of the project that may exacerbate ES risks and/or affect the project's viability and delivery of related ES mitigation measures. This can include existing tensions, conflict and instability; areas of high crime or other issues that pose any risk to public security; political uncertainty; lack of social cohesion; history of environmental or social activism in the project area; illicit activities in the project vicinity that pose a risk to project execution (e.g., mining, forestry, crops); legacy issues from previous projects; and climate risks or natural hazards (e.g., earthquake, land or mudslides, floods, volcanos, storms, etc.) that could affect project viability or present an increased safety concern to project-affected communities.

3

4. Characteristics of the potential risks and impacts

A brief description of the likely risks and impacts of the project considering the following:

- Types of ES risks and impacts based on the relevant ESS and para. 4 of the ESP. For example, risks and/or impact on people (affected communities, vulnerable groups, beneficiaries, workers, indigenous groups, etc.), health and safety, material resources, water quality and hydrology, air quality, climate, noise and vibration, landscape and visual environment, soils, land use, biodiversity, cultural heritage, etc.

- Nature of the risks and impacts (i.e., direct, indirect, cumulative; short/medium/long-term; permanent and temporary; positive or adverse).

- Magnitude and complexity of the risks and impacts, including the geographical area affected and size of the affected population/habitats/species, area of influence of the project impacts.

- Probability of the risks and impacts to occur.

- Duration, frequency and reversibility of the risk and impact.

- Mitigation measures incorporated into the project design to avoid, minimize or offset significant risks and adverse impacts.

- The transboundary nature of the risks and impacts.

Supporting Information Sources (as of October 2019)

- ▪Project-related information. Apart from the Project Concept Note, other relevant documents available could be option analyses, feasibility studies, initial environmental and social assessments, such as strategic environmental assessment, etc.
- ▪Country reports such as Systematic Country Diagnostic (SCD), Country Partnership Framework (CPF) and Country Environmental Analysis, and relevant sector assessments.
- ▪Proponent or Borrower web sites and documents such as HR policies, contractor management frameworks, existing legal agreements with workers, any existing ESA and other relevant studies, as appropriate.
- Use of publicly available country information such as ESA documents from other projects, UN reporting on relevant Conventions, relevant information from other development partners, and the CIA World FactBook https://www.cia.gov/library/publications/the-world-factbook/
- ▪Google Earth and other publicly available satellite information to assess the site. Some examples:

o Global Forest Watch: http://www.globalforestwatch.org/

o Protected Planet: http://www.protectedplanet.net/

o Map of Life - Putting biodiversity on the map https://mol.org/

o Global Biodiversity Information Facility https://www.gbif.org/

o The Land Matrix: http://www.landmatrix.org/en/

o Flexicadastre: http://www.spatialdimension.com/Map-Portals

o Group on Earth Observation: http://www.earthobservations.org

o Geo-Wiki Platform: http://www.geo-wiki.org/

o Climate explorer: https://toolkit.climate.gov/#climate-explorer

o Climate resilience toolkit: http://toolkit.climate.gov/tools

o Climate change media watch: http://www.ecoresearch.net/climate/

▪ Relevant CSO websites, particularly those organizations that have a vested interest in the project and its review

▪ Articles or other reviews and descriptions of the project and its surroundings available on the web.

▪ Business and reputational risk assessments, e.g., RepRisk https://www.reprisk.com/our-approach, Sustainalytics https://www.sustainalytics.com/esg-ratings/

▪ Social media scans and monitoring, e.g., services offered at Hootsuite - https://hootsuite.com, Mention: https://mention.com and Brandwatch - https://www.brandwatch.com .

▪ Discussion with Task Teams and relevant country-based specialists (e.g., in-country communication and sector staff can be useful to identify any potential contextual issue in the study area).

▪ Q&A sessions with the Borrower.

▪ Interviews with key knowledgeable authorities or individuals who may have had previous experience in-country or with the project, as appropriate.

▪ Bank and non-Bank tools available to facilitate screening. For example, WB Spatial Agent mobile App http://spatialagent.org/KIDS/; ITS GEO site; Geo IFC App for screening ES and other investment risks (geo.ifc.org); WB Climate and Disaster Risk Screening; WB Gender-based Violence screening tool; WB Gender Screening Tools; WB Stability, Peace and Security Files; WB tool on institutional capacity assessment; the International Biodiversity Assessment Tool (IBAT) on whether proposed project sites overlap with important natural habitats or biodiversity areas (https://www.ibatforwbg.org/); DEC Open-Access Geospatial Database on Terrestrial Biodiversity Indicators; the International Child Labor & Forced Labor Reports of the U.S. Department of Labor to provide information on whether there are significant risks of child and/or forced labor in the country and sector https://www.dol.gov/agencies/ilab/reports/child-labor).

▪ Bank guidance documents available (e.g., Good Practice Note on Non-Discrimination and Disability; Road Safety http://www.worldbank.org/esf).

▪ For high risk/visibility projects, site visits, including engagement activities with affected and interested stakeholders, at identification/concept stage.

SCREENING FORM FOR SUB-PROJECT/ACTIVITY RISK CLASSIFCATION

Name of sub-project_____

Name of the District/community in which the subproject takes place

_____

Implementing agency

_____

Name, job title, and contact details of the person responsible for filling out this form:

Name: _____

Job title: _____

Telephone numbers: _____

E-mail address: _____

Date: _____

Signature: _____

PART A: BRIEF OVERVIEW OF THE PROPOSED ACTIVITIES

Please provide information on the planned activities and scale of the activities. *(Scale considers project site, local, regional, multiple locations, linear/system, area of influence[59])*

_____

_____

Provide information about supporting actions needed during the activity, e.g. need to quarry or excavate borrow materials, laying pipes/lines to connect to energy or water source, access to water for construction and/or operation, access to power for construction and/or operation, access roads between resources and site, storage areas, permits, etc.

_____

_____

Describe how the activities will be carried out, including support/activities and resources required to operate it e.g. roads, disposal site, water supply, energy requirement, human resource etc.

_____

_____

Table 14 E&S Screening Table

PART B: QUESTIONNAIRE

	Yes	No	Points to consider: Impacts by the activity. Impacts on receptors? (Environment/social)	Impacts: 1. Direct 2. Indirect 3. Induced 4. Cumulative	Notes on: Avoid, reduce, mitigate, rehabilitate
ESS2: Occupational health hazards					
Will the works require large number (e.g., more than 30) of staff and laborers from outside the local area?			Types of workers		
Will the infrastructure works require a worker's camp?'[If "Yes", how many workers are expected to occupy the camp?					
Are the works activities prone to hazards, risks and could result in accidents and injuries to workers during construction or operation?					
Will there be OHS risks from handling of equipment?					
Is there a risk of flooding during construction/rehabilitation? (wet season or by project activities)					
ESS3: Noise and Dust Pollution during Construction and Operations					

[59] Area of influence refers to the area for which the project may impact e.g. dust, noise, light. For example along roads 500m inland either side of the road, 5km up- and downstream of moderate works on rivers.

Will the operating noise level of the new/rehabilitated infrastructure exceed the allowable noise limits?					
Will the operation result in emission of significant amounts of dust?					
	ESS3: Contamination and Pollution Hazards				
Is there a possibility that the works will lead to any contamination and pollution?			Open defecation? Informal markets causing pollution? Burning of waste?		
	ESS3: Degradation and/or depletion of resources during construction and operation				
Will the operation involve use of considerable amounts of natural resources (construction materials, trees) or may lead to their depletion or degradation at points of source?			Where water supply for construction? Operation? Where energy for construction? Operation? Need for backup power?		
Is there a likelihood of informal traders establishing business at the subproject site? (waste generation and resource depletion, increased safety risk)					
	ESS3: Solid and/or Liquid Wastes and/or Hazardous Wastes				
Will the works generate solid or liquid wastes? (including human excreta/sewage) If "Yes", does the sub-project include a plan for their adequate collection and disposal?					
Will the works generate hazardous waste?					
Will there be any soil or water contamination and degradation of water bodies?					
Is there a likelihoods of spillage and increased sediment load into water courses during construction activities and loss of riparian buffers?					
Will there be a wash bay?					
	ESS 4: Community Health and Safety				

Will community members be at risk of harm or injury during subproject implementation?					
Will activities of the subproject generate traffic safety issues? Both on site and for the adjacent community?					
Is subproject site located near to schools or other areas of sensitive or vulnerable persons?					
Is the subproject likely to encounter human-wildlife interactions and/or conflicts?					
Are there informal vendors around the construction site?					
Is there a risk that the works damage other water infrastructure on site?			Dam safety? Water balance? Emergency procedures? Greenhouse gas emissions? Paris alignment? Hazardous substances? Pest management?		
	ESS4: Beneficiary Selection and Social Dynamics				
Could the subproject lead to discrimination of certain societal groups?					
Could the beneficiary selection be contested?					
Based upon visual inspection or available literature, are there areas of possible geologic or soil instability (prone to: soil erosion, landslide, subsidence, earthquake etc.)?					
Based upon visual inspection or available literature, are there areas prone to floods, poorly drained, low-lying, or in a depression or block run-off water.			Conflict in resource use[60]/prioritization?		

[60] The project will conduct a Natural Resources Conflict Analysis to inform future strategy development. However, issues may already arise such as loss of fertile land for access roads or construction of dykes, loss of access to water for livestock drinking due to flood-protection wall, cutting trees for powerlines rather than moving route alignment, etc.

Could natural hazards (droughts and floods) exacerbate risk during project contraction of operation					
	ESS5: Resettlement and/or land Acquisition				
Will the subproject require new borrow pits, quarries, temporary use of land? E.g. stockpiling, parking, construction camps, etc.					
Will involuntary resettlement, land acquisition, relocation of property, or loss, denial or restriction of access to land and other economic resources be a result of the rehabilitation of the infrastructures works or any other project activities?					
Will the construction/ rehabilitation of the infrastructures works or any other project activities result in the permanent or temporary loss of crops, fruit trees, infra-structure (such as granaries, outside toilets and kitchens, livestock shed etc.), and/or business infrastructure (such as permanent stalls).					
Was the land area required for the sub-project subject to a voluntary land donation? If so, was all ESS 5 principles on this matter were respected?					
	ESS6: Natural habitats, Environmentally sensitive areas or threatened species				
Are there any natural habitats, environmentally sensitive areas or threatened species that could be significantly converted/adversely affected due to the rehabilitation of infrastructures works?			Environmental flow requirements? Water Balance? Forest type? Species list? Forest density, canopy cover? Key biodiversity areas? Critical habitat? Wetlands?		
Is the subproject area (or components of it) located within/adjacent to any protected areas designated by government (national park, national reserve, world heritage site etc.) or Key Biodiversity Area, or Community			Community / culturally protected areas? Critical habitat? Key biodiversity habitat areas?		

protect area e.g. Community Forest?					
Is the site considered to be habitats of endangered/threatened, endemic, or migratory species for which protection is required?					
Is there a possibility that, due to construction and rehabilitation works, any river or lake ecology will be adversely affected? (including natural springs)					
Could the works cause the loss of riverine, woodland and remnant rainforest resulting in more loss of dwindling habitat for endemic and migratory species and contribution to climate change?			Changes in flow pattern? Changes in water chemistry including seasonal variation on dilution, temperature? Nutrient levels? Flow rate? Water balance Diversity of species? Habitat health and extent? Erosion? Sediment?		
Could the works affect the rights and welfare of people and their level of dependence upon or interaction with natural resources? E.g. access to river			Competition for resources?		
Could the works trigger any human wildlife conflict?			Increased occurrence?		
ESS8: Historical, archaeological or cultural heritage site					
Based on available sources, consultation with local authorities, local knowledge and/or observations, could the works alter any historical, archaeological, cultural heritage traditional (sacred, ritual area) site or require excavation near same?			Cultural protected items?		
ESS10: Stakeholder engagement					
Has input from community members and those who may be affected by the works or any other project activities been sought?					
Has the subproject received overall stakeholder support including from vulnerable					

individuals and marginalized groups?					
Has the stakeholder engagement process considered vulnerable individuals and marginalized groups?					

PART D : MITIGATION MEASURES, DETERMINATION OF E&S INSTRUMENT

For all "Yes" responses, describe briefly the measures taken to this effect. Once the E&S Screening Form is completed it is analyzed by the Environmental and the Social Specialist at the PCU.

Based on the answers provided, the risk rating of the sub-project (High, Substantial, Moderate or Low) will be assessed - according to the WB Environmental and Social Policy for Investment Project Financing and the ESF, dispositions for *projects involving multiple small subprojects.*

The Bank will require the Borrower to carry out appropriate environmental and social assessments of subprojects, as agreed with the Bank.

Indicative summary of Risk Classification Requirements.

Project types, location, sensitivity, scale	**Nature & magnitude of ES risks & impacts, available mitigation**	**Borrower capacity and commitment**	**Context risk relevant to ES measures**
• Physical considerations; • Type of infrastructure e.g. dykes, roads, bridges, reservoirs, power plants, airports; • Volume of hazardous waste and disposal thereof;	• Impacts on greenfield sites; • Impacts on brownfield sites, e.g. rehabilitation, maintenance or upgrading; • Nature of potential risks and impacts e.g. irreversible, unprecedented activities, complex; • Resettlement activities • Indigenous peoples presence; • Possible mitigation measures considering the mitigation hierarchy;	• Capacity to manage risks and impacts consistent with ESSs; • Country policy, legal and institutional framework • Laws, regulations, rules and procedures applicable to the Project/activity sector; • Regional and local requirements; • Technical and institutional capacity; • **Track record of past project implementation**; • Financial and human resources available including technical supervision;	• Other areas of risk relevant to the delivery of ES mitigation measures and outcomes; • Depending on the specific project/activity and context in which it is being developed; • Including the nature of the mitigation and technology being proposed (e.g. may cause other impacts, cost, lack of experience, etc.); • Considerations relating to domestic and/or regional stability, conflict or security.
HIGH RISK CLASSIFICATION			
• Complex • Large to very large scale • In sensitive locations (i.e. Area of influence)	• Wide range of significant adverse risks and impacts; • Long term, permanent and/or irreversible, impossible to avoid entirely • Some cannot be mitigated or require complex, unproven mitigation, sophisticated social analysis;	• Uncertain, conflicting agency jurisdiction; • Legislation, regulations not addressing risks and impacts; • Changes to applicable legislation are being made/ not finalised; • Enforcement is weak; • Limited past experience of implementing agencies;	• Factors outside project control impacting ES performance and outcomes.

	• High in magnitude and/or in spatial extent (geographic area or population); • Significant adverse cumulative, and/or transboundary impacts; • High probability of serious adverse effects to human health and/or environment, including accidents, toxic waste, etc.; • High value and sensitive biodiversity e.g. protected areas, critical habitats; • High value, sensitive lands or rights of indigenous peoples and other vulnerable minorities; • Intensive or complex involuntary resettlement or land acquisition; • Impacts on cultural heritage or densely populated urban areas. • May give rise to significant social conflict harm or human life; • Loss of major natural or critical habitat; • Conversation of wetlands.	• Challenges and concerns about track record regarding ES issues; • Significant stakeholder engagement, commitment, track record concerns.	
SUBSTANTIAL RISK CLASSIFICATION			
• Not as complex as above; • Large to medium scale; • Not such sensitive location.	• Some significant risks and impacts; • Mostly temporary, predictable and/or reversible; • Possibility of avoiding or reversing but with substantial investment in time ; • May give rise to limited degree of social conflict, harm, human security risk; • Medium in magnitude and/or in spatial extent (medium to large geographic area or population); • Less severe, more readily avoided/mitigated cumulative and/or transboundary impacts; • Medium to low probability of serious adverse effects to human health and/or environment (with known	• Uncertain, conflicting agency jurisdiction; • Legislation, regulations not addressing risks and impacts; • Changes to applicable legislation are being made; • Enforcement is weak; • In some respects, limited experience of implementing agencies; • Some concerns about tract record regarding ES issues readily addressed; • Some stakeholder engagement concerns readily addressed.	

	and reliable mechanisms to prevent or minimize); • Lower effects on areas of high value or sensitivity; • More readily available and reliable mitigatory and/or compensatory measures.		
MODERATE RISK CLASSIFICATION			
• No activities with high potential for harming people or environment; • Located away from sensitive areas.	• Risks and impacts not likely to be significant; • Predictable and expected to be temporary and/or reversible; • Low in magnitude; • Site-specific, without likelihood of impacts beyond the project footprint, e.g. office refurbishment; • Low probability of serious adverse effects to human health and/or environment; • Routine safety precautions are expected to be sufficient to prevent accidents; • Easily mitigated in predictable manner.		
LOW RISK CLASSIFIATION			
	• Minimal or negligible risks to and impacts on human populations and/or the environment; • Few or no adverse risks and impacts or issues • No further assessment after screening.		

Example Impact Significance Matrix Based on Physical Impact Characteristics
PDA = Project Direct Area
LAA = Local Area Affected
RAA= Regional Area Affected

All Potential Impacts			
Impact Magnitude	**Extent**	**Duration**	**Significance**
Negligible	Any	Any	Not significant
Low	Any	Any	Not significant
Moderate	PDA	Any	Not significant
	LAA	Short-term	Not significant
		Medium-term	Not significant
		Long-term	Potentially significant
	RAA	Short-term	Not significant
		Medium term	Potentially significant
		Long-term	Potentially significant
High	PDA	Short-term	Not significant
		Medium-term	Not significant
		Long-term	Potentially significant
	LAA	Short-term	Not significant
		Medium-term	Potentially significant
		Long-term	Potentially significant
	RAA	Any duration	Potentially significant

Potentially Significant Impacts		
Frequency	**Reversibility**	**Significance**
Once	Reversible	Not significant
	Partially Reversible	Significant
	Not Reversible	Significant
Intermittent	Reversible	Not significant
	Partially Reversible	Significant
	Not Reversible	Significant
Continuous	Reversible	Not significant
	Partially Reversible	Significant
	Not Reversible	Significant

Annex 2: Cultural and Chance Find Procedures

This procedure was developed to protect and preserving both tangible and intangible cultural heritage records of Malawi and the requirements of the World Bank's ESS8 (To protect cultural heritage from the impacts of project activities and support its preservation, to address cultural heritage as an integral aspect of sustainable development, to promote meaningful consultation with stakeholders regarding cultural heritage and to promote the equitable sharing of benefits from the cultural heritage).

This procedure is included as a standard provision in the implementation of Works contracts to ensure the protection of cultural heritage (Archaeological and Historical Sites). The PCU, as well as contractors will be required to observe this procedure as documented hereafter.

Subprojects that require excavation or construction in sites of known archaeological will not be allowed, due to impacts on cultural heritage. Where historical remains, antiquity or any other object of cultural or archaeological importance are unexpectedly discovered during construction in an area not previously known for its archaeological interest, the following procedures should be applied:

- Stop construction activities;
- Delineate the discovered site area;
- Secure the site to prevent any damage or loss of removable objects. In case of removable antiquities or sensitive remains, a full-time guard should be present until the responsible authority takes over;
- Notify the responsible foreman/archaeologist, who in turn should notify the responsible authorities, the concerned officers from the Department and local authorities (within less than 24 hours);
- Responsible authorities are in charge of protecting and preserving the site before deciding on the proper procedures to be carried out;
- An evaluation of the finding will be performed by the concerned officers. The significance and importance of the findings will be assessed according to various criteria relevant to cultural heritage including aesthetic, historic, scientific or research, social and economic values;
- Decision on how to handle the finding will be reached based on the above assessment and could include changes in the project layout (in case of finding an irrevocable remain of cultural or archaeological importance), conservation, preservation, restoration or salvage;
- Implementation of the authority decision concerning the management of the finding;
- Construction work can resume only when permission is given from the concerned officers after the decision concerning the safeguard of the heritage is fully executed;
- In case of delay incurred in direct relation to archaeological findings not stipulated in the contract (and affecting the overall schedule of works), the contractor may apply for an extension of time. However, the contractor will not be entitled for any kind of compensation or claim other than what is directly related to the execution of the archaeological findings works and protections.

Annex 3: Procedures for Managing Contractors

This procedure was developed consistent with the World Bank ESHS Guideline which incorporates the IFC ESHS Guidelines, under the "Good Practice Note: Managing Contractors' Environmental and Social Performance". This is to remind the borrower's responsibility to comply with the ESHS Guidelines, loan agreement commitments, local laws and regulations, and permits and standards, ensuring that any contractor providing services of any kind to the implementing entity duly follows these requirements throughout the duration of the contract, including any activity or services performed by subcontractors or third parties undertaking a contract from the contractor.

The PCU must use its direct control over contractors to ensure that E&S requirements are met by contractors. To achieve this commitment, the PCU needs to include in subcontracts the requirement to comply with all the E&S requirements that are appropriate for the works being subcontracted and consistent with the implementing entity's and the contractor's E&S management programs.

Understanding Implementation Responsibilities: The role of the PCU and contractors in meeting E&S requirements are intertwined and must be worked out at the subproject level. In some cases, such as stakeholder engagement, the PCU and contractors will have certain obligations and limits and will need to coordinate their efforts. In others, such as monitoring, each party will monitor E&S performance, but at different frequencies and levels of detail. In all cases, the PCU remains ultimately responsible to the World Bank for ensuring E&S requirements are met, with the responsibilities of the contractor defined in the contract. The design standards and requirements of subprojects (and operation standards) will also be set out in the terms of reference of the contract.

Contractor Oversight: The PCU will monitor contractors and their E&S performance and ensure the contractor monitors its own and all subcontractors' E&S performance throughout rehabilitation, including mobilization, the main rehabilitation phase, and demobilization. Clear responsibilities and reporting lines are essential to avoid duplication of effort or, conversely, gaps in monitoring. If operations are carried out under contract, or some work is performed by contractors, the PCU and the contractors will monitor E&S performance during operations as well. All contractors engaged on the project operate in a manner consistent with the requirements of the ESSs, including the specific requirements set out in the ESCP.

The PCU should require contractors to report on a monthly basis their E&S performance and metrics (which shall include relevant information and data from subcontractors, as applicable). Timely reporting of E&S performance and results enables the client to identify opportunities for improvement, prevent poor performance issues, and assist contractors if remedial action is to be taken.

E&S Performance Meetings: Regular meetings are essential to ensure contractor performance is satisfactory and that project specifications are being met. The PCU may share performance monitoring results at weekly meetings with all contractors to effectively drive improved performance by introducing a competitive element, sometimes with small incentives. The authority of monitoring staff who control contractor performance also needs to be clarified and understood by contractors (for example, who gives instructions to stop work or proceed but with modifying the approach, scope, equipment, and so forth).

The PCU should ensure that contractors employ qualified E&S personnel to oversee E&S performance, and that contractor staffing and resources are commensurate with the magnitude and timing of work and

potential E&S risks. The PCU should also approve documentation, including for training programs, to ensure all staff are aware of E&S commitments and their part in meeting them.

Review and Approval of Contractor Site-Specific E&S Plans: The PCU is responsible for its contractors, meeting all of the project's E&S requirements, it is essential for the PCU to review and approve project E&S management plans and procedures. These might include such plans as working within boundaries (footprint management), protection of biodiversity, traffic management, labor sources and methods of recruitment of workers, worker accommodation, noise and dust control, and possibly others. Where an ESIA/ESMP has not been approved, no works will commence in the area.

Kickoff Meeting: Prior to early work activities, the PCU should hold a kickoff meeting with each of the contractors prior to arriving at the site. Timing of mobilization based on logistical issues, resources, customs delays, and so forth should be considered in the planning. The PCU and the contractor project managers and subcontractors should participate in these meetings. The purpose is to review planned activities and schedules, review E&S requirements (among others), review the roles of the various parties in implementing and monitoring mitigation measures, and agree on project-specific induction and training content. Both client and contractor E&S representatives should be present to reiterate all E&S commitments and establish initial compliance points and coordination requirements during site establishment.

E&S Induction and Training: A general E&S site induction and OHS training should be mandatory for all workers, with specialized technical E&S training delivered to staff. The degree of training should be based on the project's E&S risks, on the tasks that will be performed, the CoC, including the SEP, and on the general E&S provisions that are applicable for all personnel, including contractors and subcontractors. All workers should be made aware of the worker GRM and Project GRM and how to access them. The PCU SEA/SH Specialists should provide SEA/SH awareness training for staff at all levels, from contract management to day laborers. Additional training may be needed for staff that will be responsible for implementing, monitoring, and reporting E&S performance. Once the general E&S induction is defined, a series of specific trainings may be required in order to ensure that the requirements, controls, and mitigation measures are well communicated and understood.

PCU Monitoring of Activities: The monitoring of contractor E&S performance by the PCU must be practiced throughout rehabilitation, from mobilization through demobilization. This should involve both visits to work locations and reviews of records kept by the contractor and of reports submitted by the contractor. The frequency of site visits should be commensurate with the magnitude of the E&S risks of the activities being carried out and permanence of potential impacts that could result from ongoing activities. Monitoring may be conducted by PCU E&S staff.

PCU Safeguard Specialists should review one or more recent inspection reports and the contractor's previous month's E&S progress report prior to visiting the site to monitor the contactor's E&S performance. They should do the same before participating in meetings where the contractor's E&S performance is to be discussed. The PCU will review contractor reports and follow up as needed to ensure timely resolution of issues of noncompliance with E&S requirements. This may include additional visits to the contractor's site or offices, further communications with contractor E&S personnel, issuance of notices of deficiency or warnings to the contractor, and other actions as needed.

At any stage of construction or other work, if the contractor has not taken appropriate action to achieve compliance with E&S requirements after repeated notices of violation and warnings of noncompliance,

and significant E&S impacts are occurring or imminent, the PCUs should order the contractor to stop work until E&S performance is brought under control and up to acceptable standards.

Contractor Monitoring and Reporting: The PCU should require contractors to monitor and keep records on E&S performance in accordance with the E&S management plans. This may include monitoring of E&S matters, scheduled and unscheduled inspections to work locations, observations made during routine activities, desk reviews, drills, and any other monitoring protocols implemented by the contractor to ensure E&S compliance.

Responsibilities for monitoring need to be clear between the client and contractor, and results (if client and contractor are both collecting data) must be comparable, for example, collected using the same methodologies, analyzed at the same labs, and using similar equipment, and so forth.

The PCU should require contractors to report on E&S performance on at least a monthly basis throughout the construction phase, including mobilization, construction, and demobilization. This could be more frequent for more sensitive E&S projects. It can be part of the overall engineering progress report or a stand-alone E&S report. The table below shows the E&S parameters considered in the reporting of E&S performance.

Parameters to consider for E&S reporting by the contractor at least on a monthly basis.

Item	Parameter	Description
1	*Safety*:	Hours worked, Toolbox talks and topics, incidents and corresponding Root Cause Analysis (lost time incidents, medical treatment cases), PPEs, Hoarding, first aid cases, inventory needs to resupply First Aid kit, high potential near misses, and remedial and preventive activities required (for example, revised job safety analysis, new or different equipment, skills training, and so forth).
2	*Environmental incidents and near misses*:	Environmental incidents and high potential near misses and how they have been addressed, what is outstanding, and lessons learned.
3	*Major works*:	Those undertaken and completed, progress against project schedule, and key work fronts (work areas).
4	*E&S staffing*:	New hires and departures, and listing of current staff and titles.
5	*E&S requirements*:	Noncompliance incidents with permits and national law (legal noncompliance), project commitments, or other E&S requirements, grievances.
6	*E&S inspections and audits*:	By contractor, engineer, or others, including authorities—to include date, inspector or auditor name, sites visited and records reviewed, major findings, and actions taken.
7	*Workers*:	Number of workers, indication of origin (expatriate, local, nonlocal nationals), gender, and skill level

		(unskilled, skilled, supervisory, professional, management).
8	*Training on E&S issues*:	Including dates, number of trainees, and topics
9	*External stakeholder engagement*:	Highlights, including formal and informal meetings, and information disclosure and dissemination—to include a breakdown of women and men consulted and themes coming from various stakeholder groups, including vulnerable groups (e.g., disabled, elderly, children, etc.).
10	*Details of any security risks*:	Details of risks the contractor may be exposed to while performing its work—the threats may come from third parties external to the project or from inappropriate conduct from security forces employed either by the client or public security forces.
11	*Worker grievances*:	Details including occurrence date, grievance, and date submitted; actions taken and dates; resolution (if any) and date; and follow-up yet to be taken—grievances listed should include those received since the preceding report and those that were unresolved at the time of that report.
12	*External stakeholder grievances*:	Grievance and date submitted, action(s) taken and date(s), resolution (if any) and date, and follow-up yet to be taken—grievances listed should include those received since the preceding report and those that were unresolved at the time of that report. Grievance data should be gender-disaggregated. Particular sensitivity may be needed around SEA/SH issues raised.
13	*Deficiency and performance management*:	Actions taken in response to previous notices of deficiency or observations regarding E&S performance and/or plans for actions to be taken—these should continue to be reported until the client determines the issue is resolved satisfactorily.

ANNEX 4: Stakeholder Consultations

List of People Consulted

No.	Name	Position
Ministry of Finance and Economic Affairs		
1	MacDonald Mwale	Secretary to the Treasury
2	Nations Msowoya	Acting Director of Debt and Aid
3	Issa Elias	Finance Officer Debt and Aid
Ministry of Water and Sanitation		
4	Elias Chimulambe	PS
5	James Chitete	Director of Water Resources
6	Modesta Kanjaye	Director of Sanitation
	Dwight Kambuku	Chief Executive Officer - NWRA
7	Phideria Moyo	Deputy Director of Water Supply Services
8	Sydney Kamtukule	Deputy Director of Water Resources
9	John Chingawale	Principal Civil Engineer
10	Mercy Sowoya	Chief Economist
11	Gertrude Botomani	Principal Water Engineer
12	Aaron Mapsere	Civil Engineer
13	Hastings Mbale	Principal Hydrologist
14	Rodrick Kumkwezu	Senior Water Resources Development Office
15	Engineer Emmanuel Chiundira	Principal Water Resources Development Office
16	Frank Chisambilo	Director of Corporate Services - NWRA
17	Toney Nyasulu	Director of Water Resources - NWRA
Department of Disaster Management Affairs		
18	Charles Kalemba	Secretary and Commissioner
19	Peter Chimangeni	Director of Resilience and Recovery
20	Boyd Hamela	Chief Planning Officer
21	Samuel Gama	Chief Resilience and Recovery Officer
22	Annie Mapulanga	Planning Officer
23	Hastings Mwanjoka	Deputy Director
Ministry of Natural Resources and Climate Change		
24	Yusuf Mkungula	PS
25	Lucy Mtilatila	Director of Climate Change and Meteorological Services
26	Taonga Mbale	Director of Environment Affairs
27	Charles Vanya	Deputy Director of Climate Change and Meteorological Services
28	Evance Njewa	Deputy Director - EAD
29	Chimwemwe Yonasi	Environmental Officer
30	Titus Zulu	Deputy Director - DoF

Ministry of Agriculture		
31	Dickxie Kampani	PS – Agriculture
32	Geoffrey Mamba	PS – Irrigation
33	Anderson Mbozi	Deputy Director – Irrigation Services
34	Joseph Kanyangalazi	Deputy Director - LMT
35	Enock Whayo	Chief Land Resources Conservation Officer
Ministry of Local Government		
36	Douglas Mkweta	Director Local Government Services
37	Melayi Mhone	Director of Planning and Development – Blantyre District Council
38	Thokozile Munthali	Director of Planning and Development – Chikwawa District Council
39	Smith Mnenula	Director of Planning and Development – Nsanje Distirct Council
40	Precious Kamtsitsi	Director of Planning and Development – Zomba District Council
Ministry of Transport and Public Works		
41	Ganizani Liwewe	Chief Economist
Roads Authority		
42	Sam Kadangwe	Director of Major Projects
43	Florence Ndenguma	Director of Maintenance
44	Flora Hauya	Senior Engineer
MRDRMP PCU		
45	Peter Kadewere	Project Coordinator
Blantyre City Council		
46	Denis Chimseu	Chief Executive Officer
47	Costly Chanza	Director of Town Planning and Estates Management
48	Eng. Chimwemwe Mndelemani	Director of Engineering Services
49	William Chimzinga	Deputy Director of Environment

Lists of people/institutions consulted in the northern, central and southern region in September 2023.

Table 15 People and institutions consulted in the northern region

List of people consulted on the RCRP, 8th September 2023.

