

REPUBLIC OF ZAMBIA

MINISTRY OF HOME AFFAIRS AND INTERNAL SECURITY



ZAMBIA REFUGEE AND HOST COMMUNITIES PROJECT

P503941

**ENVIRONMENTAL AND SOCIAL  
MANAGEMENT FRAMEWORK  
(ESMF)**

DECEMBER 2024

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### ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
DMMU	Disaster Management and Mitigation Unit

E&S	Environmental and Social
EA	Environmental Assessment
EMA	Environmental Management Act
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
EHSGs	Environmental Health and Safety Guidelines
ESIA	Environmental Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management Systems
ESS	Environmental and Social Standards
EWMP	Electronic Waste Management Plan
FIs	Financial Institutions
FMO	Financial Management Officer
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GMAs	Game Management Areas
GRZ	Government of the Republic of Zambia
HIV	Human Immunodeficiency Virus
IPMP	Integrated Pest Management Plan
LMP	Labour Management Procedures
MoA	Ministry of Agriculture
M&E	Monitoring and Evaluation
MOE	Ministry of Education
MoH	Ministry of Health
MoHAIS	Ministry of Home Affairs and Internal Security
MoJ	Ministry of Justice
MoU	Memorandum of Understanding
MSME	Micro – Small and Medium Enterprises
MTEF	Medium Term Expenditure Framework
NDP	National Development Plan
NGOs	Non-Governmental Organizations
NHCC	National Heritage Conservation Commission
PFI	Participating Financial Institutions
PIM	Project Implementation Manual
PMU	Project Management Unit
PMC	Project Management Consultants
PMP	Pest Management Plan
POC's	Persons of Concern
PPE	Personal Protective Equipment
PSC	Project Steering Committee
PwDs	People with Disabilities

RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SME	Small and Medium Enterprises
STIs	Sexually Transmitted Infections
TA	Technical Assistance
ToRs	Terms of Reference
WB	World Bank
WMP	Waste Management Plan
ZDA	Zambia Development Agency
ZEMA	Zambia Environmental Management Agency
ZPPA	Zambia Public Procurement Authority
ZRCP	Zambia Refugee and Host Community Project

## **EXECUTIVE SUMMARY**

The Environmental and Social Management Framework has been prepared for Zambia Refugee and Host Communities Project (ZRCP) which is a World Bank financed project supporting the Government of the Republic of Zambia (GRZ) through the Ministry of Home Affairs and Internal Security (MoHAIS).

### **Project Development Objective**

Improved access to socio-economic opportunities for refugees through strengthened legal framework, improved infrastructure, and livelihoods in target areas for host communities and refugees.

### **Project Description**

The project activities include amendments to different pieces of legislation, legal and technical resources, issuance of digital identity cards, trunk road upgrade, bridge construction, off grid electrification of communities and public buildings, rehabilitation and expansion of the school and health facilities infrastructure, markets, replacement of asbestos roofs, WASH facilities and livelihood activities for both the refugees and host communities.

### **Project Components**

The project has four components as indicated below.

#### **Component 1: Strengthening the Enabling Environment (US\$8 million)**

This component will ensure that refugees and former refugees have their rights improved and social economic opportunities realized stemming from the launching of the new National Refugee Policy. In addition, the inclusion of POC's in the national social systems through the introduction of the digitized identity documentation and the digitalization of the Office of the Commissioner for Refugees.

#### **Component 2: Climate Resilient Community Infrastructure (US\$14 million)**

This component will consist of improved infrastructure in Meheba settlement and the host community. These structures will include upgrading the rural roads, installation of off grid electricity in public areas, school upgrading and possible upgrading of health clinics.

#### **Component 3: Climate Resilient Agriculture (US\$4 million)**

The component will include support towards enhancement of commercialization of cooperatives and small to medium enterprise in the host community and Meheba refugee settlement.

#### **Component 4: Project Management (US\$4 million)**

The component will help in setting up a national project management unit (PMU) and a satellite at Kalumbila District Council.

### **ESMF Justification, Principles and Objective**

The Environmental and Social risk classification of ZRCP has been assessed as substantial because the project involves activities that may have irreversible environmental and social risks and impacts. The extraction of raw materials for road rehabilitation and bridge construction will cause irreversible changes to biodiversity and natural resources, which is further exacerbated by the inadequate technical capacity of the PMU to manage E&S risks in line with the Environmental and Social Framework (ESF). Further, the multiplicity of stakeholders with a fragmented coordination mechanism, coupled with weak institutional capacity, potential risk of exclusion, could exacerbate existing tensions of inequality among refugees and host communities.

The ESMF is an umbrella instrument, applicable to all project activities, that sets out the principles, rules, guidelines, and procedures for screening proposed project activities based on their expected environmental and social impacts and defines the adequate environmental and social instruments to be applied in each case. Such instruments can range from an Environmental and Social Impact Assessment (ESIA) to Environmental and Social Management Plan (ESMP).

The ESMF also establishes the principles and procedures for undertaking consultations and to implement grievance mechanisms, as required; a monitoring and evaluation system; and a reporting system. It establishes the institutional responsibilities for implementation, supervision, monitoring and evaluation and reporting on environmental and social risk management throughout all phases of the project (design, construction, and operation). This ESMF lays out screening processes and tools directly implemented by the Ministry of Home Affairs Internal Security (MoHAIS)/Zambia Refugee and Host Community Project (ZRHCP)/Project Management Unit (PMU) to assess risks and impacts per activity. This will facilitate the recommendation of appropriate mitigation and monitoring measures for each activity. The main purpose of this ESMF is, therefore, the establishment of procedures and methodologies for environmental and social assessments, review, approval, and implementation of activities to be financed under the project, as the nature, scope and locations of activities become known during the implementation of the project.

It describes the appropriate roles and responsibilities of MoHAIS /ZRC/PMU and other stakeholders and outlines the reporting procedures on environmental and social risk issues. It describes the managing and monitoring processes for environmental and social risks and impacts related to the activities to be implemented under the project. It further determines the training, capacity building and technical assistance required by MoHAIS/ZRC/PMU to successfully implement the provisions of the ESMF and provides practical information resources for implementing the ESMF. It also lays out the project's staffing and institutional arrangements clarifying the relations between MoHAIS /ZRC/PMU and the World Bank, including their roles and responsibilities in view of the implementation of the ESMF.

This ESMF has been prepared to identify the potential environmental and social risks and impacts of the proposed Project activities and propose suitable mitigation measures to manage these risks and impacts. It maps out the Zambian Laws and regulations and the World Bank ESSs applicable to the Project, and describes the principles, approaches, implementation arrangements, and environmental and social mitigation measures to be followed.

### **Policy, Legal and Institutional Review**

The following legal instruments among others were reviewed since they provide guidance when implementing projects described in components 1, 2 and 3. These are principally the Government of Zambia (GoZ) legislations that apply to this project. A comparative analysis has been made between relevant regulations of the GoZ and the applicable World Bank's Environmental and Social Standards (ESSs).

#### **Policies**

- The National Refugee Policy
- National Policy on the environment
- National Policy on the Environment (2007)
- National Agriculture Policy
- National Water Policy
- National Policy on Climate Change (2016)

#### **Acts**

- Refugees Act No 1 of 2017

- Environmental Management Act, No. 12 of 2011
- Anti-Gender Based Violence Act, No.1 of 2011.
- The Employment Code Act, No. 3 of 2019
- The Roads and Road Traffic Act, No .11 of 2002 (as amended August 2022)
- Fisheries Act No.22 of 2011
- Human Rights Commission Act, No. 39 of 1996
- Gender Equity and Equality Act No. 22 of 2015
- National Heritage Conservation Commission Act, No.13 1994
- Occupational Health and Safety Act No. 36 of 2010
- Public Health Act, No.22, 1995
- Standards Act, No. 4 of 2017
- The National Pensions Scheme Act No.7 of 2015
- The food Safety Act No. 7 of 2017
- National Council for Construction Act No. 10 of 2020
- Immigration and Deportation Act No. 18 of 2010
- Environmental Management Act No. 12 of 2011 as read together with the Environmental Management (Amendment) Act No.8 of 2023

### Regulations

- Environmental Impact Assessment Regulations, SI No. 28 of 1997
- The National Registration (Amendment) Regulations, SI No. 80 of 2021
- The Water Resources Management (Groundwater and Boreholes) Regulations, SI No. 20 of 2018

### Environmental and Social Risk Management Instruments.

This ESMF and Stakeholder Engagement Plan (SEP) will be disclosed both in country and World Bank websites. There are other environmental and social risk instruments that will complement this ESMF during project implementation. These include Resettlement Action Plan (RAP), Labor Management Procedures (LMP), Environmental and Social Screening Forms, an Environmental and Social Impact Assessment and site specific Environmental and Social Management plans including other management plans.

### Environmental and Social Requirements

To minimize and mitigate adverse risks and impacts and undue harm of its development projects to the environment, all Bank-financed projects are guided by applicable environmental and social standards under the Environmental and Social Framework (ESF). Most of Bank’s ESSs are applicable as shown in Table 1 below.

Table 1: Applicable Environmental and Social Standards

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal	
<b>E &amp; S Standards</b>	<b>Relevance</b>
ESS1-Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS2-Labor and Working Conditions	Relevant
ESS3-Resource Efficiency and Pollution Prevention and Management	Relevant
ESS4-Community Health and Safety	Relevant
ESS5-Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS6-Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant

ESS7-Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Relevant
ESS8-Cultural Heritage	Relevant
ESS9-Financial Intermediaries	Not Relevant
ESS 10-Stakeholder Engagement and Information Disclosure	Relevant

## Environmental and Social Risks Classification

The overall Environmental and Social Risk classification is rated as **Substantial**.

## Positive, Adverse Risks, Impacts and Mitigation Measures

### Potential positive impacts

The project will contribute to enhanced opportunities for social and economic integration of refugees in Zambia. Benefits will accrue specifically to refugees in Meheba settlement and host communities within Kalumbila district through improved infrastructure, access to social services, boost in economic activities and job opportunities, leading to improved human capital indicators within the project footprint. The project approach is inclusive, fostering cohesion among refugees and host communities in target areas by adopting broad stakeholder consultations to inform project design and implementation. Furthermore, refugees, host communities and Kalumbila District Council officials will be provided with technical assistance in planning for infrastructure that is climate resilient and as well as adoption of climate smart agricultural practices. A Summary of potential adverse risks and impacts is presented in Table 2 below.

Table 2: Summary of Potential adverse Risks and Impacts and Mitigation Measures

Impacts	Description of mitigation measures
<b>Physical Environment</b>	
Waste Management (including e-waste and asbestos waste)	<p><b>Solid waste</b></p> <ul style="list-style-type: none"> <li>• Develop and implement waste management plan for managing construction and operational wastes.</li> <li>• Adequate waste receptacles and facilities should be provided at project sites/camp sites.</li> <li>• Training and awareness on safe waste disposal in all sites construction camps for all workers and in schools</li> <li>• Final disposal should be at dumpsites approved by ZEMA</li> </ul> <p><b>Hazardous Waste</b></p> <p><u>Waste oil /fuel</u></p> <ul style="list-style-type: none"> <li>• Spent or waste oil from vehicles and equipment should be collected and temporarily stored in drums or containers at site for recycling to oil marketing companies or agents approved or recognized and have the capacity to undertake oil disposal.</li> </ul> <p><u>Pit latrine Fecal Sludge</u></p> <ul style="list-style-type: none"> <li>• Develop and implement a Pit Latrine Fecal Sludge Management Plan</li> </ul> <p><u>Asbestos waste</u></p> <ul style="list-style-type: none"> <li>• Dispose in line with the hazardous waste management regulations of ZEMA.</li> <li>• Develop and implement the Asbestos Waste Management Plan</li> </ul> <p><u>Electronic Waste</u></p> <ul style="list-style-type: none"> <li>• Develop and Implement the Electronic Waste Management Plan</li> </ul>
Habitat/Biodiversity Impacts	<ul style="list-style-type: none"> <li>• Exclude areas with critical habitats, protected areas including national parks and forests for grid expansion works.</li> <li>• Develop and implement Waste Management Plan</li> </ul>

	<ul style="list-style-type: none"> <li>• Limit vegetation clearance to project footprint</li> <li>• Keep construction works to the existing road width.</li> <li>• Prepare an environmental project brief for a worker's camp site.</li> <li>• Keep to a minimum ground vegetation loss and preserve trees along the wayleave.</li> <li>• Practice topsoil stripping and stockpile for use</li> <li>• Progressive rehabilitation of borrow pits.</li> <li>• Evaluation and verification of primary suppliers' systems and practices importantly under community electrification component</li> </ul>
Air pollution	<ul style="list-style-type: none"> <li>• Ensure contractors operate only well-maintained engines, vehicles, trucks, and equipment. A routine maintenance program for all equipment, vehicles, trucks, and power generating engines should be in place.</li> <li>• The project should ensure the use of good quality fuel and lubricants only.</li> <li>• If dust generation at the project/construction site becomes a problem, limited wetting of sites and or unloading and reloading points.</li> <li>• Construction traffic speed control measures should be enforced on unpaved roads through communities)</li> <li>• Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use.</li> <li>• Implement clean/renewable energy technologies.</li> <li>• Reduction of carbon emissions both by using energy more efficiently and by increasing the use of renewable sources of energy</li> <li>• Sensitize the community to refrain from open air burning of solid waste, including construction and agricultural waste.</li> </ul>
Noise and vibration	<ul style="list-style-type: none"> <li>• Proposed investments should require contractors to use equipment and vehicles that are in good working order, well maintained, and that have some noise suppression equipment (e.g., mufflers, noise baffles) intact and in working order.</li> <li>• This will be achieved by making it a component of contractual agreements with the construction contractors.</li> <li>• Contractors will be required to implement best driving practices when approaching and leaving and implementation of the Road Policy annexed to the ESMF.</li> <li>• Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use.</li> </ul>
Water pollution	<ul style="list-style-type: none"> <li>• Develop and implement Waste Management Plan</li> <li>• No garbage/refuse, oily wastes, fuels/waste oils should be discharged into drains or onto site grounds.</li> <li>• Fuel storage tanks/sites should be properly secured to contain any spillage.</li> <li>• Maintenance and cleaning of construction vehicles and equipment should take place offsite.</li> <li>• Toilet facilities should be provided for construction workers to avoid indiscriminate defecation in nearby bush or local water bodies or disturbance to communities.</li> <li>• Avoid discharge of sediments into water bodies to prevent siltation</li> </ul>
Soil and land degradation	<ul style="list-style-type: none"> <li>• Minimize land clearing areas as much as possible to avoid unnecessary exposure of bare ground to the elements of the weather.</li> <li>• Re-vegetate cleared areas and rehabilitated excavated sites including borrow pits.</li> </ul>
Impacts on community health and safety	<ul style="list-style-type: none"> <li>• Trucks carrying construction materials such as sand, quarry dust, laterite etc. will have the buckets covered with tarpaulin or appropriate polythene material from or to project site.</li> <li>• Only road worthy vehicles/trucks should be used.</li> <li>• Only experienced drivers/operators should be employed.</li> </ul>

	<ul style="list-style-type: none"> <li>• Except for areas secured by fencing, all active construction areas will be marked with high-visibility tape to reduce the risk of accidents involving pedestrians and vehicles.</li> <li>• All open trenches and excavated areas will be backfilled as soon as possible after construction has been completed. Access to open trenches and excavated areas will be secured to prevent pedestrians or vehicles from falling in.</li> <li>• Adequate sanitary facilities will be available for workers.</li> <li>• Construction workers should be educated to adhere to basic rules regarding protection of public health, including most importantly hygiene and disease (HIV/AIDS) prevention.</li> <li>• Develop and implement traffic management plans.</li> <li>• Only experienced drivers should be employed.</li> <li>• Contractors must provide training for drivers.</li> <li>• Establish speed limits.</li> <li>• Establish speed control measures (humps, speed limit signs) etc.</li> <li>• Develop and implement waste management plans.</li> <li>• Develop and implement Emergency Response Plans</li> <li>• Develop Code of Conduct for stakeholders and participants</li> <li>• Enforce safe driving and take disciplinary action against repeat offenders</li> </ul>
Impacts on cultural heritage/archaeological interest	<ul style="list-style-type: none"> <li>• The project should implement a chance find procedure and reporting system to be used by contractors if a cultural heritage feature or ecologically sensitive item/issue is encountered.</li> </ul>
Impacts on occupational health and safety	<ul style="list-style-type: none"> <li>• Develop and implement sub project specific Occupational Health and Safety (OHS) plan that will include detailed OHS procedures (risk assessments and road safety etc.) based off the WB ESHGs and Good International Industry Practice (GIIP) and other relevant guidance, and specific requirements of ESS2.</li> <li>• The project will require all contractors to implement an Environmental, Health and Safety (EHS) plan which will outline procedures for avoiding health and safety incidents and for emergency medical treatment. This will be achieved by making it a component of contractual agreement.</li> <li>• Develop and implement Labour Management Plan</li> <li>• Contractors' workers will be required to wear suitable PPE including hard hats, high-visibility vests, safety boots and gloves and life vests as appropriate in accordance with the EHS plan.</li> <li>• Always enforce use of PPEs for all staff and workers and ensure supervision of the same to minimize accidents.</li> <li>• All construction and other workers will be sufficiently trained in the safe methods pertaining to their area of work to avoid injuries.</li> <li>• Development of Code of Conduct</li> </ul>
Inequality among refugees and host communities	<ul style="list-style-type: none"> <li>• A Stakeholder Engagement Plan has been developed</li> </ul>
Labor related issues	<ul style="list-style-type: none"> <li>• Workers should have written and signed contracts for their jobs and worker's grievance redress system should be availed</li> </ul>
Gender Based Violence/SH	<ul style="list-style-type: none"> <li>• Development of Gender Based Action Plan</li> <li>• Development of Code of Conduct for all workers</li> <li>• Sensitization/ training of workers and community groups and members on GBV issues</li> </ul>
Public Health HIV/AIDS/STI's/COVID-19	<ul style="list-style-type: none"> <li>• Design HIV/AIDS awareness, sensitization and prevention program for refuge settlement and host communities</li> <li>• Development of Code of Conduct for all workers</li> </ul>
Land acquisition and resettlement	<ul style="list-style-type: none"> <li>• Where necessary develop and implement a Resettlement Action Plan/Livelihood Restoration Plan</li> </ul>

These risks will be identified, assessed, mitigated and managed through a frameworks approach. This ESMF has been prepared to provide details of the procedures that address the project potential environmental and social risks and impacts. All subprojects will be adequately screened, and the necessary and proportionate level of the E&S due diligence will be implemented e.g., the development of the E&S instruments.