SN	Name	District	Position	Phone Number	Signature
1	Davie Nyaweremba	Kasungu	BDW	0992349350	
2	Stephen Mwithuli	Likoma	DPD	0884478769	
3	Shupikai Nyirenda	Kasungu	DDA	0999991391	
4	Flemmings Nyanda	MASAF	CE	0995380579	
5	[illegible]	Mchinji	PE	0994379435	
6	Ben Tonho	KK	DC	0999278385	
7	Walusungu Kajira	Lilongwe	DOPP	0999 198 913	
8	Walter Chikuni	MDC	DSD	0992626469	
9	George Mtengwadula	Kasungu	DPO	0992777116	
10	Frank Mfune	Rumphi	DPD	0999366196	
11	Gowezani Nyasulu	Mzuzu	CEO	0995473780	
12	Lucia Nhlane	Nkhata Bay	DC	0999387602	

SN	Name	District	Position	Phone Number	Signature
13					
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SN	Name	District	Position	Phone Number	Signature
26	Abubakar Nkhoma	Likoma	DC	0991313 086	
27	Rodney Simsoka	Mzimba	DC	0888870 156	
28	EMMANUEL Bulukuta	Rumphi	DC	[illegible]	
29	GEORGE RUPANI	NKHOTAKOTA	DPD	0993728809	
30	Allan Chitete	Machinga	Agric	0999 250 812	
31	Brian Chikopa	[illegible]	[illegible]	0884597712	
32	Israel Phiri	[illegible]	[illegible]	0998046077	
33	Macmillan Magomero	CPSC	DC	0889227469	
34	Joren Tembo	Chitipa	DP	0888728958	
35	RICHARD I KACHEPA	[illegible]	[illegible]	099573456	
36	Ahmed Bambale	MoFEA	PC	0888145053	

Table 16 People and institutions consulted in the central region

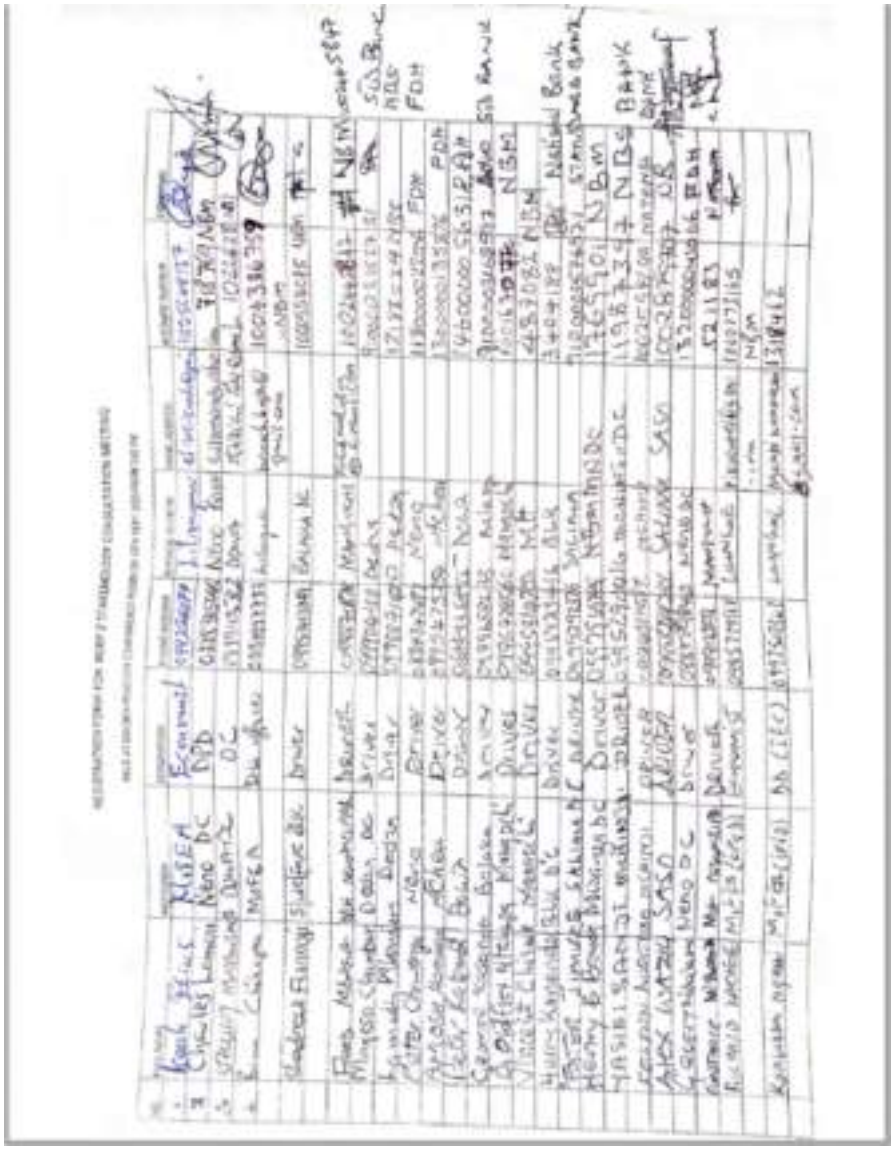

Table 17 People and institutions consulted in southern region

District Consultations on Environmental and Social Safeguards Instruments for the Regional Climate Resilience Program (RCRP), 5th September 2023

No.	Name	District	Position	Phone Number	Signature
01	Wolusungu Kayira	Local Govt Liaison	Director of Planning	0999 198 913	
2	Francis Matanga	Chiradzulu	DC	0994145511	
3	Rashid Chimwala	Zomba	DC	0884004170	
4	David Goudar	Mulanje	DC	0999400631	
5	Douglas Moffat	Phalombe	DC	0997237760	
6	W. McPHAIL NYAMBALA	Ludzwa	CEO	0888 387060	
7	Nardin Kamba	Chiladzulu	DC	0999342403	
8	Alex Nyirenda	Blantyre	DC	0999917342	
9	FRANCO MBAYA	CT	DPW	0884398080	
10	Blessings Mafeyula	Thyolo	Chief BAGMA	0884141 923	
11	Rosemary Nawasha	Thyolo	DC	0999214502	

No.	Name	District	Position	Phone Number	Signature
12	Mbayi Mwase	BCDC	DPD Ag	0999729584	
13	Felix Peter Mazali	Chikwawa	EDO	0999302272	
14	Paul JEH	Nsanje	PM	0882148833	
15	Mzamose Kabango	[illegible]	[illegible]	[illegible]	
16	Busta Chisesa	Zomba	[illegible]	0994417738	
17	Chimwemwe Mtalimanja	BCC	DEO	0998427197	
18	Dalitso Mphanda	MSDC	DDW	[illegible]	0999 310288
19	Lutten Nkhata	BCC	DDA	[illegible]	0884197297
20	melaji mhone	BC-DC	[illegible]	[illegible]	0999793814
21	JOHN MANDYA	[illegible]	DPD	[illegible]	
22	Dominic Mwanza	Nsanje	DC	[illegible]	
23	Dumbani Mnasa	Zomba	EDM	[illegible]	

No.	Name	District	Position	Phone Number	Signature
1	[illegible]	[illegible]	[illegible]	[illegible]	
2	Sydney Ramadan	[illegible]	[illegible]	[illegible]	
3	Edward Nkhoma	[illegible]	[illegible]	[illegible]	

REGISTRATION FORREGIONAL CLIMATE RESILIENCE PROGRAMMME STAKEHOLDER CONSULTATIONS MEETING (SC
GOLDEN PEACOCK HOTEL, BLANTYRE. 5th SEPTEMBER 2023

ID	NAME	INSTITUTION	DESIGNATION	EMAIL ADRESS	PHONE
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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No	Name	District	Position	Phone Number	Signature
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Annex 5: Incident Report Form

The following report form is to be completed by the PCU within 24 hours in the case of an incident:

Table 18 Incident report form

B1: Incident Details			
Date of Incident:	**Time:**	**Date Reported to PIU:**	**Date Reported to WB:**
Reported to PIU by:	**Reported to WB by:**	**Notification Type:** Email/'phone call/media notice/other	
Full Name of Main Contractor:		**Full Name of Subcontractor:**	

B2: Type of incident (please check all that apply)[1]
Fatality ☐ Lost Time Injury ☐ Displacement Without Due Process ☐ Child Labor ☐ Acts of Violence/Protest ☐ Disease Outbreaks ☐ Forced Labor ☐ Unexpected impacts on heritage resources ☐ Unexpected impacts on biodiversity resources ☐ Environmental pollution incident ☐ Dam failure ☐ Other ☐

See Annex for definitions

B3: Description/Narrative of Incident
For example: *I. What is the incident?* *II. What were the conditions or circumstances under which the incident occurred (if known)?* *III. Are the basic facts of the incident clear and uncontested, or are there conflicting versions? What are those versions?* *IV. Is the incident still ongoing or is it contained?* *V. Have any relevant authorities been informed?*

B4: Actions taken to contain the incident			
Short Description of Action	**Responsible Party**	**Expected Date**	**Status**
For incidents involving a contractor: Have the works been suspended under Contract GCC8.9? Yes ☐; No ☐; Name of Contractor:			

B5: What support has been provided to affected people

The following report form will be completed by the PCU following investigations into an incident:

Table 19 Incident form to be completed after investigation

C3a: Fatality/Lost time Injury information

Cause of fatality/injury for worker or member of the public (please check all that apply):

1. Caught in or between objects ☐ 2. Struck by falling objects ☐ 3. Stepping on, striking against, or struck by objects ☐
4. Drowning ☐ 5. Chemical, biochemical, material exposure ☐ 6. Falls, trips, slips ☐ 7. Fire & explosion ☐
8. Electrocution ☐ 9. Homicide ☐ 10. Medical Issue ☐ 11. Suicide ☐ 12. Others ☐
***Vehicle Traffic:* 13. Project Vehicle Work Travel ☐ 14. Non-project Vehicle Work Travel ☐ 15. Project Vehicle Commuting ☐**
16. Non-project Vehicle Commuting ☐ 17.Vehicle Traffic Accident (Members of Public Only) ☐

Name	Age/DOB	Date of Death/Injury	Gender	Nationality	Cause of Fatality/Injury	Worker (Employer)/Public

C3b: Financial Support/Compensation Types (To be fully described in Corrective Action Plan template)

1. Contractor Direct ☐ 2. Contractor Insurance ☐ 3. Workman's Compensation/National Insurance ☐
4. Court Determined Judicial Process ☐ 5. Other ☐ 6. No Compensation Required ☐

Name	Compensation Type	Amount (US$)	Responsible Party

C4: Supplementary Narrative

C1: Investigation Findings
For example: *I. where and when the incident took place* *II. who was involved, and how many people/households were affected* *III. what happened and what conditions and actions influenced the incident* *IV. what were the expected working procedures and were they followed* *V. did the organization or arrangement of the work influence the incident* *VI. were there adequate training/competent persons for the job, and was necessary and suitable equipment available* *VII. what were the underlying causes; where there any absent risk control measures or any system failures*

C2: Corrective Actions from the investigation to be implemented (To be fully described in Corrective Action Plan)		
Action	Responsible Party	Expected Date

The following incident form will be completed by the PCU in the case of SEA/SH cases, within 24 hours:

Table 20 Incident Report Form for SEA/SH cases

B1: Incident Details		
Date of incident intake by the project/GM: **Reported to project/GM by:** ☐ Survivor ☐ Third party ☐ Other: _____ **Is a record of this incident in GM?** Yes ☐ No ☐	**Date Reported to PIU:** **Reported to PIU by:** ☐ GM operator ☐ Directly, by Survivor ☐ Directly, by third party ☐ Other: _____	**Date Reported to WBG:** **Reported to WBG by:** ☐ PIU ☐ Directly, by Survivor ☐ Directly, by third party ☐ Other: _____

B2: Incident type (please check all that apply) See Appendix 1 for definitions
Sexual exploitation ☐ **Sexual abuse** ☐ **Sexual harassment** ☐

B3: Provide the following details from the GM record	
Age of survivor (if recorded in GM):	Have the national legislation or mandatory reporting requirements been followed? Yes ☐ No ☐
Sex of survivor (if recorded in GM): Male ☐ Female ☐ Other ☐ Is the survivor employed by the project (as indicated by the survivor or complainant and reported in the GM)? Yes ☐ No ☐	Was the survivor referred to service provision?[22] Yes ☐ No ☐ Is the alleged perpetrator employed by the project (as indicated by the survivor or complainant and reported in the GM)? Yes ☐ No ☐

B4: Basis for further action	
a. Has the complainant provided informed consent to lodge a formal complaint? Yes ☐ No ☐	c. Has the survivor provided informed consent to be part of an investigation into misconduct? Yes ☐ No ☐
b. Does the employer have a suitable administrative process and capacity in place to investigate misconduct relating to SEA/SH in a survivor-centered way? Yes ☐ No ☐	d. Has the complaint been filed anonymously or through a third party? Yes ☐ No ☐
If the answer to any of these questions is no, has the GM assessed the risks and benefits of carrying out an investigation into the alleged misconduct, taking into account the survivor's safety and wellbeing? Yes ☐ No ☐	
Will an investigation into misconduct be undertaken in addition to an investigation into adequacy of project systems, processes or procedures? Yes ☐ No ☐	

The following form will be completed by the PCU in case of SEA/SH cases – following investigations:

Table 21 SEA/SH incident report form after investigations

C1: Findings of the investigation	
Have sanctions against a perpetrator been recommended as part of an investigation into misconduct? Yes ☐ No ☐	Has an investigation into adequacy of project systems, processes or procedures been undertaken? Yes ☐ No ☐

C2: Corrective actions to be implemented (To be fully described in Corrective Action Plan)		
Short Description of Action (SEA/SH examples)	**Responsible Party**	**Timeline for completion/Status**
Referral of Survivor to holistic care services		
Undertake disciplinary investigation in accordance with GM timelines and confirmed process		
Disciplinary actions, including sanctions, to be applied following misconduct investigation by Employer		
Increased training on Codes of Conduct (CoC)		
Audit of implementation of SEA/SH safety mitigation		
Strengthened awareness training on project-related risks, CoC and how to report incidents for project-affected community		
Training for project supervisors on the need to follow guidelines of behaviour in CoC and their supervisory responsibilities		
Plan to improve coverage/quality of service provision		
Any other system strengthening measures or corrections for system failures that are necessary		

C3: For incidents involving a Contractor:
Has the incident been referred to the DAAB? Yes ☐ No ☐

Annex 6: Indicative Outlines for ESIAs / ESMPs

Below are indicative outlines and content suggestions for ESMPs and ESIAs, based on the WB ESF, that should be followed in the preparation of these instruments.

Typically, an ESIA/ESMP will be prepared in accordance with specific terms of reference (or equivalent) established during the screening process. It may also require additional issues that emerged from the screening and consultation with the responsible authority, the public and stakeholders.

An EIS typically includes many or all of the following elements as ordered below:

- An **executive summary** focused on the ESIA results;
- A **popular or non-technical summary** of the ESIA intended for non-technical, general reviewers. Such a summary is typically a separate document to the EIA requirement, but can be useful as a public communication document, especially for major projects;
- Statement of the **purpose and need** for, and objectives of, the project;
- Description of applicable **legislative, regulatory and policy frameworks**;
- Key guidance and direction from **the scoping phase** of the ESIA;
- A summary of the **methods used in the EIA** (e.g., definition of environmental components and VECs, assessment areas, and boundaries; and how significance criteria were defined);
- **Alternatives** considered in finalizing the proposed project;
- Description of the **project setting**, including the relationship to other proposed projects or activities, current land uses, and relevant policies and plans for the area ;
- Description of the **project** and how it will be implemented (construction, operation and decommissioning);
- Description of **environmental conditions and trends** (biophysical, socioeconomic, etc.), identifying any changes anticipated prior to project implementation ;
- Summary of the **public and stakeholder involvement** activities, the views and concerns expressed and how these have been taken into account . In some systems, an EIAS appendix is required compiling all comments, and how they were responded to;
- Description of the main **environmental impacts** (positive and adverse, including cumulative impacts) that are likely to result from the project, their predicted characteristics (e.g. magnitude, extent, duration, etc.), proposed mitigation measures, the residual effects and any uncertainties and limitations of data and analysis;
- Evaluation of the **significance of the residual impacts** ;
- Description of proposed **follow-up and monitoring** to verify the EIS predictions and assure compliance with expected authorization and permitting conditions;
- An **environmental management system and/or plans** that identify how proposed mitigation and monitoring measures will be translated into action. These may be in an EIS appendix or prepared as a separate document; and
- **Appendices** containing supporting technical information, description of methods used to collect and analyze data, reports of technical studies used in the EIA, EIA terms of reference, list of references, etc.

ESMPs should be prepared alongside the design of the subproject works. A draft ESMP should be finalized a couple of weeks after designs are drafted. Stakeholder consultations should be conducted during the design preparations. The ESMPs should therefore be ready for submission to the WB for clearance prior

to finalization of the designs, so comments can be incorporated into the designs. The ESMPs should be cleared by the WB prior to inclusion of ESMP details into the bidding process. The PCU will commit to respond to comments received within two weeks– to prevent procurement processes from being delayed through the clearance of E&S instruments. Remember that the quality and relevance of information in the report is more important than its quantity.

Table 22 Indicative Outline/Content for ESMP

Section	Content of Section
Executive summary	Concisely discusses significant findings and recommended actions, in English and in the respective local language. Include key information that is presented in a clear, well-organized, and logical manner, summarize project activities and significant E&S impacts. 2-3 pages total. Environmental Impact Statement (EIS)
Project description	Concisely describe the proposed subproject and its geographic, ecological, social, and temporal context. Clearly define and designate the project area of influence (direct and indirect e.g. borrow pits, access roads, camp sites, etc.) that is covered by the ESMP. Include a map and google earth /aerial image showing the project site and the project's area of influence, and relevant photos from field visits providing context of the site including seasonal variation between wet and dry seasons.
Impact assessment	Identifies and summarize all anticipated adverse environmental and social impacts (including those involving involuntary Resettlement, and associated works e.g. borrow pits, access roads, camp sites, etc.), including direct, indirect, induced, and cumulative impacts Indicate who is likely to be impacted, consequences of impacts, scale and likelihood.
Mitigation	Identify measures and actions in accordance with the mitigation hierarchy that reduce potentially adverse environmental and social impacts to acceptable levels. Include compensatory measures, if applicable. Specifically, the ESMP: (i) describes—with technical details—each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; estimates any potential environmental and social impacts of these measures; and (ii) takes into account, and is consistent with, other mitigation plans required for the project (e.g., for involuntary resettlement) (iii) Is there any residual impacts, that require further mitigation if not acceptable.
Monitoring	Identify monitoring objectives and specify the type of monitoring, with linkages to the impacts assessed in the environmental and social assessment and the mitigation measures described in the ESMP. **Monitoring** can be of three types -- **effects, baseline and compliance monitoring** -- the first two of which are included in a follow-up program. Provide (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i)

	ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.
Capacity Development and Training	Draw on the environmental and social assessment of the existence, role, and capability of responsible parties on site or at the agency and ministry level. Provide a specific description of institutional arrangements, identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). Strengthen environmental and social management capability in the agencies responsible for implementation, the ESMP recommends the establishment or expansion of the parties responsible, the training of staff and any additional measures that may be necessary to support implementation of mitigation measures and any other recommendations of the environmental and social assessment.

Table 23 Indicative table of contents for ESIA

Section	Content of Section
Executive summary	Concisely discusses significant findings and recommended actions, in English and in the native language.
Project description	Concisely describes the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required (e.g., access roads, power plants, water supply, housing, and raw material and product storage facilities, disposal sites for wastes, etc.). It should also clearly define and designate the project area of influence (direct and indirect) that is covered by the ESIA. Indicates the need for any resettlement plan. Normally includes a map and photographs showing the project site and the project's area of influence.
Policy, legal, and administrative framework	Discusses the policy, legal, and administrative framework within which the environmental assessment (EA) is carried out. Explains the environmental and social requirements of the World Bank Group (ESS and relevant guidelines). Identifies relevant international environmental agreements to which the country is a party.
Baseline data	Assesses the dimensions of the study area and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences. The baseline data must include the results of the Social Assessment. Also considers current and proposed development activities within the project area but not directly connected to the project. Data should be relevant to decisions about project location, design, operation, or mitigation measures. The section indicates the accuracy, reliability, and sources of the data.
Environmental and social impacts	Predicts and assesses the project's likely positive and negative impacts, in quantitative terms to the extent possible. It should include impacts at various phases of the project, including cumulative impacts. Identifies mitigation measures and any residual negative impacts that cannot be mitigated. Explores opportunities for environmental enhancement. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions, and specifies topics that do not require further attention.

Analysis of alternatives	Systematically compares feasible alternatives to the proposed project site, technology, design, and operation-including the "without project" situation-in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.
Environmental and social management plan (ESMP)	Covers hierarchy of measures (avoidance, prevention, mitigation, compensation/offset) and include both generic construction measures and site-specific measures to address impacts on sensitive receptors. The mitigation measures identified in the Social Assessment (if distinct than those presented in the Project ESMP) will be incorporated in the ESMP. It should also include all other sub-plans that are sub-sets of the ESMP
Environmental monitoring and reporting plan	**Monitoring** can be of three types -- **effects, baseline and compliance monitoring** -- the first two of which are included in a follow-up program.
Institutional arrangements, capacity assessment and capacity building program	Please elaborate on the scope

Monitoring Template

Includes actions to monitor from:

- The proponent's Environmental Management Plan(s) (EMPs), including the planned mitigation measures), and Environmental Management System (EMS) if there is one;
- The EIA conditions of approval issued by the responsible authority ;
- Regulatory permits and other authorizations issued for specific purposes following EIA approval; following EIA approval, a number of permits and other authorizations for project construction and operation need to be applied for and approved. Some will have their own monitoring and reporting requirements which should be incorporated into the proponent's EMP(s) and EMS, if there is one;
- to sustain liaison with the public and stakeholder groups during the life of the project; and
- and to periodically report on its environmental performance.

May require updates as situation changes, additional mitigation measures included, additional project activities required to complete the subproject.

Template for a monitoring protocol

As a general principle, the scope of environmental management, follow-up and monitoring should be proportionate to the significance of potential impacts, their likelihood of occurring, and the degree of confidence in the effectiveness of planned mitigation measures. The scope of environmental management activities should be proportionate to the significance of the potential impacts. I.e. if the impact is not likely

to have a significant impact on the baseline condition then extensive monitoring and cost of monitoring is not appropriate. Impacts with significant impact or residual risk should be prioritized.

Component of Protocol	Description
Monitoring objectives	
Responsible person	
Equipment	
Equipment maintenance/calibration	
Monitoring locations	
Monitoring methodology	
Parameters to be monitored	
Monitoring frequency	
Ad hoc monitoring requirements	
Incident and complaints procedures	
Data management	
Data analysis and interpretation	
Other data requirements	
Data reporting	
Frequency of reporting	

Since construction is generally undertaken by **contractors**, perhaps under the direction of a **supervising engineer (resident engineer)** contracted by the proponent, none of whom have been involved in the EIA process, it is vital that their contracts describe their roles and responsibilities under the EMP(s) and permits that apply to construction activities. Thus, it is vital that these roles and responsibilities are specified in the contract tender documents to they are properly priced into contract bids. Depending on the size of a project, whether it is a public- or private-sector undertaking, and the contract arrangements, contractor(s) may be required to develop their own EMP(s), and employ their own environmental and community liaison staff, rather than rely on those of the proponent. The importance of these contracts cannot be overestimated -- if they are not specific about what is expected regarding environmental management and community liaison, effective supervision of construction activities will be difficult to achieve. Needs to have copy and knowledge of full ESMP, although may only be responsible for C-ESMP. Needs to be aware of other activities to be monitored. Construction contracts should include clear descriptions of the contractor's environmental protection and management responsibilities.
Note: all points in the ESMP may not be applicable in the C-ESMP and the supervising engineer and PCU Safeguards may be responsible for monitoring specific activities. It is important that these are identified and reported on and ensure budget is appropriately allocated.

Other Regulatory authorities are responsible for issuing various construction and operation permits. They may or may not have been involved in the EIA, but become responsible for ensuring that

a project meets the various permit requirements and perhaps other environmental performance objectives specified in EIA approval terms and conditions, including the effectiveness of mitigation measures. They also are responsible for negotiating improvements as needed to enhance that performance. Theirs is mostly a surveillance role, though they may also undertake auditing of their own or the proponent's management systems to determine if strengthening is needed to achieve performance objectives. E.g. Health, not just health of workers on site but communities affected by the project.

The **responsible EIA authority** may or may not have continuing project-related responsibilities, but needs at least to ensure that commitments made during the EIA process are carried forward into project implementation. In some jurisdictions, the responsible authority may have continuing surveillance and auditing functions if they don't fit well within the mandates of the regulatory authorities involved in a project.
The **public and stakeholder groups** generally have a limited role after EIA approval. Some form of ongoing liaison and consultation with the proponent may be an EIA approval condition e.g. land agreements, community emergency procedures, community awareness, community GRM.

How to monitor
The main components of environmental management, follow-up and monitoring are variously defined by different jurisdictions and organizations. However, they are defined, their basic functions are reasonably well understood, and the main ones are outlined below. Their usage will vary depending on the terms and conditions of project approval and permitting.
Surveillance and Supervision – to inspect and verify adherence to and implementation of the terms and conditions of project approval and of regulatory permits, and to assess the execution and effectiveness of mitigation measures. **Surveillance** by regulatory authorities can be undertaken by regular or periodic site inspections to check on compliance, observe progress and discuss issues and their resolution. **Supervision** implies a more intensive direction of the environmental performance of on-site activities to ensure they are being carried out in accordance with the EMP(s), EMS, permits and/or contract specifications. Supervision is normally the proponent's responsibility.
Monitoring – generally carried out by a proponent or its contractors following a program and protocols agreed with regulatory authorities, including periodic reporting. Three types of monitoring can be included:

- **Effects monitoring** – as part of a follow-up program, to measure the environmental changes that can be attributed to project construction and/or operation, and to check the effectiveness of mitigation measures.
- **Baseline monitoring** – as part of a follow-up program, to measure environmental parameters at nearby "control sites" where project-related effects are not expected so that project-related changes can be distinguished from natural variations and trends. Baseline monitoring can also be undertaken for other purposes (e.g., to strengthen the characterization of the climate or stream flows at a project site).
- **Compliance monitoring** – to ensure that applicable permitting requirements are being met (e.g. for levels of contaminants in waste water discharge and air emissions). This typically involves the periodic sampling or continuous measurement of environmental parameters.

Auditing – the systematic examination, verification and documentation to ensure that environmental management systems and procedures are yielding the desired outcomes. Supervision, surveillance and monitoring reports and data are key inputs to any audit. Periodic auditing is an expected element of a proponent's EMS, and is intended to provide information for the continuous improvement of environmental management. The surveillance systems of regulatory authorities can be similarly audited.

Annex 7: Quarterly E&S Reporting Template

Below a template is presented for the quarterly E&S report, which the PCU will provide to the World Bank. The PCU will prepare tailor-made reporting formats to the NGLCP and contractors or other implementers, capturing necessary information from their respective activities.

Template for the Periodic Report on the Environment and Social Aspects of the Project

The objectives of the periodic report are:

- To record environmental and social impacts and risks resulting from the project activities and to ensure implementation of the mitigation, monitoring and institutional measures identified in the Environment and Social Commitment Plan (ESCP) and subsequently the ESMP(s), Resettlement Action Plans (RAPs), functionality of the project grievance redress system, accidents, and any other environmental and social instruments e.g. labor management procedures, SEA/SH Action Plans prepared for the project in order to reduce adverse impacts and risks and enhance positive impacts from specific project activities;

- Identify and address any unexpected or unforeseen environmental and social impacts or risks, that may arise during the period of the reporting this could include reporting on the progress during the construction/operation of the components/subcomponents of the Project as appropriate;

- Address any unexpected issues that may impact on the implementation of the project or compliance with the Safeguard requirements (e.g. contractor abandoned the site, site is flooded, community or worker protests, emergency works are required, etc.);

- To ensure that the implementation of the project is in line with the World Bank's (WB) environmental and social standards (ESS) in the Environment and Social Framework (ESF) for projects approved after October 2018 or the ten safeguard operational policies for projects approved before October 2018;

- To ensure development and implementation of necessary occupational health and safety management plans to identify hazards and mitigate risks, to ensure safe working sites and procedures;

- To report any changes in the project activities requiring a material change in the ESCP and/or other project instruments (e.g. ESMP(s), RAP(s), LMP etc) during the monitoring period; and

- To propose mitigations and corrective measures or actions for unforeseen adverse environmental and social risks and impacts identified during the monitoring period of the Project.

Please fill in ALL of the following information in the following template. If there is not an applicable heading for particular information, please include a section called Other or another appropriate heading and include the information. In addition, text can be included under any table, or as an additional Annexure, to further justify, provide additional details on a topic as needed.

If there is more information that you would like to report, please do so. If you require additional columns or rows to complete the tables, please add as necessary. However please DO NOT delete columns from

tables, or sections from the template. Rather indicate as not relevant, or not applicable to this reporting period.
Please delete this Guidance note section when compiling the report.

I. Proposed Template

Project Name	
Project Code	
Project Amount (or Component Amount if relevant)	
Board Approval Date	
Implementing Agency	
Applicable ESS standards/ Safeguard Operational Policies	
Monitoring Period	

1. If this is not the first report, please indicate any changes as compared to the previous reporting period.

2. Planned/Undertaken Project Activities

Please provide in Table 1, a synopsis of the main Project activities planned/undertaken during the reporting period. Project activities and monitoring indicators can be taken from the PAD.

Table 1: Synopsis of the Project Activities Implemented During the Reporting Period

Description of Project work/activities	Monitoring Indicators during reporting Period	Frequency (monthly, quarterly)

3. Pending/Delayed Actions (If any)

Please use Table 2 to highlight any pending or delayed actions of the precedent report (if any), as well as activities planned but not undertaken in the current reporting period, indicating reasons and/or challenges and actions to address the delay. If there are no pending or delayed actions please mark the Table 2 as not applicable.

Table 2: Table for Delayed Actions of the Project

No.	Activities (components, subcomponents) planned but not implemented	Safeguards requirements associated with the activities	Reason for delay	Actions to be taken	Timeline

4. Status of Implementation of the Environmental and Social Commitment Plan (ESCP).

Please use the ESCP in the loan agreement with the following columns in sequence in Table 3. (The Table can be made landscape to accommodate text or included as an annex.)

Table 3: Status of the Implementation of the ESCP.

ESS#	ESCP obligations	Timeframe of ESCP obligations	Status of implementation	Justification of delays/shortcomings	Actions to be taken and timeline

5. Status of the Implementation of the ESMP including all ancillary sites e.g. borrow pits, quarries, access roads, etc.

This section will inform/update on the status of the mitigation and monitoring measures of significant project risks, using a matrix approach including the relevant community health and safety measures. Please use the ESMP matrix with the following columns in sequence as shown in table 4 below. Where there are multiple ESMPs or ES instruments, including but not limited to ESIA, ESMF, ES Audit, LMP, GBV Action Plan, etc. within a project, please complete Annexure A to reflect status of each instrument. Please make a note here that Annexure A has been completed.

Table 4: Status of Implementation of the ESMP

Reference	E&S Mitigation Measures	Monitoring Indicators	Linked to Investment Activity or the ESS's	Status of Implementation	Justification of delays/short comings	Actions to be taken and timeline

6. Status of Development and / or Implementation of the Resettlement Action Plan (RAP) (if applicable)

For RAPs in Development: Please outline the current status of RAP(s) in development including but not limited to: (i) status of contract award to RAP consultant (ii) the number of PAPs affected by economic displacement, physical displacement and physical and economic displacement; (iii) estimated cost of compensation; (iv) status of stakeholder engagement; (v) grievances submitted during monitoring period; and (vi) expected timelines for RAP completion etc.

For RAPs in Implementation: This section will summarize the number and type of PAPs and status of the provision of relevant entitlements to compensate for the loss of assets belonging to the project affected people during the reporting period as well as the provision of livelihood restoration measures (as applicable) and justification for any delays. Where more than one RAP required for the project, please complete Annexure B in addition to the table below.

Table 5: Status of RAP Implementation

Category	# of HH	# of Persons	Justification for any change since previous reporting period
1. ONLY physically displaced from dwellings			
Displacement as anticipated in resettlement plans			

Completed resettlement/economic rehabilitation/compensation			
Pending resettlement/economic rehabilitation/compensation			
2. **BOTH physically displaced from dwellings and economically displaced**			
Displacement as anticipated in resettlement plans			
Completed resettlement/economic rehabilitation/compensation			
Pending resettlement/economic rehabilitation/compensation			
3. **ONLY economically displaced**			
Displacement as anticipated in resettlement plans			
Completed resettlement/economic rehabilitation/compensation			
Pending resettlement/economic rehabilitation/compensation			
4. Voluntary Land Donations / Negotiated Agreements (where applicable)			
Displacement as anticipated in resettlement plans			
Completed Agreements			
Pending Agreements			
5. Livelihood Restoration			
Eligible for livelihood restoration plans			
Receiving livelihood restoration plans			
Pending inclusion in livelihood restoration plans			
6. Community Assets (report per site)			
Displacement as anticipated in resettlement plans			
Completed resettlement/economic rehabilitation/compensation			
Pending resettlement/economic rehabilitation/compensation			

Table 5A: RAP Implementation Delays (if relevant)

Justification for any delay in payment of compensation and timelines for resolution	
Justification for any delay in provision of other entitlements (eg replacement structures, agricultural inputs etc) and timelines for resolution	
Justification for delay in provision of livelihood restoration and timelines for resolution	

7. Status of the Implementation of the Project's Grievance Mechanism

This section will inform/update on the status of grievances filed and how the Borrower is responding to the concerns and grievances (including labour, social, environment grievances) of project-affected parties related to the environmental and social performance of the project. Please summarise in Table 6:

- State total number of grievances recorded during the reporting period;
- How many were resolved?
- How many were referred elsewhere? Is the GRC/ GRM following up?
- How many issues are unresolved and why?
- What is the plan for the unresolved issues?

In Annex D, please attach copies of the GRMs for this reporting period.

Table 6: Overview of Grievances During the Reporting Period

#	Stakeholder	Nature of Grievance (s)	Total Grievances	Status	Remarks/ Comment(s)
	(e.g. institution, community members, local leaders, etc)			Resolved/ unresolved	

8. Stakeholder Engagement

This section will inform/update on the status of stakeholder engagement and how the Borrower is ensuring that stakeholders are being met with in line with the requirements of the Project and / or SEP as relevant. The section should outline:

a) The number of engagement activities undertaken during the reporting period and types of stakeholders met with (e.g., communities, districts, neighbouring facilities, etc)
b) Key issues raised or discussed during the meetings
c) To what extent are the stakeholders being engaged during the implementation of E&S risks and impacts management measures?
d) Do they participate in monitoring the implementation of E&S risk and impact management measures?
e) Is the engagement/consultations organized according to the SEP?
f) Were the participants informed before the meeting and minutes were shared with the participants?

9. Health and Safety Accidents

This section summarizes in table 7 the Environmental, Health and Safety accidents and incidences that occurred during the reporting period. Importantly, the section includes detailed descriptions of the procedures to mitigate recurrence and avoid further injury. The section includes reports on near-misses and treats these as incidents in line with comparative accidents. The section includes a table for follow-up of earlier accidents, incidents, and near-misses. Details of OHS status must be completed in Annexure C.

Table 7: Accident and Incident Reporting

Date and time of accident/Incident	Name of Victim	Description of the accident	Severity of Accident (Minor /Major injury/ death)	Mitigating measures taken by the contractor/proponent	Actions to be taken to prevent the occurrence of the accident	Status of the accidented (open /closed[61])

10. Environmental and Social Management Capacity

This section details the E&S supervision arrangements for the project and individual sites. The section includes a diagram of the reporting arrangements as well as roles and responsibilities, any vacant positions and timelines to fill them if relevant. The description may require several diagrams for various project sites.

Administration:

State any changes or updates on administrative requirements e.g. E&S personnel, location, etc.;
Any changes in terms of applicable national and international requirements.

Capacity Building:

Provide an update on any E&S safeguards related CB activities undertaken at any level – PCU, district, community etc.
Indicate outstanding CB activities and timelines for undertaking them.

11. Environmental and Social Audits, Reviews, and 3rd Party Monitoring

This section details the planned and conducted environmental and / or social audits (independent, external/regulator, and internal) during the project lifetime, this also includes status/progress or findings or recommendations from 3rd Party Monitors (where applicable).

12. Other Project specific issues to flag, raise, report on:

13. Other Specific Issues

Please answer the following questions:

g) Is the PCU adequately staffed with skilled and permanent E&S specialists? Do they have resources (finance and equipment) to carry out field visits and supervisions?

h) Are the Contractor(s) and Owner/Supervising Engineer adequately staffed with skilled and permanent E&S staff. Are they preparing their periodic E&S reports to the Owner?

i) Is the project GRM still robust enough to respond to complaints? How many complaints have been received and resolved (provide current and cumulative data?

[61] Closed incident referring to those that have all the actions completed

j) What is the level of expenditure of the amounts detailed in the ESMP including those incurred by the Contractor(s). Is there sufficient budget allocation for implementing the ES instruments?

k) What are the constraints to the achievement of the ESCP and ESMP(s)[62]?

II. Conclusions and Recommendations

Please summarize the major conclusions during this periodic report and recommendations for actions to be implemented in the next monitoring period. Include a summary (in a table) of measures or activities that were planned vs achieved; And state reasons why some activities are still outstanding. Include a table of planned activities for the next quarter/ reporting period.

[62] Or other ES instruments including but not limited to ESMF, ES Audit, etc.

Annexure A: Status of ESMPs (Or other instruments where there are multiple)
Indicate the status of each ESMP, or instrument, within the project. Copies of monitoring checks or reports of ESMPs should be attached to the report.

Sub-project activity name	E&S Instrument (e.g., ESMF, ESIA, ESMP, ES Audit)	Status/progress of Implementation (Implemented/not implemented/delayed)	Justification of delays/shortcomings	Actions to be taken and timeline

Annexure B: Status of RAPs
Indicate status of implementation of each RAP within the project:

Name of RAP	Status of RAP (development, implementation, closed out)	Total PAPs & HH	Number of PAPs & HH a) physically displaced only, b) economically displaced only and c) physically and economically displaced*.	Amount of compensation	Other Entitlements to be provided	Status of Provision of Compensation and / or entitlements: Paid/Part Paid/ Delayed/Unpaid	Justification of non-payment or delay	Action to be taken and timeline

*the number of PAPS and Households in this column should equal the total number of PAPs and HH reported in the previously column i.e. each PAP or HH should only appear in one classification.

Annexure C: Occupational Health and Safety
(If there are multiple contractors and/or multiple OHS plans, then submit a separate OHS Progress Report, reference it here, e.g. Project taking place in 10 Districts and 10 different contractors each with own OHS plan, etc.).

Summarise the status of:

- Site Risk Management (Outline who is the principal contractor, list subcontractors, how is OHS monitored and enforced on site, etc.)
- Site Risk Assessments (including members of risk assessment team, notes of assessments, minutes of meetings),
- Safety Plans,
- Establishment of Safety committee (including members, minutes of meetings, constitution, meeting agendas, etc.),
- Development of safety procedures,
- Induction training and attendance,

- Employee training records,
- Toolbox talk attendance,
- Labour GRM establishment and complaints,
- Compliance with OHS plan,
- Accident and incident reports (captured information into GEMS/KOBO?),
- Project construction site photos,
- Reports on environmental and ecological monitoring, including water quality, air quality, fauna, flora, avifauna, etc.

Annexure D: Project's Grievance Mechanism
Please attach copies of the Project GRMs for this reporting period.

Annex 8: Traffic Safety Management Framework

This annex presents a framework that provides minimum requirements and guidance for the preparation of site-specific plans. Sub-project-specific measures should be added according to the specific risks and impacts identified. The Contractor is required to compile the detailed plan for how they will conduct their works.

1. **Project and Site description**

Include a map, indicating construction roads in relation to the surrounding environment, community, other public roads and facilities such as schools, hospitals or clinics. Include a google map.

Include a site layout including Parking areas, access roads, loading and unloading areas, refuelling areas, blind spots or sharp corners, access for emergency services including emergency assembly, workspaces and workshops, offices, sanitary facilities, kitchen and rest areas including rest areas).

Indicate how suitability of the construction roads was determined and other alternatives considered.

2. **Site Risk Assessment**

- Identify all crossings where pedestrians, vehicles and other road users cross.
- Identify possible blind spots (where vehicles are obscured by other buildings, stockpiles, scaffold)
- Identify all activities taking place in areas that are in proximity with moving vehicles and plant (loading bays, refueling areas, pedestrian area)
- Conduct site risk assessment and provide measures to avoid accidents. The risk assessment should include roles and responsibilities for implementation.
- Hazards and risks related to moving objects (Cranes, vehicles transporting loads).
- Hazards and risks related to flying objects (transportation of quarry, soil and sand, waste materials, fly rock from blasting, roofing material).
- Hazards and risks related to falling objects (movement of unsecured loads or during loading activities).
- Hazards and risks related to collisions with moving vehicles
- Hazards and risks related to striking against fixed or stationary objects (poor stacking of materials such as timber of bricks, which may cause a person to walk into them, poor housekeeping in work areas, scaffold edges close to walk ways, vehicles reversing into fuel tanks or buildings)

3. **Vehicles and Plant Movement**

- Indicate the type of plant and vehicles, its use and type of load and Maximum load (Can be in a table)
- Measures implemented to ensure visibility on roads (signage, including reflective signage).
- Construction vehicle routing agreement, that establishes the routes that construction vehicles take to access sites and camps, and showing the agreed safe regular routes between quarries and batching plants.
- Details of safety measures at the key risk points, such as turn outs, narrow roads, unstable roads

- Measures to ensure that vehicles are fit for purpose and are checked prior to each use (pre start inspections).
- Measures to avoid mechanical failure of plant and vehicles (such as failure of breaks).
- Measures to avoid accidents from environmental/weather conditions (such as slippery roads during the rainy season, high wind when operating a crane).
- Measures implemented to ensure separation of people from construction vehicles (barriers, alternative foot paths, crossing points with signage)
- Measures to avoid congestion of vehicles in an area. Use one way systems to avoid reversing. Use of audible devises, banksman while reversing.
- Gradients of 1 in 10 to be avoided, inspections to check access road surface conditions and carrying out maintenance on access roads
- Sufficient lighting especially for night works.
- Management of visiting vehicles such as delivery trucks.

4. Loading and Unloading activities

- Develop Safe operating procedure for all loading and offloading activities
- Measures to prevent overloading
- Measures to prevent accidents from placing sheeting over loads and removing it
- Measures to prevent accidents from coupling activities such as trailer attachment and detachment processes.

5. Hazardous materials and Spill Control (In coordination with Hazardous Substances Management Plan)

- Records of hazardous materials on site and Material Safety Data Sheet (MSDS)
- Training for workers on MSDS
- Measures to prevent, minimize and clean-up of spills, provision of spill response equipment.
- Establish safe areas for parking, delivery and storage of hazardous materials.
- Provisions for designated wash bays to avoid contaminating land or water resources

6. Site rules, communication and training

- Speed limits, Parking areas, one way route systems, visitors inductions, no resting under plant and vehicles, no reversing from site into traffic.
- Prohibition of parking near structures like scaffolding
- Indicate measures for driver competence (selection criteria, general basic training, job specific training).
- Training plan (Inductions, refresher training, training workers on Joh Hazards Assessments, tool box talks)
- Traffic related site rules and driving control measures incorporated into Code of Conduct
- Training workers on incident reporting.
- Work schedules (avoid and minimize impacts of noise, dust, safety of children going to school).

7. Workers' transportation

- Provide measures for safety of workers during transportation (Driver competency, Suitability and safety of vehicle including provisions for seatbelts, road conditions).

8. Develop Safe Operating Procedures for the following:

- Fleet management and vehicle road safety, vehicle markings, etc.
- Driver assessment, check in, work schedules, etc.
- Driving routes traffic management, including filling potholes from the driving, clearing fallen obstacles from vehicles, etc.
- Site traffic safety management, including site layout plan marking routes for vehicles, pedestrians, etc.
- Emergency procedures, if there is an accident/incident what to do on the scene (separate to the ESIRT).

9. For Works on active roads:

- Standards for traffic control and signing that will be used:
    - The work site itself
    - The roads to get to/from the work site
    - The roads/routes from resource points e.g. borrow pits, quarry,
    - How machinery and construction move around on the site – esp. scaffold, hazardous substances, worker rest areas, etc.
    - How the construction vehicles move on public roads
    - How to protect the public and other road users from construction vehicles

Annex 9: Occupation, Health, and Safety Framework

This annex presents an OHS Framework that provides minimum requirements and guidance for the implementation of project activities. Sub-project-specific measures should be added according to the specific risks and impacts identified. Each subproject will be required to compile a site specific Occupational, Health and Safety Plan. The Contractor is responsible for compiling this plan, and review, compliance and monitoring against this plan will be by the relevant PCU or PIU OHS Safeguard Specialists.

Rationale and Objective of the OHS Framework

The main objective of this Framework is to provide a healthy and safe working environment. The OHS Framework will guide execution of project operations in a safe manner by clearly setting out procedures for assessing working conditions for different project activities and identifying safety procedures to mitigate the risks, stating out roles and responsibilities of the various project stakeholders which include: the client (contractors, subcontractors), project management, workers, communities, and others.

This Framework is designed to define and establish commitment made by the Project to comply with the health and safety requirements of the Malawi's Occupational Safety Health and Welfare Act of 1997 and World Bank Environmental Health and Safety Guidelines.

This Framework outlines the roles and responsibilities of employers, workers and affected persons in the implementation of the project activities to ensure that health and safety of workers, and the public is maintained at all times. All workers have a clear responsibility to maintain a positive attitude towards their safety and to prevent injury to themselves and others due to their acts or negligence. This Framework sets out responsibilities and duties of each worker to guarantee that the health and safety of everyone prevails throughout the implementation period of the Project

Scope and Nature of the Framework

This Framework is applicable to all components of the Project, which has several sub-components with activities related to engineering designs, construction, and rehabilitation works.

1. **Roles and Responsibilities**

The Project PCU will provide consultants, contractors and other workers with the authority to carry out the assigned tasks and holds them accountable for successful and safe completion of those specific tasks. All workers shall be accountable to meet the Project's OH&S goals and objectives. Responsibilities of the key personnel and workers are described below:

Entity	Roles and Responsibilities
PCU	Ensure that the Contractor carries out implementation of the OHS Framework. Review and approve OHS mitigation measures for contractors and sub-contractors. Approve the staff for the contractor and sub-contractors.

	Carry out periodic OHS inspections and receive reporting. To be done by qualified/certified OHS personnel Approve specific tasks with high safety and health risks. Provide resources for implementing agencies to implement the OHS measures. Adopt and implement workers' GRM Responsible for notifying the World Bank or any accidents or incidents on site, compiling Root Cause Analysis and Action Plan, ensuring costs and/or compensation is paid if applicable.
Ministry of Labour	Carry out joint inspections on OHS Inspect and issue work place registration licenses Carry out accidents investigations
Malawi Environment Protection Authority	Issuing hazardous waste storage and transportation licenses and permits Carrying out joint inspections on OHS
Directorate of Road Traffic and Safety Services	Inspect mobile equipment and plants Carry out road safety trainings to stakeholders
Principal Contractors	Ensure safe working environment for all workers on the project site and protect the environment and communities from risks and hazards associated with the works. To that end, the principal contractor will undertake the following duties and responsibilities, among others; Appoint CERTIFIED/QUALIFIED full time OHS Specialist to oversee development and implementation of OHS measures. Conduct site assessment. Compile OHS plan for the site including site control measures to protect the site, workers on the site, equipment on the site, and the surrounding community from the site and works, including site housekeeping, site rules, standard operating procedures (SOP) for plant and equipment, preparing and use of specific materials or processes, PPE requirements, etc. Applicable to primary work site, campsite, and ancillary sites including borrow pit and quarry, transport routes between sites, Conduct risk assessment for all tasks and propose measures to eliminate risk and provide PPE and trainings according to results of the risk assessment. Conduct regular training inform and train workers on risks and hazards associated with the works, including briefing on OHS Plan and relevant SOPs, daily tool box talks. Provide adequate and appropriate PPE; including specialized PPE for specific tasks Provide safe drinking water and sanitary facilities Develop and implement an OHS Plan and any supporting plans including, waste management, Traffic Management Plan (which includes pedestrians), Hazardous substances management plan (including transport, handling, storage, disposal and emergency preparedness); Provide induction and training/safety briefing to all suppliers and visitors to the site, provide appropriate and adequate PPE to persons visiting the site.

	Report all H&S accidents/incidents to Supervising Engineers and Labour Office for independent investigation and initiating compensation process where necessary; Conduct periodic health assessments for workers as required. Provide rest areas, water break and sheds for workers for shelter during extreme weather conditions Conduct training for workers on how to do a Job Hazard Analysis and prestart inspections for vehicle/plant and equipment operators OH&S communications will be done in languages that are easily understood by workers. If need be translators should be provided.
Sub- contractors	All subcontractors shall be subjected to and expected to adhere to the requirements of the OHS plan the same way as the Principal Contractor. The OH&S Specialist for the principal contractor shall be responsible for enforcing OHS adherence, conducting inductions and trainings as well as all task assessments for subcontractor's work sites. Subcontractors will: Ensure its workers are familiar with the OHS requirements sign Code of Conduct Provide information, induction, instruction, training and supervision to ensure that each employee is safe from injury and risk to health. Provide adequate and appropriate protective equipment. Assist in accident investigations. Keep and maintain all H&S related records including Job Hazard Analysis and prestart checklists.

Anticipated OHS Risks

OHS related risks may occur specifically in Component 2 on Infrastructure Investments and Sustainable Asset Management for Climate Resilience. The component includes two sub-components: Sub-component 2.1.: Basin-level Infrastructure Development; and Sub-component 2: District-led Resilience Building. The reconstruction and rehabilitation of critical connectivity (roads, bridges) and critical hydraulic infrastructure, as well as the construction of longer-term flood resilient hydraulic infrastructure (river training, riverbank protection, drainage, dykes, etc…) bears OHS related risks. These include OHS risks from handling equipment, risks related to inadequate PPE, risks related to inadequate understanding of EHS risks and impacts and of mitigation measures, risks from natural hazards during construction, weak regulatory and technical oversight and capacity, risks from working next to water especially in the wet season, structural safety risks, etc…

Under Component 3, specifically Sub-component 3.1 on Expanding Social Registry in Urban Areas and Piloting Social Protection Public Works, minor OHS risks may occur. The works consist of small pilot interventions to improve the design of the guidelines in 1-2 neighborhoods. This may include labor intensive small public works, such as cleaning drainage systems, fixing access unpaved roads etc…). OHS risks include risks from handling equipment, risks from inadequate PPE, and risks related to working next to water especially in the wet season.

OHS Management Requirements

This section provides guidance on plans and measures that the principal contractors and subcontractors will develop before implementation of the subprojects so that they are able to provide safe and healthy workplaces by mitigating and safeguarding hazards and risks, as well as by proactively improving OHS performance.

Occupational Health and Safety Management Plan

For all construction projects, the Principal Contractors shall develop an Occupational Health and Safety Management Plan at least 4 weeks prior to commencement of their activities on site, reviewed and cleared by the PCU, no objection by the Bank. The OHS Management Plan shall have sub-plans, which will contribute to the overall implementation of the OHS management plan.

Table 24 OHS risks and mitigation measures

OHS risk	Mitigation Plan or Measures
General Health impacts of works	**Employee Health Assessment Plan** A contractor has a duty to ensure the health assessment of his or her personnel prior to employment and in the course of project implementation through the entire span of the employee's engagement with the Project at frequent pre-set intervals. The contractor shall therefore, develop a health assessment plan for health assessment of workers. The intervals may vary depending on the site conditions and the health conditions of the employee. A subcontractor shall follow the same procedure before recruiting their workers on their subcontractor role. An independent site safety committee shall be established, which shall have common understanding of safety requirements in accordance with Occupational Heath Safety and Welfare Act 1997. This will enable all participants to recognize their restrictions and site conditions. Health & Safety meetings shall be conducted at least once a week/month, to discuss safety matters, decide safety targets, conduct site safety events for motivating and improving consciousness among all participants, review safety performance and statistics of all participants, evaluate the causes and consequences, study and suggest necessary improvement, highlight high-risk works and co-ordinate necessary measures for improvement.
Traffic Accidents and other traffic related risks	**Traffic Management Plan** Contractors will develop a traffic management plan to ensure smooth flow of traffic and manage the project induced traffic conflicts. This also ensure a safe and standard transportation of workers and material for the project.
Risks related to working next to water, especially in the wet season	**Site Security Plan** Each contractor shall prepare a site-specific security plan to manage the project induced security issues and to ensure a safe and timely completion of the project. It will also help contractors to ensure safe work site, store and camping premises.
	Storm Water Management Plan Contractors will be required to develop and implement Storm Water Management Plan. The Plan will outline measures the contractor will follow to avoid pollution, contamination, erosion and flooding by controlling runoff. Stormwater / runoff water Rain runoff water must be appropriately attenuated on site before discharge to the surround environment and community. Erosion project and energy dissipation must be installed as necessary to prevent soil erosion on and off the site. Oil separation from stormwater must be installed, waste, including sediment, must be collected/retained on site.

	Tools and Equipment Tools and equipment must be fit for purpose. All lifting appliances and lifting gears are to be properly inspected and certified. Guards and electrical trip switches must work effectively and must not be removed or bypassed. All tools shall be of good quality and maintained in a safe working condition. Homemade tools are not permitted. All power tools must have proper earthing, cables, plugs to avoid any shock. Erecting of Scaffolds shall be inspected and tagged accordingly by competent personnel before use
Health risks through hazardous substances	H**azardous Substances Management Plan** Contractors will be required to submit and implement a Hazardous Substances Management Plan. This plan shall clearly define the mechanisms for managing biological, chemical, and radiological materials and wastes. The Hazardous Substances Management Plan will address methods both to identify materials that need special handling and to prescribe processes to minimize the risk of their unsafe use and/or improper disposal. This plan shall have procedures to govern activities from receipt to disposal of these hazardous agents.
Health risks for workers and communities through waste	**Waste Management Plan** It shall be a requirement for contractors to develop and implement a site specific waste management plan (WMP). The plan shall address management of all solid and liquid refuse that result from project activities. The WMP will provide guidelines on waste reduction, segregation, collection and disposal practices in accordance with international best practices, to avoid deterioration of the natural environment and negative impacts on the health and safety of workers and the communities in the project areas. The Project is committed to apply the waste hierarchy and will seek to be a zero waste discharge facility. This plan is the primary tool to guide employees towards waste management.
Risks through noise for workers and community members	**Noise Management Measures** Each contractor shall ensure to manage the project induced noise at the worksite and the surrounding community. Excessive exposure to noise can increase the onset of Noise Induced Hearing Loss (NIHL). In this regard, the contractor shall ensure to put noise control measures to ensure the safety and health of workers and the surrounding communities. Some of the noise control measures include, but not limited to the following: Improve the design of machines (e.g. by supplying them with shock absorbers and anti-vibration mounting, installing protective Plexiglas enclosures, etc.). Where possible, use special covers, silencers and generally materials with strong anti-vibration capacity. When technically feasible, reduce emission of noise by placing a barrier between the noise source and the employee (e.g. a sound-proof cabin).

	Increase the distance between the noise source and the worker. Provide workers with personal protective devices such as suitable earmuffs and plugs. Use tools and equipment with anti-noise design. Maintain equipment properly since poorly maintained machinery can increase sound emissions. Reduce the speed of cutting, sawing and spinning (Facts) Limit the amount of time an employee spends at a noise source. This can be implemented when workers take it in turns to spend time at very noisy areas. Provide quiet areas where workers can spend time in order to gain relief from hazardous noisy environments. **(**see Table below)
Health risks related to air quality	**Air Quality Management Measures** Contractors shall ensure to put in site specific air quality measures to manage air pollution induced by the project activities to safeguard the safety and health of workers and the public. The measures shall be submitted to PCU for approval prior to commencement of any activities which may have the potential to pollute air. Major sources of air pollution include: Storage sites for cement, quarry, sand and gravel Loose soil due to excavations and vehicular movements In this regard, there is need to locate concrete batch plant away from residential areas and campsite. Storage sites for cement, quarry, sand and gravel should always be covered. This should include the transportation of such materials. Road and weigh bridges construct may cause significant impacts on surrounding communities due to dust release. The contractor should frequently suppress dust through compaction and water spray. Where quarrying activities will be conducted under the project dust emissions are expected from production and processing of quarried materials, transporting, loading, unloading and stockpiling quarried material. Among others, the contractors shall implement the measures listed below; Where possible Install a wetting system at the quarry production site to keep materials damp, Cover materials by tarpaulin when being hauled by vehicles, Reduce drop height to a minimum, Limit vehicles speed, Provide adequate and appropriate PPE to workers/visitors at the site, Prepare risk assessment for all activities happening at the quarry site. For operation of quarry site and borrow site the contractor shall prepare specific measures through the Environmental and Social Management Plan. Malawi Environment Protection Authority as well as the Bank shall approve this Plan prior to commencement of works.
Risks of Accidents	**First Aid**

	A fully equipped first aid box is to be available at all project sites, stores and offices with a ratio of 1 box to 30 people. The first aid box shall be easily accessible and all workers shall be informed of the location. The Site Engineer / Site Supervisor are responsible for maintaining and recording all the usages of the first aid box. The first aid box shall also be easily available at area where activities of high risk of injury are being undertaken. Ensure that the worksite has qualified First Aiders who have undergone first Aid Certification training. All contractors shall provide or ensure that they are provided with such equipment and facilities as are adequate and appropriate in the circumstances for enabling first aid to be rendered to any of their workers / visitors in case of illness, injury or incident at project sites. A leaflet on first aid / posters should be kept with the first aid box at the stores. The workers are to be briefed regularly about first aid in the 'Tool Box Talks'. Remote sites shall have written emergency procedures in place for dealing with cases of trauma or serious illness up to the point at which patient care can be transferred to an appropriate medical facility. Procedures shall be pictorial and in English as well as in common local languages. The contractors, in their site specific OHS plan/Emergency response plan, shall identify and indicate the closest clinic or hospital to the site in case of emergencies and shall have hospital emergency contacts. Access roads need to be assessed and alternative routes identified in cases on emergency situations especially for remote sites
Safety risks in regards to excavations	**Excavation and Trench Works** All excavations shall be barricaded at all times with solid barriers. Before excavation works, a permit shall be obtained in which it shall detail: Clearance of existing services Dimensions of the trench Means of access Means of prevention of collapse and falling objects Where excavated material is to be kept or disposed of Chance find procedures Trenches and excavations shall be inspected regularly to check collapsing or failing.
Risks through handling machinery and equipment	**Machinery Safety** All drivers and operators of mobile plant (mechanically propelled vehicles) shall be in possession of the appropriate license for the class of vehicles. Site Engineer/supervisor to ensure that all drivers and operators of mobile plant (mechanically propelled vehicles) are certified as competent.

	All mobile equipment (mechanically propelled vehicles) shall be inspected by a competent person and certified fit prior to use on site. Equipment considered to be unsafe shall not be allowed access to the site. Daily Check of Equipment to be carried out before starting of shift and document prestart inspection using a checklist and reporting of faults/anomalies All rotating parts of the plant/equipment shall be guarded properly. In case of any issues with the vehicle/ equipment, the operator must immediately stop the vehicle and report to Site Engineer/ Foreman and get it rectified immediately. The Operator/ driver must ensure that no one is close to the equipment while operating. A trained banksman will give signal to the operator when the equipment is being operated. The banksman must always wear Hi-Visibility jacket for easy visibility – all vehicles/plant shall be fitted with reverse beeping alarms. Prohibit, (through inductions/ Coc/Training), resting under parked heavy machinery, plant and vehicles. Provide rest areas and encourage workers to rest in designated areas/sheds only.

The following table provides the standards, exposure times and need for personal protective equipment.

Table The Occupation Safety and Health Administration Noise Level Standards

PERMISSIBLE NOISE EXPOSURES (1)	
Duration per day, hours	Sound level Dba Slow response
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
Less than or equal to 0.25hours or 15 minutes	115

Source: Occupational Safety and Health Administration
the sub- contractors to impress upon them the safety requirement and necessary preparations thereof.

Reporting Obligations

All workers, supervisors, engineers, managerial team, subcontractors are responsible for the verbal or written reporting of accidents, incidents, near miss, hazards and occupational illness to the concerned site OH&S Manager. Failure to do this may lead to fine or legal action according to the laws. The H&S Reports should be submitted to PCU and to the responsible authorities on weekly and monthly basis.

Monthly OHS Reports to PCU

Principal Contractors shall prepare monthly OHS reports. The monthly reports shall be submitted by close of business of the first week of following month to the PCU. The weekly reports shall comprise of the following information with respect to the reporting timeframe:

- Originator
- Name of the project
- Activities performed
- Health occurrences
- Safety occurrences
- Resulting accidents, incidents or dangerous situations
- Root cause analysis
- Investigation results
- Measures undertaken to address non-compliances including causes of incidents
- Lessons learned
- Informed authorities and resulting obligations/conditions
- Results of workplace inspections
- Training records
- OHS related grievances and resolutions

Work Place Inspection Reporting

The OHS Staff of contractors will be requested to undertake workplace inspections. In case that hazards and risks are identified during work, it is needed that the identified hazard or risk has to be eliminated and without undue delay during the inspection. In case that the problem could not be eliminated, a written report has to be prepared and issued to the OHS Manager highlighting:

- a description of the problem;
- the reason why it could not be solved during the workplace inspection;
- the needed action;
- the responsible person;
- the associated hazards and risks;
- The deadline until the problem must be solved.

The occurrences must be reported in the monthly OH&S Report. Any other reporting requirements with respect to OH&S, e.g. audit reports, weekly and monthly OH&S reports, remain unchanged. The workers/supervisors shall also be trained to conduct and document a Job hazard analysis to be done for each task before starting work. In addition to the site inspections by the OHS staff.

Incident and Accident Reporting & Investigation

Any accident resulting into damage or loss of property, injury, disability or loss of human life or have possibility of significant environmental impact shall be reported by project manager of that sub-project giving brief details to PCU at earliest possible time and not extending 24 hours from occurrence of the accident. The event summary report of the same shall be submitted to WB within 24 hours of notification, as per the instructions provided in this ESMF.

OHS Plan

This section provides an outline on how principal contractors and subcontractors will manage health and safety risks during project implementation. It contains an introduction, risk management process, task specific permits, job safety analysis, Safe work instructions, Health and Safety Review program, Health and Safety audits, Health and Safety, inspections, Health and Safety corrective actions and Health and Safety trainings.

In order to ensure the effective implementation of an OHS plan, the risk involved in the operation should be known. In other words, the degree of risk involved in the operation should be analyzed, controlled and properly managed. The contractor with key personnel along with OHS personnel shall carry out risk assessment of all operations. The basic steps are based on Hierarchy of control (HOC) as follows:

- Classify work activities
- Identify hazards
- Assess the risk from each hazard applying the ESMF risk assessment methodology.
- Try to eliminate the Hazard
- Reduce the risk/ exposure by Hierarchy of Control:
- Eliminate
- Reduce / Isolate risk
- Engineering and Administrative controls (Operating procedures)
- Provision of task appropriate PPE
- For activities which fall under High/Very high risk “H” following measures will be taken:
- Consider alternatives that eliminate the risks;

- Decide if the risk is tolerable otherwise, prepare risk control action plan Identify the qualification/capacity level for persons to undertake the activity
- Providing task specific training, Tool Box Talk, Safety Induction and on the job training.
- Monitor and audit the progress of plan and effectiveness
- Review adequacy of action plan and revise if necessary

Risk Management Process

Job Safety Analysis: The contractor shall undertake job safety analysis (JSA) or Job Hazard Analysis (JHA). A JSA is a procedure which shall help to integrate safety and health principles and practices into a particular job operation. In a JSA, each basic step of the job-related hazards has to be identified and recommendations have to be provided to choose the safest way to do the job. For conducting a JSA, five steps have to be considered as follows:

- selecting the job to be analyzed
- breaking down the job into a sequence of steps
- Identifying the core requirements and competency for doing the job for instance Don't use an illiterate person for a task that requires lots of numbers and counting/reading
- identifying potential hazards
- Determining preventive measures to overcome these hazards.

Each contractor shall submit a JSA procedure for the approval of the Supervising Engineers and PCU prior to commencement of any activity. A contractor's team will be formed comprising of Site Engineer, Site Foremen. Experienced crew staff for the task and the OHS team to prepare the JSA taking into consideration the above points. The JSA will be based on past experience and will be current site specific. Once, the JSA is ready it will be submitted to PCU or supervising engineer for review and approval. The results of the JSA will be shared with all workers and where there is migrant labor, the contractors will provide for a translator to ensure instructions and safety protocols are correctly understood.

Risk Register: The significant risks involved in the installation/ construction and related activities is assessed and registered in the form of qualitative risk assessment. The risk register is a systematic break down of activities, its potential hazards, and the risk involved. Risk rating is identified by multiplying severity by probability of occurrence based on the risk matrix chart and then its control measures. It is always recommended to prioritize those activities which are having high risk. The concept of a risk register recognizes that risk elements arising from proposed or actual activities fall into one of following four categories:

- Risks which are deemed to have a low risk can be proceeded with taking care of all safety measures
- Risks that have a medium risk will proceed with caution & necessary safety measures
- Risks that have a high Risk need to be managed & checked with site engineer & site OH&S officer. If uncontrolled, a risk event at this level may have a significant impact for the actions and tasks at an installation and construction site as a whole. Mitigating actions need to be very reliable and should be approved and monitored by the OHS Officer & Site Engineer. Even with mitigating actions in place, the construction site staff potentially exposed to that risk should be advised of identified or potential risks which have been graded at this level.
- Risks, which have an extreme high risk and therefore the activity, should probably not proceed until Site engineer & OHS Officer take all necessary corrective measures. Identify if there are any

controls currently in place to mitigate those risk; If not, develop and document risk mitigation actions. These could include:

- Planned actions: Reducing the likelihood of a negative risk to occur and/or reduce the seriousness should it occur (What should you do now?)
- Contingency actions: Planned actions to reduce the immediate seriousness of a negative risk when it does occur. (What should you do when?)
- Recovery actions: Planned actions taken once a negative risk has occurred to allow you to move on. (What should you do after?)
- Risk Transfer: Contractor staffs are covered under firms' accidental insurance. The risk is transferred to subcontractors covering all high risk work. For example bush clearing, excavation etc.

For work to commence the following steps should be taken:

Stage 1 Highlight Potential Hazards: Worker(s) and the Site construction foreman guided by the OHS Specialist should highlight potential hazards of a task and identify all necessary safety measures. Hazard identification must consider all required electrical and mechanical equipment. Stage 1 has to be done in writing. Work is not permitted to commence until Stage 4.

Stage 2 Application of Permit: The Site Engineer/ Foreman (Issuing authority) applies for permission to start work on a prescribed form and submit the application to the OHS Specialist only when all requirements and conditions described in the permit to work have been fulfilled. The Site Engineer /Foreman has to indicate in the written permit that risk assessment was conducted. The risk assessment must be attached to the permit to work.

Stage 3 Evaluation of Permit: The Supervising Consultant will evaluate and verify that all safety conditions specified in the permit to work have been fulfilled and are adequately described. The Supervising Consultant may also recommend additional measures in the permit to work when necessary. Inspection to the location of work where the permit to work has been applied for is to be done, with the Foreman during this process. Only when all safety requirements and conditions stated in the permit to work are fulfilled, the permitting Supervising Consultant will then endorse the permit to work form and forward to the OHS Specialist.

Stage 4 Approval of Permit: The Supervising Consultant may approve and issue the permit to work only when it is satisfied that:

- Proper evaluation of risk and hazards for the work concerned has been conducted including competence and skills of the persons to carry out the task should be checked;
- No incompatible work will be carried out in the same time and location of the permit to work, which may pose a risk to the persons at work;
- All reasonably practicable safety measures have been taken and all persons involved in the work have. been informed of the work hazards under the Permit to Work;
- All electrical and mechanical equipment is demonstrable checked and in safe condition. Please note that the permit can be signed by E&S specialists in absence of Project Manager as authorized persons. E&S Specialists must inform the Project Manager before signing the permit. A work permit is valid for a time limit say one working day and for the specified working time. An extension could be provided for additional two hours. In case the tasks could not be finalized within the validity of the permit to work, the permit to work must be renewed before commencement of work on the day the work may continue.

Safe Work Instructions: Contractors shall develop site-specific work instructions. Safe work instructions identifying the occupational health and safety issues that may arise from use of the machinery and equipment. The safe work instruction must be based on the OHS Plan. A safe work instruction should identify:

- the risks and hazards associated with the use of a specific tool or piece of equipment;
- the required control measures to be checked to ensure a safe use of a specific tool or piece of equipment;
- the specific training and/or qualification required;
- the personal protective equipment to be worn.

Note that Safe work instructions do not replace the requirement for a risk assessment, Preparation of a workplace procedure, the need of a permit to work or the need for training. They may be used to supplement the process of creating and providing a safe system of work. In the forms of standard operating procedures or standard work method statements for activities to be undertaken. The safe work instructions shall be submitted for approval from the concerned authorities. The approved work instruction must be communicated to each and every member of the working crew for understanding.

Health & Safety Review Program: All contractors under shall commit to review their performance in OHS on a timely manner and as and when required basis. The Project believes the review (Check) will play an important role in continual improvement of any OHS management procedure. Principal Contractor shall implement a Project specific OHS Review Programme for the project. The review program shall include a systematic evaluation of the implemented management system, compliance with this OHS Standards document, and the project OHS Plan and local legislative requirements.

Health & Safety Audits: Contractors shall review the OHS management system by undertaking OHS Site Audits on a quarterly basis OR randomly. The audits shall be performed by the Construction Manager, OH&S Manager, and the Supervising Consultant. The audits shall be conducted at the construction sites, material and equipment storage areas, workshop areas and accommodation areas (Worker's camp area), and the adjacent areas affected by the project activity sites, including ancillary sites. These audits shall be recorded and a copy of the audit report shall be attached to the monthly Health & Safety report. Each contractor will develop its own internal as well as external auditing procedure and Project specific Audit Plan.

Health & Safety Inspections: Competent Inspection and monitoring is the key to continual improvement when monitoring deviations from the plan and change in the conditions. The inspection will help the contractors to improve their performance by early detection of indicators to major incidents. The PCU shall ensure competent inspection and monitoring on weekly basis of all contractors OHS performance.

Corrective Action: After conducting inspections, the following corrective actions should be undertaken. The list corrective actions must include the following information:

- Identified risks and non-compliances;
- Needed corrective actions;
- Needed personal and material resources;
- Responsible person;
- Date for latest finalization

Training: OHS trainings aims at equipping workers with knowledge and skills on identifying safety, health and environmental hazards as well as determining appropriate control measures. The trainings will be provided in workers' language. Trainings take different forms as indicated below:

Induction Training:
The recruitment and placement processes ensure that all workers and subcontractors have the necessary physical and mental abilities for the job or can acquire these through training and experience. The contractors will ensure that all new workers, labor supply (from approved vendor) and subcontract personnel (approved) shall be given a Health and Safety induction, carried out by OHS Specialists. No personnel/ sub-contractor will be engaged prior to approval. Prior to commencement of work all tradesman shall be given a trade test by a qualified and competent site foreman and/or site engineer.

OHS induction can be defined as the initial training and awareness imparting session to make the personnel aware of the inherent hazards and risks involved in the process and area. Prior to commencing work, the contractor will ensure that all personnel undergo an OHS Induction course which stresses the need for the highest standards of health and safety on the project and conveys the requirement to fulfil the requirement of this OHS Plan. No workers will be allowed to work/visit on site without prior induction.

Below is a list of some of the topics to be covered during worker's induction:

- World Bank and National OHS policy statement
- Brief of safety rules and regulation
- Permit to work systems
- Emergency response procedures, emergency telephones numbers assembly points.
- First aider's telephone numbers, egress routes, first aid fire-fighting procedures.
- Reporting procedure.
- Reporting system for unsafe working conditions and practices
- Proper usage of PPE at site.
- Hand tools and its usages.
- Unauthorized jobs or tasks
- House Keeping and waste identification.
- Warning signs and cautions displayed on site.
- Transport, vehicle and equipment movement. Traffic safety
- Drug and alcohol policy.
- Occupational health and hygiene.
- Accident, incident and Near Miss Reporting procedures
- Heat stress, dehydration and remedies (Heat related abnormalities).
- Explanation of project and employee duties and responsibilities.
- Electrical hazards.
- Protection of environment, pollution to Air, Water and Soil
- Waste handling and disposal procedures.
- Basic site safety rules.
- Recent Similar field incidents.

The contractors will ensure that they have the induction training scheduled for the newly joining workers any day irrespective to pre-planned program. Refresher training will be done on a semi-annual basis or as and when situation demands.

Before entering the site, all visitors must undergo OHS induction process. A induction module for visitors will be designed by OHS Specialist for the contractors. The visitors will be provided with an overview of OH&S rules particularly OH&S risks, risky areas, significance of PPE they need to wear before entering the site and emergency protocols. Visitors induction records will be maintained. .

Toolbox Talks: Tool box talk (TBT) is a 5-10 minutes communication between working crews and site supervisor/site engineer related to job specific safety issues, roles responsibilities on daily basis and as and when required. Contractors will ensure that TBT document is available with safety department. During the meeting the site engineer will always ensure all the work force is aware of their duties, Dos and Don'ts and risk involved. The site engineer/ supervisor shall also monitor/ verify the fitness of the personnel for work. Toolbox talks should consider as well lessons learned from incident and accident investigation, audits, workplace inspections etc. The Site Engineers/ Supervisor shall conduct regular toolbox meeting on different topics by selecting small groups of people (maximum 15).

Needs Based Training: Needs based trainings look at the knowledge, skills, and abilities of workers to determine what types of training they need to achieve SATCP objectives.

Training Needs Analysis: Training Needs Analysis (TNA) is the process to discover the training and development needs of people so that they can carry out their job effectively and efficiently, and also to continue to grow and develop their careers. TNA covers a range of approaches. All contractors will carry out a TNA to identify the training needs of the work force as regards OHS.

Training Schedule:
Planned training programs gives the opportunity of continual improvement and re-enforcing the best work practices by reminding the bad practices acquired during the work. All contractors will prepare a training schedule to be in line with TNA to help the personnel gain required level of competency for the time in need.