In addition, the following E&S instruments have been prepared as part of the ESMF to address potential environmental and social risks under the Zambia Refugee and Host Communities Project: Electronic Waste Management Plan, Waste Management Plan, Asbestos Waste Management Plan, Chance Find Procedures (CFP), Borrow Pit Management Plan, GBV action plan, Labour Management Procedures (LMP), and the Integrated Pesticide Management Plan (IPMP) will be prepared during implementation. Further, a stand-alone Stakeholder Engagement Plan (SEP) that includes a Grievance Redress Mechanism (GRM) has been prepared.

### **Procedure for Preparation of Sub-Project E&S Instruments**

Using this ESMF which is acting as a guide, there will be need to develop Environmental and Social Impact Assessment (ESIA) or Environmental and Social Management Plan (ESMP) which are equated to site specific Environmental Project Brief (EPB) or Environmental Impact Statements (EISs) under the Zambian legal framework. The Zambian Environmental Impact Assessment regulations (1997) provide for screening into three general categories – (a) no EIA for projects with insignificant impacts; (b) Environmental Project Brief for projects of minor or less significant impacts; and (c) Environmental Impact Statement for projects with significant impacts.

ZRCP environmental and social specialists at the PMU will screen all sub projects that it will be implement under component 2 and 3. Screening will determine the environmental and social issues that the sub project might trigger, and the type and level of assessment required including which type of report to submit to ZEMA (Annex 1). All the ESMPs/EPBs and ESIAs would have to be prepared by a ZEMA registered expert, reviewed by PMU, and submitted to World Bank for further review and clearance before sharing with ZEMA for review and licensing prior to commencement of construction. The ESMPs/EPB and ESIAs will be reviewed by the ZRCP national PMU and satellite PMU and disclosed on the MoHAIS website. The reports will also be disclosed in the project areas and made accessible to the beneficiaries. The Bank will also disclose these documents on its external website.

### **Capacity Building**

Capacity development and strengthening remains a crucial component in this ESMF and will be integrated all through the project implementation phase. The planning and implementation capacity of MoHAIS PMU and satellite PMU is substantially low. Thus, MoHAIS PMU will recruit qualified Environmental Health and Safety Specialist and Social Specialist to oversee management of environmental and social risks in the project. Both MoHAIS PMU and the satellite PMU will be attending training on the ESMF implementation. The total estimated budget proposed for ESMF implementation is USD 225 000.

### **Monitoring and Reporting**

MoHAIS PMU will be required to prepare and submit to the Bank regular monitoring progress reports on the environmental, social, health and safety (ESHS) performance of the project, including but not limited to, the implementation of the ESCP, status of preparation and implementation of environmental and social instruments required under the ESCP, stakeholder engagement activities, and the functioning of the grievance mechanism.

Reporting will be quarterly and annually throughout the project implementation period. MoHAIS PMU will promptly notify the Bank (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, the affected communities, the public or workers including child abuse, gender-based violence or misuse or any dispute between local communities' project workers.

### **Public Consultations, Stakeholder Engagement and Disclosure**

A separate Stakeholder Engagement Plan (SEP) consistent with ESS10 has been prepared and the process of consultation is being documented. The SEP is expected to provide stakeholders with timely, relevant, understandable, and accessible information, in a culturally appropriate manner, free of manipulation, interference, coercion, discrimination, and intimidation. The SEP identifies relevant stakeholders to be engaged throughout the project cycle. The SEP also outlines characteristics and interests of the relevant stakeholder groups, the timing, and methods of engagement throughout the life of the project.

The SEP has been disclosed including a record of the stakeholder engagement activities carried out so far, which include consultations with (i) Inter-Ministerial National Steering Committee for the Modernization of Refugee Host Communities and Settlement Approach (MORHCSA), Ministry of Home Affairs and Internal Security, Practice Manager for Social Sustainability and inclusion in East Africa, line ministries in Kalumbila District, Barrick Lumwana Mines held in Kalumbila, refugee leaders and the host community in Meheba Refugee Settlement and host communities.

### **Grievance Mechanism**

A grievance mechanism (GM) consistent with ESS10, based on which the PMU will establish, publicize, maintain, and operate an accessible GM, to receive and facilitate resolution of concerns and grievances in relation to the Project, promptly and effectively, in a transparent manner that is culturally appropriate and readily accessible to all Project-affected parties, at no cost and without retribution, including concerns and grievances filed anonymously. The grievance mechanism shall be equipped to receive, register, and facilitate the resolution of SEA/SH complaints, including through the referral of survivors to relevant gender-based violence service providers, all in a safe, confidential, and survivor-centered manner.

### **Project Implementation and Institutional Arrangements.**

The Ministry of Home Affairs and Internal Security will coordinate project activities, including day-to-day implementation, coordination, supervision, and overall management of project activities. In addition, the Kalumbila District Council will host a satellite PMU which will be responsible for the infrastructure and agribusiness components with oversight from the Ministry of Home Affairs and Internal Security.

Other institutions such as Zambia Environmental Management Agency (ZEMA), Ministry of Agriculture, Ministry of Education, Ministry of Local Government and Rural Development and local authorities, Water Resources Management Authority. Ministry of Labour and Social Services (department of Occupational Safety and Health Services) will play a vital role as part of institutional arrangement in monitoring subproject Environmental and Social Impact Assessments (ESIAs) and the Environmental and Social Management Plans (ESMPs) in compliance with the procedures outlined in this ESMF.

## **CHAPTER 1:INTRODUCTION**

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

This ESMF is developed to support the environmental and social due diligence provisions for activities financed by the World Bank in the Zambia Refugee and Host Communities Project (P503941). The project will improve access to services and economic opportunities for the refugees and strengthen infrastructure and livelihood in the host community communities and Meheba Refugee Settlement. Component 1 of the project will be implemented national wide while 2 &3 will be concentrated in Kalumbila District of North-Western Province. Component 4 on project management cuts across. The Ministry of Home Affairs and Internal Security will be implementing the Project activities in collaboration with other Government institutions.

This ESMF follows the World Bank Environmental and Social Framework (ESF) as well as the national laws and regulations of Zambia. The objective of the ESMF is to assess and mitigate potential negative environmental and social risks and impacts of the Project consistent with the Environmental and Social Standards (ESSs) of the World Bank ESF and national requirements. More specifically, the ESMF aims to (a) assess the potential environmental and social risks and impacts of the proposed Project and propose mitigation measures; (b) establish procedures for the environmental and social screening, review, approval, and implementation of activities; (c) specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social issues related to the activities; (d) identify the staffing requirements, as well as the training and capacity building needed to successfully implement the provisions of the ESMF; (e) address mechanisms for public consultation and disclosure of project documents as well as redress of possible grievances; and (f) establish the budget requirements for implementation of the ESMF.

This ESMF should be read together with other plans prepared for the project, including the Environmental and Social Commitment Plan (ESCP), Electronic Waste Management Plan, Integrated Pesticide Management Plan (IPMP), Borrow Pit Management Plan, Hazardous Waste Management Plan, GBV action plan, Chance Find Procedures (CFP), standalone Stakeholder Engagement Plan (SEP) that includes a Grievance Redress Mechanism (GRM) and Labor Management Procedures (LMP).

### **1.1 Project Development Objective**

Improved access to socio-economic opportunities for refugees through a strengthened legal framework and improved climate-resilient infrastructure and livelihoods in target areas for host communities and refugees.

## 1.2 Project Components

Activities under component 1 will address policy and legal barriers to refugee and former refugee integration at the national level, including the issuance of ID cards. This is intended to establish an enabling environment for the social and economic inclusion of all refugees and former refugees in the country. Activities under components 2 and 3 will operationalize the refugee policy on the ground by supporting the local development agenda of Kalumbila District in North-Western Province, through the provision of infrastructure and support to agribusiness in the Meheba refugee settlement, the largest and oldest refugee settlement in the country hosting over 40,000 refugees. GRZ has targeted Meheba for developmental improvement to harness its economic potential and improve the well-being of surrounding communities. Investment choices are fully aligned with GRZ's reform agenda and the Local Area Development plan for Meheba prepared by Kalumbila District Council.

The project aims to focus on legislation reforms to ensure that refugees can benefit from the services that are offered to the host communities. In addition, the project will also look at improving access to markets and connectivity through different infrastructure, enabling economic opportunities through agribusiness initiatives and improve learning, WASH facilities in schools and health centers through solar connectivity and expanded infrastructure capacity. The following activities will be undertaken (i) strengthening the enabling environment; this will enable refugees enjoy the improved rights and social-economic opportunities based on the new Refugee Policy, (ii) climate smart community infrastructure; upgrading of infrastructure in the settlement and host communities which includes upgrading of the main Meheba access road (38 Km), two lane bridge construction at Mafwe, off-grid electrification of communities and key public building, single school rehabilitation and expansion and, (iii) support to resilient agribusiness; this includes support to enhance commercialization of cooperative and enhance small and medium enterprise in Meheba and Host communities; and (iv) project management; support in setting up a national project management unit in line with governments decentralization a second PMU which will be stationed in Kalumbila District Council.

### **Component 1: Strengthening the Enabling Environment (US\$ 8 Million est.)**

In November 2023 the GRZ endorsed Zambia's new National Refugee Policy. It foresees the strengthening of rights and a widening of economic opportunities for refugees, including upgrading official documentation, enhanced access to social services (education, health) and improvements to livelihoods. The GRZ has set five key objectives for its revised refugee policy – (i) strengthening refugee protection, (ii) improving refugees' access to basic services, (iii) building better livelihoods and self-reliance, (iv) enabling progress on long term solutions including local integration, and (v) enhancing coordination on refugees and their inclusion in national development processes. Overall, the new Refugee Policy introduces legal and administrative reforms that are intended, *inter alia*, to overcome longstanding barriers to local integration and naturalization. It also includes measures to enhance economic opportunities and access to services for refugees and former refugees through harmonizing the documentation issued to refugees and modifying administrative and financial requirements related to residence and work permits.

#### **Subcomponent 1.1. Building an enabling legal and administrative framework (US\$1.5 million)**

Under this subcomponent, the Project Management Unit (PMU) will organize a review of existing laws, regulations and administrative measures that are at variance with the objectives of the National Refugee Policy. It will consult closely with other government Ministries and Departments and external stakeholders, notably civil society organizations, through periodic country wide consultations. There are three broad areas where reform or amendments are needed that will impact positively on refugee protection and socio-economic conditions – (i) immigration status and documentation, (ii) access to basic services and livelihoods and (iii) self-reliance. It is envisaged

that progressive removal or amendment of specific legal, regulatory, and administrative barriers, will strengthen refugees' ability to secure recognized official status and improve their economic opportunities, while also increasing their resilience to climate-related shocks. An important challenge will be to identify whether legal amendments, the issuing of new Statutory Instruments or simple modifications to existing administrative practices, will be the optimal interventions to enable progress towards policy objectives.

Based on the legislative and administrative review, the PMU will convene and conduct a series of consultations with key stakeholders to secure their agreement on priority tasks, responsibilities for their implementation and an accompanying timetable. It will coordinate closely with the Ministry of Justice and with other participating Ministries on the articulation of the legislative, regulatory, or administrative changes required.

- **On immigration status**, the key issues to be addressed are improvements to reception, admission and management, the inclusion of refugees in national civil registration and documentation systems, the local integration of former refugees and the prevention and reduction of statelessness. This may involve amending clauses in the Refugee Act of 2017 with the new Refugee Policy of 2023, the Immigration and Deportation Act, the Citizenship Act, and the regulations and costs around residence permits.
- **In the area of basic services**, key is improving access to higher education and skills development and improving access to health care services. This may require, for example, amendment to the Higher Education, Bursaries and Scholarship Act, the National Health Services Act and providing formal provisions for refugees to attend high school through a reduction in cost of study permits, particularly for tertiary level. Climate risk assessments will be integrated into the planning and design of education and health services.
- **For livelihoods and self-reliance**, the main focus is on improving refugee access to productive means through review of laws on land ownership, access to financial services for improved productivity and freedom of movement to market their produce and participate in national development. Among others, revisions may be needed to the Land Act, the Zambia Development Act, the Employment Code, and the Constituency Development Fund guidelines.

### **Subcomponent 1.2. Issuing of ID cards to refugees and former refugees nationally (US\$6.5 million)**

**GRZ plans to roll out the issuance of new biometric National Registration Cards (NRCs) to all citizens.** The process is led by the Department of National Registration, Passports and Citizenship under the MoHAIS through the government's Integrated National Registration Information System (INRIS) project. The overall objective of that project is to improve Civil Registration and Identity Management processes through digitization and automation. In line with the new Refugee Policy, the scheme will be extended to all refugees and former refugees, enabling them for the first time to be part of the national civil registry. Despite the historically high uptake of NRCs by Zambian citizens, women and girls face several access challenges. Some of these can be explained by their time and mobility constraints due to domestic work and childcare commitments.

**The current system of documentation leaves persons of concern vulnerable.** GRZ, with the support of the UNHCR, has been registering persons of concern and issuing them with documents such as asylum seeker certificates, registration certificates, refugee identity cards, birth certificates

and alien cards. Whilst refugee identity cards, birth certificates and alien cards are legal documents, the rest are administrative documents and confer limited rights. In addition, these documents are not aligned with the existing national documentation system and are, therefore, not widely known and accepted by law enforcement agencies and other stakeholders. As such, persons of concern holding such documents have limited access to social services and livelihood opportunities (including the ability to open bank accounts and take out loans for their businesses) and are susceptible to extortion, arrest and detention.