Personnel Protective Equipment (PPE): PPEs are the last resort of personnel protection. Contractors shall identify PPEs for the working personnel considering the following: For each hazard identified, select personal protective equipment that will protect the employee by creating a barrier against workplace hazards. Consider the likelihood of an accident and the seriousness of a potential accident. PPE must be selected to protect against any hazard that is present or likely to be present. It is important for department personnel to become familiar with the potential hazards, the type of protective equipment that is available, and the level of protection that is provided by that equipment. The PPE selected must fit the employee it is intended to protect. Make certain that workers have the correct size of protective equipment. Whenever possible, select adjustable personal protective equipment. Workers including subcontractor workers must be trained in the use of their specifically needed appropriate PPE and adhere to No PPE, No work policy.

Employee input in the selection process of PPE is critical. Personal protective equipment that fits properly and is comfortable will more likely be worn by workers. Damaged or defective protective equipment must be taken out of service immediately to be repaired or replaced and workers must be provided with the proper equipment in the interim. Mandatory PPEs requirement at site will be Helmets, Safety Shoes, and Hi- visibility vest before entering to site. Few examples listed below the purpose of using such equipment as: Helmet used to prevent - Objects might fall from above and strike them on the head; might bump the heads against fixed objects, such as exposed pipes or beams; or there is a possibility of accidental head contact with electrical hazards. Safety Shoes- for example employees who face possible foot or leg injuries

from falling or rolling objects or from crushing or penetrating materials, should wear protective footwear. High visibility vests to be used for good visibility specially to attract drivers/operators while operating equipment and vehicle. Task specific PPEs will be used while carrying out specific activities.

Table 25 OHS PPE

Specific Task	**Task Related PPEs**
Material Handling, Manual work, pulling, handling hazardous substance, chemical, grinding, welding	Hand gloves suits the work.
Grinding, cutting,	Face shield, gloves especially if material heats up while grinding
Working on electrical panels or on live line	Electrical insulated hand gloves and face shield, not steel toe cap boots, rather alloy toe capped boots
Concreting	Gumboots
Noisy Area	Ear plugs / ear muff
Dusty Area	Dust Masks
Insulator fixing or work on cross arm	Self-Retracting Lanyards
Concrete work, handling chemical, object swinging towards the eyes, protruding object	Eye goggles

Signs, Signals & Barriers: The Occupational Safety and Health Administration (OSHA) have revised the construction industry safety standards to require that traffic control signs, signals, barricades or devices protect workers. Contractors shall analyze the site requirement for the signs, signals and barriers on daily basis prior to the start of activity. The signs shall be pictorial and in English, common local language and any other language for migrants.

OHS Procedures

This section outlines specific activities to be implemented by contractors when implementing sub-projects activities under the Project. The contractors will always adhere to the procedures that follows:

Task/Activity Risk Assessment

Contractors shall undertake a risk assessment for all activities and will be assessed to be of a low, medium, high and very high risk. The OHS Specialist shall conduct the risk assessment with the involvement of the experienced staff, Foreman, and worker(s) to undertake the activity. The risk assessment shall be carried out before the execution of the activity and the risk assessment shall be documented. The risk assessment shall be approved by the Manager responsible for the installation or construction site. The risk elements shall be identified from actual activities and associating them in terms of likelihood of occurring and seriousness of impact.

Portable Water Supply

The contractor shall be responsible for supply of potable water for drinking and raw water for washing/toilet facilities, and construction purposes. Drinking water shall meet the drinking water quality standards as specified by Malawi Bureau of Standards.

Workplace Temperature

Exposure to hot or cold working conditions in indoor or outdoor environments can result in temperature stress-related injury or death. Use of personal protective equipment (PPE) to protect against other occupational hazards can accentuate and aggravate heat-related illnesses. Extreme temperatures in permanent work environments should be avoided through implementation of engineering controls and ventilation. Where this is not possible, such as during short-term outdoor work, temperature-related stress management procedures should be implemented which include:

- Monitoring weather forecasts for outdoor work to provide advance warning of extreme weather and scheduling work accordingly
- Adjustment of work and rest periods according to temperature stress management procedures provided by ILO, depending on the temperature and workloads as in annex 4;
- Provide temporary shelters to protect against the elements during working activities or for use as rest areas
- Use of protective clothing ·
- Providing easy access to adequate hydration such as drinking water or electrolyte drinks;
- Alcohol tests will be done every morning and workers who test positive will be barred from entering the site

Lone and Isolated Workers

A lone and isolated worker is a worker out of verbal and line of sight communication with a supervisor, other workers, or other persons capable of providing aid and assistance, for continuous periods exceeding 5 minutes. The worker is therefore at increased risk should an accident or injury occur. Where workers may be required to perform work under lone or isolated circumstances, the contractor/client shall develop and implement SOPs to ensure all PPE and safety measures are in place before the worker starts work. The developed SOPs shall establish, at a minimum, verbal contact with the worker at least once every hour, and ensure the worker has a capability for summoning emergency aid. If the worker is potentially exposed to highly toxic or corrosive chemicals, emergency eye-wash and shower facilities should be equipped with audible and visible alarms to summon aid whenever the eye-wash or shower is activated by the worker and without intervention by the worker.

Lavatories

During implementation of all activities the contractor shall provide adequate and appropriate lavatory facilities. The facilities shall be maintained in a clean and orderly condition. The provided lavatory facilities shall meet the number of people expected to work in the facility and allowances made for segregated facilities, or for indicating whether the toilet facility is “In Use” or “Vacant”. In cases where both male and females are employed the lavatories will have separate entry for each sex. Toilet facilities shall also be provided with adequate supplies of water and soap.

Annex 10: Waste Management Framework

This annex presents a Waste Management framework that provides minimum requirements and guidance for the implementation of project activities. Sub-project-specific measures should be added according to the specific risks and impacts identified.

This Framework provides guidance on the management of the different types of waste that will be generated during the Project implementation. Hazardous waste management is handled in the following annex. Likely non-hazardous wastes under the Project components include sanitary wastes, construction waste, including small amounts of waste plastic containers for oils and lubricants, broken filters and belts, and damaged tires will be generated. Construction and managerial staff will also generate some waste such as paper, bottles, cans, plastics, and food scraps.

The measures presented here will reduce the risk(s) of destroying and/or polluting the environment. They main to prevent any adverse impacts to the local environmental conditions from any construction or rehabilitation activities that generate waste through the implementation of waste management principles and best practice strategies.

The Objectives are as follows:

- Minimize waste generation in line with the principles of the waste hierarchy reduce, reuse and recycle.
- Safely dispose of all non-reusable and non-recyclable non-hazardous wastes;
- Comply with relevant regulations and standards.
- Increase the efficiency of the use of raw material;
- Reuse, reduce or recycle material where feasible;
- Promote awareness of and adhere to proper waste management procedures;
- Manage waste as close to the source as practicable;

Types of Waste and Management

Non-Hazardous Waste is waste that is not toxic but is degradable in the environment – constituted of construction non-hazardous waste and camps/offices non-hazardous waste, including waste waters etc. During the site activities, waste will be generated from sources such as workers' camps and construction and rehabilitation activities.

Table 26 Waste Management Method

Type of Waste	Management Measures
Wood (timber, slash, stumps, etc.)	Reuse, donate, dispose
Treated wood (poles, cross arms	Reuse, donate, dispose
Metals (Ferrous and Non-Ferrous) (but not including drained electrical equipment (transformers, etc.) *refer hazardous substances.*	Reuse, Recycle, dispose.
Food waste	Composting, dispose
Paper and Cardboard	Recycle

Concrete wastes	Reuse, Dispose in landfill
plastics	Recycle, Reuse, Dispose
Office waste	Recycle, dispose.
Waste from demolition materials	Recycle, dispose

Waste Management Process

Pre and Post Project Waste: Any existing unidentified waste exposed or uncovered on site prior to the initialization of site activities will be brought to the attention of the contractor. All wastes identified pre-project will be clearly documented, and pictorial evidence taken if necessary.

All temporary project infrastructure will be removed after the project activities have been completed. All project rubble and waste generated from the decommissioning of the construction camps, etc. will be sorted into materials that can be reused and waste material for discard. All discarded material will be removed to waste disposal facility. A final site walk through will be undertaken with the client environmental representative to ensure that all rubble/waste has been adequately removed before the site is handed over to the client. A site handover will be done by concerned parties to acknowledge satisfactory waste removal.

Waste Avoidance and Minimization: The opportunity for avoidance and minimization of waste production as described above can be summarized as follows:

- Non-hazardous or low toxicity materials/products will be selected instead of hazardous material/products, whenever feasible;
- Where possible, construction materials will be ordered on a "as needed" basis to prevent over-supply to site;
- As far as possible, it must be ensured that all construction materials are stored and handled correctly to minimize damage to the materials which will render it unusable; and
- Minimization of waste will also include the reduction of waste toxicity. This may be performed by selecting low toxic chemicals used during the Project.

Waste Collection Points: The main waste collection point will be in an easily accessible area within the main camp area or construction site. The waste collection point will be selected, taking into considering the prevailing wind direction, surface runoff patterns, topography and visual context and will as far as possible, cause the minimum of nuisance to adjacent properties. It will be ensured that the waste disposal area will not be located near any drainage areas, wetlands on and near the site.

The selected waste area will comprise of a cordoned-off and contained area. Provisions will be made for the segregation of waste into non-hazardous and hazardous waste. Non-hazardous waste will further be divided into organic and non-organic waste. Organic waste will consist of general domestic food waste. Non-organic waste will consist of glass, plastics and metals.

All waste containers on site (bins, skips, drums, etc.) will be clearly labelled with visible signs to indicate which waste it contains.

Waste Treatment and Disposal: If waste produced cannot be reused or recycled, the waste will be disposed of at a waste disposal facility.

Options for disposal of solid organic waste include composting at site. An appropriately sized location will be dug for this purpose and it will be ensured that the facility has sufficient air and will be protected from rodents and other scavengers.

Non organic waste is usually recyclable. Where it is not recyclable or too dirty for recycling, it shall be disposed of at a waste disposal facility.

Table 27 : Waste Disposal Methods

Waste	**Disposal Method**
METALS: Scrap metal, tins, cans, foil	Separate Bin - Metals
Plastic bottles and polythene	Separate Bin – Plastics Empties of water etc.
Cardboard boxes and papers	Separate Bin – Card & Paper
Bottles and Glass	Separate Bin - Glass

Procedures for Handling and Storage of Waste

Waste Handling: All personnel who are involved in the handling of non-hazardous waste will undergo specific training in:

- The procedure to be followed to ensure adequate segregation;
- Waste handling (and PPE requirements) including collection;
- Waste storage; and
- Correct waste disposal procedures.

Waste from litter bins will be collected from site on a weekly basis or as required. Accumulated hazardous waste will be removed from the site daily and will be transported to the main waste collection point. Waste will be removed from site on a monthly/weekly basis. The frequency of waste collection will be determined based on the rate in which the waste accumulates during the construction activities.

Temporary Waste Storage: All waste produced during the Project activities at site and servicing activities and camps shall be collected using appropriate personnel protective equipment and they shall be sorted out and temporarily stored in special containers at the camp.

The waste storage areas are to be indicated on relevant site procedures and will be located at least 100m from any watercourses. Wastes will be stored in a manner to prevent:

- Accidental spillage or leakage, contamination of soils and groundwater, loss of integrity from accidental collisions or weathering by provision of suitable secondary containment and/or roofing;
- Corrosion or wear of containers both from the weather, by protecting waste storage areas, and from the wastes themselves, by selecting containers suitable for storage of intended waste,
- Theft by people by storing waste within security of camp perimeter; and
- Scavenging by animals by storing putrescible waste in closed bins before composting,

- The waste storage containers used will be appropriate in terms of volume, composition, shape and opening for the material that is being stored. Only containers in good condition will be utilized. Lids will be securely fastened, or other forms of covering shall be provided. No containers will be used that are susceptible to reaction with the wastes, which may lead to the release of harmful substances. All hazardous wastes will be strictly segregated. Only one category of hazardous waste may be placed in any one container. Solid and liquid wastes will not be mixed, as well as hazardous waste of incompatible nature.

Construction Site Clean-Up and Disposal of Waste Materials

Site clean-up: The contractor shall always keep the construction area, including storage areas used free from accumulation of waste material or rubbish. The contractor shall obtain a permit or other appropriate documentation approving the disposal methods used. All used fuels, oils, other plant or vehicle fluids, and old tires and tubes shall be collected to a central disposal area daily and disposed of in a manner approved by the Approving Authority (e.g., Local District Council).

Servicing of equipment and vehicles shall whenever possible be carried out at a workshop area. This workshop area shall be equipped with secure storage areas for fuels, oils and other fluids and constructed in such a way as to contain any spillage, which may occur, and similar storage where fluids can be stored securely prior to their disposal. When servicing of plant, equipment and vehicles is carried out away from the workshop area it shall be done at locations and in such a manner as to avoid spillage and contamination of streams and other drainage courses.

In the event of the contractor's failure to perform the above work, the work may be performed at the expense of the Contractor, and his surety or sureties shall be liable.

Disposal of waste materials: Waste materials, including refuse, garbage, sanitary wastes and oil and other petroleum products, shall be disposed of by the contractor.

Waste materials removed from the construction area shall be dumped at an approved dumpsite.

- Disposal of Material by Burying: Only materials approved by the Local Authority and the Project Engineer may be buried. Burial shall be in pits and the location, size and depth of which shall be approved.
- Disposal of Material by Removal: Material to be disposed of by removal from the construction area(s) shall be removed from the area(s) prior to the completion of the work under these specifications. All materials removal shall be the Contractor's responsibility.
- Disposal by dumping: Materials to be disposed of by dumping shall be hauled to an approved dump site. It shall be the responsibility of the Contractor to make any arrangements of such dumping. Any fees for charges required to be paid for dumping of materials shall be paid by the Contractor.

Water Pollution: The Contractor shall observe the requirements to avoid the pollution of watercourses and ground water. Sanitary facilities for all sites workers convenient to the working sites shall be provided to enable environmentally sensitive disposal of the waste. The storage of fuel and oil for the works operations shall be arranged in working sites, refueling of all plant and equipment and servicing practices shall be arranged to prevent the uncontrolled spilling of any oil-based products.

Mitigation measures shall include drip trays, working on paved surfaces with waste collection arrangements and the provision of oil absorbing material for spills that can be subsequently disposed safely by burning.

Best Waste Management Practices

These include the following:

- The contractor to obtain permits regarding waste management from relevant authorities.
- The contractor to provide handling containers, storage, signage, transportation, and other items as required to implement waste management procedure during the entire duration of the project.
- The Environmental management personnel to be responsible for matters of managing the environment including being responsible for implementing, monitoring, and reporting status of this procedure and shall be full time on worksites throughout the project.
- All workers, subcontractors, and suppliers to be trained on proper waste management procedures, as appropriate for the work occurring at Project Site(s). Information, Education and Communication (IEC) materials shall be distributed and/or made available to everyone concerned and to all entities when they first begin works.
- To provide specific designated and labeled areas on project site(s) necessary for separating materials that are to be recycled, reused, donated, and sold. Recycling and waste bin areas are to be kept neat, and clean, and clearly marked in order to avoid contamination of materials and.
- Hazardous wastes to be separated, stored, and disposed of according to local regulations and should not be included in management of the other waste streams.

Consultations with interested stakeholders and link with GRM

The Project has a Stakeholder Engagement Plan which includes those directly involved in waste generation and management. Community members need to have information or resources related to various waste management-related activities such as (e.g. transportation, sanitation, emergency response, environmental health, public health, and business leaders viz a viz potential generators of waste). The communities must have a chance to express their grievances around waste management through the provided Grievance Redress Mechanism (GRM) should that need arise. Each stakeholder's role, in terms of waste management should be clearly spelt out in stakeholder consultation meetings, disclosures and consultative meetings.

The Waste Management measures define ways in which the community should be informed of waste management-related information, including the transportation and management of incident-related wastes in or near the community. The most effective methods of notifying the community about the risks that each waste stream may present to human health and the environment should be clearly spelt out and disseminated at stakeholder engagement opportunities. Communication channels for waste management information should be clearly stipulated be it through the media, community meetings and any other channels that may be identified. If there are possible ways to increase public understanding and acceptance of decontaminated wastes, reused materials and recycled products, let this be known to all stakeholders and members of the community. All relevant personnel involved in waste management operations need to acquire have appropriate training regarding waste handling and management. Use of PPE should always be adhered to in all sub projects.

Waste Management Plan

Table 28 Waste Management Matrix

No.	Contractor Measures	Output Indicator	Means of Verification	Time Frame	Responsible Person	Legal Limits / acceptable criteria
1.0	**General Measures**			**Construction phase**		
1.1	Develop & implement staff training program (at induction and through Toolbox Talks)	# of staff trained	Training/toolbox talks/progress reports	Ongoing	Contractor	IFC Performance Standards (2012) 1 & 3, ESS 1 & 3
1.2	Work fronts and office waste handling activities	# of clean sites	Progress reports	Ongoing	Contractor	IFC Performance Standards (2012) 1 & 3, ESS 1 & 3
1.3	Identification and implementation of measures for avoiding or reducing waste generation at work fronts as far as practicable.	Amount/type of waste generated	Waste register/progress reports	Ongoing	Contractor	IFC Performance Standards (2012) 1 & 3, ESS 1 & 3
Waste handling &storage						
1.3	Waste segregation at source: color coding/bin labelling	% of labeled storage containers for different types of waste onsite	Inspection/progress reports	Ongoing	Contractor	MBS waste Handling Standards
1.4	Designation of secure temporary waste storage areas on sites for various waste types: hazardous/general. Provision of proper storage containers, waterproof flooring and signage	# of sites with availability of secure waste storage yards	Inspection/progress reports	Ongoing	Contractor	MBS waste Handling standards
Non-Hazardous Waste Transportation and Disposal						
1.5	Collection and transportation of	Covered	Inspection/progress	Ongoing	Contractor	MBS waste handling

No.	Contractor Measures	Output Indicator	Means of Verification	Time Frame	Responsible Person	Legal Limits / acceptable criteria
	waste without spilling while in transit to disposal site.	vehicle with tarpaulin	reports			standards
1.6	Regular (weekly) emptying and collecting waste for disposal	Frequency & quantity of waste disposed	Waste registers/ progress reports	Ongoing	Contractor	MBS waste handling standards
1.7	Prohibition of open burning of waste	# of sites with no evidence of waste burning on site	Inspection/progress reports	Ongoing	Contractor	MBS waste handling standards
1.8	When necessary, License shall be obtained from MEPA/District Councils for handling, transportation and disposal of waste according to EMA 2017	# of sites with licenses obtained	Copies of the Licenses	The first 2 months of commence ment	Contractor	EMA 2017
1.9	All construction solid waste that cannot be reused or recycled in a practicable and feasible manner will be disposed of by burying at preapproved offsite disposal site (Preapproval should be by environmental authorities and should be specific to the types of wastes proposed for burial)	Location of disposal site & amount of waste disposed	Waste registers/ progress reports	Ongoing	Contractor	MBS waste handling standards & EMA 2017
1.10	Prohibit dumping of waste in water bodies and general littering shall not be allowed.	# of sites with no trace of waste dumped in water bodies	Waste registers/ progress reports	Ongoing	Contractor	IFC Performance Standards (2012) 1 & 3, ESS 1 & 3
1.121	Other alternative disposal options will be evaluated on a situation-situation basis during construction and / or at start-up of work Phase.	# of sites with Identified alternative disposal	Progress reports	Ongoing	Contractor	MBS waste handling standards & EMA 2017

No.	Contractor Measures	Output Indicator	Means of Verification	Time Frame	Responsible Person	Legal Limits / acceptable criteria
		methods.				
1.12	Ensure that no waste materials are left at each project work site.	# of clean sites after sub-project closure	Progress reports	At the end of project	Contractor	IFC Performance Standards (2012) 1 & 3, ESS 1 & 3

Performance Monitoring

Inspections: Sites inspections will be performed by the Health, Safety and Environment (HSE) Officer of the Contractor on weekly basis. Waste quantity shall be recorded (as number of 200L waste bins collected and disposed per week). These inspections will ensure that all commitments in this plan are being enforced and that specific waste management elements are verified.

Data Collection: Waste material register should be maintained to ensure the measurement of eliminated waste and of residual matter sent for reuse, recycling and others.

Audit: Six months since commencement of the project, a waste management audit should be performed, on sites all waste data collected, to identify waste streams and fate and develop ways to reduce waste production.

Roles and Responsibilities

The roles and responsibilities inherent to this waste management plan are as per table below:

Table 29 Roles and Responsibilities

ENTITY	RESPONSIBILITY
PCU	• Enforce the Waste Management Plan. • Contractually obligate the contractor to meet the requirements of this Waste Management Plan.
Contractor	• Employ a person responsible for overseeing matters of environmental management. • Provide garbage receptacles to allow for waste segregation. • Develop a site-specific Waste Management Plan for the activities the Contractor is undertaking. • Educate all members of staff on the waste hierarchy. • Education is to be provided to each staff member prior to commencement of work, and regular refresher sessions are to be undertaken in the form of toolbox talks or training sessions throughout the contract period. • Provide and distribute Information, Education and Communication (IEC) materials to everyone on sites
District Councils/MEPA/other stakeholders and authorities	• Conduct audit and monitoring activities

Contractor Responsibilities

THE CONTRACTOR and any of its sub-contractors working on site will be required to adhere to the requirements of this General Waste Management Procedure and all applicable environmental documentation and legislation.

THE CONTRACTOR will provide enough training to all staff to ensure that they are aware of the relevant aspects of this Procedure and are able to fulfil their respective environment and waste management functions.

THE CONTRACTOR will, if required appoint a reputable waste service provider to assist with safe disposal of any hazardous waste.

Table 30 Specific Contractor Responsibilities:

Responsible Person	Responsibility
Project Director	• Will ensure that there are enough resources (people and money) to manage and monitor the waste issues of the project. • Will ensure that the Waste Management reflects any changes during the construction process that may have a significant environmental impact and manage them accordingly. • Will ensure the waste records are returned to Head Office for review.
Project Manager	• Will be responsible for ensuring that all site staff, including sub-contractors, and activities comply with the General Waste Management Procedure. • Will ensure that all environmental incidents are reported and dealt with effectively.
HSE Officer	• Will ensure that environment and waste management activities comply with applicable ESHS standards and all project Safeguards Instruments. • Ensure that signage for waste segregation and other relevant safety signs are clearly posted as required. • Will ensure a chemicals usage register is kept on site.
Site Supervisors	• Will work in close coordination with the HSE Supervisor. • Will be responsible, with the assistance of the HSE officer, for ensuring at their level that all site staff, including sub-contractors, works in accordance with the environmental requirement relevant to their activity. • Will be responsible for reporting to the Project Manager and/or to the HSE Officer any deviation from the Environment Management System requirements, or any environmental incident that they could observe on the site.

Record Keeping

Data on waste production and disposal will be gathered continually via waste registers. These records will be maintained on site and made available to all authorities and any other body to audit or assess the waste management practices on site. This data will include the final destination of each waste stream and where disposal has occurred proof of safe disposal will be required (such as stamped waste disposal ticket issued by a sanitary landfill). A cost will be paid for safe disposal of any hazardous wastes. Evidence of waste disposal will always be maintained.

Annex 11: Hazardous Substance Management Framework

This Hazardous Substance Management Framework presents the activities to be conducted to support the safe handling of hazardous materials and waste during the project implementation of the Project in compliance with the Occupational Safety, Health and Welfare Act 1997, the Environment Management Act (EMA) 2017, the Public Health Act 1948 and the World Bank's EHS Guidelines on Environmental Hazardous Materials Management. The production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCB's, wildlife or products regulated under CITES will not be supported under this project.
This Framework provides instructions for the safe handling, storing, containment, use transportation, treatment and final disposal of hazardous materials and waste in order to prevent releases to the environment, and prevent human exposure.

It should be noted that this plan is intended to serve as a framework and a guide to the contractor on the safe handling and management of hazardous materials and waste. Therefore, the instructions provided in this document are general, also given that specific sub-projects are not known yet. The contractor will be required to develop a specific plan, which will guide the management of hazardous materials and waste. The plan will identify the specific hazardous materials and the anticipated hazardous waste and create an inventory for the same. The contractor will also establish standard operating procedures (SOP) for the safe handling and transportation of hazardous materials and waste.

The Environmental Management Act (EMA) 2017 gives powers to the District Environmental Officer (DEO) under the Environmental Affairs Department to be the advisor and lead in all matters relating to the environment at district level. Similarly, the Public Health Act 1948 gives powers to the District Environmental Health Officer (DEHO) under the Directorate of Health and Social Services to lead on matters of public health/environmental health at district level. Therefore, throughout the implementation of this project, all matters relating to the safe handling, storage, containment, transportation, treatment and final disposal of hazardous materials and waste will be done with the guidance of the DEO and DEHO of the respective districts where the project is being implemented. Disposal of hazardous waste will be guided by the two council representatives (DEO and DEHO). Sign sheets bearing signatures of all representatives witnessing the disposal will be prepared and filed by the contractor as evidence that the disposal was handled and guided by the Council Authorities.

During project works, the following hazardous materials and substances are anticipated to be in use. Quantities cannot be estimated at this point.

Table 31 Anticipated hazardous materials

Material name	Usage
Diesel	For fueling vehicles and plants
Motor oil	Used as lubricants in vehicles
Welding rods	For welding works
Paints, thinners, waterpoofers, cleaning solvents (Lead-free)	For painting and cleaning of equipment and tools
Batteries	For electrical powering of vehicles and tools
Gasoline	For fueling vehicles

Gas	For hot works
Carbolineum	For preservation of timber and wood
Solignum	For preservation of timber and wood
Concrete additives	Where concrete is used
Decaying organic materials	e.g. in culverts
Preservatives, herbicides and pesticides	For landscaping

General Guidelines for the Management of Hazardous Materials and Waste

According to the OSHWA 1997, Section 51, the following general guidelines must apply when managing hazardous substances and waste in Malawi:

- Manufacturers, importers and suppliers of hazardous substances used at workplaces, including those in the agricultural sector, shall provide sufficient information on such substances with the precautions to be taken.
- In the use of all materials containing hazardous substances and during the removal and disposal of wastes; the health of the workers and of the public and the preservation of the environment shall be safeguarded.
- Hazardous substances shall be clearly labelled giving their relevant characteristics and instruction on their use.
- Containers of hazardous substances shall carry, or be accompanied by, instructions for the safe handling of the contents and procedures to be followed in case of spillage.
- In application of hazardous substances preference shall be given to means other than spraying, such as by brush or, where feasible roller. Caution should also be exercised in terms of the location where the activity will be undertaken, in order to avoid contamination of soil or water.
- Where the use of toxic substances or other volatile chemical substances, including thinners and paints cannot be avoided, special control measures, including local exhaust ventilation, shall be instituted.
- Where the use of hazardous chemicals is likely to penetrate the skin and cause rash, skin contact with hazardous chemical shall be avoided and personal hygiene and the type of clothing worn shall be such as to enable rapid removal of any chemical from skin contact.
- Where it is necessary to deal with proven carcinogenic substances, particularly in work involving bituminous tar, asphalt, asbestos fibers, pitch, heavy oils, and aromatic solvents, strict measures shall be taken to avoid inhalation and skin contact.

The framework further follows the instructions in the World Bank EHS Guidelines as well as GIIP. The World Bank EHS Guidelines provide the following guidance:

- Establishing hazardous materials management priorities based on hazard analysis of risky operations identified through Social and Environmental Assessment;
- Where practicable, avoiding or minimizing the use of hazardous materials. For example, non-hazardous materials have been found to substitute asbestos in building materials, PCBs in electrical equipment, persistent organic pollutants (POPs) in pesticides formulations, and ozone depleting substances in refrigeration systems;
- Preventing uncontrolled releases of hazardous materials to the environment or uncontrolled reactions that might result in fire or explosion;

- Using engineering controls (containment, automatic alarms, and shut-off systems) commensurate with the nature of hazard;
- Implementing management controls (procedures, inspections, communications, training, and drills) to address residual risks that have not been prevented or controlled through engineering measures.

Hazardous Materials Management

The construction contractor will be responsible for complying with the legal requirements for the handling, storage, transport, use and disposal of hazardous materials and hazardous waste, in compliance with sections 39 to 44 of EMA 2017 and the World Bank's EHS Guidelines on Environmental Hazardous Materials Management. The contractor will be responsible for implementing the performance requirements identified in this Framework.

Definition of Hazardous Materials

Hazardous materials and wastes are defined in the EHS Guidelines as materials that present a risk to human health, property, and the environment due to their physical or chemical characteristics. These can include: explosives; compressed gases, including toxic or flammable gases; flammable liquids; flammable solids; oxidizing substances; toxic materials; radioactive material; corrosive substances; chemical fertilizers; soil amendments; chemicals, oils, and other hydrocarbons; paints; pesticides; herbicides; fungicides; asbestos; metal waste; hospital and pharmaceutical waste; used batteries; radioactive medical waste; fluorescent light bulbs and ballasts; byproducts of plastic incineration at low temperatures; and polychlorinated biphenyls (PCBs) in electrical equipment. Generally, the term “hazardous material” refers to materials brought on site for use during construction. When a hazardous material is no longer usable for its original purpose and is intended for disposal, but still has hazardous properties, it is considered a hazardous waste.

Minimization of Hazardous Materials

To the extent possible, the contractor will minimize the use of hazardous materials. The contractor will make every effort to use chemicals presenting the least environmental hazard wherever possible or substitute hazardous materials with safer alternatives. During construction activities, hazardous materials will be properly used, stored, and disposed of in accordance with manufacturer recommendations and the national regulations.

Hazardous Material Inventory

Hazardous materials stored on site and used during construction will be documented in the Hazardous Materials Inventory. A Hazardous Materials Inventory Form is included in Annex A. The Hazardous Materials Inventory Form will be completed by the construction contractor for new materials brought on site or if the amount to be stored on site changes significantly. The hazardous materials inventory will be maintained by the contractor and a copy should be shared with the OHS Specialist of the PCU. The

contractor shall ensure that all hazardous materials come with Safety Data Sheets (SDS) and that the SDS are available and accessible to the people handling the hazardous materials.

Restrictions on Hazardous Waste

When categorizing solid waste as hazardous, it becomes subject to subsequent restrictions. Hazardous waste will not be disposed of or recycled alongside regular trash or waste, burned, or allowing it to evaporate into the air. Additionally, hazardous waste will not be disposed of or diluted in water (such as by pouring it down the drain), nor can it be disposed of or buried in the land or water bodies.

Waste Labelling, Storage and Transport

Where possible, hazardous materials will be kept in original containers clearly marked/ labelled with information such as waste type, hazards, accumulation start date, and generator information and the containers will be displayed with appropriate warning signs around hazardous waste storage areas to alert personnel and visitors to the presence of hazardous materials and will be periodically inspected by the assigned personal. Specifically for PCBs and oils the following should be ensured:

- Stored at a dry, leakproof place to prevent rain water from reaching the stored PCB
- An adequate floor that has continuous curbing with a minimum of 6 inch high curb. The floor and the curbing must provide a containment volume equal to at least two times the internal volume of the large PCB containers stored.
- Appropriate secondary containment structures consist of berms, dikes, or walls capable of containing the larger of 110 percent of the largest tank or 25% percent of the combined tank volumes in areas with above-ground tanks with a total storage volume equal or greater than 1,000 liters and will be made of impervious, chemically resistant material.
- No drain valves, floor drains, sewer lines, or other openings that would permit liquids to flow from the curbed area
- For the storage of tyres and waste tyres the following points should be observed:
- Store tyres on a level site away from surface watercourses, preferably indoors in well-ventilated and dry space. If outdoor storage is necessary, use tarps or covers to protect tyres from rainwater. Make sure the covers are securely fastened to prevent water accumulation.
- Provide all-weather vehicle access to the storage site
- Control vegetation or other fuel materials around the tyre storage pile
- Keep tyres away from potential sources of ignition or heat, including flammable or combustible liquids or other sources
- Keep tyres away from electric power lines
- Maintain sufficient separation distance to buildings and boundaries and between individual tyre piles

In general terms, procedures will be implemented by the contractor to prevent leaks and spills during storage and transport, such as:

Table 32 Procedures to prevent leaks and spills

Use of Hazardous Material Generation of Hazardous waste	**Mitigation Measures**	**Project phase**	**Responsible party**	**Monitoring indicators**
Use of Hazardous Material	Ensuring materials are stored in designated areas.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	% of materials stored in designated areas
Use of Hazardous Material	Storage area will be cool, dry and away from heat and moisture to prevent chemical reactions. The storage area should be secured with restricted access and out of reach by children and the public.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	% of storage areas that meet the requirements
Use of Hazardous Material Generation of Hazardous waste	Different hazardous materials or waste should be stored separately to prevent reactions or cross-contamination.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	% of hazardous waste that is stored separately
Use of Hazardous Material	Materials will be stored on impervious surfaces or within secondary containment to prevent spills or leaks from infiltrating the ground.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	% of materials stored appropriately

Use of Hazardous Material	The area will also have appropriate drainage system to handle rainwater and prevent the accumulation of water within the containment area. This will help to avoid water contamination from runoff during wet weather.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	# of areas with appropriate drainage system
Use of Hazardous Material	Only necessary quantities of materials will be stored.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	% of materials that are necessary
Use of Hazardous Material	Only containers designated for storing hazardous materials will be used.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	% of materials stored in designated containers
Use of Hazardous Material	Incompatible materials will be stored in segregated areas and will not be placed in the same containers.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	# of incompatible materials that are stored in segregated areas
Generation of Hazardous waste	Hazardous waste containers will remain closed during transfer and storage, except when it is necessary to add or remove waste.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	% of containers that are closed during transport
Use of Hazardous Material	Only personnel trained in handling of hazardous materials will be allowed to perform these tasks.	Construction, Operation and Maintenance	Construction phase: Contractor	# of personnel trained

Generation of Hazardous waste			Operation and Maintenance Phase: Relevant local authorities	
Use of Hazardous Material	No hazardous materials will be stored in proximity of wetlands, waterways, and waterbodies.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	# of hazardous materials stored in proximity to wetlands
Use of Hazardous Material	Hazardous materials are prohibited in the following areas: Food and beverage consumption areas; Recreational facilities ; Washrooms; Meeting rooms; Carpeted area; Common areas accessible or used as a gathering location by the public; Personal and administrative offices	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	# of hazardous materials stored in forbidden areas
Use of Hazardous Material Generation of Hazardous waste	Transportation procedures will include weekly inspections of storage and containment areas, inspection of containers prior to transport, and documentation of corrective actions taken to prevent leaks and spills.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	Evidence of regular inspections
Use of Hazardous Material	Qualified personnel will properly label hazardous materials containers, keep containers in good condition, follow written procedures for the transport of hazardous materials.	Construction, Operation and Maintenance	Construction phase: Contractor Operation and Maintenance Phase: Relevant local authorities	% of materials labeled appropriately

Training

All project personnel will be provided with project-specific training to ensure that all hazardous materials and wastes associated with the project are handled in a safe and environmentally sound manner and disposed of according to applicable rules and regulations. Specifically, employees handling wastes will receive hazardous materials training and will be trained in hazardous waste handling procedures, as well as OHS control measures and on the use of PPE, spill contingencies and waste minimization procedures. The training will also include information regarding the use of appropriate PPE when handling hazardous materials and waste. Also, the employees will receive awareness about the importance of proper waste management and its potential impact on the environment and health.

Inspections and Records

The contractor will regularly inspect hazardous materials storage areas for spills or leaks from containers. Regular inspections will be performed during construction and maintenance or rehabilitation to reasonably prevent spills or leaks. These inspections will be completed weekly. If a spill or leak is detected, immediate action will be taken to clean up and implement the necessary corrective actions. The inspections and corrective actions will be documented, and records maintained on site. A Spill Log/Report Form is included in Annex B. A Spill Log/Report Form will be completed by the construction contractor in the event a leak or spill is discovered.

The contractor should maintain accurate and up-to-date records of all hazardous waste activities, including waste generation, transportation, and disposal.

Hazardous Waste Management

The contractor is fully responsible for identifying, handling, storing, and transporting hazardous wastes in accordance with the provisions in the EMA section 42. The construction contractor will be responsible for implementing the hazardous waste management procedures in this Framework. The contractor will be supervised and monitoring by the PCU.

Hazardous Waste Generation: Typical wastes that may be generated during construction activities are paints, spent solvents, waste lubricants, spent oil-absorbent materials, and impacted soil. Equipment that is decommissioned as part of the replacement of unstable structures will be disposed of or recycled in accordance with waste management guidelines and by-laws as guided by the respective District/City Councils within which work is being done and World Bank ESF requirements. Utility wood pole waste may be generated during decommissioning of existing lines. Utility wood pole waste will be reused by ESCOM elsewhere to minimize waste.

Storage, Containerization, and Labeling: Hazardous waste will be accumulated and stored on site during construction. Hazardous waste will be managed by the construction contractor in conformity with the EMA guidelines and ESF requirements. The contractor will maintain a readily accessible supply of spill control measures, such as absorbent pads; implement secondary containment measures as warranted; and conduct periodic inspections. Accumulation periods will be monitored, and disposal of hazardous waste will occur in accordance with the by-laws of the City/District Councils in which work is being carried out and according to the World Bank's Environmental Health and Safety Guidelines.

Hazardous waste must be packaged in containers compatible with the waste and a completed label affixed at the time the waste is first added to the container.

Treated wood pole waste will be stored safely before it is dispatched for reuse by ESCOM. Stockpiles of treated wood will be placed on plastic sheeting or comparable material. Stockpiles of treated wood will also be covered with plastic sheeting or comparable material and surrounded by a berm, prior to the onset of precipitation.

Transportation and Disposal: All hazardous wastes will be handled in a safe and environmentally sound manner. Hazardous wastes will only be stored at designated hazardous waste storage areas that would be used for hazardous waste collection or consolidation. Hazardous waste may be generated at any of the individual work areas or "remote sites" but will be stored at "consolidation sites," which will be secured static project work areas. "Remote sites" will use the closest "consolidation site" during project construction for hazardous waste storage. A remote site is one where hazardous waste is generated but is not routinely staffed and is not adjacent or connected to a secured project site. Many work areas, primarily along the transmission line, qualify as remote sites. Waste from remote sites will be handled and transported to a consolidation site in accordance with the applicable guidelines.

- The procedures for transportation of hazardous materials should include:
- Proper labeling of containers, including the identify and quantity of the contents, hazards, and shipper contact
- information
- Providing a shipping document (e.g. shipping manifest) that describes the contents of the load and its
- associated hazards in addition to the labeling of the containers. The shipping document should establish a
- chain-of-custody using multiple signed copies to show that the waste was properly shipped, transported and
- received by the recycling or treatment/disposal facility Ensuring that the volume, nature, integrity and protection of packaging and containers used for transport are appropriate for the type and quantity of hazardous material and modes of transport involved
- Ensuring adequate transport vehicle specifications
- Training employees involved in the transportation of hazardous materials regarding proper shipping procedures and emergency procedures
- Using labeling and placarding (external signs on transport vehicles), as required
- Providing the necessary means for emergency response on call 24 hours/day

Hazardous waste must only be accumulated for a limited and specific amount of time. The length of time for the accumulation of hazardous waste is based on the waste profile, quantity, and the rate of generation. Hazardous waste has a 90-day limit (180 days for small quantity generators), PCBs greater or equal to 50 parts per million have a 30-day limit, and Universal Waste has a 1-year limit.

Only approved hazardous waste transportation vendors and disposal facilities may be used to transport and dispose of hazardous waste. A hazardous waste disposal permit shall be obtained from the District/City Council before disposal is done. An Environmental Health Officer from the Council should be present during the disposal of hazardous waste and s/he should provide guidance on how the waste

should be disposed of and where. Where there is no District Officer an official from Environmental Affairs Department will provide guidance.

Inspections and Records: The contractor will regularly inspect hazardous waste storage areas for containment systems, waste management practices, spills or leaks from containers. Regular inspections will be performed during construction and maintenance to reasonably prevent spills or leaks and to ensure that the site is meeting all legal requirements and performance standards. The inspection will be performed periodically and in response to specific incidents or complaints. For sites undergoing closure or remediation, inspections will be performed before and after the process to ensure that closure requirements are met and to monitor the site's stability and safety.

For hazardous waste storage areas, a comprehensive record of the types and quantities of hazardous waste generated, stored, transported, and disposed of at the site will be maintained. Detailed reports documenting the findings of routine, compliance, and emergency response inspections will be recorded. These reports will outline any issues identified and the actions taken to address them. Copies of all permits and licenses related to hazardous waste management will be kept on file, demonstrating the site's authorization to handle hazardous materials. Records of hazardous waste management training provided to employees, contractors, and personnel involved in site operations will be maintained. For hazardous waste transported off-site, detailed records of shipments, manifests, and disposal receipts will be kept tracking the waste's final destination and ensure proper disposal. Documented weekly inspections are required and records will be maintained on site. If a spill or leak is detected, immediate action will be taken to clean up and implement the necessary corrective actions. The inspections and corrective actions will be documented, and records maintained on site. A Spill Log/Report provided in Annex B, will be completed by the construction contractor in the event a leak or spill is discovered.

Performance Requirements: As a summary, the following performance requirements related to hazardous waste management will be adhered to by the construction contractor:

- Clearly identify and secure hazardous waste storage area to prevent the release of hazardous substances to surrounding areas or groundwater.
- Site isolation to restrict access, ensuring that only authorized personnel can enter the area.
- Take preventative measures to avoid spills or leaks in hazardous waste storage areas or during handling or transport of wastes.
- Promptly clean up spills or leaks and document the corrective action.
- Limit the storage of hazardous waste to designated storage areas.
- Prohibit overnight storage of hazardous waste in non-secure storage areas.
- Perform risk assessment to identify potential hazards and assess the level of risk posed by hazardous substances at the site.
- Risk management strategies, such as implementing institutional controls or engineering measures, to mitigate identified risks.
- Ensure adequate health and safety measures to protect workers and the public from exposure to hazardous materials during site cleanup and ongoing maintenance.
- When feasible, implement waste recycling programs for all applicable waste streams.
- Properly label all waste containers and keep incompatible wastes segregated.
- Assure that all containers are kept closed when waste is not actively being added or removed.
- Train construction personnel in proper hazardous waste management procedures
- The hazardous waste site must comply with all relevant local, state, and federal regulations and standards governing hazardous waste management and cleanup, and management and disposal in line with the World Bank ESF requirements.

Training: All personnel working in construction will receive environmental training and training on the requirements of the World Bank EHS Guidelines.. This training does not relieve the construction contractors of the responsibility to train employees as required by the OSHWA of the Republic of Malawi. Workers responsible for managing generated waste, conducting hazardous waste inspections, or involved in emergency response procedures will be trained on hazardous materials and waste management procedures, emergency and spill response procedures, and waste minimization procedures. The training will also include information regarding the use of appropriate PPE when handling hazardous materials and waste. Also, the employees will receive awareness about the importance of proper waste management and its potential impact on the environment and health. Training records will be maintained for records.

Management and disposal measures of different types of hazardous materials and waste

Fueling and Maintenance of Construction Equipment: the contractor will be responsible for communicating the fueling and maintenance spill prevention measures to construction personnel to prevent leaks or spills of hazardous materials. The following fueling and maintenance spill prevention measures for construction equipment will be implemented, as applicable, during the construction or rehabilitation:

- Refueling of construction vehicles and equipment will occur within the Project work areas, but not within 200 meters of drains or waterways with flowing water or within 75 meters of drains or waterways that are dry.
- The contractor must obtain a refueling license from Malawi Energy Regulatory Authority (MERA) and he is obliged to use MERA approved methods only.
- Spill-proof fuel containers with tight-fitting caps will be used to minimize the risk of fuel spills during refueling.
- Plastic liners or drip pans will be placed under construction equipment while refueling.
- Plastic liners or other control measures will be used for fuel storage tanks to prevent spills from directly contacting the soil.
- Drip pans or other control measures will be placed under construction equipment when not operating to capture oil leaks.
- Construction equipment will be inspected daily for leaks and failures to ensure proper functioning.
- Used filters, rags, and other waste materials generated during maintenance will be properly disposed to prevent potential contamination.
- Hazardous materials, such as used oil and fuel, will be disposed of according to regulations and World Bank EHS guidelines.
- The above spill prevention measures will be implemented during all construction activities. When it is not practicable to use these measures, personnel will use appropriate precautions to prevent spills through safe work procedures and will be efficient in spill response procedures.

Gas:

- Gas cylinders will be stored upright so that residual liquefied gas cannot contact the cylinder valves.
- Secured by a chain or rack so they cannot fall over
- Gas cylinders will be kept in well ventilated area, preferable a cage outside to reduce the risks associated with leakage
- Located away from radiant heat or anything that could cause fire
- Segregated so that volatile and incompatible gases are not stored together.

- Labeled and tagged so that staff and contractors know exactly what's inside and that it has been tested as "safe to use".
- No employee will be allowed to perform any hot works unless a hot permit is obtained prior to commencing as outlined in the health and safety management plan.

Waste batteries

To manage waste batteries, this plan encourages "reduce" and "recycling" strategies.

- ***Reduce:*** Maintain and protect batteries to prevent damage and charge loss by visiting the dealers as per schedule to ensure that batteries are regularly tested and maintained. Test batteries prior to disposal to confirm the battery is spent. Replace non-rechargeable batteries with rechargeable batteries where possible
- ***Recycle:*** Service batteries to extend life**.** Send spent batteries to recyclers. Make an agreement with the suppliers/distributors of the batteries to return the waste batteries.

Sensitive Habitats

Spill prevention is particularly critical in and around any sensitive areas including habitats for special-status species, and wetlands, waterways, and water bodies. Most of the sites targeted in this project are where the lines are crossing rivers. Therefore the particular sensitive areas of concern are wetlands and water bodies.

T

he following preventative measures will be implemented during equipment fueling and maintenance activities, particularly for construction work areas along the transmission line:

- No fueling will occur within 200 meters of drains or waterways with flowing water or within 75 meters of drains or waterways that are dry;
- Spills will be immediately cleaned up as described in this plan;
- Applicable secondary containment will be implemented where hazardous materials must be stored or fueling must occur adjacent to sensitive habitats.

Cleanup Procedures

The construction contractor will document containment and clean-up measures taken in the event of a spill or release of hazardous materials or hazardous waste. The spent spill response material, contaminated media, and spent PPE will be placed into appropriate containers, properly labeled, and placed in an appropriate area until the hazardous waste can be transported and disposed at an appropriate disposal site.

Spill or release response procedures will depend on the following factors:

- If large quantities of hazardous materials were released;
- If specialized PPE is required for the cleanup;
- If property owners or the community are concerned about the release;
- If there is a threat to the public;
- If there is a threat to surface waters;
- If a sensitive environment is or may be affected; or
- If a highway or roadway is affected.
- When cleanup has taken place, the following information should be well documented and recorded:
- Actions taken to contain the spill and prevent it from spreading further

- The cleanup procedure applied
- The methods and equipment used during the cleanup. This may include the use of barriers, absorbent, or other containment materials.
- The timelines for the cleanup activities
- Challenges encountered during the cleanup exercise.

Spill containment Measures

The best way to deal with a spill is to stop it before it even happens. If it is not possible, to provide spill containment at the source, so that it cannot spread into the environment. The following measured shall be followed to stop spills before they happen or contain them at the source:

- ***Inspect the containers:*** Regularly inspect all containers. This will help identify pinhole leaks before a major container rupture occurs. Daily or weekly check sheets will help to delegate responsibility and make sure that everyone plays their part. The Environmental Specialist of the Contractor has the responsibility to ensure that these checks are happening as scheduled.
- ***Use secondary containment:*** The use of secondary containment systems prevents a spill from spreading beyond a specific area. It should surround one or more primary storage containers to collect spillage in case of a failure
- ***Use spill preventing equipment:*** Equipment and accessories for storing and dispensing flammable liquids should meet regulatory standards. Safety faucets are self-closing and have drip proof replaceable seals. Safety drum vents maintain a constant pressure in the drum. They provide vacuum relief when drawing liquids out and emergency pressure venting in the case of a fire or excessive heat. Spill control funnels are designed to facilitate waste disposal. Their low profile enables quick liquid collection or passive draining.
- ***Train Employees:*** Having the right equipment to prevent and contain spills is a good starting point. Yet, spills may occur due to poor training of employees and lack of supervision. Regularly update work procedures and work instructions to ensure everyone is up to date with the equipment in use and the operating context. Train employees on how to use spill prevention equipment. Supervise activities to keep the workplace safe and environmentally friendly.

Documentation

The construction contractor will complete required documentation on the Spill Log/Report FormAnnex B. The documentation will include records of spill or releases, regardless of the quantity. The Spill Log/Report will be maintained at the construction site for records.

Emergency Release Response Procedures

Emergency release response procedures provide guidance for personnel to respond safely and quickly to hazardous materials spills or releases to prevent adverse impact to human health or impact to surrounding environmental media such as streams, lakes, wetlands, or storm water system or sensitive areas including conservatories and wildlife areas. The emergency release response procedures stated in this section will be implemented by the contractor. The contractor will follow the emergency release response procedures for the Project. Construction personnel, construction monitors, and other field personnel will be trained on the emergency release response procedures. The emergency release response procedures will be documented on the Emergency Release Response Form provided in Annex B.

Table 33 Typical Response Steps in the Event of a Release of Hazardous Material

Typical response steps in the event of a release of hazardous materials:	
ASSESS THE SITUATION & DEFINE A SAFETY PERIMETER	Identify the product (look at labels, placards or other markings). Refer to the product's SDS/MSDS. Keeping a safe perimeter, carefully locate the source of the release. Assess the source of the release (such as drum, storage tank or other container) to assist with the approximation of quantity spilled. If the spill has reached a drain or watercourse, it can no longer be contained and external parties and potentially surrounding communities will have to be immediately notified.
DETERMINE RESPONSE LEVEL	**What's the response level required?** **LEVEL 1:** You are trained and capable to handle response **LEVEL 2:** Require additional assistance from internal resources **LEVEL 3:** External third-party assistance required
CAREFULLY STOP OR CONTROL THE RELEASE	Approach the spill site with the wind at your back. Only if the situation is deemed safe to do so (For example: eliminate source of leak/spill by turning off valves, taps, faucets or other controls). Cover grates/drains/sewers.
CONFINE THE SPILL OR CONTAIN THE PRODUCT	Contain the spilled product in the smallest possible space close to the source. Avoid directing the product toward the sewer system or body of water
NOTIFY AUTHORITIES AND THE PUBLIC (AS APPROPRIATE)	If the spill is no longer under your control, notify the District Environmental Officer or fire/police (emergency response agencies). Notify the public (if necessary).
RECOVER SPILLED MATERIALS	The product must be recovered quickly to limit its migration or spread, taking into consideration the properties of the product and weather conditions
SAFELY DISPOSE OF CONTAMINATED MATERIALS AND WASTE	Store wastes separately from in-use products. Use an accredited contractor. Obtain a disposal permit from the District/City Council.
PREPARE AN INCIDENT REPORT & REPORT TO THE AUTHORITIES	Use Environmental Emergency (Spill Response) Incident Form. Site Manager will assume responsibility for informing and reporting to District Authorities as a result of the environmental incident
REPLENISH RESPONSE SUPPLIES	Conduct a spill kit inventory check, document. Restore spill kit equipment, ensure used PPE is clean or replaced.

Emergency Release Response Equipment

The construction contractor will maintain the spill response equipment listed below. The location of the spill response equipment will be identified on site by the site manager and communicated to construction personnel during training. The contractor will be responsible to maintain a current inventory of spill response equipment and regularly inspect and service equipment per manufacturer's recommendations. Construction vehicles will be equipped with spill response kits.

- The following material will be available at designated location(s) throughout the Project areas that are under active construction and easily accessible in the event that a spill may occur:
- Large 55-gallon drum spill kits or "spill attack kits" will include:
- 3-ply or greater disposable plastic bags,
- 50 to 100 count 16-inch by 20-inch oil sorbent pads,
- 10 count 3-inch by 4-inch socks (if needed),
- Four pairs of Nitrile gloves,
- Two pairs of splash goggles, and
- A copy of the spill response procedure sheet.
- Vehicle spill kits will include:
- 3-ply or greater disposable plastic bags,
- 16-inch by 20-inch oil sorbent pads,
- One to two pairs of Nitrile gloves, and
- A copy of the spill response procedure sheet.

Evacuation

The contractor will identify the emergency evacuation procedures for material yards, staging areas, and other construction work areas. The procedures will identify the methods for communicating the evacuation of onsite personnel and surrounding neighbors in the event of a serious incident. The emergency evacuation procedures prepared by the construction contractor will identify nearby hospitals and will provide the route from the site to the nearest hospital. These procedures and evacuation areas will be communicated in training and during onsite safety briefings to all personnel that visit the construction site.

Annex A. HAZARDOUS MATERIAL INVENTORY FORM

Project:
Site Name
Site Location:
Hazardous Material Information ((Complete this form for each hazardous material used or stored on site)
Hazardous Material Name:
Hazard Classification: Toxic Flammable corrosive Other (Specify)
Instructions for safe handling:
Instructions for safe use:
PPE Requirement:
Instructions for safe disposal:
Is a SDS Available Onsite? Yes / No: (attach SDS)
New Hazardous Material or Quantity Change?
Quantity Stored Onsite:
Type of Container:
Size of Largest Container:
Location of Hazardous Material on Site
Inventory prepared by:
Requestor's Name: Date:
Signature
Supervisor's Name Date:

Signature
Emergency Response
I case of emergency; the Contractor must follow the instructions on the safety data sheet (SDS). Should there be need for medical attention, the contractor must call for an ambulance/emergency vehicle for referral to the medical center.
Emergency Medical Facility
Facility Name: Phone:
Address:
City:

Annex B. SPILL LOG/REPORT

REPORTABLE / NON-REPORTABLE QUANTITY SPILL	
Log Prepared by:	
Name:	Date:
Email:	Phone:
Location of the spill	
Specific Spill Information:	
Date of Spill:	Time of spill:
Material Spilled:	
Quantity spilled:	
Media affected: (Tick appropriately) Concrete / Asphalt / Water / Vegetation / Soil / Other If Other, please specify:	
Cause of spill:	
Extent of spill:	
Potential Threat to Surface and/or Groundwater, Human Health (Affect Groundwater/ residential areas, etc.)	
Impact Assessment **Impact of the spill on the:** **Environment** **Personnel** **Property** **Any observed damage or risks resulting from the spill**	
Response and Cleanup Action Taken: **Measures taken to protect the health and safety of personnel involved in the spill response** **Use of PPE during the clean up** **Measures taken to prevent similar spills in the future:**	

Date:	Time:
Name of Officer:	Signature:

Annex C: Emergency Release response Procedure

Typical response steps in the event of a release of hazardous materials:	
ASSESS THE SITUATION & DEFINE A SAFETY PERIMETER	Identify the product (look at labels, placards or other markings). Refer to the product's SDS/MSDS. Keeping a safe perimeter, carefully locate the source of the release. Assess the source of the release (such as drum, storage tank or other container) to assist with the approximation of quantity spilled. If the spill has reached a drain or watercourse, it can no longer be contained and external parties and potentially surrounding communities will have to be immediately notified.
DETERMINE RESPONSE LEVEL	**What's the response level required?** **LEVEL 1:** You are trained and capable to handle response **LEVEL 2:** Require additional assistance from internal resources **LEVEL 3:** External third-party assistance required
CAREFULLY STOP OR CONTROL THE RELEASE	Approach the spill site with the wind at your back. Only if the situation is deemed safe to do so (For example: eliminate source of leak/spill by turning off valves, taps, faucets or other controls). Cover grates/drains/sewers.
CONFINE THE SPILL OR CONTAIN THE PRODUCT	Contain the spilled product in the smallest possible space close to the source. Avoid directing the product toward the sewer system or body of water
NOTIFY AUTHORITIES AND THE PUBLIC (AS APPROPRIATE)	If the spill is no longer under your control, notify the municipal/provincial/territorial authorities, and/or fire/police (emergency response agencies). If you activate emergency services contact the region Communications Branch. Notify the public (if necessary).
RECOVER SPILLED MATERIALS	The product must be recovered quickly to limit its migration or spread, taking into consideration the properties of the product and weather conditions

SAFELY DISPOSE OF CONTAMINATED MATERIALS AND WASTE	Store wastes separately from in-use products. - Use an accredited contractor. Obtain a correctly completed waybill (i.e. hazardous waste transportation manifest).
PREPARE AN INCIDENT REPORT & REPORT TO THE AUTHORITIES	Use Environmental Emergency (Spill Response) Incident Form. Site Manager will assume responsibility for informing and reporting to provincial/territorial and/or other authorities as a result of the environmental incident
REPLENISH RESPONSE SUPPLIES	Conduct a spill kit inventory check, document. Restore spill kit equipment, ensure used PPE is clean or replaced.

Annex 12: Labor Management Procedures

ESS2 on Labor and Working Conditions and ESS4 on Community Health and Safety were identified as applicable for the project. In accordance with the requirements of ESS2, these Labor Management Procedures (LMP) were prepared. The purpose of the LMP is to set out the ways in which the PCU and all other implementers will manage all project workers in relation to the associated risks and impacts for the Project activities in Malawi. The objectives of the LMP are to:

(a) Identify the different types of project workers that are likely to be involved in the project
(b) Identify, analyze and evaluate the labor related risks and impacts for project activities
(c) Set out procedures to meet the requirements of ESS2, ESS4 and applicable national legislation.

The LMP will be applied with due consideration to the requirements of national laws, the interrelatedness of ESS2 with other ESS in general and with ESS4 in particular.

The LMP will be administered to different types of project workers as follows:

(a) **Direct Workers.** People employed directly by the PCU to work specifically in relation to the project at the Ministry.
(b) **Contracted Workers.** People engaged through third parties to perform work related to core functions of the project, regardless of location. Under this category are included employees of contractors or third party providers contracted to implement project activities.
(c) **Primary Supply Workers**. People engaged as primary suppliers. These include, for example, suppliers of construction materials like gravel or sand.
(d) **Community Workers**. People employed or engaged in providing community-based project interventions. These will include community members who will be performing minor unskilled labor activities.

The LMP will apply to Project workers including fulltime, part-time, temporary and seasonal. The Project scope does not have chances of employing migrant workers.

Labor Forecast

The Project will include the following components: Component 1: Risk Management and Climate Financing; Component 2. Infrastructure Investments and Sustainable Asset Management for Climate Resilience; Component 3. Adaptive Climate Services for Resilient Communities; Component 4. Project Management; and Component 5. Contingent Emergency Response Component.

The following labor requirements are expected per component. Numbers of workers are only rough estimations at this point.

Figure 4 Labor forecast per component

Project Component	Types of workers	Approximate numbers of workers	Timing of labor requirements
Component 1: Risk Management and Climate Financing	Direct workers in the PCU	Ca. 10 direct workers	Throughout Project life cycle

	Contracted workers for TA (through third party services)	Ca. 30 contracted workers for TA	Throughout implementation of C1
Component 2. Infrastructure Investments and Sustainable Asset Management for Climate Resilience	Direct workers in the PCU and NLGFC Contracted workers through construction companies Primary supply workers through supplier Community workers through contractor / as unskilled labor	Ca. 10 direct workers Ca. 100 contracted workers for rehabilitation and construction Ca. 10 primary supply workers Ca. 50 community workers	Throughout Project life cycle Sub-project planning and construction phase Construction phase Construction phase
Component 3. Adaptive Climate Services for Resilient Communities	Direct workers in the PCU Contracted workers for TA (through third party services) Contracted workers through construction companies Community workers through contractor / as unskilled labor	Ca. 10 direct workers 20 contracted workers for TA 10 contracted workers for piloting of guidelines 20 community workers for piloting of guidelines	Throughout Project life cycle Throughout implementation of C3 During piloting of guidelines During piloting of guidelines
Component 4. Project Management	Direct workers in the PCU	Ca. 15 direct workers	Throughout project implementation

The labor requirements of the Project show that the LMP will have to cater for all four categories of project workers as described in ESS2, namely direct workers, contracted workers, primary supply workers and community workers.

Relevant Provisions in Malawi Labor Legislation

Table 34 Relevant Provisions in Malawi Labor Related Legislation

	Issues	Malawi Legislation

1	Fundamental employee rights, non-discrimination	This is provided for under Part II of the Labor Relations Act (1996)
2	Contractual arrangements, terms and working conditions of workers	This is provided for under Part V and VI of Employment Act (2000)
3	Working hours	This is provided for under Part VI of Employment Act (2000) specifically Sections 36 which is on 'Normal working hours, weekly rest, etc.'; and Section 37 on 'Maximum daily working hours'.
4	Salaries and wages and frequency of payments	This is provided for under Part VII of Employment Act (2000) specifically on Sections 50 to 55
5	Leave provisions – annual, maternity, sick and holidays	This is covered in Employment Act (2000) specifically under Part VI (sections 40,44,45,46 and 47)
6	Retrenchment/termination of contract arrangements	This is provided for Under Part V Sections 28, to 31 of the Employment Act of 2000, Employment (Amendment) Act 2010
7	Prohibition against all forms of child labor	This is provided for under Part IV of the Employment Act of 2000 on 'Employment on young persons' specifically in sections 21 to 24
8	Prohibition against forced labor	This is provided for under Part II of Employment Act (2000), specifically on section 4
9	Freedom or association and labor unions;	This is provided for under Part II of the Labor Relations Act (1996)
10	Dispute resolution/grievance management systems	This is provided for under Part V of the Labor Relations Act (1996)
11	Safety provisions	Covered under Part V and VI of the Occupational Safety, Health and Welfare Act of 1997
12	Health and employee welfare provisions	This is provided for under Part IV and VI of the Occupational Safety, Health and Welfare Act of 1997

Labor Risk Assessment

As part of the labor risks and impacts identification, the following activities will assist in understanding the exposure pathways. However, it has to be pointed out that presented here are only key risks related to workers of predictable activities:

(a) The main activities for community workers will be light works construction and rehabilitation of water supply, clearing of access roads, clearing of irrigation channels etc…
(b) The main types of activities for contracted workers will be activities in the construction and rehabilitation of flood risk mitigation measures - including more complicated civil works (heavy equipment).

The table highlights and analyses the potential labor risks and impacts in view of the anticipated labor utilization and general baseline settings of the project areas.

Table 35 Labor Risk Identification and Analysis

Risk/Impact	Analysis (Magnitude, Extent, Timing, Likelihood, Significance)	Risk Mitigation Measures
ESS2: Labor and working conditions		
Labor standards are not in accordance to national laws and international standards	Actual labor practices may differ from labor standards and laws	Through the implementation of this LMP, including field level monitoring and supervision of construction sites, these gaps are addressed.
Underpayment of contracted workers or supply workers	Despite the existence of a legally defined minimum wage, there is a risk that local contractors and sub-contractors underpay the contracted or supply workers.	The project will enforce the minimum wage and implement it throughout the project / cascade it down to contractors. A workers' grievance mechanism will be adopted and implemented.
Labor disputes over contracts	It is possible that disputes over contracts emerge	The project will provide workers' GRM with an appeals mechanism outside of the direct employer.
Poor working conditions: Unsafe work environment	Due to the weakness of formal justice institutions, employees' working conditions are poor. The impact is significant in that it may manifest in exploitation of the very community that the project intends to benefit, community workers, but also contracted workers may be affected.	Supervision of Contractor Labor Management Practices is essential to mitigate against this risk. A contractor checklist will be used.
Poor working conditions: lack of workers' rights	Labor laws in Malawi may not be rigorously implemented and it is difficult for poor workers to seek judicial redress	The project needs to ensure, through rigorous workers' grievance mechanisms, that workers can articulate violations of their rights and receive redress.
Discrimination against women in employment / SEA/SH risks among workers	In most rural communities, women typically carry out household work. If there is no deliberate effort by the project to encourage the local women to thrive in contracted work or community work the risk of missing them as beneficiaries of potential employment is substantial. There is also a high incidence of SH of female workers by other workers, and discrimination in recruitment and employment of women generally.	Contractors are compelled to safeguard the interests of women, including gender parity at the workspace, prohibiting sexual harassment and other forms of GBV toward female workers by other project workers, appropriate sanitation facilities at workplace, and appropriate PPE for women. The Project will monitor these measures during field visits, and will require every worker to sign a CoC, as well as adopt and implement workers' GRM.
Use of child labor	The general minimum age for work is 14 (which is in accordance with ILO standards on minimum age where a country's economy and educational facilities are insufficiently developed). Children between the ages 14 and 18 to engage in the worst forms of child labor, violating international standards. However, there is a risk that underage children are involved in unskilled labor at the local level.	The minimum age of 18 will be enforced in recruitment and in daily staff team talks by contractors. All implementers will also supervise this through the Contractor Management Checklist. Field visits and observation will be undertaken and communities will be sensitized in regard to child labor.

Forced Labor	Forced labor takes place in Malawi, for example in the tobacco industry, There is a risk that forced labor will be deployed under the project, for example in the form of community workers.	Contractors' obligations will be spelled out in their respective contracts and the PCU will monitor full compliance, including through field visits and a strong workers' GRM.
Injuries at the workplace	Given that PPE may be scarce for contracted workers or community workers, and health and safety regulations may not exist or not be enforced.	Contractor occupational risk assessments and mitigation plans will be devised and implemented. The Project will conduct field monitoring visits and adopt and implement a workers' GRM.
ESS4: Community Safety and Health		
Labor influx and SEA/SH	There is likely to be internal movement of people from areas outside the project areas to seek employment and associated benefits from within targeted communities. Furthermore, contracted workers may be brought into communities to conduct construction works. Population movement due to labor influx may result in SEA/SH cases.	All contractors will implement the Labor Influx Management Procedure (see below); a SEA/SH Prevention and Response Plan.
Spread of diseases in communities, including HIV through labor influx	Population movement due to labor influx may result in the spread of HIV and other diseases.	All contractors will implement the Labor Influx Management Procedure (see below), including sensitization on preventing common diseases. Communication of risks will be conducted through locally appropriate means – targeting specific social groups and genders.
Contamination of drinking water supplies, ambient air quality and general nuisance from septic tanks and pit latrines.	The siting and operation of the latrines may create the potential for contamination of the water supply, ambient air and create diseases vectors.	Location of such facilities should be downstream or a minimum of 30 meters from water sources. The direction of wind is considered and the facilities are kept clean and hand washing will be observed.
Safety of flood risk reduction activities	The safety of the flood risk reduction activities may be compromised by the design of the subproject or by the selected location, which can have adverse impacts of the safety of the community.	Ensure that all proposed flood risk mitigation design, operation and maintenance regimes are designed and reviewed by qualified engineers. Adopt and implement GIIP Safety measures to ensure that flood risk mitigation activities are safe.

Institutional Arrangement for Implementation of LMP

Given the categories of project workers (direct workers, contracted workers, primary supply workers and community workers), this section lays out the operational arrangements amongst the various institutions that are collaborating with the Project to ensure the smooth implementation of the LMP. The requirements of the LMP apply to all categories of project workers and where there is a special emphasis for a particular category of workers, it is highlighted within the applicable section of the LMP.

The requirements of the LMP as applicable to the direct workers will be the responsibilities of the PCU. The PCU will however have an oversight role vis-à-vis other contractors or third party providers through direct reporting arrangement on the requirements of the LMP in particular and other ESMF requirements in general.

Contracted workers are those who will be employed by contractors or third party providers to execute the project activities. Where the LMP refers to contractor responsibilities, it also refers to any other third party provider. The contractor has the responsibility to ensure LMP implementation at the interface with its respective sub-contractors, while the PCU oversees the LMP implementation at all levels.

Contractors may engage community workers directly in rehabilitation or construction activities. They are therefore responsible for the full implementation of the requirements of the LMP as it applies to community workers in relation to ESS2, while the PCU will exercise oversight over labor management processes.

The Primary Suppliers are identified at the sub-project level by contractors or directly during sub-project screening and the applicability of the LMP will be affirmed at that time. Contractors have the mandate to ensure that all the procedures for primary supply workers are observed, though the PCU will have the overall responsibility. ESS2 applies a proportionality approach to oversight responsibility towards suppliers. That being said it is important that the project ensures minimum conditions in cases like quarries, or camp service suppliers, or any activities ongoing within construction sites.

Terms and Conditions

Government civil servants, who may provide support to the Project, will remain subject to the terms and conditions of their existing public sector employment agreement or arrangement as provided in the Malawi Public Service Regulations (MPSR) and other government circular. The Project staff and consultants, will remain subject to the terms and conditions of currently in place at the MoF**.** The following terms and conditions will guide management of workers engaged by the contractors under the project:

- Workers to be involved in the construction works should be at least 18 years of age;
- Workers will have an opportunity to negotiate their wages equal or above the government set minimum wage rate;
- Difference in wages will not be influenced by race, color, sex, language, religion, political or other opinion, nationality, ethnic or social origin, disability, property, birth, marital or other status or family responsibilities or other matters arising out of the employment relationship;
- payment of wages will be done at most on monthly basis on the last day of each month.

During recruitment of workers the Contractors will explain the terms and conditions prior to commencement of work. Section 27 of the Employment Act makes it mandatory for employers to give employees a copy of the written particulars of employment, signed by both parties within one month

of employment. Violation of the workers' Code of Conduct will constitute misconduct. In ensuring full compliance with the law in this regard, contractors will be required to furnish PCU with copies of the Written Particulars of Employment or copies of contract of all its workforce.

Key Procedures

The Project guided by the recognition of the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. The Project will promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions.

The PCU and contractors and all project workers will follow up in ensuring the full accomplishment of the objectives of ESS2 and ESS4 in specific.

Recruitment and Replacement Procedure

Procedure Objective
The objective of this procedure is to ensure that the recruitment process and placement of project workers is conducted in a manner which is non-discriminatory and employees are inducted to all essential work-related matters.