**This subcomponent will support the rollout of new national ID cards to refugees in all three of the refugee hosting districts;** these are Kalumbila in Northwestern province, Nchelenge district in the Luapula province, and Kaoma District in the Western Province. In addition, “hotspots” in other provinces could also be targeted based on their concentration of refugees. The subcomponent will also support an inclusive public engagement strategy, and preparation of a registration plan that includes vulnerable communities within the refugee and host population, for example, single women and people with disabilities. While existing INRIS offices could be used, the project might also consider dedicated desks in areas where refugees are more scattered. Specific activities to be supported include:

- Procurement of approximately 100,000 paper-based cards or polycarbonate cards (out of the 20 million government will buy for National IDs).
- Cost of switch over of the UNHCR ProGres database to MoHAIS (separate servers and peripheral equipment).
- Cost of community-level customized campaigns for refugees in three districts, including mobile registration camps targeting women and girls.
- Cost of enrollment/registration campaign with equipment (counters/desks, biometric registration kits required) in refugee communities only.

## **Component 2: Climate Smart Resilient Community Infrastructure (US\$14 million est.)**

The objective of this component is to help address profound infrastructure deficits both in the Meheba refugee settlement and the surrounding community. It will support climate-resilient infrastructure activities aligned with local planning priorities including the Local Area Plan for the Meheba settlement prepared by the Kalumbila District Council (under the Ministry of Local Government). There will be a focus on socio-economic infrastructure to facilitate livelihood and employment rural trunk road upgrade and electrification using a mix of solar and grid expansion as feasible in areas of highest population density both within the settlement and the local community. The settlement access road will be built to a high climate-resilient standard to ensure greater sustainability. Component activities will also electrify markets, businesses, public institutions (schools, health facilities, etc.) and nearby households. The main social infrastructure priority is schools, which are massively overcrowded and lack classroom capacity, teacher accommodation, and appropriate Water, Sanitation and Hygiene (WASH). Electricity to school infrastructure will allow for uninterrupted learning, whilst new classroom designs will allow greater cooling and ventilation, and the adoption of simple water harvesting will permit more handwashing. Through this component, GRZ - specifically Kalumbila District Council - will be provided with technical assistance to improve its capacity in climate-resilient design and construction standards for infrastructure. The project aims to pilot new climate-resilient classrooms designs that are cost effective, sustainable, and can subsequently be adopted by the Ministry of Education for national rollout. Component 2 will provide the following support:

i. **Transport infrastructure - Meheba settlement main access road and Mwafwe bridge (US\$2.5 million).** The overall state of rural roads within the Meheba settlement remains one of the main bottlenecks to the development of that settlement into an economically viable area. The rehabilitation of settlement roads is the priority development need across all communities to ease mobility within the settlement and connect communities with services and local markets. The project will upgrade the 38 Km of rural road from the Meheba junction on the T5 Solwezi – Mwinilunga highway to the Mwafwe River located at the southern border of the settlement. Construction will be done to a climate-resilient standard, to withstand damage from flash flooding, including for example, building in robust drainage and ensuring their periodic maintenance in line with Zambia’s Climate Adaptation Plan which seeks to promote the application of climate-smart codes for roads development nationally. It will also provide a bridge over the Mwafwe River to facilitate access to communities in the Matebo Ward to the immediate south of the settlement. Rural road upgrading will also contribute significantly to creating linkages – increasing the opportunity to access goods and services located in nearby Solwezi and other markets, thus building resilience of the refugees and the broader community to the impacts of climate change. This will be a two-lane gravel road which will be upgraded from an existing dirty road with a road of width of about 6 m. Construction will be done by a contractor to be supervised by a supervising engineer. The operation and maintenance manual to ensure sustainability of the project will be prepared by the contractor and implemented by the district council. The contractor will be engaged through the national bidding process. The raw materials will include gravel and laterite whose quantities will be determined during the preparation of the designs. The number of workers involved will also be determined at design stage.

ii. **Electrification of communities (US\$2.5 million).** This activity will be implemented through the Rural Electrification Agency (REA). It will support the extension of electricity supply to Meheba Refugee camp and the host community through expanding the grid and connecting public facilities, Small and Medium Enterprises (SMEs) and households. It will also provide off-grid solutions to those facilities and households that are unable to access the grid. In line with Sustainable Development Goal (SDG) 7 to “ensure access to affordable, reliable, sustainable and modern energy for all”, there is need to accelerate the provision of energy infrastructure in underserved areas such as refugee camps. Providing energy access to health facilities, schools, SMEs, and households will improve the provision of basic services, thereby improving welfare, catalyzing growth, and positively changing livelihoods in the refugee settlement and surrounding areas. The proposed project will enable at least six settlement areas (three in the refugee settlement and three in the surrounding communities identified through community consultations) to have access to sustainable energy services using least cost options and with approximate demand of 20-300kW. Given the limited financing available and the problems with power supply from the national grid, the project will consider prioritizing decentralized renewable energy supply solutions, namely solar mini-grids, and standalone systems. Where solar mini grid solution is least cost, it will be developed under a Public-Private Partnership (PPP) whereby private investment and public funds co-finance construction of generation facilities, and public funding is used to construct the distribution network. The project would build on the ongoing works to supply the community by REA that is connecting Meheba under phases 1 and 2 financed by UNHCR; and will fund subsequent phases that are under scoping by REA.

iii. **School upgrading (US\$6.5 million).** Meheba plays a key role in providing education services for both refugees and host communities though facilities are inadequate both within the settlement and in the schools in its immediate vicinity. The inadequacy of facilities affects the quality of education as all schools fall way below the GRZ minimum standards for classroom capacity and furniture, sanitation facilities and teacher accommodation. Local population growth, coupled with a general lack of financing to upgrade and expand existing facilities has resulted in many schools massively over exceeding their original design capacities. For example, schools with

an original design capacity of 1000 pupils are currently educating over 3000 with class sizes exceeding 150 pupils. In addition, the lack of teacher accommodation stymies recruitment and retention. WASH facilities are also inadequate, with most schools surviving on a limited number of antiquated pit latrines which pose a high health risk, especially during periods of high rainfall. Within the available budget, the project will seek to upgrade and expand six schools both within the settlement and in the surrounding community in close consultation with communities and Ministry of Education (MoE). Also aligned with Zambia's Climate Adaptation Plan, the design and construction of school buildings and facilities will be done to new climate-resilient standards which will include adaptation solutions such as roof gutters for rainwater harvesting, higher windows and orientation to deal with heatwaves and for enhanced ventilation, solar panels on roofs and low energy bulbs to improve mitigation.

iv. **Health facilities (US\$2.5 million).** Communities have identified health services as a priority amongst other needs in Meheba. The major challenges are the poor quality of road access, lack of electricity, inadequate physical health infrastructure, poor to non-existent WASH facilities, levels of staffing which fall below Ministry of Health standards, and lack of basic equipment. None of the five government health centers in the settlement have a dedicated maternity annex with adequately trained staff and equipment, leading to elevated levels of both maternal and infant mortality. More staff housing units are also required to help address current shortages. The project aims to upgrade and expand two health centers, to be identified jointly by the MoHAIS and the Ministry of Health. Priority investments will be on improving existing physical infrastructure (to withstand damage from flash floods as well as improve ventilation to respond to higher temperatures), providing dedicated fully equipped maternity units, staff housing, electricity and support to WASH given the current reliance on pit latrines (which contribute to the spread of climate-related vector borne diseases). An assessment to be carried by the Ministry of Health will identify investment choices. The assessment would inform of any works to be carried out related to services e.g., supply of potable water, electricity, wastewater management and waste disposal.

### **Component 3: Climate Resilient Agriculture (US\$ 4 million est.)**

The objective of this component is to support small-scale farmers and to improve their productivity, income, and resilience to climate shocks. The increase in the population of the Kalumbila District, coupled with the presence of large mining companies, means that food is in very high demand. This increase in demand has not been met by the local farmers, which has forced mining companies, who are currently the largest consumers, to buy the shortage from other regions. At the same time, refugees and host communities find it challenging to access livelihood opportunities to meet their basic needs. The component will support capacity building of farmers and cooperatives to address key constraints related to limited access to business advisory services and finance, including adaptive climate technology. This will be achieved through providing technical assistance (TA) and investment in sub-projects of individual farmers or farmer cooperative.

i. **Technical Assistance (US\$2 million).** The process for selecting and supporting beneficiaries will follow a standardized sequence entailing a call for applications, selection of eligible applicants by the Ministry of Agriculture in collaboration with the Kalumbila district council and thereafter sequenced business development support. Support will include: 1) cooperative management to enhance effective operations; 2) financial management, including digital financial tools; 3) business operations; 4) training on selected value chains; 5) climate-adaptive inputs such as drought resistant seeds or climate adaptive technologies; 6) marketing and business outreach; 7) aggregation strategies including exploring the use of anchor farms or collective processing or storage facilities; 8) nutritional diversity and food security; 9) networking and mentorship. The TA will include exposure to value chains that can be resilient to climate shocks which provide a menu of options for how cooperatives can work jointly to

monetize value chains and produce consistent high-quality produce. Cooperatives will also be aided with certification, brand registration and marketing. TA will be delivered by an externally sourced service provider in collaboration with local agricultural extension officers from the Ministry of Agriculture. Support will also be provided to help establish practices that minimize EHS impacts and risks, including ensuring that the grants include the budget for costs of mitigating E&S risks and impacts.

- ii. **Co-investments in sub-projects (US\$2 million):** While all eligible farmers and cooperatives will receive technical assistance, only a subset will receive investment from the project for assets or working capital support that support their agri-business. Eligible farmers will be incentivized to apply for financing through well-organized cooperatives, common interest groups or producer groups. The TA service provider will provide an initial shortlist of well performing individual farmers and cooperatives. Precise selection criteria will be developed by the TA service provider in consultation with local officials from the Ministry of Agriculture. Up to 70 percent of 8000 business proposals will be funded through the project in different agriculture related activities. The co-investee farmers or cooperatives will receive additional technical support on the operation and maintenance of purchased assets.

#### **Component 4: Project Management (US\$ 4 Million est.)**

The component will finance the staffing of two PMUs and includes the costs of project implementation, monitoring, evaluation, oversight, and capacity-building for the implementing agencies. The project will support the establishment of a national PMU within the Ministry of Home Affairs and Internal Security (MoHAIS) and a satellite PMU at the Kalumbila District Council.

##### **1.3 ESMF Purpose and Rational**

The ESMF was selected as the environmental and social instrument for assessing, managing, and monitoring environmental and social risks and impacts of the project for components 1, 2 &3 including TA EHS risks and impacts since the actual project locations, and designs are not known, and the impacts cannot therefore be clearly described at the time of project preparation. The ESMF has been prepared to provide guidelines and procedures for assessing environmental and social risks and impacts during implementation. This ESMF lays out screening processes and tools to be used by the MoHAIS to assess risks and impacts per activity. Using the ESMF, screening will be undertaken for all activities planned (referred to as sub projects) to guide preparation of specific E&S instruments for the selected sub projects. The ESMF describes the appropriate roles and responsibilities of the PMU and other stakeholders and outlines the reporting procedures on environmental and social risk issues. It describes the managing and monitoring processes of environmental and social risks and impacts related to the project. It further determines the training, capacity building and technical assistance required for PMU to successfully implement the provisions of the ESMF; and provides practical information resources for implementing the ESMF. It also lays out the project's staffing and institutional arrangements clarifying the relations between PMU and the World Bank, including their roles and responsibilities in view of the implementation of the ESMF. The ESMF has been prepared in accordance with applicable World Bank Environmental and Social Standards (ESSS).

##### **1.4 Implementation Arrangements**

There are two project management units that will be involved in implementation of the ESMF.

**The national PMU within the Ministry of Home Affairs and Internal Security (MoHAIS).** This PMU will manage the overall coordination of the project, coordinate partnerships with key

government and external agencies, convene consultations with engaged stakeholders, and lead on overall project communications. It will be responsible for managing the project's institutional arrangements through the National Steering Committee. It will be directly responsible for the implementation of sub-components in Component 1. The PMU will also have a lead role in overall project monitoring down to the district-level and be responsible for housing the project's grievance redress mechanism (GRM) and leading on project communications and monitoring and evaluation (M&E). The national PMU will oversee relevant screening processes for components 2 & 3 in alignment with the Zambia Environmental Management Act of No. 12 of 2011 as read together with the Environmental Management (Amendment) Act No. 8 of 2023, the Environmental Impact Assessment (EIA) Regulations, Statutory Instrument No.28 of 1997, and the World Bank Environmental and Social Framework.

**A satellite PMU at the Kalumbila District Council.** This will oversee the day-to-day implementation of components 2 and 3, supervised by the National PMU. It will have an appropriate staffing structure to ensure fiduciary and safeguards compliance, together with effective stakeholder engagement, procurement, and contract management capabilities. A district PMU at the Kalumbila District Council will oversee the day-to-day implementation of components 2 and 3, with qualified staff and resources to support management of ESHS risks and impacts of the Project including a qualified Environmental Specialist and Social Specialist supervised by the National PMU. It will have an appropriate staffing structure to ensure fiduciary and safeguards compliance, together with effective stakeholder engagement, procurement, and contract management capabilities including project manager, civil engineer, agribusiness specialist 1, agribusiness specialist 2, FM and procurement specialist.



### 2.3 Water and sanitation

The source of water in the area is groundwater supplied through boreholes (Figure 2). However, increase in human activities including agricultural activities may degrade soil and water quality. The source of water in the area is groundwater supplied through boreholes. The area is heavily dependent on pit latrines with no proper sanitary waste management facilities. This poses a risk of ground water contamination. Rehabilitation of WASH facilities to consider site contamination associated with the presence of pit latrines in the project area. There is an increased risk of waterborne diseases such as cholera in the rainy season given the current over reliance on pit latrines. There is a naturally occurring iron in the Kalumbila geological structure of Kalumbila area which in some parts is visible in boreholes. Hence, the WASH aspects of the project need to put up measures to ensure clean water is supplied and meets acceptable water quality parameters.



Figure 2: Type of water system in Meheba Refugee Settlement

Source: UNHCR Report

### 2.4 Climate

Kalumbila District falls in the agro-ecological region III of the country, with current rainfall above 1000 mm per annum and is endowed with abundant arable land, a lot of water bodies and good pastureland, giving it a high potential zone for crop and vegetable production, aquaculture, livestock farming and value-addition. Despite these natural endowments and high market demands, agriculture at Meheba and in the surrounding community remains largely at the subsistence level. Infrastructure development to consider climate adaptive technology to manage E&S risks and impacts associated with climate change.

### 2.5 Biodiversity at Project Locations

Sites for rehabilitation activities are already in existing areas with minimum vegetation. The major vegetation cover observed in the project area is on the peripheral of the truck road to be rehabilitated Figure 3.



Figure 3: Aerial view of the trunk road for rehabilitation

## 2.5 Socio Economic and cultural environment

### Demographics

Zambia's population estimated at 19.6 million in 2021 is one of the fastest growing in the world and will likely reach 27 million by 2035. At national level, the incidence of poverty was estimated at 60 percent in 2022 compared to 54.4 percent in 2015 with women more effected by poverty then men. More than 60 percent of Zambia's population lives below the international poverty line compared to 35 percent across Sub-Saharan Africa. With over 65 percent of the population under 25 years old, Zambia is a country of young people. The overall fertility rate is 4.8 children. Unemployment has increased from 8 percent in 2012 to 13 percent as of 2021. The youth and female unemployment rates are even higher at 26 and 14 percent respectively and the prevalence of poverty is higher in rural areas. Zambia needs to generate an average of at least 375,000 jobs each year to 2030 to maintain its already low labor force participation rate and unemployment levels.

The MoHAIS through COR manages three refugee settlements namely, Mantapala Refugee settlement in Luapula Province, Meheba Refugee Settlement in Northwestern Province and Mayukwayukwa in Western Province. Additionally, there is a Transit center facility in Lusaka (Figure 4). About 70% of the population are settlement based and the rest are urban based due to several reasons. It is important to note that settlement-based refugees are not locked in but can move freely from the settlement to conduct their personal businesses if they access mobility passes as provided by the law. Zambia launched its first National Refugee Policy in 2024 which has a robust implementation plan. The government is taking a one government approach by encouraging all line ministries to include Persons of Concern (POCs) in their planning.

Zambia's POC population is over ninety thousand (90,000) and the number has continued to increase due to the volatility in the region. The Government has maintained an open-door policy towards receiving and hosting POCs in line with international conventions and has continued to protect and finding solutions on issues that affect the POCs.

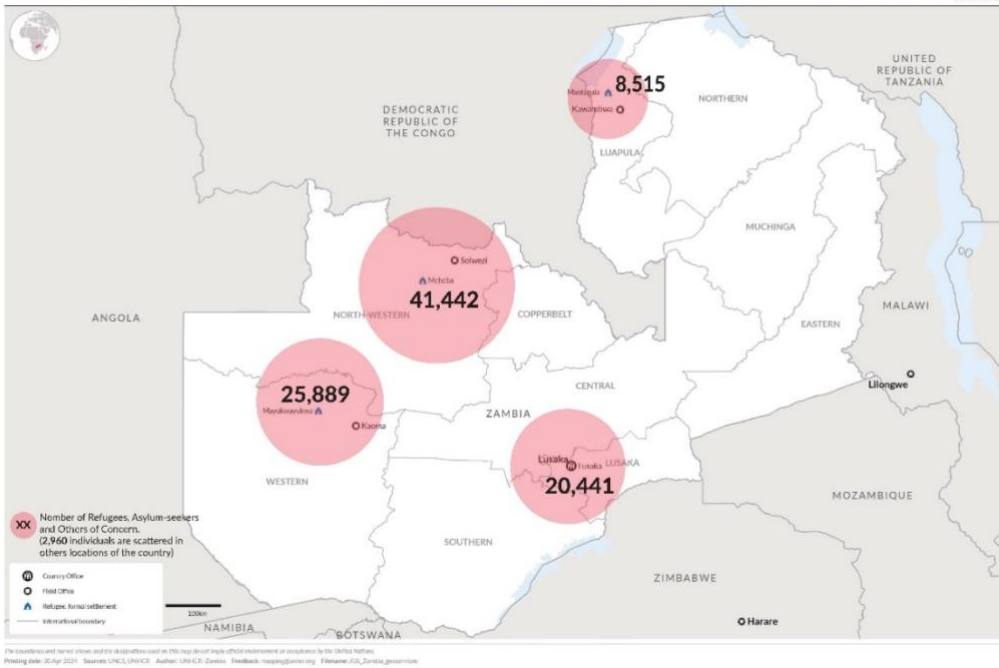


Figure 4: Location and population of Refugee Settlements in Zambia

Meheba Settlement Camp was established in 1971 in Kalumbila District and covers an area of 720 km<sup>2</sup>. It is demarcated into eight blocks from A to H. Meheba has a total population of 31,450 with land space of 720 km<sup>2</sup> according to the United Nations High Commission for Refugees. The population of Meheba, which is predominantly youthful (75.9 percent aged below 35 years), embodies the potential of a highly productive age group looking for opportunities and livelihoods. The settlement’s boundaries intersect with three adjoining wards of Kalumbila District Shilenda, Mwajimambwe and Matebo that have a combined population of 61,000.

### Vulnerable/Disadvantaged People

Reducing inequality is Zambia’s principal development challenge. The Gini coefficient, as a measure of income inequality, increased from 0.60 in 2006 to 0.65 in 2010. The richest 20 per cent of households in Zambia are responsible for 60 per cent of total expenditure while the poorest 80 per cent share 40 per cent of the total. Poor households spend 66 per cent of their resources on food, with those better off spending only 34 per cent. While urban Zambia is associated with the formal economy and carries most households in the formal sector, most rural areas are associated with the informal economy and accommodate many of the identified vulnerable groups.

According to the Zambia Vulnerability Risk Assessment and Mapping Report (2019), vulnerability is defined as the condition determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impact of hazards. Various studies have shown that poverty in Zambia is transmitted across generations.

### Health

Zambia’s health system includes both Public and Healthcare service provision. In 2018, the estimated total fertility rate was 4.7 births per woman of reproductive age, a decline from 5.3 births per woman in 2013/14. Majority of the Zambian population is affected by poverty, with 54.40% in 2015 classified as poor and 40.80% as extremely poor (CSO, 2015). The country has continued to experience a huge burden of disease, mainly characterized by; high prevalence and impact of

communicable diseases, particularly, malaria, HIV and AIDS, Sexually Transmitted Infections (STIs) and Tuberculosis (TB); and high maternal, neonatal and child morbidity and mortality. The country is also faced with a rapidly rising burden of noncommunicable diseases, including cancer diseases, mental health, diabetes mellitus, cardiovascular diseases (CVD) and trauma. These diseases also affect refugees and those in the surrounding communities.

Meheba and the surrounding community are serviced by 7 clinics. Communities have identified health services as a priority amongst other needs in Meheba. The major challenges are the poor quality of road access, lack of electricity, inadequate physical health infrastructure, poor to non-existent WASH facilities, levels of staffing which fall below Ministry of Health Standards, and lack of basic equipment. None of the five government health centers in the settlement have a dedicated maternity annex, with adequately trained staff and equipment, leading to elevated levels of both maternal and infant mortality. Figure 5 indicates a health facility in the area. More staff housing units are also required to help address current shortages. The demand for health services is likely to grow with increases to the population which demands investment in both facilities and staffing. The project aims to upgrade and expand two health centers, to be identified jointly by the MoHAIS and the Ministry of Health. Worth noting is that 13 Nurses were deployed in Meheba Refugee Settlement area in Kalumbila district during the 2022 Teacher and Health Professionals recruitment exercise to these clinics.



Figure 5: Photo of Health Facility in Meheba

## Education

The current structure of Zambia's formal education system has a 7—5—4 structure, with seven years of primary education (four years of lower and three years of upper primary), five years of secondary (two years of junior and three years of senior secondary), and four years of university to first degree level. Transition from lower to higher educational levels is determined by national competitive examinations at the end of Grades 7, 9 and 12. Historically, primary, and secondary education were offered in separate institutions, but this changed with the development of basic schools which provide the first nine years of schooling, this has since been reversed. This means that currently there are two parallel but related paths for educational progression after Grade 7: some Learners proceed into Grade 8 in a basic school, while others proceed into conventional secondary schools that run from Grade 8 to Grade 12.

Meheba and the surrounding community benefit from 14 Schools, one (1) is a boarding school, two (2) Secondary schools and 1 Day school, of these 3 communities, 8 primary schools. Figure 6 indicates one of the schools in the camp. In 2022 about 30 Teachers were deployed in Meheba Refugee Settlement area in Kalumbila district during the 2022 Teacher and Health Professionals recruitment. However, the schools in and around refugee settlement areas are massively overcrowded at both primary and secondary levels and the costs of study permits to access to tertiary education are prohibitively high for most students. There is inadequate electricity, water and sanitation in schools, which is exacerbating gender gaps as girls lack adequate menstrual hygiene at secondary level. Figure 6 indicates one of the schools in Meheba settlement.



Figure 6: School in Meheba Settlement

## Land tenure

Land tenure is the way in which rights in land are held and in Zambia tenure is categorized into two tenure systems namely, statutory tenure and customary. Statutory land tenure refers to state Land which is administered by the Lands Commissioner through local authorities on behalf of the President since all land in the country is vested in the Republican President on behalf of the people. The president of Zambia holds the country's land in perpetuity on behalf of the Zambian people. The president has delegated his powers to make and execute grants and disposition of land to the Commissioner of Lands. The Commissioner has agents who plan the land into plots and thereafter select and recommend suitable candidates to the Commissioner of Lands for issuance of certificate of title. The Commissioner's agents in this regard, are the District, Municipal, and City Councils. These agents use the Town and Country Planning Act to plan the land in their areas in their capacities as planning authorities under the Act. Customary land tenure system applies in areas under the jurisdiction of traditional authorities (chiefs/chieftainesses). The traditional system of tenure is the most prevalent among the majority Zambians who live in rural areas. Approximately 94% of the country is officially designated as customary area. It is occupied by 73 tribes, headed by 240 chiefs, 8 senior chiefs and 4 paramount chiefs. Usually, tenure under customary lands does not allow for exclusive rights in land. No single person can claim to own land as the whole land belongs to the community. Land is deemed as belonging to members of the community for their own use (Republic of Zambia, 1995). It is a valuable heritage for the whole community. Communal lands in most of the African countries including Zambia have sprung from a concept of ancestral trust committed to the living for their own interest and for the interest of the unborn.

A chief's subjects and their families have long-term, largely undocumented, use rights to the land. Historically these households have been primarily involved in smallholder agriculture. Increasingly

in the peri-urban areas, outsiders, often urban elite, acquire this land from traditional authorities either for housing or weekend farms. Due to the illegality of land markets on customary land, any monetary transaction for this land is technically illegal, but nevertheless, a very common practice. These outsiders may or may not then seek to convert customary land to statutory tenure. Occupiers of customary land do not pay ground tax to government, and community members are vulnerable to being displaced by outside investments. Community members may pay tribute to traditional ceremonies; however, these customary taxes are not necessarily related to the number or size of landholdings.

### **Economic Activities**

Mining, Agriculture and tourism are the major economic activities of Northwestern province. The area has two operational mines namely Kansanshi, Lumwana mines and Kalumbila mines officially known as Trident. While less well-known for copper production than neighboring Copperbelt Province, North-Western's output has surpassed that of the Copperbelt in recent years. Sorghum is the major crop grown in the province with other major crops which include cassava and maize. In the local diet, maize is preferred to cassava while sorghum and millet are mainly grown for beer brewing. In addition, North-Western Province is the source of the mighty Zambezi, Africa's fourth-longest river, it also features West Lunga National Park, Mutanda Falls, and Northern Kafue National Park. Which are among the key tourist attractions in the province.

However, the common activity in the settlements is farming. Some are individual farmers with a few incorporated into cooperatives that access farming inputs from government. Further, a lot of farming produce goes to waste as farmers cannot go to sell in areas outside settlements and on the other hand, big companies like Shoprite cannot drive into the settlements to purchase bulky orders due to the liability that comes with poor road network, leading to wastage of produce. It is also hard to have aggregate centers for fresh food due to lack of energy. All these challenges faced by the POCs are why the Government decided to embark on applying for the WB grant to help address some of these everyday challenges. Other economic activities range from running small businesses such as trading shops, artisans, animal husbandry to providing services through formal and informal employment.

### **Energy**

There are currently no reliable sources of energy, this inhibits both livelihood activities and the delivery of social services (health, education). The settlements are not yet connected to the national power grid. Hence, making electrification of communities as a component of the project activities in Meheba settlement camp.

## **CHAPTER 3: METHODOLOGY**

Review of the existing baseline information and literature material was undertaken and helped in gaining a further and deeper understanding of the proposed project. A desk review of the Zambia legal framework and policies was also conducted to the relevant legislations and policy documents that should be considered during project implementation. Among the documents that were reviewed to familiarise and further understand the project included:

### **3.1 Literature Review on Relevant Documents**

#### **World Bank Related Documents**

- Project Appraisal Document
- World Bank's Environmental and Social Standards
- Concept Environment and Social Review Summary
- World Bank Group General Environmental Health and Safety (EHS) Guidelines

#### **Relevant Policy Documents**

- National Policy on the Environment (2007)
- National Agriculture Policy
- National Refugee Policy
- National Water Policy
- National Policy on Climate Change (2016)

#### **Relevant Legislation**

- National Heritage Act No. 19, 1989
- The Refuge Act No. 1 of 2017
- Environmental Management Act No. 12 of 2011 as read together with the Environmental Management (Amendment) Act No.8 of 2023
- The Environmental Impact Assessment Regulations SI No. 28 of 1997
- The Water Resources Management (Groundwater and Boreholes) Regulations, SI No. 20 of 2018

### **3.2: Stakeholder Consultations and Discussions**

The ESMF preparation comprised of consultations with the key project stakeholders identified, these included with (i) Inter-Ministerial National Steering Committee for the Modernization of Refugee Host Communities and Settlement Approach (MORHCSA), Ministry of Home Affairs and Internal Security, Practice Manager for Social Sustainability and inclusion in East Africa, line ministries in Kalumbila District, Barrick Lumwana Mines held in Kalumbila, refugee leaders and the host community in Meheba Refugee Settlement and host communities. Meetings were held with the key stakeholders to prioritize project components and activities as well as their level of awareness and involvement with the proposed Project. The consultations were an important part of the ESMF preparation and were carried out to introduce the project to the stakeholders and obtain their input into the development of the ESMF. The public consultations were carried out in Lusaka and Solwezi districts (see table 12 for details).

**CHAPTER 4: REGULATORY FRAMEWORK DESCRIPTION**

**4.1 Zambia Legal Framework**

The national legal framework is presented in Table 3 below.

Table 3: Zambia Relevant Legal Framework

Legislation	Interpretation	Relevance	Compliance
<p><b>The Environmental Management Act, No. 12 of 2011 as read together with the Environmental Management (Amendment) Act No. 8 of 2023</b></p>	<p>The is the principal legislation governing environmental management in Zambia. The Act provides for the sustainable management of natural resources and protection of the environment, and the prevention and control of pollution.</p> <p>Of relevance is section 29 of the Act which states that “A person shall not undertake any project that may have an effect on the environment without the written approval of the Agency, and except in accordance with any conditions imposed in that approval”.</p> <p>In relation to this project, some of the functions of ZEMA are to review environmental impact assessment reports and undertake environmental auditing and monitoring. The act also provides for public participation in decision-making and access to environmental information.</p>	<p>A project of this nature requires that environmental issues are identified at an early stage and environmental management measures incorporated in the planning stage. The sections of the Act which are relevant to the project development include the following:                      Division II – Water Pollution; section 46 of the Act prohibits the discharge of any object or substance that has potential to cause water pollution.                      Division III – Air Pollution; the civil works during the rehabilitation of the road, construction of the bridge, expansion of school infrastructure, borehole drilling, and other construction activities coupled with the loading and offloading of dry sediments, has potential to cause localized emissions of lead contaminated dust.                      Division IV – Waste Management; this division prohibits practices that have potential to lead to unsound waste management practices. Solid                      Division VI – Noise; this section prohibits emission of any noise above the standards. The regulations for noise have not been developed yet and therefore there are no noise standards in place.                      Division VIII – Natural Resources Management</p>	<p>No works will be initiated before a decision is made by ZEMA, the competent authority in the EIA decision-making process in Zambia.</p>
<p><b>The Environmental Impact Assessment Regulations, SI 28 of 1997</b></p>	<p>In line with the principal Act, the EMA of 2011, these regulations demand that before a developer commences implementing a project, an EIA report should be prepared and submitted to the relevant regulatory authority for review and approval. Regulation 7(2) specifically requires that a developer prepares and submits an Environmental Impact Statement for:                      (a) Any project set out in the Second Schedule, whether or not the developer is part of a previously approved project.</p>	<p>The implementation of project by the Zambia Refugee and host Communities Project will involve rehabilitation of 40 Km, construction of two lane bridge and other some infrastructure works including the construction of aggregators, wholesalers, bulking centers, abattoirs, agro warehouses, food processing plants and other associated auxiliary structures in the agri-business value chain, road rehabilitation, off-grid solar system electrification, construction of school accommodation and classrooms, teachers housing and modern waste disposal. The construction of such infrastructure works may cause environmental and social risks and impact on the environment through</p>	<p>In compliance with the requirements of the Environmental Impact Assessment (EIA) regulations, all subprojects under the Zambia Refugee and Host Communities Project will be screened and categorized in terms of their risk. Depending on the risk category, an Environmental and Social Impact Assessment (ESIA) shall be conducted in accordance with the EIA regulations.</p>