Procedure

1. Contractors submit a recruitment plan to the PCU for review and approval. The following details will be shown:
    i. Number of staff required
    ii. Intended working condition
    iii. Intended locations of staff
    iv. Job specifications in terms of qualification and experience
2. Contractor publishes the job invitation in the appropriate media (local press or direct invitation for contracted worker, or word of mouth through local leaders for community workers) to ensure all potential candidates have access to the information, including women and persons with disabilities, actively addressing risks of nepotism, or other forms of recruitment or employment discrimination.
3. Shortlist and recruit candidates ensuring the following;
    i. As far as possible, 50% shortlisted candidates are women.
    ii. As far as possible, 50% engaged employees are women.
    iii. Screen out candidates under the age of eighteen years.
4. On recruitment, ensure a contract of employment is signed voluntarily, for both contracted workers and community workers.
5. For community workers, contractors will have the terms and conditions discussed, explained, negotiated and documented through joint community meetings, with each community employee showing consent by appending their signature against the resolutions or signing the attendance register of the meeting which made the employment resolutions.
6. Before commencement of work, the contractor will ensure the employee is inducted on the essential work related issues, which include the following;

i. Key Job Specifications
ii. Terms and Conditions of Employment
iii. Special Codes of Conduct
iv. Disciplinary Procedures
v. Workers' Grievance Redress Mechanism

vi. Freedom to join and participate fully in Workers Association activities, Employment Council or Trade Union
vii. Key E&S aspects of the Project and its ESMF and other E&S instruments
viii. Emergency Preparedness

7. Maintain all such employment records available for review by the PCU, the World Bank, or Regulatory Authority.

Workers' Grievance Redress Procedure

a. Objectives of the procedure

The objective of this procedure is to settle the grievance between an employer and employee or between employees bilaterally before recourse to formal dispute resolution. Under the provisions of ESS2, the project will provide a grievance mechanism for all direct and contracted workers to raise workplace concerns. Workers will be informed of this grievance mechanism at the time of recruitment and the measures put in place to protect them from any reprisal for its use. The project will put in place measures to make the worker grievance mechanism easily accessible to all project workers.

b. Procedure

1. The PCU or the NLGFC will only engage contractors with registered code of conduct or who sign an undertaking to comply with the relevant provisions for contracted workers and contractors who will comply with community meetings resolutions on applicable rules in the case of community workers.
2. Contractors induct the employees on the applicable workers' GRM to be aware of their rights. All records of induction shall be kept and made available to the PCU.
3. In case of violation, the aggrieved employee must capture and present the details of the grievance to the person they report to or the supervisor's superior in case of conflict of interest.
4. The supervisor will verify the details and seek to address the matter within the shortest time (up to 48 hours).
5. The supervisor will escalate the matter if not resolved within 48 hours if a resolution is not found.
6. Where no resolution is found, the employee can escalate the matter to the sector specific institutions or courts who will resolve the matter between employer and employee. The Supreme Court's decision is final, where it has exercised lawful jurisdiction.
7. Where the formal courts are not accessible, do not exist in an area, or cannot render a judgment, the matter shall be reported to and handled under the PCU, for example through the Project Grievance Redress Mechanism (GRM). The PCU, in this case, will accommodate a fair agreement between the worker and the contractor.
8. The contractor shall keep records of all proceedings of grievance redress that are within their jurisdiction and furnish the PCU or NLGFC as part of the periodic progress reporting to the PCU.
9. All grievances of sexual nature (GBV/SEA/SH) should follow the SEA/SH Prevention and Response Action Plan referral pathways and complaints resolution mechanism.
10. In case of risk of retaliation, the employee may immediately escalate to the court system. If confidentiality is requested, the PCU will ensure it to avoid any risk of retaliation, including in its follow-up actions.
11. Community workers apply the Project GRM.

Occupational Health and Safety (OHS) Procedures

a. Objective of procedure

The objective of the procedure is to achieve and maintain a healthy and safe work environment for all project workers (contracted workers and community workers) and the host community.

b. Procedure

1. On procurement for contractors, the PCU or NLGFC will avail the ESMF, ESMP or other relevant E&S instruments to prospective bidders so that contractors include the budgetary requirements for OHS and community health and safety measures in their respective bids.
2. The contractors will develop and maintain an OHS management system that is consistent with the scope of work, duration of contract, national laws and WB EHS Guidelines on Occupational Health and Safety.
3. Contractors will adopt the sub-project ESMPs and where necessary develop Construction Environmental and Social Management Plans (C-ESMPs) to help manage construction risks.
4. Contractors appoint an appropriately qualified and experienced OHS/Environmental Officer whose responsibilities is to advise the employer on an OHS related issues.
5. Contractors prepare task specific risk assessment and safe working procedures for executing works;
6. Contractors provide preventive and protective measures, including modification, substitution or elimination of hazardous conditions or substances.
7. Contractor provides for appropriate training/induction of project workers and maintenance of training records on occupational health and safety subjects.
8. Contractor documents and reports on occupational accidents, diseases and incidents.
9. Contractor provides emergency prevention and preparedness and response arrangements to emergency situations including and not limited to:
    - Workplace accidents
    - Workplace illnesses
    - Flooding
    - Fire outbreak
    - Disease outbreak
    - Labor unrest and
    - Security
10. Contractors shall maintain all such records for activities related to the safety health and environmental management for inspection by the PCU or The World Bank.

Contractor Management Procedures

a. Objective of procedure

The objective of this procedure is to ensure that the PCU/ NLGFC have contractual power to administer oversight and action against contractor non-compliance with the LMP.

b. Procedure

i. PCU/ NLGFC shall avail all related documentation to inform the contractor about their requirements for effective implementation of the LMP.

ii. Before submitting a bidding for any contracted work, the contractor shall incorporate the requirements of ESMF and all other relevant E&S instruments

iii. Contractor to formulate, implement and review contractor specific Management Plans (C-ESMPs) as required by the ESMF and specifically the LMP including:
    - OHS plans
    - Labor Recruitment Plan
    - CoCs for employees
    - Waste management plan
    - Emergency plan

iv. Contractor to submit the progress reports on the implementation of the LMP and allow the PCU/ NLGFC access to verify the soundness of the contractor's implementation of the requirements of the LMP.

v. Where appropriate, PCU/ NLGFC may withhold contractor's payment until corrective action(s) is/are implemented on major noncompliance to the LMP. The following are some of the major noncompliance that contractors need to take note of:

- Failure to submit mandatory quarterly progress report
- Failure to avail for inspection specified documentation pertaining to the implementation of the ESMP, C-ESMP and LMP
- Failure to timely notify and submit incident and accident investigation report
- Failure to appoint or replace a competent and experienced EHS officer
- Failing to enforce C-ESMPs including provision of adequate appropriate PPE
- Recruitment of nontechnical staff from outside the local community.

Labor Influx Procedure

a. Objective of the procedure

The objective of this procedure is to capacitate PCU/ NLGFC and all contractors to mitigate the labor influx risk and impacts. The influx of workers and followers can lead to adverse E&S impacts on local communities, especially if the communities are rural, remote or small. Such adverse impacts may include increased demand and competition for local social and health services, as well as for goods and services, which can lead to price hikes and crowding out of local consumers, increased volume of traffic and higher risk of accidents, social conflicts within and between communities, increased risk of spread of communicable diseases, and increased rates of illicit behavior and crime, including GBV cases.

b. Procedure

i. Contractor shall ensure that all non-technical work is reserved for locals (identifiable with the host community and witnessed by host community leadership).

ii. Beneficiary selection and employment recruitment should verify the authenticity of the localness of potential employees.

iii. Contractor liaises with local leadership on enrolment for community workers while at the same time ensuring that no grievances derive from nepotism via utmost transparency in the selection process, announcing hiring campaigns early enough in community consultations and/or other outreach activities.

iv. Where there are camp establishments, contractor shall ensure camp management and community relations are good. If labor camps are required, special management plans need to be developed, or if smaller establishment, camp management reflected in the ESMP.

- Security within camp
- Social relations with community members should be cordial and consistent SEA/SH requirements in CoCs
- Waste management
- Water and sanitation
- Proper camp demobilization

v. Establish code of conduct for contract workers interaction with the host community. This may include:

- Access to camp by children, non-employed girls and women
- Appropriate language
- Time restrictions where required
- GBV/SEA/SH

- Good conduct if small numbers of workers are accommodated in communities rather than camps (requirements on when to establish a camp shall be included in the POM)

vi. Contractors should have own supply of, pay for accommodation offered by community to contracted employees.

vii. Contractor shall ensure that local supply shall not negatively impact the availability of resources for the local communities and sourcing of local wildlife shall be prohibited.

viii. Contractor shall provide a fully equipped first aid kit.

ix. Contractors to mainstream HIV issues in the workplace by providing HIV prevention training during induction and continuously during employment through health and safety talks.

x. Contractor to be fully aware of and be ready to implement the Workers' GRM.

Procedure for Primary Suppliers

Primary supply workers are employees of suppliers who, on an ongoing basis, provide goods and services to the Project. PCU/ NLGFC have oversight of the implementation of the LMP requirements in this category.

Objective of the procedure

The objective of the procedure is to ensure that labor-related risks to the project from primary supply workers are managed in line with the requirements of ESS2.

Procedure

PCU/ NLGFC will undertake the following measures:

i. Procure supplies from legally constituted suppliers. The legal registration ensures that the company is legally obliged to comply with all applicable labor laws and other laws in Malawi. This will include evidence of

- Certificate of incorporation
- Tax Clearance
- Value Added Tax certificate
- Registration of supplier with regulatory body for the goods or services where required

ii. Make a physical check on the supplier's labor management system, including

- employee contracts
- OHS
- any past work-related environmental or occupational incidents
- workers committee in place

iii. Check products quality certification and environmental rating where required

iv. Undertaking to take back waste for reuse, for example containers and packaging where applicable

vi. Possibility of training in safe use of product by community users where applicable

vii. Where potential child labor or forced labor or serious safety risks are identified in a specific sector or industry, in connection with the supply of goods, a mapping exercise should be conducted to identify suppliers relying on such goods.

viii. Where it is not possible to identify specific primary suppliers, the mapping should identify general industry labor issues relating to the supply of the respective goods.

Procedure for Community Workers

The activities in Component 2 and 3 may include the use of community workers in a number of circumstances, such as labor provided by the community in construction or rehabilitation activities. In these scenarios of community workers, the related occupational risks are perceived as low since they will be using simple tools and perform light work. Given the nature and objectives of such a project, the application of all requirements of ESS2 may not always be applicable. In all such circumstances, this procedure provides measures to be implemented to ascertain whether such labor is or will be provided on a voluntary basis as an outcome of individual or community agreement and if the employment terms and conditions have been fully discussed and agreed.

Objective of procedure

The objective of this procedure is to ensure the community workers offer their labor voluntarily and are agreeable to the terms and conditions of employment.

Procedure

PCU/ NLGFC will apply the following guidelines when dealing with community workers. Implementing Partners will develop standard TOR, working times, remuneration systems (depending on the type of work), methods of payment, timing of payment, and community CoC which will apply to all project activities. These will be developed during the project inception phase.

i. Produce a recruitment plan and have it reviewed and approved by PCU

ii. Meet and document resolution of meeting with the community on the intended community workers recruitment. The resolution shall include details on

- Nature of work
- Working times
- Age restrictions (18 and above, verification will be based on ID documentation)
- Remuneration amount
- Method of payment
- Timing of payment
- Individual signatory or representative signatory of meeting resolution
- Employment is voluntary
- Community CoC

iii. Induct community workers on key LMP issues, including

- SEA/SH
- Workers' and Project GRM
- OHS
- HIV awareness
- Safe use of equipment and lifting techniques
- Applicable PPE

Vi. Ensure that all proposed subproject designs, operation and maintenance regimes, specifically in view of flood risk mitigation activities, are designed and reviewed by qualified engineers.

Terms and Conditions of Project Workers

The specific terms and conditions for the different categories of project workers and different types of activities will be defined in the inception phase of the project, they will draw on currently applied terms and conditions by the PCU.

Monitoring and Supervision

The performance monitoring of this LMP will follow the same institutional arrangement as the monitoring and supervision of the ESMF. Detailed mechanisms are laid out above in the monitoring

section of the ESMF. In general, the PCU will be responsible for the monitoring of the implementation of the LMP. In particular, the Social Safeguards Specialist in the PCU will work directly to ensure that the LMP is fully implemented.

The Social Safeguards Specialist will undertake supervision missions and spot checks as per a schedule to be developed once sites have been selected. Through the initial activity- or site-specific screening process, the Social Safeguards Specialist will be aware of potential labor-related risks and impacts of activities and will develop a monitoring schedule around these.

Non-compliance of the LMP will be reported to the PCU Project Manager, and will be taken up in the regular E&S reporting.

Annex 13: Sexual Exploitations and Abuse (SEA) and Sexual Harassment (SH) Prevention and Response Plan

Objectives of the Plan

This Sexual Exploitation and Abuse (SEA) / Sexual Harassment (SH) Prevention and Response Plan has been developed to accompany the implementation of the Project and ensure that it does not have any negative impacts or further promotes SEA/SH. It presents operational activities as well as recommendations for SEA/SH risk mitigation measures that build on existing mechanisms. The SEA/SH Prevention and Response Plan is based on the commitments made by Malawi in its respective gender policies and laws, and on the commitment made in the ESCP. It provides procedures for grievances related to such abuses in relation to project activities. It is based on existing protection, prevention and mitigation strategies as coordinated through the GBV sub-cluster.

This Plan has been developed to accompany the implementation of the Project and ensure that the Project does not have any negative impacts or further promotes SEA/SH. It presents operational activities as well as recommendations for SEA/SH risk mitigation measures that build on existing mechanisms in the Project areas. The Action Plan also provides procedures for SEA/SH grievances in the project areas. It is based on existing protection, prevention and mitigation strategies and measures as coordinated through key actors and the GBV sub-cluster group in Malawi. The following activities are conducive to the recognition by all project contractors of the risks of SEA/SH and the specific vulnerabilities of women and girls. These measures will be updated as needed throughout the life of the project. SEA/SH response measures are designed based on WB recommendations for improving gender outcomes.[63]

The Plan includes the following sections: Strengthen institutional capacity for SEA/SH; prevention, capacity building and communication on SEA/SH for contractors, suppliers, and communities; inclusion of SEA/SH requirements in the tender processes; Preparation of SEA/SH risks assessments at sub-project sites; strengthening of GBV service provision and referral pathways; SEA/SH reporting protocol & referral pathways; and monitoring and supervision of the Plan.

[63] World Bank's Good Practice Note: Addressing SEA/SH in IPF with Major Civil Works, the Secretary-General's Bulletin ST/SGB/2003/13, dated 9 October 2003, on "Special measures for protection from sexual exploitation and sexual abuse", as well as the Secretary-General's Report A/71/818 dated 28 February 2017 on "Special measures for protection from sexual exploitation and abuse: a new approach".

Definition of SEA/SH

According to the World Bank Good Practice Note on GBV in civil works, 'GBV is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed gender differences.'[64] It can thereby occur in a variety of different ways, including through the infliction of physical, mental, and sexual harm or suffering' threats of such acts, as well as coercion and other deprivations of liberty. Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) are manifestations of GBV. Both are relevant for the Project. The Good Practice Note defines these as follows:

SEA: is the exploitation of a vulnerable position, differential power, or trust for sexual purpose; or actual or threatened sexual physical intrusion.

Workplace SH: are unwanted sexual advances; requests for sexual favors; and sexual physical contact[65].

SEA/SH-related Project Risks

The SEA/SH risk rating is considered to be *substantial*. Malawi has high rates of Gender Based Violence (GBV) including intimate partner violence, sexual violence. Key drivers include high rates of early marriage and childbirth, low levels of economic independence and low levels of education. While legislation exist to prevent and respond to GBV there is weak enforcement and critical national action plans on GBV require updating. Resources to address GBV are also limited and fragmented in the Southern Region. Within the Shire Valley GBV related incidences have been reported on other project sites where prevention and response measures are in place indicating the level of risks and tolerance for GBV by workers and in the community.

Labor influx is anticipated during construction with works located close to rural villages. There is therefore the risk of workers subjecting community members including minors to SEA/SH. This may take the form of rape as well as transactional sexual relations. SEA/SH may also occur on worksites, in camps or in exchange for employment opportunities on the project usually perpetrated by men against female workers. The Project will be implemented over a dispersed geographical footprint with multiple sites where male and female workers may be in close proximity or where male workers will be close to communities with limited supervision.

Grievance Redress Mechanism

The Project will establish a Project GRM, as described in the SEP and in the ESMF above. The GRM will provide a systematic mechanism for collecting suggestions and complaints from beneficiaries or those who consider that they have been harmed by the project. SEA/SH grievances can be reported through the GRM channels. All recipients will be trained in the appropriate handling of SEA/SH cases.

The PCU will contract a GBV service provider to assist the Project with SEA/SH related tasks. The GBV service provider will map SEA/SH reporting channels at the district level as part of the project´s

[64] World Bank, Good Practice Note. Addressing Gender Based Violence in Investment Project Financing involving Major Civil Works, September 2018, p.5.
[65] World Bank 2018, p.6

communication campaign. The PCU and the GBV Service Provider will ensure that a SEA/SH Focal Point is designated for key subproject areas at district level or above (depending on the subproject activities). The SEA/SH Focal Points with the GRM Team will be the designated persons to adequately refer SEA/SH complaints, if received directly and outside of the GRM. They will have specific responsibilities and will be trained on SEA/SH mechanisms. The PCU Social Safeguards Specialist and the GBV Service Provider will identify specific responsibilities and train the SEA Focal Points on SEA/SH mechanisms and to receive SEA/SH complaints, considering the degree of confidentiality and the need to refer victims to support institutions in (i) health; (ii) psychosocial; and, (iii) legal support.

Cases of SEA/SH will be reported through the Project GRM. The GRM Operators will be trained to receive those cases in an appropriate manner and specific responsibilities in handling SEA/SH complaints will be identified prior to receiving complaints. The GRM will be implemented in all Project districts and will be operationalized in all the geographical areas of the Project.

Complaints can be made physically or remotely through the contacts and channels that must be available and disclosed in the community for the purpose. In the event of discomfort in filing the complaint, the complainant may choose to forward it directly to the PCU or the GBV Service Provider.

Generally, the PCU Social Safeguards Specialist or the GBV Service Provider will provide clarification to the complainant on the matter in question, with a view to resolving the complaint. Anonymous complaints can be registered, for which the complainant must provide detailed information and allow the case to be followed without, however, exposing the survivor.

If the perpetrator of the act is a project worker, it is important that the case is notified to the contractor management so that the appropriate penalties associated with the Action Plan and Code of Conduct (CoC) for GBV prevention are triggered. Depending on the severity of the complaint, the aggressor is referred to the police, and the victim for hospital and psychological care, if the victims consents.

Cases reported through the Project GRM: the GRM Operator needs to report the case immediately and in any case within 48 hours after learning of the incident. Cases reported through the SEA/SH Focal Points will be reported immediately and directly to the Project GRM, which will then report to the GBV Service Provider and the PCU. The SEA/SH Focal Points or GBV Service Provider will inform the victim about referral pathways and available GBV support services.

Staff receiving and/or reporting allegations who are not a designated SEA/SH focal points or members of the GRM team must upon consent of the affected person, inform a designated Sea/SH focal point, the GBV Service Provider or the PCU at the field or country level as soon as possible and provide accurate information about where to receive assistance including medical, legal, psychosocial support and reporting of cases to the police. All workers, SEA/SH focal points and the GBV Service Provider are bound to maintain confidentiality of all reported allegations, including the identity of complainant and subject.

Confidentiality: All grievance recipients and anyone handling SEA/SH must maintain absolute confidentiality in regards to the case. Maintaining confidentiality means not disclosing any information at any time to any party without the informed consent of the person concerned. There are exceptions under distinct circumstances, for example a) if the survivor is an adult who threatens his or her own life or who is directly threatening the safety of others, in which case referrals to lifesaving services will be sought; b) if the survivor is a child and there are concerns for the child's health and safety. The survivors need to be informed about these exceptions.

Informed Consent: The victim can only give approval to the processing of a case when he or she has been fully informed about all relevant facts. The survivor must fully understand the consequences of actions when providing informed consent for a case to be taken up.

Asking for consent means asking the permission of the victim to share information about him/her with others (for instance, with referral services), and/or to undertake any action (for instance investigation of the case). Under no circumstances will the victim be pressured to consent to any conversation, assessment, investigation or other intervention with which she does not feel comfortable. A victim can also at any time decide to stop consent.

Where possible, a consent form can be used (in cases of direct person-to-person reporting). By signing this form the victim can formally agree (or disagree) with the further processing of the case. The form will clearly state how information will be used, stored and disseminated.

If a survivor does not consent to sharing information, then only non-identifying information can be released or reported on. In the case of children, informed consent is normally requested from a parent or legal guardian and the children.

The GRM operators, SEA/SH Focal Points and staff of the GBV Service Provider will be trained in the process of obtaining informed consent and in emphatic and non-judgmental listening at the beginning of their deployment.

Table 36 Informed Consent Process

Informed Consent Process	
1.	Tell a victim what is going to happen to him/her.
2.	Explain to him/her the benefits and risks of an intervention (investigation)
3.	Explain that s/he has the right to decline or refuse any part of an intervention.
4.	Explain that pressure will not be exerted in any form.
5.	Explain that if the victim does not want to be interviewed about the event or does not agree to any further investigations, this will NOT affect access to health and other services and does not preclude participation in future proceedings related to legal justice.
6.	Inform the victim that there is no mandatory reporting in the setting.
7.	Inform the victim that information about him/her will be discussed in the team.
8.	Inform that the de-identified data for program information purposes
9.	Emphasize the security of client information
10.	Ensure that the victim understands what you have told him/her.

Empathetic and non-judgmental listening: All grievance recipients will further follow guidelines for empathetic, non-judgmental listening to a survivor when recording a complaint.

Table 37 Call Answering Protocol SEA/SH Cases

Call Answering Protocol for SEA/SH Cases	
1.	Answer call according to standard script
2.	Ensure confidentiality
3.	Collect intake information
4.	Provide emotional and psychological support
5.	Detect if there is immediate danger for the victim
6.	Explain informed consent, obtain if victim agrees
7.	Provide contacts for referral services and assistance to access then where required

Table 38 Guidelines for empathetic and non-judgmental listening

Guidelines for empathetic, non-judgmental listening to a survivor when recording a complaint.
➢ Listen, inquire, validate enhance safety and support
➢ Be patient and give compassionate responses to the caller, particularly because the caller is likely to be upset and in distress
➢ Responses will be dealt with in a calm way
➢ Do not make judgements or ask inappropriate questions
➢ Be sensitive to cues survivors may give

Registration of SEA/SH Cases: Registration of SEA/SH cases will take place through the form below, which is based on the World Bank's incident reporting format for SEA/SH cases. Most importantly, the victim will not be named and will only receive a Code. Employment of a coding system will ensure that the client names are not easily connected to case information. A data storage system will be selected that allows for the encoding of cases.

Table 39 SEA/SH Incident Reporting Form to be filled in within 24 hrs

B1: Incident Details		
Date of incident intake by the project/GM:	**Date Reported to PIU:**	**Date Reported to WBG:**
Reported to project/GM by: ☐ Survivor ☐ Third party ☐ Other: _____ **Is a record of this incident in GM?** Yes ☐ No ☐	**Reported to PIU by:** ☐ GM operator ☐ Directly, by Survivor ☐ Directly, by third party ☐ Other: _____	**Reported to WBG by:** ☐ PIU ☐ Directly, by Survivor ☐ Directly, by third party ☐ Other: _____

B2: Incident type (please check all that apply) See Appendix 1 for definitions
Sexual exploitation ☐ **Sexual abuse** ☐ **Sexual harassment** ☐

B3: Provide the following details from the GM record	
Age of survivor (if recorded in GM):	Have the national legislation or mandatory reporting requirements been followed? Yes ☐ No ☐
Sex of survivor (if recorded in GM): Male ☐ Female ☐ Other ☐	Was the survivor referred to service provision?[7] Yes ☐ No ☐
Is the survivor employed by the project (as indicated by the survivor or complainant and reported in the GM)? Yes ☐ No ☐	Is the alleged perpetrator employed by the project (as indicated by the survivor or complainant and reported in the GM)? Yes ☐ No ☐

B4: Basis for further action	
a. Has the complainant provided informed consent to lodge a formal complaint? Yes ☐ No ☐	c. Has the survivor provided informed consent to be part of an investigation into misconduct? Yes ☐ No ☐
b. Does the employer have a suitable administrative process and capacity in place to investigate misconduct relating to SEA/SH in a survivor-centered way? Yes ☐ No ☐	d. Has the complaint been filed anonymously or through a third party? Yes ☐ No ☐
If the answer to any of these questions is no, has the GM assessed the risks and benefits of carrying out an investigation into the alleged misconduct, taking into account the survivor's safety and wellbeing? Yes ☐ No ☐	
Will an investigation into misconduct be undertaken in addition to an investigation into adequacy of project systems, processes or procedures? Yes ☐ No ☐	

Table 40 SEA/SH Incident Reporting Form - to be filled in after investigations

C1: Findings of the investigation	
Have sanctions against a perpetrator been recommended as part of an investigation into misconduct? Yes ☐ No ☐	Has an investigation into adequacy of project systems, processes or procedures been undertaken? Yes ☐ No ☐

C2: Corrective actions to be implemented (To be fully described in Corrective Action Plan)		
Short Description of Action (SEA/SH examples)	**Responsible Party**	**Timeline for completion/Status**
Referral of Survivor to holistic care services		
Undertake disciplinary investigation in accordance with GM timelines and confirmed process		
Disciplinary actions, including sanctions, to be applied following misconduct investigation by Employer		
Increased training on Codes of Conduct (CoC)		
Audit of implementation of SEA/SH safety mitigation		
Strengthened awareness training on project-related risks, CoC and how to report incidents for project-affected community		
Training for project supervisors on the need to follow guidelines of behaviour in CoC and their supervisory responsibilities		
Plan to improve coverage/quality of service provision		
Any other system strengthening measures or corrections for system failures that are necessary		

C3: For incidents involving a Contractor:
Has the incident been referred to the DAAB? Yes ☐ No ☐

Service Referral Process

The GBV/SEA referral system will be coordinated by the GBV Service Provider, and will ensure that the victims receives all necessary services they may choose, including medical, legal, counseling, and that cases are reported to the police with informed consent of the survivor.

A survivor has the right to make an informed choice of services. Project staff and SEA/SH focal points, Project GRM and the GBV service provider will be able to provide comprehensive information about existing referral pathways. Referrals will always be safe, confidential, non-judgmental, and respectful. When the survivor is referred, explanation on services available and which conditions apply will be thorough. For instance, there is a 72 hour limit for post –Exposure Prophylaxis (PEP) in case of a sexual abuse survivor.

For the referral process, the sectors named below are required. The mapping of service providers will indicate which sector is available in which district or province prior to project activities commencing. The list will be kept up to date at any time and will only be established shortly prior to activity commencement to ensure that services are actually in place when required.

Table 41 Sectors and GBV related services

Sectors	Functions
Case care services (Counselor / Social Worker)	• Welcome, understand the victim's situation and makes the appropriate referral through the assistance. • Facilitate access to health services. • Discuss the patient's social situation with health professionals; • Monitor and stimulate the patient's health treatment • Provide information on GBV.
Security and Police Protection Services	• Ensuring protection and safety for survivors • Guarantee an emergency response (through the complaints and emergencies hotline) for survivors
Medical and psychological care services	• Provide medical or psychological assistance in hospitals, clinics or health centers; • Assess the victim's needs and plan actions to meet the needs; • Provide GBV information, advice and awareness to survivors; • Provide basic emotional support (counseling); • Monitor the needs of the survivor.
Legal Services	• Make sure that the victim is comfortable during the interview and medical examination; • Show maximum respect for the survivor's privacy; • Do not transmit any judgmental behavior during the interview.
Social Protection Services	- Advise, shelter for case management and support systems; - Facilitate referral to other services (security and other community support services).
Protection Services for Children	• Protect, monitor and ensure safety of minors under 18 years old.
Trafficking in Persons Services (Detection / Reporting / Rescue)	• Provide reporting information about trafficking cases to the investigative services.
Community Services	• Provide basic emotional support (counseling); • Monitor the needs of the survivor; • Promote socialization and community integration • Provide information about GBV.

GBV victims will be guided in the referral process according to their preferences, as the victim is more familiar with the circumstances and level of comfort with the choices and decisions available. However, an interdisciplinary multi -service process to ensure adequate support, safety and privacy for the victim is in place. The referral begins with the first GRM recipient it is necessary to determine the victim's age (underage victims need specialized support) then the victim receives the first follow-up by being referred to the GBV Referral Service, which will then guide the victim to counseling and other services, or provide the services itself.

Medical support, if necessary, is subdivided into psychological assistance for victims/survivors of all types of violence so that no trauma will result from GBV, and assistance to victims of physical aggression and victims of sexual violence where procedures are followed to deal with possible infections and pregnancy resulting from rape.

In case the survivor is a child, the consent of parents or guardians will be sought where it is in the best interest of the child and if they are not the perpetrators. All service provider interventions to child survivors must be undertaken with staff trained in child-friendly procedures in regards to the handling of cases. A child survivor will continue to go to school while procedures are on-going and all efforts will be done to ensure her/his protection. In addition to this, all the above reporting and referral procedures will be applied.

In this context, a child perpetrator is a boy or girl under 18 years of age who has allegedly committed an act of GBV against another person. In regard to child perpetrators, alternative justice procedures apply. Child perpetrators will undergo rehabilitation and psycho-social counseling.

Process for referring and addressing SEA/SH complains[66] :

(a) Fill in the Incident Reporting Form (see above). This information will be shared with the GBV Service Provider and the PCU Social Safeguards Specialist, who will then make a decision about further investigation.
(b) Provide accurate information about where to receive assistance e.g. medical/clinical, legal, psychosocial support (address, phone number).
(c) Establishing the appropriate procedure including the need for medical examination of the victim and the perpetrator where possible (clinical management of rape preferably must take place within 72 hours from the incident).

The GBV Service Provider and the PCU Social Safeguards Specialist will follow up on SEA/SH cases and ensure the survivor accesses appropriate services. Once the GBV Service Provider and Social Safeguards Specialist have both determined that the survivor has received all available assistance required, the case will be closed.

[66] Based on Worlds Bank Good practice note on addressing GBV.

Action Plan

Table 42 SEA/SH Action Plan

Risks and considerations	GBV prevention mitigation and response	Indicators	Responsible	Timeline
Women and girls are generally exposed to exclusion and vulnerability, SEA/SH (e.g. women and girls are excluded from all household and community levels activities (mainly due to lack of knowledge, rights and information on gender equality, SEA/SH), including in the construction/rehabilitation of infrastructure	**Identification and Recruitment of GBV Service Provider** **Project level initial SEA/SH risk assessment to understand the local realities, dynamics, trends, and magnitude of SEA/SH** in sub-project areas. This will also support community engagement in general and women and girls in particular for the project interventions. **Education and raising of awareness for women on SEA/SH.** Project beneficiaries will be made aware of the laws, reporting channels and services they can receive in case of an incident. **Signing of Codes of Conduct (CoC) with reference to SEA/SH by all project workers.** **Community awareness and disclosure of CoC.** CoC will be made available to the public in the activity areas, especially to identified project stakeholders through means described in the SEP.	GBV Service Provider recruited Initial SEA/SH assessment conducted, and report shared with all concerned stakeholders. % of project workers that have signed a CoC # of awareness sessions held in communities # of meetings with the community to share information about the project and the content of the CoC with communities.	Implementation: PCU and GBV Service Provider and Contractors Monitoring: PCU	Prior to commencement of sub-project activities Throughout project implementation
Limited knowledge of existing GBV service providers, protocols, and referral pathways	**Strengthen coordination and collaboration with relevant GBV prevention and protection service providers where they exist**, including through the GBV Service Provider, Protection Cluster, GBV Sub-Cluster and Child Protection Sub-Cluster to tap into the existing referral system in project areas.	# of coordination meetings between GBV Service Provider and other actors	Implementation: GBV Service Provider Monitoring: PCU	At the beginning of Project and throughout project implementation

Risks and considerations	GBV prevention mitigation and response	Indicators	Responsible	Timeline
	Mapping of referral services in subproject area. Map to be kept up to date at any time. Where no referral options exist, the GBV Service Provider will take on the case **Assessment of capacity and quality of services of existing GBV service providers** in project areas. **Classification of existing service providers according to their technical capacity on** SEA/SH (according to global standards) to update existing referral pathways. **Establishment of agreements with service providers** in subproject areas for potential referrals of project-related cases.	Map of GBV service providers available and working to attend GBV cases (disaggregated by location and type of service) Assessment and classification of existing providers available # of agreements with service providers have been entered	Implementation: GBV Service Provider Monitoring: PCU	Before commencement of relevant sub-project activities
	Implementation of the GRM reporting channels and of referrals to available services in all project areas (for all workers and community members). **Establishment of close working relations with local women and girls** to identify the most appropriate reporting channels that can be made available. **Training of GRM operators** in the process of obtaining informed consent and in emphatic and non-judgmental listening at the beginning of their deployment.	# of project areas with quality response services for survivors (case management, medical, legal, and psychosocial support) # of GBV survivors attended to, disaggregated by type of support provided # of registered SEA/SH cases # of SEA/SH cases handled within the deadline	Implementation: GBV Service Provider and GRM officers Monitoring: PCU	Throughout project implementation

Risks and considerations	GBV prevention mitigation and response	Indicators	Responsible	Timeline
		# of SEA/SH cases linked to project activities; # of referred SEA/SH cases # of SEA/SH cases follow-up report prepared for the period # of GBV Survivors referred to medical facilities. % of GRM Operators that have been trained		
Abuse of power, including SEA/SH and bullying in hiring, employment, and retention practices. Hiring and employment practices that seek to increase the number of women in different employment positions – from skilled labor within contractors (i.e. engineers) to female workers in construction works – can expose women to incidents of SEA (pressure to perform sexual acts in exchange for work), SH or violence.	**Development of GBV Action Plan guidance and checklists** for contractors on how to develop a simple and implementable mitigation activities , which will be included as a tender requirement for contracts.	% of contractors with SEA/SH measures in place # of contractors with SEA/SH actions that make reference to available GBV services in the subproject area	Implementation: GBV Service Provider, E&S Specialists Monitoring: PCU	Prior to commencement of sub-projects
Lack of involvement in economic and decision-making activities at household and community level poses vulnerabilities to SEA/SH. Having more control on resources may expose women and girls to violence, SEA/SH.	**Regular periodic review of interventions** to identify SEA/SH trends and magnitude during project interventions through, both, qualitative and quantitative approaches. **Strong post intervention monitoring**, internal and through third party, to analyze project	# of monitoring visits conducted per Quarter # of monitoring reports developed, reviewed, and share with all stakeholders featuring SEA/SH aspects	Implementation: PCU Social Safeguards Specialist Monitoring: PCU	Regular, at least on quarterly basis

Risks and considerations	GBV prevention mitigation and response	Indicators	Responsible	Timeline
	implications on women and girls in light of Do-No-Harm lens to see whether the project has contributed to women and girl's empowerment and not increased their vulnerabilities to SEA/SH.			

Patriarchal norms that lead to designs based on male, able-bodied models and priorities in infrastructure planning. Women and girls' exclusion from planning and design of spaces can result in interventions that either ignore, or exacerbate women and girls' risks of SEA/SH	**Include women in planning and consultation of interventions.** **Training of Direct Workers:** Train all direct workers and partners in SEA/SH issues to ensure maximum participation of women and girls in consultation processes to minimize exposure to SEA/SH. **Training of community workers**: Include training for all community workers deployed for their activities – prior to the start of activities. Training will include explanation of SEA/SH, roles and responsibilities of actors involved, SEA/SH incident report mechanism, accountability, and referral procedures as well as information on available SEA/SH services. **Request the inclusion of a provisional sum in sub-projects to cover the referral of SEA/SH** survivors with eligible complaints (i.e. complaints directly related to the implementation of the project) to existing GBV service providers in project-affected areas to facilitate access to timely, safe and confidential services for survivors.	% of women and girls interviewed during the design of infrastructure planning and design. % of direct workers that have been trained # of community workers that have been trained % of funds included as provisional sum for referral pathways	Implementation: PCU Social Safeguards Specialist and GBV Service Provider Monitoring: PCU	Throughout project implementation

Risks and considerations	GBV prevention mitigation and response	Indicators	Responsible	Timeline
Limited awareness of SEA/SH among the project team and **implementers as well as project communities** **Limited mechanisms** to respond to GBV challenges.	**GBV Service Provider to supervise and provide technical support for the implementation of the SEA/SH Action Plan.** GBV Service Provider to work in close coordination with contractors and oversee the implementation of the SEA/SH measures for all activities.	# Service Provider recruited	Implementation: GBV Service Provider, Social Safeguards Specialist Monitoring: PCU	Within 3 months of project effectiveness Within 6 months of project effectiveness

Monitoring

The PCU Social Safeguards Specialist will monitor the implementation and compliance with this Plan. The Specialist will monitor the referral and resolution of SEA/SH complaints, taking into account confidentiality of survivors. The monitoring will be facilitated by the use of a single file called "reference protocol". The Specialist will monitor the selected contractors' implementation of the Plan. The Specialist will monitor the implementation on a quarterly basis.