Legislation	Interpretation	Relevance	Compliance
	<p>(b) Any alterations or extensions of any existing project which is set out in the Second Schedule; or</p> <p>(c) Any project which is not specified in the Second Schedule, but for which the Council determines an Environmental Impact Statement (EIS) should be prepared.</p>	<p>increased dust levels, generation of solid and hazardous waste, occupational health and safety (OHS) risks and impacts and community health and safety risks and impacts. The scale of such type of activities require that associated environmental and social issues are identified at an early stage and environmental management measures incorporated in the planning stage.</p>	<p>No works will commence before a decision is made by ZEMA, the competent authority in the EIA decision-making process in Zambia</p>
<p><b>The Environment Management (Licensing) Regulations (SI 112 of 2013)</b></p>	<p>There are several parts in this statutory instrument giving regulatory powers to ZEMA to control the discharge of water pollutants, air emitting pollutants, pesticides and other toxic substances, waste (both municipal and hazardous) and ozone depleting substances. The parts of relevance to the project at hand are II (Air and Water Pollution) and IV (Hazardous Waste). Part IV applies to: (a) the control and monitoring of the generation, collection, storage, transportation, pre-treatment, treatment, disposal, export, import, transit, trade in and transboundary movement of the hazardous waste listed in the Fifth Schedule; and (b) the waste specified in the Sixth Schedule, if that waste exhibits the characteristics found in the Seventh Schedule. Regulation 19. (1) demands that any person who intends to generate, pre-treat, treat, handle, transport, store, dispose of, transit, trade in or export hazardous waste shall apply to the Agency for a hazardous waste license.</p>	<p>Construction and rehabilitation work, agricultural activities and solar electrification of facilities will generate dust, pesticides waste and electronic waste. Relevant parts of the regulations include:  Part II – Air and Water Pollution Part IV – Hazardous Waste Part V – Pesticides and Toxic Substances</p>	<p>Dust emissions with potential to cause air pollution, particularly during the construction phase, will be prevented or minimized by consistently watering down dusty areas. This will ensure that the emission limit of 50 µg/m<sup>3</sup>, for ambient respirable particulate matter (PM<sub>10</sub>), as specified in the Second Schedule, is set within limits. Pesticides to be obtained from ZEMA licensed suppliers and disposed of empty pesticides containers in line with the hazardous waste licensing regulations. Electronic waste to be disposed of in accordance with the Hazardous Waste Regulations</p>
<p><b>Forests Act No.4 of 2015</b></p>	<p>This Act was enacted to ensure that national forests, Local Forests, joint forest management areas; are protected for the purposes of conservation and use of forests and trees for the sustainable management of forests ecosystems and biological diversity. The Act is concerned itself with the management and conservation of forest resources and, to some extent, the protection</p>	<p>Some of the subprojects under the Zambia Refugee and Host Communities Project may involve the clearing of natural forests to increase agricultural hectares. In addition, some subprojects may be implemented near national forests or forest management. Creation of borrow pits may affect the natural forest through vegetation clearance.</p>	<p>To avoid and minimize implementation of project activities in reserved national forest, an exclusion list has been developed by the Zambia Refugee and Host Communities Project to mitigate such risk. The exclusion list does not allow the implementation of subprojects in the national gazette</p>

Legislation	Interpretation	Relevance	Compliance
	of biological diversity and generally the environment in Zambia		forest. If the area of vegetation to be cleared is significant, and there are impacts on critical and natural habitats then the subproject would have to apply the mitigation hierarchy to manage risks and impacts related to indiscriminately clearing of forest.
<b>Refugees Acts, No. 1 of 2017</b>	It is the Act that establishes the office of the Commissioner for Refugees and provide for its functions. The Act provides for the recognition, protection and control of refugees, provide for the rights and responsibilities of refugees, it establishes the Refugees Fund, it also domesticates the United Nations Convention relating to the Status of refugees. It allows refugees to safely participate in and contribute to the social and economic life of the local communities who are hosting them within the safety of Zambia's borders	During the Implementation of the Zambia Refugee and Host Communities Project, one of the potential risks is refugees' rights being abused and their rights and responsibilities are not adhered to.	In compliance to this act, the Zambia Refugee and Host Communities Project will ensure that Refugee rights are not abused and that they benefit from the project.
<b>The Urban and Regional Planning Act, No. 3 of 2015</b>	This piece of legislation was developed, among other functions, to: Provide for a framework for administering and managing urban and regional planning; establish a democratic, accountable, transparent, participatory and inclusive process for urban and regional planning that allows for involvement of communities, private sector, interest groups and other stakeholders in the planning, implementation and operation of human settlement development; ensure functional efficiency and socioeconomic integration by providing for integration of activities, uses and facilities; ensure sustainable urban and rural development by promoting environmental, social and economic sustainability in development initiatives and controls at all levels of urban and regional planning.	The project site is in Kalumbila District. This project is being implemented by the local planning authority – Kalumbila Town Council. The Act provides for the appointment of regional planning authorities, provincial planning authorities and local planning authorities whose main responsibilities are the preparation, approval of layout plans and revocation of development plans.  Section 13 of the Act describes the functions of a local authority which include being designated as a planning authority. These functions include: a) regulate, control and plan for the development and use of land and buildings within its area of jurisdiction. b) prepare and implement integrated development plans, local area plans and sectoral plans; an integrated development plan is the principal planning instrument to guide and inform all planning and development in the	The engineering designs for the rehabilitation of the road, construction of the bridge, and school expansion works will need to conform to the overall developmental plans for the Council. Kalumbila Town Council, as a local and planning authority, will consult with regional and provincial planning authorities on the road design and planned works and their specifications will be complied with. Some of the beneficiaries under the Project will be involved in small civil infrastructure works that will require planning and building permits from the respective local authorities. The local authorities are

Legislation	Interpretation	Relevance	Compliance
		<p>area of the local authority and all planning decisions of a planning authority.</p> <p>c) receive and process applications for planning permission for the development of land.</p> <p>d) operate services and maintain infrastructure in its area; and</p> <p>e) promote and facilitate sustainable land use.</p> <p>Some of the issues covered in the local plan include the following which are related to the rehabilitation of the canal:</p> <p>a) infrastructure and service provision.</p> <p>b) health.</p> <p>c) transport.</p> <p>d) waste management.</p> <p>e) water and sanitation;</p>	<p>also in charge of issuing fire and public health permits for construction related works within the local authority. All beneficiaries will comply with this Act in collaboration with the local authority.</p>
<p><b>The Local Government Act, No. 2 of 2019</b></p>	<p>The Act was developed to provide for an integrated local government system; give effect to the decentralization of functions, responsibilities and services at all levels of local government; ensure democratic participation in, and control of, decision making by the people at the local level; revise the functions of local authorities; provide for the review of tariffs, charges and fees within the area of a local authority; provide for the proceedings of the council and committees; provide for the role of traditional leadership in democratic governance; repeal and replace the Local Government Act of 1991.</p> <p>The First Schedule of the Act defines the functions of a local authority. Some of these functions include the following:</p> <p>With respect to public health, a local authority, Kalumbila Town Council in this case, is expected to establish and maintain environmental health services and taking of measures for the preservation and improvement of public health and the</p>	<p>The proposed development is within the jurisdiction of Kalumbila district in Northwestern Province and all approvals required to be sourced from the Northwestern Province planning authority will be sought. Management of Kalumbila Town Council will also take into account the views and concerns of the Council, a composition of elected councilors in Kalumbila Constituency</p> <p>The provision of sanitation services, which includes waste management, maintenance of drains, roads and the removal of effluent, all of which are included in this project, are activities that are part of the functions of the local authority.</p>	<p>The contractor, working on behalf of Kalumbila Town Council, will be expected to comply with the specifications and any relevant by laws set up by the Kalumbila Town Council.</p> <p>Section 36 of the Act provides for the establishment of Ward Development Committees appointed by the Town Clerk or Council Secretary. The success of the implementation of the project during and post the construction period will hinge, to some extent, on the cooperation between Kalumbila Town Council and the WDCs. These committees can be used as conduits for providing information from the council to the local communities.</p> <p>The implementation of these subprojects will require the support of the local authority in terms of approval and supervision of some these construction-related</p>

Legislation	Interpretation	Relevance	Compliance
	<p>prevention and abatement of nuisances, including measures for the extermination of mosquitoes.</p> <p>In relation to sanitation and drainage, a local authority is required to establish and maintain sanitary services for the removal and destruction of all kinds of refuse and effluent; and establish and maintain drains, sewers and works for the disposal of sewerage and refuse.</p>		<p>subprojects. In addition, some beneficiaries that are involved in food processing and food handling will require public health permits and training as food handlers.</p>
<p><b>The Waste Management Act No. 20 of 2018</b></p>	<p>An Act to provide for the sustainable regulation and management of solid waste, general and self-service solid waste; the incorporation of solid waste management companies and define their statutory functions; the licensing and functions of waste service providers, operators and self-service solid waste providers and provide for their functions; the regulation, operation, maintenance and construction of landfills and other disposal facilities; the setting and approval of tariffs for management of solid waste and provision of solid waste services; and matters connected with, or incidental to, the foregoing.</p>	<p>The anticipated waste from the project is construction debris and vegetative waste. Any waste that is not contaminated with hazardous waste will be handled in line with the provisions of this Act.</p>	<p>In compliance with this Act, all municipal solid waste generated at construction sites will be collected in designated waste bins and offloaded at approved sites. No open air burning of waste will be allowed anywhere within the works facilities.</p> <p>Solid Waste Management in rehabilitated schools and Meheba settlement to comply with this Act.</p>
<p><b>The Workers Compensation Act, No. 10 of 1999</b></p>	<p>This Act makes provision for the establishment and administration of a Fund for the compensation of workers disabled by accidents to, or diseases contracted by, such workers in the course of their employment, and for the payment of compensation to dependents of Workers who die as a result of such accidents or diseases; for the payment of contributions to such Fund by employers; for the granting of pensions and allowances to certain dependents of Workers who, being in receipt of pensions for such disablement, die</p>	<p>Workers will be engaged by the contractor working on behalf of Kalumbila Town Council. It will thus be the duty of the contractor to make contributions to the Workers Compensation Fund Control Board (WCFCB) after assessments have been done and the amount of compensation shall be calculated with reference to the earnings of the worker.</p> <p>The rehabilitation works and subsequently the maintenance activities through the use of sharp tools and heavy equipment raises the possibility of occupational health and safety concerns and may cause injury to</p>	<p>In compliance with this Act, Kalumbila Town Council and its contractors will make contributions to the Fund on behalf of the workers. Any contracted companies will also be expected to show certificate of contributions made to the Fund.</p> <p>No worker will be allowed to operate machinery without having undergone adequate training. Kalumbila Town Council, through the contractor, will ensure that</p>

Legislation	Interpretation	Relevance	Compliance
	<p>from causes not connected with such accidents or diseases.</p> <p>The employer has civil liability and damages should be awarded to a worker if it is established that there was negligence, breach of statutory duty or other wrongful omission on the part of the employer.</p>	<p>workers. Section 40 also provides for compensation to his dependents in the event that the worker dies. However, no compensation shall be paid if the accident is attributable to the serious and willful misconduct of the worker, unless the accident results in serious permanent disablement, or the worker has died in consequence of the accident, leaving as his dependent his widow or anyone dependent on him.</p>	<p>adequate signage is provided at workplaces and that no inappropriate behavior such as drunkenness or negligence will be condoned.</p>
<p><b>The Occupational Health and Safety Act, No. 36 of 2010</b></p>	<p>This Act is promulgated to establish the Occupational Health and Safety Institute and provide for its functions; provides for the establishment of health and safety committees at workplaces and for the health, safety and welfare of persons at work; provide for the duties of manufacturers, importers and suppliers of articles, devices, items and substances for use at work; provide for the protection of persons, other than persons at work, against risks to health or safety arising from, or in connection with, the activities of persons at work.</p> <p>Section 11 of Part III requires that an employer of ten or more persons at any workplace establishes a health and safety committee.</p> <p>According to section 13 the functions of the health and safety committee are:</p> <ul style="list-style-type: none"> <li>● promote cooperation between the employer and the employees in achieving and maintaining healthy and safe working conditions.</li> <li>● share information about occupational health, safety and welfare with employees.</li> <li>● investigate and resolve any matter that may be a risk to the health and safety of employees at a workplace.</li> </ul>	<p>The operation of construction machinery and equipment during the rehabilitation of the canal has potential to bring about unsafe working conditions. The generation of dust at workplaces can deteriorate the quality of air and thus affect the health of employees.</p> <p>Some of the project beneficiaries will be involved construction, manufacturing, and use of pesticides, import and export of goods. If same working conditions are not maintained to as required by this Act, this may lead to occupational health and safety \ risks among the workers and surrounding communities.</p>	<p>To this end, Kalumbila Town Council, through its contractor, will ensure that information, instruction, training and supervision are provided to ensure the health and safety of the employees at their workplace.</p> <p>The duties of an employee at a workplace, according to section 17, with regard to health and safety are to:</p> <ol style="list-style-type: none"> <li>a)take reasonable care for the employee’s own health and safety and that of other persons who may be affected by the employee’s acts or omissions at the workplace.</li> <li>b)not operate any machine or engage in a process which is unsafe or is an imminent risk to the employee’s own health or safety and that of others; and</li> <li>c)cooperate with the employer or any other person in relation to any duty imposed on the employer or that other person, so far as is necessary to enable that duty or requirement to be performed or complied with.</li> </ol> <p>The employee is also expected to immediately inform the employer,</p>

Legislation	Interpretation	Relevance	Compliance
	<ul style="list-style-type: none"> <li>● review the measures taken on the health and safety of employees at a workplace; and</li> <li>● formulate, review and disseminate to the employees the standards, rules and procedures relating to health and safety to be carried out at the workplace.</li> <li>● Section 16 of Part IV provides the duties of employers at workplaces in respect of health and safety at workplaces. These duties include:</li> <li>● ensure, so far as is reasonably practicable, the health, safety and welfare of the employees of the employer at a workplace; and</li> <li>● place and maintain an employee in an occupational environment adapted to the employee's physical, physiological and psychological ability.</li> </ul>		<p>the committee or health and safety representative if there are reasonable grounds to believe that any item, device, article, plant or substance, condition or aspect of the workplace is, or may be, dangerous to the employees' occupational health or safety at or near the workplace.</p> <p>An OHS plan will be required that encompasses the requirements of the Act and WB's (ESS2, ESS4 and EHSGs).</p>
<p><b>The Public Health Act, No. 22 of 1995</b></p>	<p>This Act provides for the prevention and suppression of diseases and the general regulation of all matters connected with public health in Zambia. Amongst other things, the Act prohibits anyone from causing a nuisance, where nuisances are given to include:</p> <ul style="list-style-type: none"> <li>● The pollution of potable water.</li> <li>● Any collection of water or any cesspit, latrine or urinal found to contain mosquito larvae.</li> <li>● Any collection of water, sewage or waste which permits or facilitates the breeding of parasites, insects or other agents which may lead to the infection of people or domestic animals.</li> </ul>	<p>During the rehabilitation and construction works, there is a possibility that public health conditions can be compromised through the generation of waste by construction workers. The workers will also be using portable toilets. Indiscriminately disposed of waste is unsightly and is a nuisance as defined in section 67 of the Public Health Act.</p> <p>Section 64 of the Act gives powers to a local authority to take all practicable measures for maintaining its district at all times in clean and sanitary condition, and for preventing the occurrence of any nuisance or condition liable to be injurious or dangerous to health.</p> <p>Some of the project interventions may cause public health risks and impacts on the host communities due to</p>	<p>Kalumbila Town Council and the Contractor will ensure that the place of work and the surrounding environment do not generate any nuisances that can pose health risks to the workers and the general populace. Mobile toilets will be used, and the worksites will, at all times, be kept in clean and sanitary conditions. Any generated non-hazardous waste will temporarily be stored in dedicated receptacles and disposed of at an approved disposal site.</p> <p>Project will develop site-specific health management plans that will form part of the ESMP to avoid and minimize the spread of diseases. The</p>

Legislation	Interpretation	Relevance	Compliance
	<ul style="list-style-type: none"> <li>● The accumulation or deposit of waste which is offensive or injurious or dangerous to health.</li> <li>● The discharge or noxious matter or wastewater into a water course not approved for the reception of such discharge.</li> <li>● Dangerous buildings and overcrowded premises.</li> <li>● Factories giving rise to smells and effluents which are offensive or dangerous to health.</li> </ul>	indiscriminate disposal of solid and hazardous waste that may lead to the spread of diseases.	project will also adopt mitigation measures under the World Bank Environmental and Social Standard, ESS1 and ESS2.
<b>The Roads and Road Traffic Act CAP 464 of the Laws of Zambia</b>	An Act to make provisions for the care, maintenance, and construction of roads in Zambia, for the control motor traffic, for the licensing of drivers and motor vehicles, for the compulsory third party insurance of motor vehicles, for the licensing and control of public service vehicles and public services, and for other miscellaneous relating to roads and motor traffic.	Construction and rehabilitation works are likely to disturb the flow of traffic. Measure to be employed include the use of signages, flaggers, barricading of the worksites for the safety of motorist and pedestrians	All drivers working on project related activities will be licensed in compliance to this Act. All project related vehicles including drilling rigs must be fit for purpose, passed the necessary vehicle inspections, registered, possess test certificates and all drivers possess valid driving licenses for the vehicle driven or operated, that the driver is competent, the driver is physically fit to drive and within all legal parameters such as age etc.
<b>The Public Roads Act No.12 of 2002</b>	An Act to establish the Road Development Agency (RDA) and to define its functions; to provide for the care, maintenance, and construction of public roads in Zambia; and to provide for matters connected with, or incidental to the foregoing.	The rehabilitation and construction of the road and bridge will be done in consultation with RDA and other relevant authorities within the district.	In compliance with this Act, Kalumbila Town Council will ensure that no damage is done to other public roads during the rehabilitation and construction works.
<b>Water Resources Management Act, No. 21 of 2011 read</b>	The Act was developed to establish the Water Resources Management Authority	Construction of the is part of the “water works” controlled by WARMA. As defined in the Act, “water	A permit will be obtained from WARMA before construction works

Legislation	Interpretation	Relevance	Compliance
<p><b>together with Statutory Instrument No 18 of 2018 (ground water and borehole regulations)</b></p>	<p>(WARMA) and to provide for the management, development, conservation, protection and preservation of the water resource and its ecosystems as well as provide for the equitable, reasonable and sustainable utilization of the water resource.</p> <p>As specified in section 57, in relation to the management of shared water resources, WARMA is given powers to:</p> <ul style="list-style-type: none"> <li>• establish national mechanisms for dispute resolution regarding shared water resources.</li> <li>• promote and ensure stakeholder participation, as part of Government’s decision support system, in the management of shared water resources; and</li> <li>• facilitate the building of appropriate capacity for negotiations of shared water resources agreements as well as participation in institutions established to deal with shared water resources.</li> </ul> <p>According to section 71, a permit is required for water works that relate to the construction of water works, supply of water from a borehole, dewatering of a mine, draining of a dambo, swamp or wetland.</p>	<p>works” include a canal, channel, embankment, filter, filter bed, pipeline, pumping plant, purification plant, plant for the generation of hydroelectric power or water storage works. In line with this requirement, section 103(1) demands that a permit be granted by WARMA before the construction of water works.</p> <p>The project will be constructing a bridge which will involve construction of embankments. Constructions works are likely to affect the hydrological flow of the water resource. Clearance from WARMA is required before any work can commence.</p> <p>The project may abstract water for dust suppression or construction from streams or rivers during construction. The project will also involve the drilling of boreholes.</p>	<p>begin. Works to be carried out before the wet season to minimize soil erosion and siltation of the surface water resource. No dredged material will be left piled on the sides of the bridge which can easily be eroded back into the river thereby increasing suspended material and siltation in surface water.</p> <p>Water abstraction permits will have to be obtained prior to commencement of construction works. Borehole drilling permits will be obtained from WARMA prior to construction.</p>
<p><b>The National Heritage Conservation Commission Act, No. 23 of 1989</b></p>	<p>The Act provides for the conservation of ancient, cultural and natural heritage, relics and other objects of aesthetic, historical, pre-historical, archaeological or scientific interest</p>	<p>Construction works may lead to inadvertent finding of relics of cultural, historical and natural value. Such relics may also be excavated during the acquiring of raw materials and excavation activities during construction.</p>	<p>Any site or relic of historical or archaeological value will need to be conserved in line with the provisions of the National Heritage and Conservation Commission (NHCC) Act. In addition, if any new artefact is found, NHCC will be notified. In this case, section 37(1) of the Act shall apply which states: “Any</p>

Legislation	Interpretation	Relevance	Compliance
<p><b>The Employment Code Act, No. 2 of 2019</b></p>	<p>This Act provides legislation relating to the employment of persons; to make provision for the engagement of persons on contracts of service and to provide for the form of and enforcement of contracts of service; to make provision for the appointment of officers of the Labour Department and for the conferring of powers on such officers and upon medical officers; to make provision for the protection of wages of employees; and to provide for the control of employment agencies</p>	<p>The rehabilitation and construction works will involve the employment of workers with a mix of a skill set which will include engineers, drivers, construction workers, office workers, general workers, surveyors, etc.</p>	<p>person who desires to excavate any ancient heritage or collect relics shall apply to the Commission for a permit to excavate or collect</p> <p>In compliance with this law, Kalumbila Town Council will ensure that individuals employed are of legal employment age and are provided with conditions of service that meet or exceed the national minimum conditions of service. Employees will not be subjected to exploitation and abuse of their rights through casualization.</p> <p>According to this law, it is illegal for any employer to engage an employee on casual basis for any job that is of a permanent nature. The Act also bans unjustified termination of employment by employers.</p>
<p><b>The Factories Act, No. 13 of 1994</b></p>	<p>The Act regulates the conditions of employment in factories and other places of work as regards the safety, health and welfare of persons employed therein. The Act also provides for the examination and inspection of certain plant and machinery in order to ensure safety. The Factories Inspectorate under the Ministry of Labour and Social Security is the mandated authority under the Act.</p>	<p>The project will support road rehabilitation, construction activities and support SMEs who will be involved in value addition through food processing to add value to the agriculture products. If not managed properly, such processing plants may create occupational health and safety hazards from retrofitting machinery and other plant machinery. In addition, the Act requires that the conditions under which the workers are working comply with overall safety, health and welfare of the workers.</p>	<p>To ensure that sound occupational health and safety standards of employees are upheld during the works, all employees will be trained in health and safety protocols. All employees will be equipped with adequate and appropriate personal protective equipment (PPE) and the devices, tools and equipment that will be used by the employees will be regularly inspected, maintained and repaired if found to be defective.</p>
<p><b>The National Council for Construction Act, 2011</b></p>	<p>The Act provides for the establishment of the National Council for Construction (NCC) and defines its functions as provided for in section 6. Some of these functions are:</p>	<p>The rehabilitation and construction works being undertaken are controlled as provided for under this piece of legislation. Engineering firms will be involved at the planning and construction stages. These firms will</p>	<p>All contractors to be engaged will be expected to be registered with NCC with the level of proficiency or class required for the required civil works. Kalumbila Town Council will be</p>

Legislation	Interpretation	Relevance	Compliance
	<p>a) to provide for the promotion and development of the construction industry in Zambia.</p> <p>b) to provide for the registration of contractors.</p> <p>c) to provide for the affiliation to the Council of professional bodies or organizations whose members are engaged in activities related to the construction industry.</p> <p>d) to provide for the regulation of the construction industry.</p> <p>e) to provide for the establishment of the Construction School; and</p> <p>f) to provide for the training of persons engaged in construction or in activities related to construction.</p>	<p>need to be registered with NCC for the type of work involved</p>	<p>open to the inspection by NCC engineers and will adhere to construction code of ethics, safety, architectural and engineering design, as well as contract management.</p>
<p><b>The Employment of Young Persons and Children Act, No. 13 of 1994</b></p>	<p>This piece of legislation was developed to regulate the employment of young persons, and children. This Act defines a child as a person under the age of fourteen years; while a young person is a person who has ceased to be a child and who is under the age of eighteen years.</p> <p>Section 4. (1) of the Act prohibits the employment of children and states: “No child shall be employed in any public or private industrial undertaking or in any branch thereof, other than an undertaking in which only members of the same family are employed.”</p> <p>Further, section 7 also prohibits employment of young persons.</p>	<p>The rehabilitation of the canal is an industrial undertaking as prescribed in the Act. As defined in section 3 of the Act, an industrial undertaking includes construction, reconstruction, maintenance, repair, alteration of a drain or water work, which in this case can include the canal being proposed to be rehabilitated. This also extends to quarries and other works for the extraction of laterite and aggregate.</p>	<p>No child or young person as defined by this Act will be engaged by the contractor during the carrying out of civil works. Young persons can only be employed under the following conditions:</p> <ul style="list-style-type: none"> <li>● In possession of a certificate signed by a Labour Officer authorizing such employment.</li> <li>● Employed under a contract of apprenticeship entered into under the Cap.275 Apprenticeship Act.</li> </ul>
<p><b>The Sexual Offences Act, No. 12 of 2009</b></p>	<p>This legislation prohibits sexual offences which include rape, grievous sexual act, marital rape, incest, sexual touching or interference, sexual grooming of child, sexual intercourse with person under sixteen, inducing or encouraging violation of child under the age of sixteen, custody or abduction</p>	<p>The project site is in community settlements except for the road work works that some of the construction workers may be away from their families for a period of time, a situation which may prompt others to be involved in sexual offences. The increase in disposable income amongst workers has potential to bring about</p>	<p>The contractor will be required to explain the sexual offences to the workers and the associated consequences of being involved in such acts. Anyone being involved shall be reported to the relevant</p>

Legislation	Interpretation	Relevance	Compliance
	<p>of child under sixteen, indecent assault. Consent of a child is not deemed as defense in indecent assault. Other sexual offences are violation of person suffering from mental disorder or physical disability, unlawful detention with intent to have sexual intercourse, living on earnings of prostitution.</p>	<p>unwholesome behavior such as abuse of alcohol, an activity that can bring about sexual offences</p>	<p>authorities as required in section 33 of the Act.</p>
<p><b>The Anti Gender-Based Violence Act, No. 1 of 2011</b></p>	<p>This is a Zambian law on gender-based violence which not only offers a comprehensive framework for protection, but also a means of survival for victims and survivors of gender-based violence (GBV), and prosecution of perpetrators. The Act specifically provides for:</p> <ol style="list-style-type: none"> <li>a) The establishment of a gender-based violence fund to assist victims and or survivors.</li> <li>b) Establishment of shelter to support victims and or survivors of gender-based violence.</li> <li>c) Provision of emergency monetary relief</li> <li>d) Addressing of harmful traditional practices.</li> </ol> <p>The Act defines gender-based violence as “any physical, mental, social or economic abuse against a person because of that person’s gender.” In particular, the Act lists the following as amounting to gender-based violence:</p> <ul style="list-style-type: none"> <li>• Violence that results in or is likely to cause physical, sexual or psychological harm or suffering to a person, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life; and</li> </ul>	<p>Such type of civil works can exacerbate risks of GBV as a result of interaction of workers with the local communities. This legislation provides for mitigation and response to GBV.</p>	<p>Measures to prevent the occurrence of gender-based violence will include ongoing sensitization among the workforce about the need to avoid such anti-social behavior and the consequences as provided in the law. The contractor will also ensure that victims have access to justice, assistance for telephone hotlines and women’s resource center that provide legal and psychosocial support to victims</p>

Legislation	Interpretation	Relevance	Compliance
	<ul style="list-style-type: none"> <li>Actual or threatened physical, mental, social or economic abuse that occurs in a domestic relationship.</li> </ul> <p>The Act seeks to address all forms of gender-based violence. It goes on further to list the types of abuses arising from cultural practices to include forced virginity testing, forced marriages, “sexual cleansing” and child marriages. It also defines such abuse to include “abuse perpetrated on a person by virtue of the person’s age, physical or mental incapability, disability or illness.”</p>		
<p><b>The Gender Equity and Equality Act, No. 22 of 2015</b></p>	<p>This is an Act to provide for the taking of measures and making of strategic decisions in all spheres of life in order to ensure gender equity, equality and integration of both sexes in society; promote gender equity and equality as a cross cutting issue in all spheres of life and stimulate productive resources and development opportunities for both sexes; prohibit harassment, victimization and harmful social, cultural and religious practices; provide for public awareness and training on issues of gender equity and equality; and to provide for the elimination of all forms of discrimination against women, empower women and achieve gender equity and equality by giving effect to the Convention on the Elimination of all Forms of Discrimination against Women, the Protocol to the African Charter on Human and People’s Rights on the Rights of Women in Africa and the SADC Protocol on Gender and Development.</p>	<p>Inequalities in accessing resources and employment opportunities may ensue during project implementation inhibiting economic benefits trickling down to women. The Act is relevant to guide the project to ensure employment opportunities and recruitment procedures are gender inclusive.</p>	<p>To achieve gender equity and equality, the following will be undertaken in line with sections 14 through 20:</p> <ol style="list-style-type: none"> <li>both sexes shall enjoy equal rights before the law.</li> <li>both sexes shall have equal access to justice and protection before the law.</li> <li>both sexes shall have equal access and rights to training at the workplace.</li> <li>both sexes shall have equal access to modern, appropriate and affordable technology and support services.</li> </ol>

## 4.2 National Environmental and Social Assessment and Permitting

The main institutions, statutory bodies and agencies that will play a role in the implementation of the Zambia Refugee and Host Communities Project are listed as follows:

- Ministry of Home Affairs and Internal Security (MHAIS)
- Cabinet Office
- Ministry of Health
- Ministry of Education
- Ministry of Local Government
- Ministry of Justice
- Ministry of Green Economy and Environment (MGEE)
- Ministry of Agriculture (MOA)
- Ministry of Fisheries and Livestock (MFL)
- Zambia Environmental Management Agency (ZEMA)
- Kalumbila District Council
- Zambia Bureau of Standards (ZABS)
- The Zambia Metrology Agency (ZMA)
- Zambia Compulsory Standards Agency (ZCSA)

### **Ministry of Home Affairs and Internal Security (MHAIS)**

The Ministry of Home Affairs and Internal Security is charged with the responsibility of providing and maintaining internal security in Zambia. The functions of the Ministry are undertaken by various Departments and Specialized Agencies that include: Human Resource and Administration; Finance, Purchasing and Supplies, Home Affairs Research, Planning and Information; Zambia Police Service; Zambia Correctional Service; Drug Enforcement Commission; Immigration Department; Department of National Registration; Passport and Citizenship; National Archives of Zambia; Commission for Refugees; Registrar of Societies; National Forensic Science Authority; Anti-Terrorism Centre; and Police Public Complaints Commission. The Ministry of has two Permanent Secretaries, one in charge of internal security and drugs and is the controlling officer while the other is in charge of Correctional, Register of Societies, Immigration, Archives and refugee issues. The Zambia Refugee and Host Communities Project will be under the supervision of the Office of the Commissioner for Refugees.

### **Ministry of Health**

The Ministry of Health is charged with the responsibility to provide effective quality healthcare services close to the family as possible. They ensure equity of access to health services delivery and contributes to the human and social economic development. The Ministry also targets to attain sustainable Development Goals on health and other national health priorities. The Zambia Refugee and Host Communities Project will collaborate with the Ministry of Health to ensure that the upgrading of the health facilities is done in accordance with international standards.

### **Ministry of Education**

The Ministry of Education is responsible for overseeing Early Childhood Education, Primary education, secondary education, colleges of teacher education and public universities in Zambia. In addition to formal education system, there is a non-formal education system that operates to serve among others, persons with disabilities, displaced persons, school age children who have either dropped out of school, never attended formal school or geographically isolated children, orphans and children on the street and those working. The Ministry recognizes alternative approaches to schooling, which include community schools and alternative education provision through interactive radio programmes, television programmes learning (technology enabled learning), open learning programmes and distance education programmes. In addition, literacy education to youths

and adults is also provided. The Zambia Refugees and host communities will collaborate with the Ministry to ensure that the school infrastructure is in accordance with the Government requirement.

### **Ministry of Local Government and Rural Development**

The Ministry of Local Government and Rural Development (MLGRD) is charged with the responsibility of promoting a decentralized and good local governance system, facilitating delivery of quality municipal services in order to contribute to sustainable socio-economic development. The Ministry oversees the implementation of delegated functions and responsibilities by the local authorities. The Ministry will be working in close collaboration with the Zambia Refugees and Host Communities Project since some of the functions will be decentralized to Kalumbila District Council.

### **Ministry of Justice**

The Ministry of Justice (MOJ) is responsible for facilitating the administration of justice and promoting the observance of the rule of law in the country. The Ministry comprises two constitutional office holders namely the Attorney-General who is the chief legal advisor to the Government and is assisted by the Solicitor-General. The Zambia Refugee and Host Communities Project will work with the Ministry in amending the current Refugee Law as the Ministry is the Government institution given the task to undertake such activities.