Quarterly reviews will focus on:

- Ensuring that all activities proposed have been undertaken and/or are on track.
- Monitoring and reporting on the effectiveness of the implementation of the SEA/SH Prevention and Response Plan.
- Reporting on progress on all activities and re-assessment of risks, monitoring of the situation as appropriate.
- Provision of the technical support if required by all implementers.

Non-compliance: Where quarterly reviews identify non-compliance with the Plan, the matter will be reported to the PCU Project Manager and the World Bank. The PCU will then seek clarification from the respective contractor and jointly develop a corrective action plan.

The PCU Social Safeguards Specialist will monitor that the SEA/SH sessions for contractors regarding the CoC obligations and awareness raising activities to the community are in place and implemented. SEA/SH sessions will take place during kick-off meetings with each contractor as well as monthly. The information gathered will be monitored and reported to the World Bank on a quarterly basis.

The table below contains specific indicators that will be monitored under this Plan, if needed, these indicators will be further refined by the PCU' E&S Team and the Monitoring & Evaluation Specialist.

Table 43 Monitoring and evaluation indicators

Sector	Activity	Indicator
GBV General	▪ Recruit GBV Service Provider ▪ Carry out GBV risk assessments ▪ Mapping of GBV service providers ▪ Workers to sign CoC with reference to SEA/SH	▪ # of survivors of GBV victims accessing counseling services disaggregated by sex & vulnerability ▪ # of SEA/SH cases taken care of within the deadline ▪ % of reported cases of SEA/SH addressed through the Referral Pathway Mechanism ▪ # of project areas with referral services for survivors (case management, medical, legal, and psychosocial support) ▪ # of project sites equipped with women´s friendly spaces ▪ # of training/refresher training on SEA/SH for staff
Awareness and communication	▪ Communication of information about Project, including CoCs with communities	▪ # of meetings with the community to share information about the project and the content of the CoC with communities

Sector	Activity	Indicator
contractors	▪ Include women in design and planning of subproject activities ▪ Project workers to sign CoC ▪ Induction for workers ▪ Explain GBV requirements at pre-bid conferences	▪ % of women and girls interviewed during the design of infrastructure planning and design ▪ # of contractors whose workers have signed the CoC ▪ # of trainings on GBV CoC for contractors. ▪ # of training materials reviewed by Social Safeguards Specialist ▪ # of budgets including a provisional sum for referral pathways ▪ # of pre-bid conferences held where GBV requirements are explained
Coordination	▪ PCU Gender Specialist hired ▪ Coordination meetings undertaken	▪ # of coordination meetings between with GBV sub cluster
GRM	▪ Training of GRM Operators in emphatic listening and informed consent ▪ Training of SEA/SH focal points in the same ▪ Completion of GRM Manual with specific reference to data management system that provides confidentiality	▪ % of GRM operators that have been trained ▪ % of SEA/SH focal points trained ▪ Completed GRM Manual

SEA/SH Requirements for Bidding and Execution of Contracts

- The contractor shall adopt and implement the SEA/SH Prevention and Response Plan for the works to be carried out and shall prepare the workplan considering relevant provisions of the ESMP. Help from the PCU or GBV Service Provider can be requested for the elaboration of the Plan.
- The contractor shall attend pre-bidding informative section on SEA/SH prevention and response.
- The contractor shall adhere to the Plan activity implementation schedule and the monitoring plan to ensure effective feedback of monitoring information to project management is provided and that impact management can be implemented properly.
- The PCU will designate the Social Safeguards Specialist and the GBV Service Provider to oversee compliance with the Plan. The contractor shall comply with directives from the PCU.
- If the contractor fails to implement the Plan within the stipulated time, he/she shall be liable and made accountable in accordance with the rules and regulations in place in Malawi.
- The contractor shall prepare monthly progress reports to the PCU on compliance with the Plan.
- The contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the specifications of the Plan, and are able to fulfil their expected roles and functions.
- The contractor shall comply with all relevant national laws and regulations relating to gender equality and GBV.

Sample - Code of Conduct

The Code of Conduct should be written in plain language and signed by each worker to indicate that they have:

- *received a copy of the code;*

- *had the code explained to them;*
- *acknowledged that adherence to this Code of Conduct is a condition of employment; and*
- *understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities.*

To Be Signed by All Employees, Sub-contractors, Engineer, and Any Personnel thereof.

I, _____ agree that in the course of my association with the Employer, I must:

- treat children and women with respect regardless of race, color, gender, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status;
- not use language or behavior towards children and women that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate;
- not engage children under the age of 18 in any form of sexual intercourse or sexual activity (other than in the context of legal unions that took place between parties under the laws of the country), including paying for sexual services or acts;
- Not engage sexually with any woman, in a situation, without mutual consent
- Wherever possible, ensure that another adult is present when working in the proximity of children;
- Not invite unaccompanied children into my place of residence, unless they are at immediate risk of injury or in physical danger;
- Not invite women into my place of residence if this is not acceptable by the code of ethics of the company;
- Not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor's permission, and ensure that another adult is present if possible;
- Use any computers, mobile phones, video cameras, cameras or social media appropriately, and never to exploit or harass children or access child exploitation material through any media;
- Not use physical punishment on children and women;
- Not hire children for domestic or other labor which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury;
- Comply with code of ethics of the company and all relevant local legislation, including labor laws in relation to child labor and behavior;
- Immediately report concerns or allegations of child and women exploitation and abuse and policy non-compliance in accordance with appropriate procedures;

- Immediately disclose all charges, convictions and other outcomes of an offence, which occurred before or occurs during my association with the Employer that relate to child exploitation and abuse.

When photographing or filming a child or using children's images for work-related purposes, I must:

- Assess and endeavor to comply with local traditions or restrictions for reproducing personal images before photographing or filming a child;
- Obtain informed consent from the child and parent or guardian of the child before photographing or filming a child. As part of this I must explain how the photograph or film will be used;
- Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive;
- Ensure images are honest representations of the context and the facts;
- Ensure file labels, meta data or text descriptions do not reveal identifying information about a child when sending images electronically or publishing images in any form;

I understand that the onus is on me, as a person associated with the Employer, to use common sense and avoid actions or behaviors that could be construed as child exploitation and abuse.

Signed:

Date:

Annex 14: Biodiversity Management and Rehabilitation Framework

This annex provides guidance on the preparation of site-specific biodiversity assessments (BDAs), biodiversity management plans (BMPs) and rehabilitation plans.

The overall objective of BDAs and BMPs and Rehabilitation Plans is to mitigate imminent identified risks to the aquatic environment, terrestrial environment, and their associated livelihoods, and bring the operational management into compliance with the relevant WB standards. Particular emphasis is put on the presence of sensitive habitats and species with a conservation status of concern (both flora and fauna).

Specific Objectives of a Flora Assessment are:

i. To identify the botanical attributes of the project, including:
   - Compilation of species lists of all observed flora species;
   - Description of the extent and type of native species present;
   - Verification of the presence of threatened species or vegetation communities (per the IUCN Red List) ;

ii. To quantify the botanical attributes of the assessment site (if necessary), to:
   - Identify the species and size class found within the site, and determine the ecological/habitat significance of each; and
   - Map the locations of threatened flora species and indicate potential habitat for threatened species.

iii. To quantify the regeneration and invasive species status of the area.

Specific Objectives of a Fauna Assessment are:

i. To identify the fauna present in the area including:
   - Compilation of species lists of all observed fauna species;
   - Documentation of the presence of threatened species or animal communities (per the IUCN Red List);

ii. To quantify the faunal attributes of the assessment site (if necessary), to:
   - Determine species diversity within and around the project, and determine the ecological/habitat significance of each;
   - Map the locations of threatened animal species and indicate potential habitat for threatened species;
   - Identify existing and potential invasive species and cross breeding status at the sites.

Specific Objectives for Aquatic Assessments are:

- Collect, collate and compile comprehensive baseline information on the aquatic and riverine/riparian ecosystems;
- Determine the significance of aquatic ecological impacts caused by the dams, taking direct, indirect and cumulative impacts into consideration;
- Identify and describe the potential structural and non-structural measures to at least maintain or increase the ecological flow downstream of the dams;
- Develop Biodiversity Management Plans for the affected dams under the project.

Methodology for Biodiversity Assessments (BDA)

Assessments should adopt the following methodology. The methodology should be adapted to the site-specific characteristics. Select:

- Spatial scale-procedures to determine project's area of influence, including maps.
- Terrestrial and aquatic area of influence.

Value of ecological resources and vulnerability of receptors

Terrestrial: In order to determine the value or integrity of terrestrial habitats, adopt the criteria shown in the Table below. Vulnerability of receptors was determined by employing the IUCN conservation status/value.

Table 44 Criteria for habitat integrity (William Latimer, 2009)

Criteria for defining habitat quality
High quality: • High degree of intactness (i.e. floristically and structurally diverse), containing several important habitat features such as ground debris (logs, rocks, vegetation), mature hallow-bearing trees, and a dense understory component. • High species richness and diversity (i.e. represented by a large number of species from a range of flora and fauna groups). • High contribution to a wildlife corridor, and/or connected to a larger area of high quality habitat. • Habitat that has experienced or is experiencing low levels of disturbance and/or threatening processes (i.e. weed invasion, introduced animals, soil erosion, salinity). • Provides known, or likely habitat for one or more rare or threatened species listed under the IUCN.
Moderate quality: • Moderate degree of intactness (i.e. floristically and structurally diverse), containing several important habitat features such as ground debris (logs, rocks, vegetation), mature hallow-bearing trees, and a dense understory component. • Moderate species richness and diversity (i.e. represented by a large number of species from a range of fauna groups). • Moderate levels of foraging and breeding activity, with the site used by native fauna for refuge and cover. • Moderate contribution to a wildlife corridor, and/or connected to a larger area of high quality habitat. • Habitat that has experienced or is experiencing low levels of disturbance and/or threatening processes (i.e. weed invasion, introduced animals, soil erosion, salinity). • Unlikely to provide known, or likely habitat for one or more rare or threatened species listed under the IUCN.
Low quality: • Low degree of intactness (i.e. floristically and structurally diverse), containing several important habitat features such as ground debris (logs, rocks, vegetation), mature hallow-bearing trees, and a dense understory component.

- Low species richness and diversity (i.e. represented by a large number of species from a range of fauna groups).
- Low levels of foraging and breeding activity, with the site used by native fauna for refuge and cover.
- Unlikely to form part of a wildlife corridor, and/or connected to a larger area of high quality habitat.
- Habitat that has experienced or is experiencing low levels of disturbance and/or threatening processes (i.e. weed invasion, introduced animals, soil erosion, salinity).
- Unlikely to provide known, or likely habitat for one or more rare or threatened species listed under the IUCN.

Determine the quality or value of vegetation using the criteria presented in the Table below.

Table 45 Criteria for vegetation integrity

Criteria for defining vegetation condition
High quality: Vegetation dominated by a diverse indigenous species, with defined structures (where appropriate), such as canopy layer, shrub layer, and ground cover, with little or few introduced species present.
Moderate quality: Vegetation dominated by a diversity of indigenous species, but is lacking some structures, such as canopy layer or ground cover.
Low quality: Vegetation dominated by introduced species, but supports low levels of indigenous species present, in the canopy, shrub layer or ground cover.

Aquatic: This section explains the criteria to be used in quantifying aquatic ecological resources in the project area of influence of influence. To evaluate instream and riparian ecosystems, the methodology developed by Kleynhans (1996) should be employed. Vulnerability of receptors can be determined by employing the IUCN conservation status/value. The Table below shows the criteria that can be used for aquatic habitat integrity assessment.

Table 46 Criteria for aquatic habitat integrity (Kleynhans, 1996)

Criterion	**Relevance**
Water abstraction	Direct impact on habitat type, abundance and size. Also implicated in flow, bed, channel and water quality characteristics. Riparian vegetation may be influenced by a decrease in the supply of water.
Flow modification	Consequence of abstraction or regulation by impoundments. Changes in temporal and spatial characteristics of flow can have an impact on habitat attributes such as an increase in duration of low flow season, resulting in low availability of certain
Bed modification	Regarded as the result of increased input of sediment from the catchment or a decrease in the ability of the river to transport sediment (Gordon et al., 1993). Indirect indications of sedimentation are stream bank and catchment erosion. Purposeful alteration of the stream bed, e.g. the removal of rapids for navigation (Hilden & Rapport, 1993) is also included

Criterion	Relevance
Channel modification	May be the result of a change in flow, which may alter channel characteristics causing a change in marginal instream and riparian habitat. Purposeful channel modification to improve drainage is also included.
Water quality modification	Originates from point and diffuse point sources. Measured directly, or alternatively indicated by human settlements, agricultural and industrial activities. Aggravated by a decrease in the volume of water during low or no flow conditions.
Inundation	Destruction of riffle, rapid and riparian zone habitat. Obstruction to the movement of aquatic fauna and influences water quality and the movement of sediments (Gordon et al., 1992).
Exotic aquatic fauna	The disturbance of the stream bottom during feeding may influence the water quality and increase turbidity. Dependent upon the species involved and their abundance.
Solid waste disposal	A direct anthropogenic impact which may alter habitat structurally. Also a general indication of the misuse and mismanagement of the river.
Indigenous vegetation removal	Impairment of the buffer the vegetation forms to the movement of sediment and other catchment runoff products into the river (Gordon *et al*., 1992). Refers to physical removal for farming, firewood and overgrazing.
Exotic vegetation encroachment	Excludes natural vegetation due to vigorous growth, causing bank instability and decreasing the buffering function of the riparian zone. Allochthonous organic matter input will also be changed. Riparian zone habitat diversity is also reduced.

Descriptive classes for the assessment of modifications to habitat integrity should be adopted from Kleynhans, 1996. These are shown in the Table below.

Table 47 Descriptive classes for the assessment of modifications to habitat integrity (Kleynhans, 1996).

Impact Category	Description	Score
None	No discernible impact or the modification is located in such a way that it has no impact on habitat quality, diversity, size and variability.	0
Small	The modification is limited to very few localities and the impact on habitat quality, diversity, size and variability are also very small.	1-5
Moderate	The modification is present at a small number of localities and the impact on habitat quality, diversity, size and variability are also limited.	6-10
Large	The modification is generally present with a clearly detrimental impact on habitat quality, diversity, size and variability. Large areas are, however, not influenced.	11-15
Serious	The modification is frequently present and the habitat quality, diversity, size and variability in almost the whole of the defined area are affected. Only small areas are not influenced.	16-20
Critical	The modification is present overall with a high intensity. The habitat quality, diversity, size and variability in almost the whole of the defined section are influenced detrimentally.	21-25

The Table below shows criteria and weights to be used for the assessment of habitat integrity (Kleynhans, 1996).

Table 48 Criteria and weights used for the assessment of habitat integrity (Kleynhans, 1996).

Instream Criteria	Weight	Riparian Zone Criteria	Weight
Flow modification	13	Exotic vegetation encroachment	12
Water quality	14	Exotic vegetation encroachment	12
Water abstraction	14	Inundation	11
Inundation	10	Water abstraction	13
Bed modification	13	Bank erosion	14
Channel modification	13	Channel modification	12
Exotic macrophytes	9	Flow modification	12
Exotic fauna	8	Water quality	13
Solid waste disposal	7		
TOTAL	**100**	**TOTAL**	**100**

Scores are then calculated based on ratings received from the assessment. The estimated impacts of the criteria are then summed and expressed as a percentage to arrive at a provisional habitat integrity assessment. The scores are then placed into the intermediate habitat integrity assessment categories (Kleynhans, 1996) as seen in the Table below.

Table 49 Intermediate habitat integrity assessment categories (Kleynhans, 1996)

Category	Description	Score
A	Unmodified, natural.	90 - 100
B	Largely natural with few modifications. A small change in natural habitats and biota may have taken place but the ecosystem functions are essentially unchanged.	80 - 90
C	Moderately modified. A loss and change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged.	60 - 79
D	Largely modified. A large loss of natural habitat, biota and basic ecosystem functions has occurred.	40 - 59
E	The loss of natural habitat, biota and basic ecosystem functions is extensive.	20 - 39
F	Modifications have reached a critical level and the lotic system has been modified completely with an almost complete loss of natural habitat and biota. In the worst instances the basic ecosystem functions have been destroyed and the changes are irreversible.	0 - 19

Evaluation of significance of Impacts

In the criteria for the evaluation of impacts that can be adopted for an assessment, the following factors should be considered in classifying each potential impact generated by the sub-project:

- **Frequency:** Occurrence of activity producing the impact, e.g. continuous, intermittent or a single event/less than once per year;
- **Likelihood:** Probability of impact occurrence (e.g., 100%, 50%, 0%);
- **Extent:** Spatial extent of the impact (e.g. within 2km of site boundary, outside the Project but within 20km, within 200km, within the country, outside the country.
- **Duration:** Extent in time of the impact. Short term impact (less than the life of the project), medium term impacts (equal to the lifetime of the Project) and long term impacts (greater than the lifetime of the Project);
- **Magnitude:** Impact magnitude defined in relation to the limit criterion specified by ZEMA or international standards where available.
- **Type of impact:** Positive or negative effect; direct or indirect action.
- **Potential significance:** A combination of all the factors described in the preceding bullet points is used to determine the type and significance of potential impact prior to mitigation. This is defined as low, medium or high.

The Table below presents the terminology that can be used to describe and rank environmental and social impacts according to the categories defined above.

Table 50 Terminology used to describe environmental and social impacts

Category	Terminology	Definition
Scope of Impact[(1)]		
Frequency	Frequent Infrequent Rare	Uninterrupted or on a daily basis Once or more per day Less than once per day Single event/less than once per year
Likelihood	Certain Likely Unlikely No impact	Impact possibility estimated to be 100% Impact possibility estimated as between 50% and 99% Impact possibility estimated as < 50% Zero estimated possibility of impact
Extent	Local Provincial Regional National International	Within 2 km of the Project Outside the Project area of influence but <20 km away Outside the Project area of influence but < 200 km away Within the country Outside the country
Duration	Short Medium Long	Less than the life of Project The life of project Greater than the life of Project
Magnitude[(2)]	Very low Low Medium High Very high	Defined in relation to the limit criterion where available, e.g.: • Very low: Parameter < 10% limit criterion • Low: Parameter 10 to <50% limit criterion • Medium: Parameter 50 – 100% limit criterion • High: Parameter 100 – 200% limit criterion • Very High: Parameter > 200% limit criterion. Or, for qualitative assessments:

Category	Terminology	Definition
		• Very low: No degradation/adverse alteration to resource/receptor • Low: Minor degradation/adverse alteration to resource/receptor • Medium: Moderate degradation/adverse alteration to resource/receptor. • High: Significant degradation/adverse alteration to resource/receptor. • Very High: Permanent degradation/detrimental alteration to resource/receptor.
Type of Impact		
Effect	Positive Negative	Beneficial impact Adverse impact
Action	Direct Indirect	Impact caused solely by activities within scope of Project Impact which does not result directly from by activities within the scope of Project, but which has a connection with the Project's presence.
Potential Significance		
Significance	Low Medium High	Any low magnitude impact, or medium magnitude impact that is unlikely to occur or is of short duration. Any medium magnitude impact that is certain or likely to occur and of medium or long duration. Also, any high magnitude impact that is unlikely to occur, of short duration, or local in extent. Any high magnitude impact that is certain or likely to occur, of medium or long duration, and regional in extent.
(1) (2)	All terms are characteristics of the impact(s). For example, duration refers to duration of impact, not the activity causing it. As indicated, the impact magnitude for some environmental aspects can be defined in relation to the limit criterion specified by national legislation or international regulations, or best practices when national standards are not available. However, in the absence of definitive quantitative criteria, a qualitative assessment of the magnitude is used relating to the impact type.	

Approach to Mitigation of Impacts

The conservation objectives and management actions in a BMP should be developed to ensure that the mitigation hierarchy is consistent with the World Bank approach, i.e. anticipate and avoid risks and impacts; where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; once risks and impacts have been minimized, mitigate; and, when significant residual impacts remain, compensate for, or offset them when technically and financially feasible.

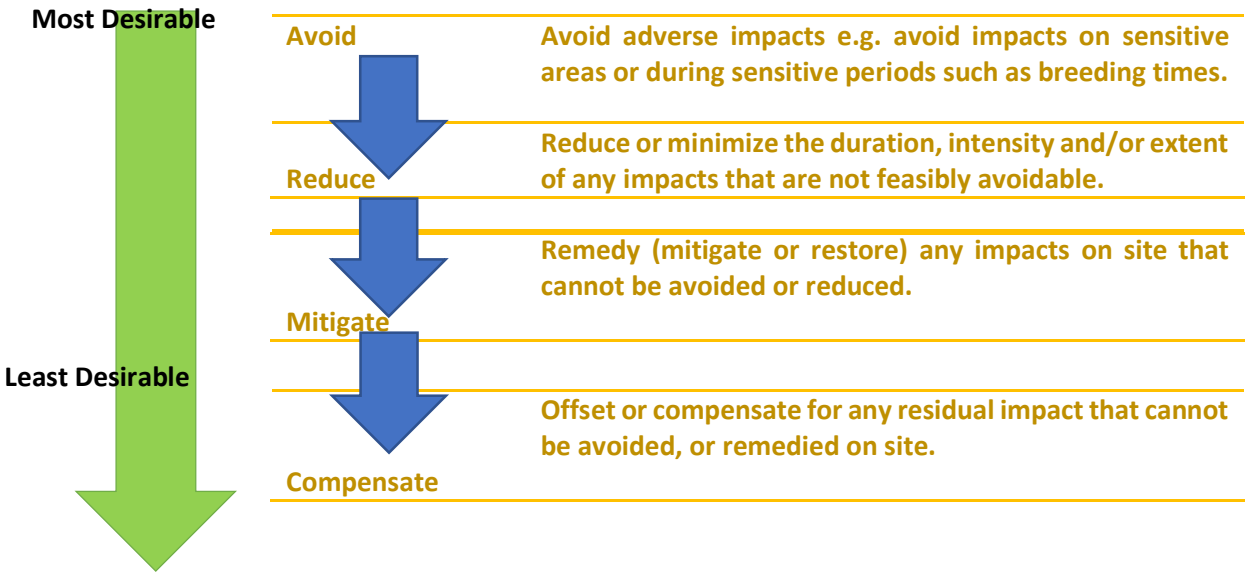


Figure 5 Impact Mitigation hierarchy to be adopted

Data Collection Methods

- Desk review
- Completion of field surveys
- Terrestrial field surveys
- Flora surveys
- Stratified Random Sampling
- Purposive Sampling and Point Count

Provide The coordinates for the locations of the sample plots.

The Table below shows the parameters that were taken from the main plots. All the measurements taken on the tree parameters from the main plot were recorded on the main plot data collection form (Annex B).

Table 51 Parameters measured from the main plot

Parameter	Comment
Diameter at Breast Height (DBH)	Taken on each tree in cm
Bole height	Taken in m
Total Height	Measured in m
Tree condition	Crooked, moribund, etc…
Tree species	Identified by use of check lists and KYT

Crown size	In m
Evidence of fire	
Health of canopy	In %
Vegetation type	forest etc.

The data collection team should comprise of an Ecologist, Assistant Ecologist and a local person. The 20m radius plots should be subdivided into semi-circle plots with each team handling one half of the plot. To ensure consistency in the data collection, the below protocol should be followed.

Table 52 Flora data collection protocols

Flora Data Collection Protocols	
1	*Measuring tree diameter* • For trees with diameters greater than 5cm, measure diameter of the tree at 1.3 m from the ground • Record diameter to the nearest 0.5 cm • A leaning tree should always be recorded on the lower or underneath side • If the tree forks or there is some deformity at 1.3m, get diameter below the fork and above the deformity respectively and indicate the "forked" or "deformed" in the remarks column of the main form. • If the tree breaks into two or more stems at or near ground level record measure diameter at 1.3m of the biggest tree
2	*Measuring tree height* • Height is read to the nearest 1 meter • Ensure that the horizontal distance to the centre of the tree from the observer is accurately taken • Ensure reading the correct scale • Ensure that the effect of lean on any measurement is corrected by taking readings from diametrically opposite points and average calculated or measurement to be taken at right angles to the plane of the lean. • Ensure that the device or instrument is in good working condition before use. • Always stand on the same level of ground as the tree, i.e. do not measure from up or down a slope but across the slope • If your vision is obstructed to the tip or top most branches of the tree either take a different baseline or estimate where the top is and record the height as estimated • If possible, always check the height using more than one baseline taken in different directions from the tree • If a tree is dead in its upper crown or dying back, the height recorded should be to the highest live branch, although the height it had reached will be of interest if not recorded before • For leaning trees get height from both sides (leeward and leaning)
3	*Regeneration* • Count all the tree species with diameter <5cm and height <50cm • Identify the tree species
4	*Health of canopy cover* • Measure the health of the canopy in percentage • Observe the canopy cover using the visual guide provided

- Interviews
- Invertebrates
- Aquatic field surveys
- Reconnaissance Survey
- Selection of sampling points

Terrestrial Assessment Results

Evaluation of Impact Significance Using the criteria explained above, the potential impacts that the proposed sub-project may have on the biodiversity in the area should be evaluated and reported in a Table format as below. The unmitigated values are shown below. It should anticipated that the impact significance will be lower once the proposed mitigation measures in the BMP are applied.

Table 53 EXAMPLE Impact evaluation and reporting

Impact	Sub Impact/Potential Source	Impact Description	Impact Evaluation (Assessment) (Unmitigated negative impacts								
			Frequency	Likelihood	Extent	Duration	Magnitude	Effect	Action	Sensitivity	Significance
1.0. TERRESTRIAL											
Site Preparation and Construction Phase											
Impacts on Terrestrial Biodiversity											
Increased clearing of flora for site preparation and access roads	Loss of Indigenous flora species/reduction in population i.e. stocks per area	Paving way or creation of space for access roads, setting up of construction camp as well as excavation of laterite (borrow pits) for construction works will certainly demand for clearing of vegetation in certain locations of the site	Rare	Certain	Local	Long	Medium	Negative	Direct	Medium	Medium
	Habitat fragmentation	Creation and/or rehabilitation of access roads, construction camp and setting up of working or operational areas will further fragment the already fragmented habitats on site	Rare	Likely	Local	Long	Low	Negative	Direct	Medium	Medium
	Loss of habitats and associated fauna	Vegetation clearing will result in loss of habitats for the fauna observed on site - birds, insects (invertebrates), mammals (mainly hares and mice) as while as reptiles (snakes and lizards) on site. Birds may also lose nesting trees. If not checked, this may consequently result in loss of fauna	Rare	Certain	Local	Long	Low	Negative	Direct	Medium	Medium

Impact	Sub Impact/Potential Source	Impact Description	Impact Evaluation (Assessment) (Unmitigated negative impacts								
			Frequency	Likelihood	Extent	Duration	Magnitude	Effect	Action	Sensitivity	Significance
Increased noise levels	Disruption of fauna activities	Noise from heavy construction machinery (vehicles), increased number of people on site and general workings on site will likely unsettle or disturb the fauna. Sleeping schedules, feeding movements and resting time may be affected in this regard	Rare	Likely	Local	Medium	Low	Negative	Direct	Low	Low
Increased vehicle-fauna collisions	Injury or mortality of fauna	Increased vehicular movement in the project area of influence may potentially result in collision with fauna on site that is not accustomed to this situation.	Rare	Unlikely	Local	Mediu	Low	Negativ e	Direct	Low	Low
Increased risk of hunting and trading in wildlife	Reduced fauna population	If in-migration occurs as a result of project implementation it will likely increase demand for food including game meat. This may increase the risk of hunting wild game for meat. For the same reason, trading in wildlife may increase	Rare	Unlikely	Provincial	Medium	Low	Negative	Indirect	Low	Low
Increased demand for medicinal use of flora and fauna as a result of In-migration	Increased exploitation of medicinal biodiversity in the project area of influence	Because of the increased population resulting from in-migration, the demand for medicines from flora and fauna is also likely to increase. This is likely to be the case because of lack of hospitals and clinics in the project area of influence	Rare	Unlikely	Local	Medium	Low	Negative	Indirect	Low	Low
Increased demand for firewood or wood based fuels	Debarking Cutting down of trees	Pressure on trees will increase with the increase in demand for firewood and wood based fuels which will be as a result of increased number of people in the area (in-migration)	Rare	Unlikely	Local	Medium	Low	Negative	Indirect	Low	Low

Impact	Sub Impact/Potential Source	Impact Description	Impact Evaluation (Assessment) (Unmitigated negative impacts								
			Frequency	Likelihood	Extent	Duration	Magnitude	Effect	Action	Sensitivity	Significance
Impacts on Terrestrial Habitats											
Destruction of existing habitats on site	Fragmentation and depletion of habitats	Project activities such as setting up of camp site, creation of access roads, creation of working area and claiming of laterite from borrow pits will contribute to the fragmentation and depletion of habitats on site	Rare	Likely	Local	Long	Low	Negative	Direct	Medium	Medium
	Reduced value or integrity of habitats	Mismanagement of project activities can result in contamination of habitats. These activities include handling of hydrocarbons (fuel, oils and hydraulic fluids), industrial and domestic waste can also contribute to this impact. If not properly handled, hydrocarbons and different streams of waste can further reduce the value of habitats on site	Rare	Likely	Local	Medium	Low	Negative	Direct/Indirect	Medium	Medium
	Introduction of Invasive species and pathogens	There is a possibility that Invasive plants and seeds may be accidentally or intentionally introduced into the project area of influence by workers through clothing, vehicular movements, and as ornamental plants. In case of fauna, introduction may be mainly through pets	Rare	Unlikely	Local	Medium	Low	Negative	Indirect	Medium	Low
Impacts on Biophysical Environment											

Impact	Sub Impact/Potential Source	Impact Description	Impact Evaluation (Assessment) (Unmitigated negative impacts								
			Frequency	Likelihood	Extent	Duration	Magnitude	Effect	Action	Sensitivity	Significance
Increased risk of fire occurrences	Reduced habitats/ecosystems value and increased risk of injury or death of flora and fauna	The presence of humans on site carries with it the risk of bush/forest fires as a result of cooking, smoking, arson as well as accidents. The results fires can negatively affect both habitats and biodiversity species on site	Rare	likely	Local	Medium	Medium	Negative	Indirect	Medium	Medium
	Injury or mortality of fauna		Rare	Likely	Local	Short	Low	Negative	Indirect	Medium	Low
Operations Phase											
Water Availability											
Increased water harvesting or storage in dam	Increased availability of water	Remedial works will increase the efficiency and capacity of the dam to hold water. This will make more water available for flora and fauna all year round. Stored water will also contribute to the charging of ground water system	Frequent	Certain	Local	Long	High	Positive	Direct	Medium	High
2.0. Aquatics											

Impact	Sub Impact/Potential Source	Impact Description	Impact Evaluation (Assessment) (Unmitigated negative impacts								
			Frequency	Likelihood	Extent	Duration	Magnitude	Effect	Action	Sensitivity	Significance
Site Preparation and Construction											
Compromised aquatic habitats for fauna and loss of breeding areas	Clearing vegetation	Creation of access roads, setting up of construction camp, clearing of vegetation during rehabilitation, could contribute to an increase of siltation within aquatic habitats.	Rare	Certain	Local	Long	Medium	Negative	Direct	Medium	Medium
Pollution of water Loss of noise quality	Stresses flora, fauna and habitats	Some materials used during site preparation and construction could pollute the water During construction, there will be an assortment of machinery operating, and an increased number of people. Ultimately, this could increase noise levels (pollution) in the area. This could stress some lifeforms	Rare	Certain	Local	Long	Medium	Negative	Direct	Medium	Medium
Increased fishing pressure	Reduced fish population	Project likely to increase number of people in the area. This could ultimately translate into increased demand for food items such as fish.	Rare	Unlikel y	Provinc	Mediu	Low	Negati ve	Indirec	Mediu	Low
Increased demand for water	Compromised aquatic habitat	Construction is a water-demanding task. Further, the construction workers will need water for personal use.	Rare	Unlikely	Local	Medium	Low	Negative	Indirect	Medium	Low

Impact	Sub Impact/Potential Source	Impact Description	Impact Evaluation (Assessment) (Unmitigated negative impacts								
			Frequency	Likelihood	Extent	Duration	Magnitude	Effect	Action	Sensitivity	Significance
Increased habitat contamination by Hazardous waste	Loss of flora and fauna, degraded habitats	Some by- products of construction work, could be hazardous. And if they are disposed in water, unintentionally r intentionally, they could degrade habitats, cause diseases and in some cases mortality to fauna and flora	Rare	Unlikely	Local	Medium	Low	Negative	Indirect	Medium	Low
Operations Phase											
Maintained environmental flows downstream and protected upstream and downstream dambos and the dam habitats	The downstream flows will continue during the runoff season in relation to the design	The flows will be maintained as per the design and storage ratios. Once these are protected the biodiversity in the dam will be sustained. Species of conservation will be protected and will have conducive habitats to live in.	Rare	Certain	Regional	Longterm	Medium	Positive	Direct	Medium	Medium
Increase in water pollution	Chemicals used for agriculture and loose soils from fields may run into the waters	Increased chemical pollution from irrigation practices which can lead to algae growth and eutrophication.	Rare	Unlikely	Local	Medium	Low	Negative	Indirect	Medium	Low

Impact	Sub Impact/Potential Source	Impact Description	Impact Evaluation (Assessment) (Unmitigated negative impacts								
			Frequency	Likelihood	Extent	Duration	Magnitude	Effect	Action	Sensitivity	Significance
Decommissioning											
Settlements /infrastructure downstream may be inundated and damaged	Loss of flora and fauna, infrastructure. And unfortunately, there could loss of human lives	Decommissioning could happen if there is a desire to reconstitute the environment. It involves well thought out plans to reinstate the initial river course by removing the weir	Rare	Unlikely	local	Medium	Low	Negative	Indirect	Medium	Low
Loss of species of conservation concern	Overfishing	Overfishing and use of unsustainable fishing methods can deprive the waters of fauna species such as species of conservation, plankton and invertebrates. The levels of vulnerable species are at risk due to the presence of the invasive fish species.	Rare	Unlikely	local	Medium	Medium	Negative	Direct	Medium	Medium

Impact	Sub Impact/Potential Source	Impact Description	Impact Evaluation (Assessment) (Unmitigated negative impacts								
			Frequency	Likelihood	Extent	Duration	Magnitude	Effect	Action	Sensitivity	Significance
Removal of weir could lead to severe losses of water, fish, other lifeforms from the dam compromising livelihoods especially for those using the dam for fishing and agriculture	Loss of flora and fauna, infrastructure.	Decommissioning could happen if there is a desire to reconstitute the environment. It involves well thought out plans to reinstate the initial river course by removing the weir	Rare	Unlikely	local	Medium	Low	Negative	Indirect	Medium	Low

Impacts Summary

Terrestrial Biodiversity Environment:

- Positive Impacts during rehabilitation works
- Negative Impacts during rehabilitation works
- Positive Impacts during operation and maintenance
- Negative Impacts during operation and maintenance

Aquatic Biodiversity Environment:

- Positive Impacts during rehabilitation works
- Negative Impacts during rehabilitation works
- Positive impacts during operation and maintenance
- Negative impacts during operation and maintenance

Provision of Concluding Impact Statement

Biodiversity Management Plan (BMP)

A site-specific BMP should be developed in this section and a Habitat Management Plan should be developed to guide management of biodiversity in the project area of influence. It should be based on the BDA. The BDA should have identified the ecosystems (habitats) as well as the flora and fauna present in the project area of influence. It should also provide information on the extent of potential impacts anticipated. Information gathered in the BDA should be used for the preparation of a BMP.