### **Ministry of Agriculture (MoA)**

The Ministry of Agriculture is responsible for administering and implementing policies and programmes to facilitate and support the development of a sustainable, diversified and competitive agriculture sector that assures food and nutrition security, contributes to job creation, and maximizes profits and the sector's contribution to the national Gross Domestic Product (GDP). Given its important role in promoting production in the agriculture sector, the Ministry will form part of the steering committee and in so doing ensure that the project effectively supports the policy objective for the sector. The Zambia Refugee and Host Communities Project will collaborate with the ministry in implementing various agriculture activities through the improvement of productivity and professionalism of farmers and cooperatives to include support on aggregation across select value chains and support SMEs for example aggregators, processors, wholesalers, equipment suppliers and link them to both downstream and cooperative groups and upstream markets.

### **Ministry of Livestock and Fisheries**

The Ministry of Fisheries and Livestock (MFL) is responsible for promoting the growth of the two sectors by implementing policies and programs in that regard. Given this role, the Ministry will be part of the project steering committee and help identify sub projects in the livestock and fisheries sector. The Zambia Refugee and Host Communities Project will collaborate with the ministry in implementing aquaculture subprojects through business proposal development, review and approval of designs, and supervision of the aquaculture and livestock subproject implementation.

### **Ministry of Green Economy and Environment (MGEE)**

This Ministry hosts ZEMA, which will provide regulatory and technical services in terms of management of environmental and social risks and approval of mitigation measures.

### **Zambia Bureau of Standards (ZABS)**

The Zambia Bureau of Standards (ZABS), a statutory body under the Ministry of Commerce, Trade, and Industry, is responsible for standardization, standards formulation, quality control, quality assurance, import and export quality inspection, certification, and removal of technical barriers to trade. To improve quality of their products and increase the potential to sell products, SMEs and POs under the Zambia Refugee and Host Communities Project will require training and certification with ZABS.

### **Zambia Environment Management Agency**

The Environmental Management Act, No. 12 of 2011 establishes Zambia Environmental Management Agency (ZEMA). ZEMA is a statutory body, and the following are its main functions:

- Integrated environmental management and the protection and conservation of the environment and sustainable management and use of natural resources.
- The prevention and control of environmental pollution and environmental degradation.
- Provide for public participation in environmental decision making and access to environmental information.
- Undertaking environmental auditing and monitoring; and
- Facilitating the implementation of international environmental agreements and conventions to which Zambia is a party.

In relation to this development, some of the functions of ZEMA are to review environmental impact assessment reports and undertake environmental auditing and monitoring. The act also provides for public participation in decision-making and access to environmental information.

### **Zambia Metrology Agency**

The Zambia Metrology Agency (ZMA) is a Statutory Body under the Ministry of Commerce, Trade and Industry (MCTI) established by the Metrology Act No. 6 of 2017. The overall mandate of the ZMA is to oversee the service provision of Scientific, Industrial and Legal Metrology in Zambia. The Agency provides for the designation, keeping and maintenance of national measurement standards, the use of measurement units of the International System of Units and other units and for consumer protection, health, safety as well as environmental management through legal metrology measures. All subprojects under the Zambia Refugee and Host Communities Project will be required to have their measurements devices calibrated in accordance with the requirements of the ZAM Act.

### **Zambia Compulsory Standards Agency**

The Zambia Compulsory Standards Agency (ZCSA) is a Statutory Body under the Ministry of Commerce, Trade and Industry (MCTI) that was established by the Compulsory Standard Act No.3 of 2017. The Agency monitors and controls the quality and safety of products subjected to Compulsory Standards on the market through inspections and related activities under the Import Monitoring and Domestic Monitoring Department in line with World Trade Organization Technical Barriers to Trade (WTO TBT) Agreement guidelines and other international and regional practices. The Zambia Refugee and Host Communities Project will provide support to subprojects who will be involved in processing and value addition activities. Some of these subprojects will require compliance with the Compulsory Standards to protect the protect consumers with the intake or use of substandard and unsafe products.

### **National Environmental and Social Permits**

The following list of environmental and social permits and authorization may be required during the implementation of the Zambia Refugee and Host Communities Project at subproject level depending on the activity.

- Agricultural Import Permit.
- Borehole Registration.
- Building Permit.
- Certificate of origin (Livestock, Crops, Fish)
- Drillers and Constructor License
- Environmental Impact Assessment (EIA) Decision Letter.
- Emission License (Air, Water)

- Fire Certificate.
- Ground Water Use Permit.
- Hazardous Waste Management Licence.
- Health Clearance Certificate (Transit, Exports and Imports)
- Livestock and Product Import Permit
- Livestock and Product Export Permit
- National Construction Council (NCC) License (Registration of Contractors, Manufacturers, Suppliers, Project Registration) Phytosanitary Certificate
- Pesticide and Toxic Substance Licence.
- Stock Movement Permit (Plant and Animals)
- Seed Import Permit
- Seed Export Permit.
- Surface Water Use Permit.
- Waste Management Licence (Transport of Wastes and Wastes Disposal).

### **4.3 World Bank Standards and Key Gaps with the National Framework**

The World Bank’s environmental and social standards relevant to project activities are summarized in Table 4 below.

Table 4: Relevant World Bank Environmental and Social Standards

World Bank Environmental and Social Standards	Description of the Relevant ESS
<p><b>ESS1 Assessment and Management of Environmental and Social Risks and Impacts</b></p>	<p><b>Relevance:</b> ESS1 is relevant for the project because project activities are expected to pose substantial environmental and social risks such as (i) vegetation clearance; (ii) development of borrow pits; (iii) generation of solid, hazardous and electronic waste; (iv) air pollution due to dust emissions; (v) noise level increases from traffic construction activities; (vi) increase in traffic related accidents; (vii) poor OHS practices; (viii) poor data processing; (ix) labor influx, increased incidences of child labor and SEA/SH; (x) exclusion of project beneficiaries.</p> <p><b>Compliance:</b> The assessment of environmental and social risks and impacts of the proposed sub-project will be conducted from screening using the screening form (<b>Annex 1</b>) to preparation of the appropriate instruments which shall include an ESIA or ESMP using the screening form in Annex 1. This will be followed by the implementation of prepared instruments and monitoring of their performance.</p>
<p><b>ESS2 Labor and Working Conditions</b></p>	<p><b>Relevance:</b> Owing to the nature of the project, labor aspects play a cardinal role in its implementation. The project will involve direct, contracted, and primary supply workers. Non-skilled labor to be hired from within the refugee and host communities in Kalumbila District. Workers and communities may be exposed to construction hazards and traffic related incidences. Further, incidences of child labor and Gender Based Violence and Sexual Exploitation and Abuse (GBV/SEA) may arise as this is a common phenomenon in the area due to existing socio-cultural practices. ESS2 is relevant for the project because there are certain labor risks for project workers. Labor-related risks include (i) security risks to project workers, (ii) traffic and road safety issues, (iii) inadequate terms and conditions of employment, and (iv) occupational health and safety risks.</p> <p>ESS2 also provides workers with accessible means to raise workplace concerns. The worker GRM should be proportionate to the nature and scale and potential risks of the project.</p> <p><b>Compliance:</b> Code of conduct, workforce, GRM and Labor Management Procedures will be closely adhered to.</p>
<p><b>ESS3 Resource Efficiency and Pollution Prevention and Management</b></p>	<p><b>Relevance:</b> Project activities are likely to generate risks and impacts including (i) dust emissions from road grading, excavation activities and borrow pit operations, (ii) use of pesticides in agricultural activities (iii) local water resource competition from excessive consumption for dust suppression, workers campsite and agricultural activities (iv) soil and water contamination from hazardous materials storage, servicing of equipment and onsite fueling of construction vehicles (v) generation of solid and hazardous waste (vi) electronic waste generation from solar energy equipment</p> <p><b>Compliance:</b> Mitigation measures which shall be prepared in line with relevant WB EHS guidelines for the identified risks and impacts in the ESIA, ESMPs and other appropriate management plans such as waste management plan (ii) integrated pesticide management plan and (iii) borrow pit exploitation and operation plan and (iv) electronic waste management plan and (v) asbestos waste management plan.</p>

<p><b>ESS4 Community Health and Safety</b></p>	<p><b>Relevance:</b> Exposure to dust, noise, default infrastructure, hazardous construction wastes and traffic related incidents associated with proposed rehabilitation works are likely to arise.</p> <p><b>Compliance:</b> These risks will be assessed during screening and E&amp;S assessment and implementation of appropriate mitigation measures included in the ESMPs, the LMP, SEP and the GRM to be developed for the project. The design, construction and operation of the project infrastructure to be done in accordance with the national legal requirements, the EHS and other GIIPs. Identification, evaluation and monitoring of traffic and road safety risks to workers, communities and road users to be done throughout the project cycle. Management and safety of hazardous materials to be ensured including during the delivery, transportation, storage and disposal. The project Refugee and host communities will be sensitized on adopted risk mitigation measures, including codes of conduct for workers to prevent and address GBV/SEA/SH aligned with the World Bank Good Practice Note (GPN) on GBV and ensuring adequate staffing to address GBV/SEA/SH risks.</p>
<p><b>ESS5 Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement</b></p>	<p><b>Relevance:</b> Rehabilitation of existing 38 km gravel access road within the refugee camp may require land acquisition. Road width of 6m will be maintained, however, small stores constructed within the road reserve will be impacted. The risk is considered moderate given availability of land to allow relocation of stores by a few meters. The main impact will include temporal business disturbance. Proposed expansion of schools and health centers is not expected to result in land acquisition as works will be undertaken within existing premises. However, the areas will be screened to ensure no encumbrances are present during site selection. Further, the component on promoting agribusiness may result in land acquisition and resettlement if the need for land parcels arises to support small to medium enterprise developments within the project area.</p> <p><b>Compliance: Where necessary</b> a Resettlement Action Plan (RAP) or Livelihood Restoration Plan (LRP) will be prepared, disclosed and implemented prior to commencement of any civil work</p>
<p><b>ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources</b></p>	<p><b>Relevance:</b> ESS 6 is relevant to the project although with minor risks and impacts on biodiversity and natural resources as the project activities will take place in already existing sites and not located in natural or critical habitats. Likely risks and impacts on biodiversity include (i) land and habitat degradation when primary suppliers obtain raw materials (sand and gravel) extracted legally or illegally from environmental sensitive areas; (iii) vegetation clearance for construction of contractor's camp/laydown areas and for agricultural activities. To address the risks, (i) an exclusion criteria will be established and included in the ESMF to avoid adverse impacts on biodiversity.</p> <p><b>Compliance:</b> To address the risks, (i) an exclusion criterion will be established and included in the ESMF to avoid adverse impacts on biodiversity. The project will ensure proper siting, screening of subprojects and preparation of the ESMP that should inform project design; and (ii) incorporating mitigation measures in contractor's bidding documents to ensure compliance, including conducting due diligence to primary suppliers.</p>
<p><b>ESS 8 Cultural Heritage</b></p>	<p><b>Relevance:</b> The ESS 8 is relevant because the project may negatively affect tangible and non-tangible cultural heritage during rehabilitation and construction activities which involve excavations and movement of earth material. Through the environmental and social impact assessment, project site specific risks and impacts on cultural heritage will have to be identified. If during E&amp;S assessment cultural heritage is identified, mitigation measures to avoid these impacts needs to be identified and implemented in line with mitigation hierarchy and where appropriate, a cultural Heritage Management Plan will be needed if significant impacts are expected.</p>

	<p>However, if the project encounters site specific cultural heritage not previously identified, a Chance Find Procedure will be implemented which will be incorporated in the ESMP including the contractor ESMP.</p> <p><b>Compliance:</b></p>
<b>ESS 10 Stakeholder Engagement and Information Disclosure</b>	<p><b>Relevance:</b> ESS10 is relevant for all projects given the need to engage with beneficiaries and stakeholders on development activities that affect their lives. Meaningful consultations with all stakeholders for the successful implementation of the project is a critical aspect of the project, including enhanced community participation. Various consultations were held and these focused on (i) collecting information to advance project development, (ii) assessing possible implementation arrangements (iii) identifying key stakeholders and (iv) disclosing information on timelines for project preparation.</p> <p><b>Compliance:</b> A SEP has been prepared in consultation with stakeholders identified as directly or indirectly impacted by the anticipated project.</p>

Table 5: Relevant World Bank ESSs and Key Gaps with the National Framework

<b>ESS and Requirements</b>	<b>National Laws and Requirements</b>	<b>Gaps</b>
<p><b><u>Social and Environmental Assessment and Management System (ESS1)</u></b></p> <p><b>Use of Borrower’s Environmental and Social Framework</b> When a project is proposed for Bank support, the Borrower and the Bank will consider whether to use all, or part, of the Borrower’s ES Framework in the assessment, development, and implementation of a project. Such use may be proposed provided this is likely to address the risks and impacts of the project and enable the project to achieve objectives materially consistent with the ESSs.</p> <p><b>Environmental and Social Assessment</b> The Borrower will carry out an environmental and social assessment of the project to assess the environmental and social risks and impacts of the project throughout the project life cycle. The assessment will be proportionate to the potential risks and impacts of the project, and will assess, in an integrated way, all relevant direct, indirect, and cumulative</p>	<p><b>Use of Borrower’s Environmental and Social Framework</b></p> <p><b>Environmental Management Act No. 12 of 2011:</b> The principal legislation governing environmental management in Zambia is the Environmental Management Act (EMA) of 2011. The Act provides for the sustainable management of natural resources and protection of the environment, and the prevention and control of pollution. Of particular relevance is section 29 of the Act which states that “A person shall not undertake any project that may have an effect on the environment without the written approval of the Agency, and except in accordance with any conditions imposed in that approval”.</p> <p><b>The Environmental Impact Assessment Regulations, 1997 (Statutory Instrument No. 28 of 1997):</b> specifies the requirements for an EIA and it also set out in its Second Schedule projects for which EIAs are applicable. It provides specific guidelines for conducting environmental impact assessments and for evaluation of environmental impact statements. Applicable Regulations under the Environmental Management Act No. 12 of 2011 are described below.</p>	<p>No significant gaps between ESS 1 and the various national laws.</p>

ESS and Requirements	National Laws and Requirements	Gaps
<p>environmental and social risks and impacts throughout the project life cycle, including those specifically identified in ESSs2–10.</p> <p><b>Environmental and Social Commitment Plan</b>  The Borrower will develop and implement an ESCP, which will set out measures and actions required for the project to achieve compliance with the ESSs over a specified time frame. The ESCP will be agreed upon with the Bank and will form part of the legal agreement. The draft ESCP will be disclosed as early as possible, and before project appraisal.</p> <p><b>Project Monitoring and Reporting</b>  The Borrower will monitor the environmental and social performance of the project in accordance with the legal agreement (including the ESCP). The extent and mode of monitoring will be agreed upon with the Bank and will be proportionate to the nature of the project, the project’s environmental and social risks and impacts, and compliance requirements. The Borrower will ensure that adequate institutional arrangements, systems, resources, and personnel are in place to carry out monitoring. Where appropriate and as set out in the ESCP, the Borrower will engage stakeholders and third parties, such as independent experts, local communities, or nongovernmental organizations (NGOs), to complement or verify its own monitoring activities. Where other agencies or third parties are responsible for managing specific risks and impacts and implementing mitigation measures, the Borrower will</p>	<p><b>Environmental Protection and Pollution Control (Environmental Impact Assessment) Regulations, SI No. 28 of 1997.</b>  These Regulations provides the main framework under which EIAs are conducted, submitted to ZEMA and considered for either approval or rejection. These regulations are relevant as a guide to the developer as to what is supposed to be done at every stage of the EIA process. The requirements of conducting an EIA are all stipulated under these regulations and the developer shall ensure compliance at every stage. The EIA regulations also give a guideline as to how much review fee will be paid to ZEMA for the purpose of reviewing the EIS for the proposed project and that development shall not be undertaken by a developer without an approval letter from ZEMA.</p> <p><b>Statutory Instrument No. 112 of 2013 – Environmental Management (Licensing) Regulations:</b> These Regulations provide standards and guidelines for mitigating air, wastewater, hazardous waste, pesticides and toxic substances and ozone depleting substances. There are several parts in this statutory instrument giving regulatory powers to ZEMA to control the discharge of water pollutants, air emission pollutants, pesticides and other toxic substances, waste (both municipal and hazardous) and ozone depleting substances.</p> <p><b>Project Monitoring and Reporting</b>  The Environmental Management Act and the 1997 EIA regulations provides for ESIA studies including as part of ESMP clear procedures to monitor and measure the effectiveness of the management program, as well as compliance with any related legal and/or contractual obligations and regulatory requirements.</p>	