Objectives of a BMP

The main objectives of a BMP are to provide a structure to manage impacts according to the mitigation hierarchy, and to provide a roadmap for the implementers of the mitigation measures.

Specific objectives:

- Compliance with national regulations and international guidelines and/or standards regarding biodiversity management;
- Address of biodiversity risks identified through an ecological assessment of the project area of influence; and
- Remediation of impacts of the initial works on the xxx

Scope of a BMP

A BMP only covers the defined area of influence[67] for the site. Further, its focus should be on the management of potential impacts of the proposed works.

Table 54 Biodiversity Management Plan

[67] This is proportional to scale of the project and potential area of impact. E.g. For small scale projects this is 5km radius.

REF NO.	IMPACT	OBJECTIVE	MANAGEMENT ACTION	TIMING		RESPONSIBILITY
				START	END	
1.0. SITE PREPARATION AND CONSTRUCTION PHASE						
1.1. TERRESTRIAL						
Flora						
Fauna						
Invasive Species						
1.2. AQUATICS (SITE PREPARATION AND CONSTRUCTION PHASE)						
2.0. OPERATIONS PHASE						
2.1. TERRESTRIAL						
Flora						
Fauna						
Invasive Species						
Demobilization						
2.2. AQUATICS (OPERATIONS PHASE)						

Follow-Up and Monitoring

The monitoring plan for the sub-project should be developed to ensure the proper implementation and effectiveness of mitigation measures. Parameters or indicators to be monitored should be developed by adhering to the SMART nomenclature (scientific, measurable, accountable, reliable, and time-bound).

The aims or purposes of a monitoring plan are to determine observe the deviation from the baseline conditions of the observed biodiversity and environmental factors and assess the effectiveness of the impact mitigation/management interventions put in place; and prevent the occurrence of serious negative project impacts on the biodiversity and environment by facilitating timely corrective actions on project aspects and management interventions not yielding the intended results.

Table 55 Biodiversity Monitoring Plan

REF NO.	POTENTIAL IMPACT/ISSUE	OBJECTIVE	MITIGATION MEASURE	TIMING AND/OR FREQUENCY	RESPONSIBILITY	INDICATORS OF REFERENCE
1.0 Terrestrial						
Construction Phase						
Operation phase						
2.0 Aquatic						
Construction phase						
Operation phase						

Evaluation of Monitoring

The evaluation of the monitoring programme will be on-going and as follows:

- Daily: General monitoring updates, reporting of incidents impacting biodiversity and emergency response;
- Monthly: Compilation of monitoring progress report, environmental training delivered, details on any major incidents/events, general progress of the monitoring program; and
- Quarterly: Summary report on quarterly biodiversity monitoring programs, review quarterly performance and apply adaptive management if required.

Implementation of the BMP

Step 1: Roles and responsibilities of different stakeholders for BMP implementation

Table 56 Roles and Responsibilities of relevant stakeholders in in BMP implementation

Name of Authority/ Entity	**Key Roles and Responsibilities**

Step 2: Incident Reporting

Incident reporting will follow the management and reporting process below:

1) Initial communication
2) Classification: how serious?
3) Notification: Who? How: When?
4) Investigation: What happened? How and Why?
5) Response: Remedial actions?; Preventive actions?
6) Follow up: Is response Complete? Was it effective? Lessons?

Step 3: Handover for Operation

Annex B: Main Plot data Collection Form

TREE PARAMETERS DATA FORM							*FORM A*
Altitude……	**Plot No……..**	**Date……**		**Quadrant No……**			**Plot Size…….**
Centre of Plot (GPS Reading UTM) N…….. E……..		**Vegetation Type……..**					
Recorder……..							
SPECIES (TREE ≥ 5CM)	**HEIGHT (M)**	**DBH (CM)**	**CROWN SIZE**		**STEM HT (M)**	**NOTES****	
			a Width	b Length			

** Indicate any noticeable
damage, crookedness, fungal attack
browsing signs, form, fire occurrence etc.

Plant Species Identification Codes:

√ ? -- Genus identified, species uncertain; (Write GENUS name and ?)

+ / - -- Identification not sure; (Write SUSPECTED NAME and + / -)

?? – Plant not identified (Write: SPP, Id No. and Plot No.)

Annex C: Regeneration Plot Data Collection Form

TREE REGENERATION DATA FORM				*FORM B*
Altitude……	**Plot No……..**	**Date……**	**Quadrant No……**	**Plot Size……**
Centre of Plot (GPS Reading UTM) N…….. E……		**Vegetation Type…….**		
Recorder……..				

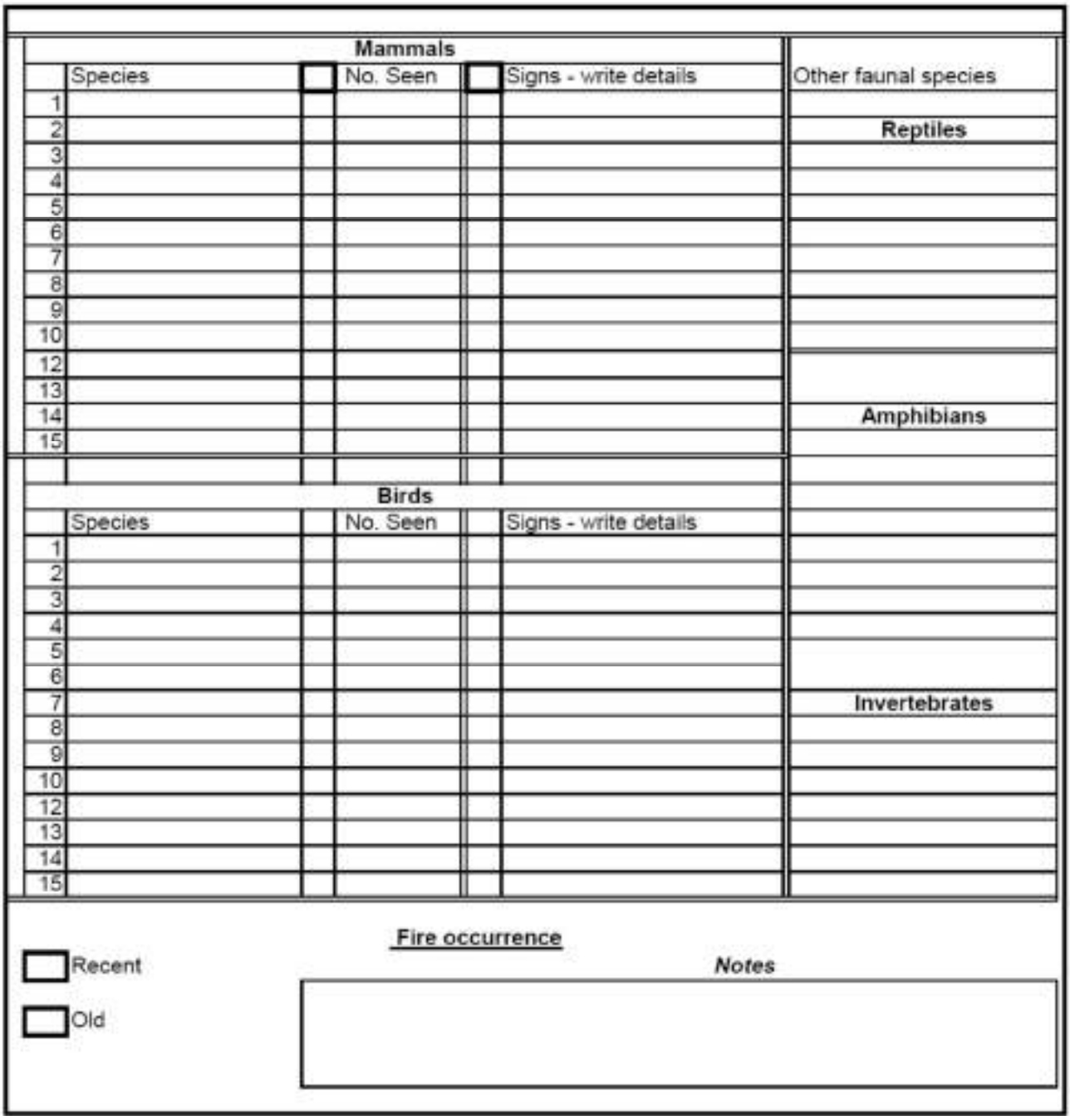
SPECIES	COUNT	NOTES**

** Indicate any noticeable
damage, crookedness, fungal attack
browsing signs, form, fire occurrence etc.

Plant Species Identification Codes:

√ ? -- Genus identified, species uncerta + / - -- Identification not sure; ?? – Plant not identified
(Write GENUS name and ?) (Write SUSPECTED NAME an (Write: SPP, Id No. and Plot No.)

Annex D: Fauna Data Collection Form



	Mammals					
	Species		No. Seen		Signs - write details	Other faunal species
1						
2						Reptiles
3						
4						
5						
6						
7						
8						
9						
10						
12						
13						
14						Amphibians
15						
	Birds					
	Species		No. Seen		Signs - write details	
1						
2						
3						
4						
5						
6						
7						Invertebrates
8						
9						
10						
12						
13						
14						
15						

Fire occurrence

☐ Recent

☐ Old

Notes

Annex E: Data Collection Sheet

DATA COLLECTION SHEEET
The Aquatic Biodiversity Check List

Biodiversity Scoping

Identification of habitats

- ✓ Is the direct area of influence considered to be modified/converted, natural, or critical habitat?
- ✓ Is the indirect area of influence considered to be modified/converted, natural or critical habitat?
- ✓ What is the legal protection regime?
- ✓ Is the direct area of influence located on indigenous land?
- ✓ What are the existing drivers of habitat loss?

Identification of key biodiversity features

- ✓ Is it a priority area for conservation? (existing or proposed protected area, indigenous or local communities protected areas, Ramsar sites, area with high level of endemism, presence of aquatic corridor to ensure genetic diversity, important spawning area etc.). Note: List all sites within a 50km radius from the dam.
- ✓ Are there any Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT) species and/or endemic or restricted-range species within a 50 km radius from the dam ? If so, list the species and their conservation status (based on the IUCN Red List)
- ✓ Does the area support important ecological processes? (spawning site? sediment supply to a wetland downstream? fish migratory route ? etc.)
- ✓ Are there any priority ecosystem services in the area of influence that may be affected by the dam ? If so, is it critical to the livelihoods of indigenous communities?

Identification of Aquatic species

- ✓ What is the conservation status of the vertebrate and invertebrate species?
- ✓ What is the conservation status of the macrophytes?
- ✓ Is there any migratory fish species ? List those species (if applicable) and shortly describe the migratory dynamic.

Aquatic biodiversity impact assessment and management

- ✓ What are the potential impacts and risks (direct, indirect, induced and cumulative) of the dam and how it would affect the key biodiversity features (if any)? Shortly describe impacts for each project phases (construction, operation and decommissioning)
- ✓ Would the dam lead to long term declines in population of any species listed either as CR, EN, VU or NT?
- ✓ Will the project significantly affect critical natural habitats or natural habitats?
- ✓ Would there be any significant changes in the water flow that could affect the aquatic and/or the riparian habitat and species?
- ✓ Is there any residual biodiversity impacts anticipated?
- ✓ In the case of residual impacts, is there sufficient information to plan management actions required to mitigate, or compensate for this type of impacts ? Or additional baseline studies are required?
- ✓ Is it possible to improve the project's design to avoid (and if not possible, to minimize) the project's impact?
- ✓ What are the potential options for biodiversity conservation and enhancement?

Monitoring

- ✓ Is the baseline information gathered sufficient to produce standardized biodiversity indicators useful for monitoring changes in the biodiversity overtime?

SAMPLING FORM 1
FISH SPECIES

A. Length-Weight Data

To be completed at every sampling point **Sampling Day:…….**

Coordinates:…….. Date:……/……/…….

Sample ID	Name of Species (common name and *Latin name*)	Number	Length (mm)	Weight (g)	Gear	IUCN Conservation status	Migratory species (yes/no)	Endemic, restricted-range specie (yes/no)
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								
23.								
24.								
25.								
26.								
27.								
28.								
29.								
30.								

Sampling Form 2

WATER QUALITY

B. Physicochemical Parameters

Sampling Point …… Sampling Day:……

Coordinates:…….. Date:……/……/…….

SAMPLING POINT	DO (mg/L)	Temp (C^0)	pH	Cond mS/m	Sech. reading	TDS	Total hardness	Alkalinity	Turbidity
Values of references									
downstream									
Upstream									
Mid of the dam									
At the weir									

Sampling Form 2

C. Aquatic plants

Sampling point …… Sampling day:……

Coordinates:…….. Date:……/……/…….

S/#	Species	Monocots	Dicots
Emergent			
Submerged			
Free floating			

D. Macroinvertebrates survey

Order	Sub/Family	English name	Comments
Any other species			

Annex F: Water Analysis Results for water samples collected

	Sample point 1	Sample point 2	Sample point 3	Sample point 4	Sample point 5
Sampling date	**15.04.2021**	**15.04.2021**	**15.04.2021**	**14.04.2021**	**23.04.2021**
Parameter					
pH					
Conductivity (µs/cm)					
Sulphates (mg/l)					
Nitrates (as NO_3–N mg/l)					
Alkalinity (as $CaCO_3$ mg/l)					
Total Dissolved Solids (mg/l)					
Ammonia (as NH_4-Nmg/l)					
Phosphates (mg/l)					
Total Suspended Solids (mg/l)					
Chemical oxygen demand (as mg O_2/l)					
Chlorides (mg/l)					
Turbidity (NTU)					
Hydrocarbons (mg/l)					

Tests carried out in conformity with " Standard Methods for the Examination of water and Wastewater APHA, 1998".

Plankton composition

No.	Phytoplankton	Zooplankton
1		
2		
3		
4		
5		
6		

Annex G: Habitat Management

General Integrated Catchment Management Guidelines
A Catchment means a geographical area which naturally drains into a water resource and from which the water resource receives surface or ground flow that originates from rainfall[68].

1) Policy and regulatory framework with the relevant institutions

2) The vision for the integrated catchment management plan for

3) Underlying this vision, are the following aims of the plan, derived from the studies and the consultation processes:

4) Principles that drive conceptualization and implementation of the plan.
   - Participatory management
   - Using labor intensive/ involving approaches
   - Using local resources
   - Empowering local communities, particularly women and youth
   - Sustainability

5) Catchment-wide projects will be proposed, or may already be in place or planned for implementation. These can include:

6) Time lines:

7) Funding:

Project Management EXAMPLE

This section provides guidance on retaining, maintaining and where necessary re-establishing vegetated riparian buffers around the sensitive water resources (stream, dam / dambos) managed, and work sites (campsite, slopes, borrow areas etc.) as pointed out by the area of influence and in the BMP. The following riparian zone management procedures will be implemented:

a. restricting land disturbance activities to the low rainfall seasons;
b. managing stock numbers, feeding, watering and location to lower risks areas;
c. isolating potentially harmful materials from water;
d. immediate and effective waste spill clean-up;
e. use of structural stormwater retention/ drainage systems/ slopes;
f. implementation and sensitization of environmental management plans; and
g. training of staff, locals and contractor in good operational practice.

[68] WARMA Act

Annex H: Rehabilitation Plan Guidance

This section discusses aspects requiring rehabilitation before the contractor demobilizes from the project area. Its objective is the rehabilitation of embankments, borrow pits, access roads / tracks created during construction or any downstream erosion, embankment destabilization that has been caused by construction works.

The main purpose of this plan is to:

- identify, rehabilitate and remediate the existing areas, which have environmental and safety issues;
- outline the requirements to return disturbed sites to a state which is similar to the state prior to construction.

A Baseline should be established prior to impact, where no BDA was conducted. The baseline should include photos and all-species composition lists (vegetation as well as faunal, flora).

SAMPLE rehabilitation works are elaborated in the table below:

Table 57 Sample rehabilitation plan

Aspect	Condition/ risks	Remedial measures	Schedule for Implementation	Monitoring	Performance indicators	Estimated Cost
Structural risks						
Non-structural risks						
Borrow pits	Borrow pit existing Refer to map Coordinates: Borrow area- 16°5'57.68"S, 26°51'17.44"E Risks: community health and safety, biodiversity loss	Detailed site specific method statements will be prepared by the contractor with methods and quantities. Earthworks, rehabilitation of the sites to promote drainage, aesthetic uniformity, revegetation by seeding and natural succession vegetation, slopes and safety. Partially fill borrow areas with acceptable material to form a safe landform and cover with topsoil or grade to a desired landform slope and drainage. Stock the existing vegetated sites' soils during borrow rehabilitation and place back when works are done. Plant native seeds in addition to the replacement of top soil to ensure	*Timing:* day works- commencement of construction activities so that recovery is demonstrable by the end of the contractor's liability period Implementation role: Construction contractor Supervisor: PCU Remedial works will include earth ripping to enable regrowth of natural vegetation. Assisted vegetation (seeding and soil fertilization with watering) will be included on all sites to supplement possible natural vegetation. The unnecessary roads should be close by scarifying the	Contractor liability period Site inspections pictures Continuous maintenance during the 3 year maintenance period	Contouring Drainage Stabilized slopes Desired landform	In provisional sum Day works

		coverage. Construct appropriate surface slopes with drainage channels to prevent water from collecting at the site. Ensure drainage should avoid accidents and public health risks. Stabilize the areas of disturbance and steep slopes. Implement reinstatement by natural succession together with full cover assisted vegetation seeding interventions, which will require intense monitoring and maintenance within the 3 years maintenance period. This will include sub-base preparation, top-soiling, fertilizing and seeding for each area which requires rehabilitation.	roadway, ripping and recontouring. Re-establish natural drainage patterns on the closed roads. *Materials and equipment* Earthworks Spoil Soils for top soiling within the borrow area stockpiles Grass seeds- approved noncompetitive native species Watering equipment Fertilizers/ soil fertility promoters Equipment backactor; tractor dumpers; and haul truck *Workmanship and timeline:* up to 6 machine operators and 5 local workers for less than 4 months.			
Access routes	Location and condition of the sites: the access road is in a very poor condition, eroded over the years with poor surface. The road goes through a school which is	Detailed site-specific method statements will be prepared by the contractor with methods and quantities. Rehabilitate and close the roads left by the	*Timing:* day works- commencement of construction activities so that recovery is demonstrable by the end	Contractor liability period Site inspections pictures Continuous maintenance during	Ripped roads for revegetation	In provision al sum Day works

	close to the dam, 200m away. Alternative roads are given on the Land use map. The road that will be selected for use during works will be rehabilitated during the commencement of works. Images Risks: biodiversity loss, accidents, drowning	contractor, which will not be used by the current construction contractor and community. Road rehabilitation will be done by earth ripping to enable possible regrowth of natural vegetation even as assisted vegetation will be implemented on full coverage of the areas. Close unnecessary road by scarifying the roadway, ripping and recontouring. Create an environment supporting over ground with natural regeneration to support the assisted vegetation. Assisted vegetation will included seeding, watering and maintenance of locally adapted vegetation. Re-establish natural drainage patterns on the closed roads.	of the contractor's liability period Implementation Role: Construction contractor Supervisor: PCU *Materials and equipment* Earthworks Limited gravel utilizing existing surface to form with a grader and tractor dumpers Grass seeds- approved noncompetitive local/ native species Watering equipment Fertilizers/ soil fertility promoters *Workmanship and timeline:* 4 Operators and 8 laborers as per above equipment 4 days per equipment	the 3 year maintenance period		
Eroded and disturbed areas	Open areas around the basin, material area slopes Livestock watering contributes to soil loosening	Detailed site specific method statements will be prepared by the contractor with methods and quantities. Implement reinstatement by natural succession with	*Timing:* day works-commencement of construction activities so that recovery is demonstrable by the end	Contractor liability period Site inspections Pictures Continuous maintenance	Soil stabilization	In provisional sum Day works

Risk: soil movements and loosening	assisted vegetation seeding interventions, which will require intense monitoring and maintenance within the 3 years maintenance period. Include sub-base preparation, top-soiling, fertilizing and seeding for each area that requires rehabilitation. Develop a costed method statement for disturbed sites. Designate livestock watering points and promote soil stabilization by stone pitching, compacting and/ or trough creation as an alternative watering mechanism to keep some animals from the dam basin. The last option is the more expensive one of the two.	of the contractor's liability period Implementation Role: Construction contractor Supervisor: PCU *Materials and equipment* Earthworks Compacting, stone pitching material and native vegetation seeds for soil stabilization method Concrete trough, pump, tank Tractor dumpers; and haul truck for materials *Workmanship and timeline:* 10 laborers and 1 month use of the equipment

Annex 15: Framework for Disaster Risk Assessment and Emergency Preparedness Plan and Response Procedures

The annex provides a template to be used for the preparation of sub-project specific Disaster Risk Assessments and Emergency Preparedness Plan and Response Procedures as identified in ESMP ESS2 and the ESCP ESS4.

The findings and recommendations of the Disaster Risk Assessments will include Emergency Preparedness Plans and Response Procedures, which will be included into the site management and implementation procedures, design considerations, community early warning, and other E&S instruments.

Table 58 Outline for Disaster Risk Assessment and Emergency Preparedness Plan and Response Procedures

Section 1	Introduction
Section 2	Description of site-specific sub-project
Section 3	Assessment of potential disasters: - Climate effects on future rainfall - Quantitative analysis of flooding scenarios - Other relevant GIIP
Section 4	Prevention of risks or threats of identified disasters
Section 5	Mitigation or reduction of risks or disaster or its consequences
Section 6	Capacity building
Section 8	Preparedness plan to deal with identified disasters
Section 9	Response procedures to identified disasters
Section 10	Recovery procedures from identified disasters

Annex 16: Small Dam Safety Guidelines

Exclusion criteria of the ESMF and ESCP exclude dams with the objective of water storage and irrigation schemes, including construction, upgrade, expansion, etc. thereof, including small dams with safety risk as per definition in ESS4 Annex 1.

The project may rehabilitate existing small dams which does not envisage significant downstream impacts, such as small water diversion weirs with no water storage capacity; however, these can still have structural safety risks.

For subproject activities including the rehabilitation of existing small dams, which are not excluded under the exclusion list, a dam safety audit should be prepared. The dam safety audit should be prepared by an independent dam safety specialist with the following objectives:

a. inspect and evaluate the safety status of the existing dam, its appurtenances, and its performance history;
b. review and evaluate the owner's operation and maintenance procedures; and
c. provide a written report of findings and recommendations for any remedial work or safety related measures necessary to upgrade the existing dam to an acceptable standard of safety.

For projects that include additional dam safety measures or require remedial work, the Borrower will require that the dam is designed and its construction is supervised by competent professionals, and the required safety reports and plans required for rehabilitation works are prepared and implemented.

The Project Civil Engineer shall be responsible for ensuring that technical safety requirements for small dams are acceptable for the World Bank and relevant training on small dam safety is provided to relevant personnel.

Technical requirements for small dams are provided in World Bank's Technical Note on Small Dam Safety[69], which provides typical safety issues and recommendations for basic checking and quality control. The Technical Note provides Good Practices on Community Participation in Irrigation Management and Small Dam Safety, including key recommendation on: (i) Institutional and Governance Arrangements; (ii) Financial and Economic; (iii) Technical Support; (iv) Community Participation; (v) Design and Construction Quality Management; (vi) Surveillance, Monitoring, and Emergency Preparedness; (vii) Approaches to Sediment Management, among others.

[69] https://openknowledge.worldbank.org/entities/publication/5e233587-7378-5d1a-b6ae-d165b67e2c6b

Annex 17: Outline for Human- Wildlife Conflict Management Procedures

Site-specific sub-projects will require a site-specific assessment of potential human-wildlife conflict and the preparation of site-specific procedures.

The below table recommends an outline for such assessments:

Table 59 Assessment of human-wildlife conflict for sub-projects

Section 1	Introduction
Section 2	Details of sub-project and site description
Section 4	Methodology of assessment (eg. Semi-structured interviews, participatory mapping)
	Assessment results (types of human-wildlife conflicts in the sub-project area, ranking of problem animals and reasons for ranking, extent of households affected by problem animals, community perceptions,
Section 5	Institutional arrangements
Section 6	Information and reporting, communication strategy
Section 7	Control options (SOPs) and level of effectiveness (e.g. protected areas and ecological corridors, electric fences and trenches, acoustic deterrents, light-based deterrents, agricultural-based deterrents, early detection and warning).

Annex 18: INEGRATED PEST MANAGEMENT FRAMEWORK

EXECUTIVE SUMMARY

Introduction

Include summary Project Background information, scope, implementation arrangements:

Project Components: Sustainable agricultural productivity and diversification ,
Summary of all components under the projects

Objectives of PMP

Include objectives for development of the IPMP :

- Promote the use of environmentally friendly practices in pest control,
- Monitor pesticide use during implementation of the project activities,
- Ensure that project activities comply with Malawi's laws and regulations on use of pesticides, and World Bank safeguard policies, Environmental and Social Framework (ESF) and Environmental and Social Standards (ESS).
- Provide an integrated pest management action plan which can be easily implemented in the event that pest management issues are encountered during implementation of proposed project activities.

Strategies to developing IPMP

The IPMP should outline steps towards the establishment of IPM approaches in the project, including the following:

- Identification of the implementation team;
- Deciding on scale of implementation;
- Setting goals and measurable objectives for the IPM program;
- Analysis of current housekeeping, maintenance and pest control practices;
- Establishing a system for regular IPM inspections;
- Defining treatment selection policy;
- Establishing communication protocols;
- Developing worker training plans and policies; and
- Participatory monitoring and evaluation

The IPMP should investigate several alternatives, including biological, mechanical and manual methods for pesticide control, which are recommended for use, with the ultimate objective of progressive reduction in the application of chemical pesticides, by replacing them with the more environmentally friendly options. The PMP should discuss these opportunities and make recommendations for implementation. A strong capacity building program is required to manage and monitor the use of pesticides that may be used by farmers in project activities.

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 OVERVIEW OF THE AGRICULTURE SECTOR

Provide the current overview of the Agricultural sector in the Country.

1.2 PROJECT BACKGROUND

Describe Project Background information and activities under the project components.

1.3 PROJECT IMPLEMENTATION ARRANGEMENTS

- Project Coordination and Oversight
- Project Implementation Arrangements

- Fiduciary Arrangements
- Procurement Arrangement
- Environmental and Social Safeguards

1.4 JUSTIFICATION OF THE INTEGRATED PEST MANAGEMENT PLAN

Describe elements of the project that relate to the requirement of having an Integrated Pest Management Plan and program.

1.5 METHODOLOGY FOR PREPARATION OF THE IPMP

The following are key preconditions for an IPM approach:

- Understanding of the ecological relationships within a farming system (crop, livestock, plant, pests organisms and factors influencing their development;
- Understanding of economic factors within a production system (infestation: loss ratio, market potential and product prices);
- Understanding of socio-cultural decision-making behavior of the farmers (traditional preferences, risk behavior);
- Involvement of the farmers in the analysis of the pest problems and their management; and
- Successive creation of a legislative and agricultural policy framework conducive to a sustainable IPM strategy (plant and animal quarantine legislation, pesticides legislation, pesticide registration, price policy)

Include consultations and literature review (add as necessary):

- National Regulatory Framework for pesticides,
- Projects Environmental and Social Management Framework or Policies),
- The World Bank Safeguard Policy on Pest Management (O.P. 4.09),
- The World Bank Environmental and Social Framework (ESF) and Environmental and Social Standards (ESS), in particular, ESS 4: Resource Efficiency and Pollution Prevention and Management
- The World Bank Environmental, Health and Safety Guidelines (EHSGs)
- Environment Management Act of 1996;
- FAO International code of Conduct on the Distribution and Use of
- Pesticides, 2002;
- FAO International code of Conduct on the Pesticide Management, 2014
- Integrated Pest Management Framework for Kenya Agricultural Productivity and Agribusiness Project (IPMF-KAPAP), 2009; and Livestock Development and Animal Health Project - Pest Management Plan (Volume III); and
- Bulletin of the World Health Organization, 66 (5): 545-551 (1988)
- OIE Terrestrial Animal Health Code 2016.

Summarize consultations and key issues that resulted from consultations and attach consultation records in appendix.

CHAPTER TWO: CURRENT PEST MANAGEMENT PRACTICES IN MALAWI

Describe pest management practices in the country, challenges with the current practices including use of chemicals.

2.1 AGRICULTURE AND PEST MANAGEMENT IN MALAWI

Indicate non chemical control methods and techniques or practices for controlling pesticides: biological, cultural (such as storage practices like hermetic bags, mulching, weeding,) Mechanical (such as bagging and netting of fruit), regulatory requirements such as quarantine, use of pest resistant varieties.

Note: Introduction of Biological Controls in an area may have significant impacts on biodiversity and may result in economic impacts if not properly assessed. (Indicate approval requirements in Malawi)

Indicate most common crops where chemicals are used for pest control. Can also be in a table indicating the crop and most used pesticide

2.2 PEST CONTROL CHALLENGES IN MALAWI AND RECOMMENDATIONS - CHEMICALS

Include challenges and corresponding recommendations. Examples of challenges indicated below (add to the list as necessary):

- Use of Unregulated Pesticides
- Accessibility and Limited Roles in regulation and control of pesticides,
- Use of expired pesticides:
- Lack of protective gear.
- Challenges related to current policies andregulations on pesticides
- Misinformation and lack of knowledge on Integrated Pest Management (Agricultural advisors/ extension workers and Farmers)

CHAPTER THREE: INTERNATIONAL AND NATIONAL PESTICIDES LEGISLATION AND REGISTRATION

3.1 INTERNATIONAL LEGISLATION AND POLICIES

Make additions to the below as necessary (New policies, Regulations):

- The World Bank Environmental and Social Framework (ESF), in particular, the World Bank Environmental and Social Standard 4: Resource Efficiency and Pollution Prevention and Management
- World Bank Operational Policy on Pest Management, OP 4.09 (1998)
- Pesticide Protocol based on World Bank Environment Health and Safety Guidelines and Food Production (Pest Purchase and use, Storage, Handling, Application, Disposal, Fertilizers, Community health and safety Guidelines)
- International Plant Protection Convention of FAO (1952)
- World Food Security and the Plan of Action of November 1996

3.2 NATIONAL LEGISLATION AND POLICIES

Make additions to the below as necessary (New policies, Regulations)

- The Pesticides Act, 2000
- Regulation of Pesticides Storage, Distribution and Disposal

CHAPTER FOUR: IMPLEMENTATION OF THE IPM

Outline implementation arrangements for the IPMP (add as necessary)

4.1 IDENTIFICATION OF THE IMPLEMENTATION TEAM

Outline the composition of the implementation team, including roles and responsibilities.

4.2 DEFINITION OF THE SCALE OF IMPLEMENTATION

Indicate the scale of implementation according to project activities and requirements.

4.3 SETTING OF MEASURABLE OBJECTIVES FOR THE IPMP

Prior to implementation, define and set objectives and IPM indicators to be relevant to each district; and determining factors such as:

- Commencement

- Costs
- Targets/Indicators
- Methods of monitoring success
- Data Collection (Pest management costs, reports on pest infestations and use of chemicals, baseline data on pest infestations for comparison after IPM implementation).

4.4 ANALYSIS OF CURRENT HOUSEKEEPING, MAINTENANCE AND PEST CONTROL PRACTICES

Describe current practices and identify opportunities for improvement in implementation of IPM during project implementation (add as necessary):

- Biological Control Agents
- Genetic control measures
- Cultural Control Practices
- Mechanical control methods
- Physical control methods
- Legislative measures.
- Management of Chemical pesticides (Storage, handling, management/disposal of obsolete chemical pesticides)
- Sanitation plan and training (capacity requirements)

4.5 ESTABLISHMENT OF REGULAR IPM INSPECTIONS SYSTEM

Indicate systems for inspections and monitoring covering but not limited to the following: Entry points, Water sources, Food sources , Harborage areas.

Inspections should assist in providing recommendations on pest identification, selection of Control Methods, Monitoring and Evaluation

4.6 DEFINITION OF THE TREATMENT POLICY SELECTION

Written policy on:

- How the facility will respond to pests when they appear
- Definitions of both non-chemical and chemical treatment options and the sequence or prioritization in which they will be considered.
- Approved materials list to inform choices when chemical treatments are applied.
- Monitoring requirements to facilitate determination of supplemental treatment options if required.

4.7 ESTABLISHMENT OF COMMUNICATION PROTOCOLS

Establish Communication protocols for issues such as documentation and reporting of pest sightings, communication of recommendations and notification of pesticide treatments, communication with the maintenance team.

4.8 DEVELOPMENT OF FARMER TRAINING PLANS AND POLICIES

Training sessions for farmer groups in pesticide identification and sighting, IPM principles and their responsibilities for the success of the IPM program.

4.9 TRACK PROGRESS AND REWARD SUCCESS

Such as, annual assessment of progress against measurable objectives and indicators set at the beginning. Assessment to be documented and include the following (add as necessary):

- Detailed description of the parameters and service protocols of the IPM program, stating the ground rules;
- Specific locations where pest management work was performed;
- Dates of service;

- Activity descriptions, e.g., baiting, crack-and crevice treatment, trapping, structural repair; and
- Log of any Chemical pesticide applications, including:
- Target pest(s);
- The brand names and active ingredients of any pesticides applied;
- PCB registration numbers of pesticides applied;
- Percentages of mix used in dilution;
- Volume of pesticides used expressed in kilograms of active ingredient;
- Applicator's name(s) and certification identity (copy of original certification and recertification should be maintained);
- Facility floor plan on which all pest control devices mapped and numbered;
- Pest tracking logs (sightings and trap counts);
- Action plans, including structural and sanitation plans, to correct any pest problems;
- Pest sighting memos used in reporting pest presence
- Using these records, and the goals of the IPM program (increased efficacy, lower costs and reduced pesticide use), should translate into:
- Fewer pest sightings and farmer complaints;
- Lower monitoring-station counts over time;
- Lower costs after the first 12-18 months, once IPM's efficacy advantage has had time to take effect; and
- Downward trend in volume or frequency of chemical pesticide usage
- Trends showing reduction in toxic chemical use and exposure.

CHAPTER FIVE: IMPACT ASSESSMENT OF PEST MANAGEMENT PRACTICES

5.1 IMPACTS OF CHEMICAL PESTICIDES

Indicate negative impacts of using chemical pesticides and mitigation measures (can be in form of a table).

5.2 IMPACTS OF NON-CHEMICAL PEST CONTROL

Indicate negative and positive impacts of using non-chemical pesticides and mitigation measures and enhancement measures (can be in form of a table)

5.3 IMPACTS OF IMPLEMENTING IPM

Indicate advantages of implementing an IPMP and enhancement measures (can be in form of a table)

5.4 LIST OF PESTICIDES ACCEPTABLE FOR USE UNDER THE PROJECT AND THE LIST OF BANNED PESTICIDES

CHAPTER SIX: PEST MANAGEMENT AND MONITORING PLAN

6.1 IMPACTS AND MONITORING TABLE

In a table format, summarise impacts and challenges of the different control methods, their causes, mitigation or enhancement measures, responsibility of implementation, monitoring institution and frequency as well as indicators.

6.2 ESTIMATED COSTS FOR PEST MANAGEMENT AND MONITORING

Summarise estimated costs for implementation of the IPMP.

CHAPTER SEVEN: CAPACITY, TRAINING NEEDS AND BUDGET FOR IMPLEMENTATION OF THE IPMP

7.1 CAPACITY NEEDS

Include assessment of Capacity needs based on a gap assessment including implementing agencies, and farmers at community leve (provide a summary in table format including participant group, their roles in implementing the IPMP, identified gap, training content, cost and trainer or training institution)

CHAPTER EIGHT: CONCLUSIONS

REFERENCES

ANNEXES

Annexes that may be included (add as necessary):

- IPMP development team
- People and institutions consulted
- Consultation questionnaire / Checklist
- Summary table indicating concerns/issues raised during consultations.