ESS and Requirements	National Laws and Requirements	Gaps
<p>collaborate with such agencies and third parties to establish and monitor such mitigation measures.</p> <p><b>Stakeholder Engagement and Information Disclosure</b> As set out in ESS10, the Borrower will continue to engage with, and provide sufficient information to stakeholders throughout the life cycle of the project, in a manner appropriate to the nature of their interests and the potential environmental and social risks and impacts of the project.</p>	<p><b>Stakeholder Engagement and Information Disclosure</b> Environmental Management Act and the 1997 EIA regulations provides for ESIA studies to include stakeholder engagement and disclosure of information.</p> <p>Article 10 of the EIA regulations require prior consultations, but only for Environmental Impact Statements. Article 17 of the EIA regulations provide for optional public hearings.</p> <p><b>Disclosure</b> All documents submitted to ZEMA are publicly available. However, developers may claim that certain information is proprietary and thus cannot be disclosed.</p>	
<p><b>Labour and Working Conditions (ESS2)</b> recognises that the pursuit of economic growth through employment creation and income generation should be balanced with protection for basic rights of workers.</p> <ul style="list-style-type: none"> <li>• ESS2 provides specific requirements on occupation health and safety, expanding upon the World Bank Group’s Environmental, Health and Safety Guidelines.</li> <li>• It introduces labor management procedures.</li> <li>• It requires non-discrimination and equal opportunity.</li> <li>• ESS2 includes provisions on the treatment of direct, contracted, community, and primary supply workers, and government civil servants.</li> <li>• ESS2 recognizes workers’ organizations. It requires a grievance mechanism for all project workers.</li> <li>• ESS2 includes protection of project workers, including vulnerable workers, such as women, and persons with disabilities.</li> <li>• Prevents the use of all forms of forced labor and child labor</li> </ul> <p><b>Working Conditions and Management of Workers Relationship</b> The Borrower will develop and implement written labor management procedures applicable to the project. These procedures will set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS 9. The procedures address the way in which this ESS will apply to different categories of project workers, including direct workers, and the way in which the Borrower will require third parties to manage their workers.</p>	<p><b>Occupational Safety and Health Act (OSHA), 2010.</b> This Act is promulgated to establish the Occupational Health and Safety Institute and provide for its functions; provides for the establishment of health and safety committees at workplaces and for the health, safety and welfare of persons at work; provide for the duties of manufacturers, importers and suppliers of articles, devices, items and substances for use at work; provide for the protection of persons, other than persons at work, against risks to health or safety arising from, or in connection with, the activities of persons at work.</p> <p><b>Working Conditions and Management of Workers Relationship</b> Zambia’s employment and labour laws workers are guided by clear labor management procedures.</p>	<p>No significant gaps between ESS 2 and the various national laws.</p>

ESS and Requirements	National Laws and Requirements	Gaps
<p><b>Non-Discrimination and Equal Opportunity</b>  Decisions relating to the employment or treatment of project workers will not be made on the basis of personal characteristics unrelated to inherent job requirements. The employment of project workers will be based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, or disciplinary practices. The labor management procedures will set out measures to prevent and address harassment, intimidation, and/or exploitation. Where national law is inconsistent with this requirement, the project will seek to carry out project activities in a manner that is consistent with the requirements to the extent possible. The borrower will take measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to women. The principles of non-discrimination apply to migrant workers.</p> <p><b>Workers Organisation</b>  In countries where national law recognizes workers’ rights to form and to join workers’ organizations of their choosing and to bargain collectively without interference, the project will be implemented in accordance with national law. In such circumstances, the role of legally established workers’ organizations and legitimate workers’ representatives will be respected, and they will be provided with information needed for meaningful negotiation in a timely manner. Where national law restricts workers’ organizations, the project will not restrict project workers from developing alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment. The Borrower should not seek to influence or control these alternative mechanisms. The Borrower will not discriminate or retaliate against project workers who participate, or seek to participate, in such workers’ organizations and collective bargaining or alternative mechanisms.</p> <p>The Borrower will provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns and inform</p>	<p><b>Non-Discrimination and Equal Opportunity</b>  The constitution of Zambia does not allow discrimination of any form and prohibit discrimination on race, sex, ethnicity, religion, and several other criteria, and further the labor laws also provide for equal opportunity and non-discrimination of any form for workers with respect to employment including any form of intimidation or harassment. However, the laws do not explicitly prohibit discrimination based on sexual orientation or gender identity.”</p> <p><b>Workers Organisation</b>  Zambia’s employment and labour laws fully provide for grievance redress mechanism establishment in all workplaces through freedom to join associations or trade unions and enter into collective bargaining agreements.</p>	

ESS and Requirements	National Laws and Requirements	Gaps
<p>the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them.</p> <p><b>Protecting the Work Force</b>  <b>Child Labour and Minimum Age</b>  A child under the minimum age will not be employed or engaged in connection with the project. The labor management procedures will specify the minimum age for employment or engagement in connection with the project, which will be the age of 14 unless national law specifies a higher age.</p> <p><b>Forced Labor</b>  The borrower will not employ forced labor, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor, or similar labor-contracting arrangements. The borrower will not employ trafficked persons.</p> <p><b>Grievance Mechanisms</b>  A grievance mechanism will be provided for all direct workers and contracted workers (and, where relevant, their organizations) to raise workplace concerns. Such workers will be informed of the grievance mechanism at the time of recruitment and the measures put in place to protect them against reprisal for its use. Measures will be put in place to make the grievance mechanism easily accessible to all such project workers.</p> <p><b>Occupational Health and Safety</b></p>	<p><b>Child Labour and Minimum Age</b>  Sections 80 to 87 of the Employment Code adequately address child labour. The minimum age is 15, but restrictions apply until the age of 18. The use of National Registration Cards as a minimum requirement to confirm age for employment has been adopted in the Country and the agriculture sector.</p> <p><b>Gender-Based Violence</b>  The Sexual Offenses Act comprehensively addresses sexual violence. Section 95 (1) of the Employment Code makes it mandatory for employers to have an employment policy on harassment. Section 137A of the Penal Code Chapter 7 Volume 7, makes it an offense for any person to practice sexual harassment in a workplace or elsewhere and against a child.</p> <p><b>Forced Labor</b>  Any form of forced labour, including trafficking, is prohibited by the labour laws.</p> <p><b>Grievance Mechanisms</b>  Zambia’s employment and labour laws provide for all workers the freedom and to right to join associations and trade unions where they can air their grievances without fear of victimisation.</p>	

ESS and Requirements	National Laws and Requirements	Gaps
<p>The Borrower to provide a safe and healthy work environment taking into account inherent risks in its particular sector and specific classes of hazards in the work areas. Measures relating to occupational health and safety will be applied to the project. The OHS measures will take into account the General Environmental Health and Safety Guidelines (EHSGs) and, as appropriate, the industry specific EHSGs and other Good International Industry Practice (GIIP). The OHS measures applying to the project will be set out in the legal agreement and the Environmental and Social Commitment Plan (ESCP).</p> <p><b>Contracted Workers</b> The Borrower will make reasonable efforts to ascertain that third parties who engage contracted workers are legitimate and reliable entities and have in place labor management procedures applicable to the project that will allow them to operate in accordance with the requirements of this ESS.</p> <p><b>Community Workers</b> Projects may include the use of community workers in a number of different circumstances, including where labor is provided by the community as a contribution to the project, or where projects are designed and conducted for the purpose of fostering community-driven development, providing a social safety net or providing targeted assistance in fragile and conflict-affected situations. Given the nature and objectives of such projects, the application of all requirements of ESS2 may not be appropriate. In all such circumstances, the Borrower will require 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.</p> <p><b>Primary Supply Workers</b> As part of the environmental and social assessment, the Borrower will identify potential risks of child labor, forced labor, and serious safety issues which may arise in relation to primary suppliers.</p>	<p><b>Occupational Health and Safety</b> This Act is promulgated to establish the Occupational Health and Safety Institute and provide for its functions; provides for the establishment of health and safety committees at workplaces and for the health, safety and welfare of persons at work; provide for the duties of manufacturers, importers and suppliers of articles, devices, items and substances for use at work; provide for the protection of persons, other than persons at work, against risks to health or safety arising from, or in connection with, the activities of persons at work.</p> <p><b>Contracted Workers</b> Zambia's employment and labour laws provide for protection of the rights of all categories of workers, including contracted workers.</p> <p><b>Community Workers</b> Zambia's labour laws do not interfere with agreements made between workers and employers for as long as the agreement is in line with the employment act.</p> <p><b>Primary Supply Workers</b></p>	

ESS and Requirements	National Laws and Requirements	Gaps
	Zambia's labour laws provide and ensure that rights of all categories of workers are protected including workers employed by primary suppliers. Child labour, forced labour and workers safety are considered a criminal offence by the labour and employment laws as well as occupational safety and health legislation.	
<p><b><u>Resource Efficiency and Pollution Prevention and Management (ESS3)</u></b> 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.</p> <p>The Borrower will consider ambient conditions and apply technically and financially feasible resource efficiency and pollution prevention measures in accordance with the mitigation hierarchy. The measures will be proportionate to the risks and impacts associated with the project and consistent with GIIP, in the first instance the Environmental Health and Safety Guidelines (EHSsGs).</p> <ul style="list-style-type: none"> <li>• Include requirement on management of wastes, chemical and hazardous materials.</li> <li>• Provides for avoidance or minimization and/generation of hazardous and non-hazardous waste</li> <li>• Provides for measures to avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.</li> <li>• Provides for measures to promote more sustainable use of resources, including energy and water.</li> <li>• Provides for measures to reduce project related GHG emissions.</li> </ul> <p><b>Pollution Prevention and Management</b> The Borrower will avoid the release of pollutants or, when avoidance is not feasible, minimize and control the concentration and mass flow of their release using the performance levels and measures specified in</p>	Zambia has a variety of legal and regulatory statutes that address and enforce Pollution Prevention and Management including (Air, Water, Hazardous and Non-Hazardous Waste, Chemical and Hazardous Materials).	No significant gaps between ESS 3 and the various national laws.

ESS and Requirements	National Laws and Requirements	Gaps
<p>national law or the EHSs, whichever is most stringent. This applies to the release of pollutants to air, water, and land due to routine, nonroutine, and accidental circumstances, and with the potential for local, regional, and transboundary impacts.</p> <p><b>Air Pollution Management</b> In addition to the resource efficiency measures described above, the Borrower will consider alternatives and implement technically and financially feasible and cost-effective options to avoid or minimize project-related air emissions during the design, construction, and operation of the project.</p> <p><b>Management of Hazardous and Non-hazardous Waste.</b> The Borrower will avoid the generation of hazardous and non-hazardous waste. Where waste generation cannot be avoided, the Borrower will minimize the generation of waste, and reuse, recycle and recover waste in a manner that is safe for human health and the environment. Where waste cannot be reused, recycled or recovered, the Borrower will treat, destroy, or dispose of it in an environmentally sound and safe manner that includes the appropriate control of emissions and residues resulting from the handling and processing of the waste material.</p> <p><b>Management of Chemicals and Hazardous Materials</b> The Borrower will avoid the manufacture, trade, and use of chemicals and hazardous materials subject to international bans, restrictions or phaseouts unless for an acceptable purpose as defined by the conventions or protocols or if an exemption has been obtained by the Borrower, consistent with Borrower government commitments under the applicable international agreements.</p>		
<p><b>Community Health and Safety (ESS4)</b> recognises 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.</p> <p>ESS4 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</p>	<p>Zambia has a number of legal and regulatory statutes that address community health and safety, hazard material management and safety, safety services, traffic and road safety, ecosystem services, community exposure to diseases, emergency preparedness and security personnel.</p> <p><b>The Public Health Act</b></p> <ul style="list-style-type: none"> <li>• Provides for the prevention of the occurrence of nuisance or conditions dangerous/injurious to humans.</li> <li>• Provides that the relevant local authority shall take all lawful, necessary and reasonably practicable measures.</li> </ul>	<p>No significant gaps between ESS 4 and the various national laws.</p>

ESS and Requirements	National Laws and Requirements	Gaps
<p>attention to people who, because of their particular circumstances, may be vulnerable.</p> <p>ESS 4 Objectives include:</p> <ul style="list-style-type: none"> <li>To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and nonroutine circumstances.</li> <li>To promote quality and safety, and considerations relating to climate change in the design and construction of infrastructure, including dams.</li> <li>To avoid or minimize community exposure to project-related traffic and road safety risks, diseases, and hazardous materials.</li> <li>To have in place effective measures to address emergency events.</li> <li>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.</li> </ul> <p><b>Community Health and Safety</b> The Borrower will evaluate the risks and impacts of the project on the health and safety of the affected communities during the project life cycle, including those who, because of their particular circumstances, may be vulnerable. The Borrower will identify risks and impacts and propose mitigation measures in accordance with the mitigation hierarchy.</p> <p><b>Infrastructure, Equipment Design and Safety</b> The Borrower will design, construct, operate, and decommission the structural elements of the project in accordance with national legal requirements, the EHSs and other GIIP, taking into consideration safety risks to third parties and affected communities. Structural elements of a project will be designed and constructed by competent professionals and certified or approved by competent authorities or professionals. Structural design will take into account climate change considerations, as appropriate.</p> <p><b>Hazardous Materials Management and Safety</b> The Borrower will avoid or minimize the potential for community exposure to hazardous materials and substances that may be released by</p>	<p><b>The Environmental Impact Assessment Regulations, 1997 (Statutory Instrument No. 28 of 1997):</b> specifies the requirements for an EIA and it also set out in its Second Schedule projects for which EIAs are applicable. It provides specific guidelines for conducting environmental impact assessments and for evaluation of environmental impact statements. Applicable Regulations under the Environmental Management Act No. 12 of 2011 are described below.</p> <p><b>Environmental Protection and Pollution Control (Environmental Impact Assessment) Regulations, SI No. 28 of 1997.</b> These Regulations provides the main framework under which EIAs are conducted, submitted to ZEMA and considered for either approval or rejection. These regulations are relevant as a guide to the developer as to what is supposed to be done at every stage of the EIA process. The requirements of conducting an EIA are all stipulated under these regulations and the developer shall ensure compliance at every stage. The EIA regulations also give a guideline as to how much review fee will be paid to ZEMA for the purpose of reviewing the EIS for the proposed project and that development shall not be undertaken by a developer without an approval letter from ZEMA.</p> <p><b>Statutory Instrument No. 112 of 2013 – Environmental Management (Licensing) Regulations:</b> These Regulations provide standards and guidelines for mitigating air, wastewater, hazardous waste, pesticides and toxic substances and ozone depleting substances. There are several parts in this statutory instrument giving regulatory powers to ZEMA to control the discharge of water pollutants, air emission pollutants, pesticides and other toxic substances, waste (both municipal and hazardous) and ozone depleting substances.</p>	

ESS and Requirements	National Laws and Requirements	Gaps
<p>the project.</p> <p><b>Safety of Services</b> Where the project involves provision of services to communities, the Borrower will establish and implement appropriate quality management systems to anticipate and minimize risks and impacts that such services may have on community health and safety. In such circumstances, the Borrower will also apply the concept of universal access, where technically and financially feasible.</p> <p><b>Traffic and Road Safety</b> The Borrower will identify, evaluate, and monitor the potential traffic and road safety risks to workers, affected communities, and road users throughout the project life cycle and, where appropriate, will develop measures and plans to address them. The Borrower will incorporate technically and financially feasible road safety measures into the project design to prevent and mitigate potential road safety risks to road users and affected communities.</p> <p><b>Ecosystem Services</b> The project’s direct impacts on ecosystem services may result in adverse health and safety risks to and impacts on affected communities. With respect to this ESS, ecosystem services are limited to provisioning and regulating services as defined in ESS1. Where appropriate and feasible, the Borrower will identify the project’s potential risks and impacts on ecosystem services that may be exacerbated by climate change. Adverse impacts will be avoided, and if they are unavoidable, the Borrower will implement appropriate mitigation measures.</p> <p><b>Community Exposure to Disease</b> The Borrower will avoid or minimize the potential for community exposure to waterborne, water based, water-related, and vector-borne diseases, and communicable and non-communicable diseases that could result from project activities, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups. Where specific diseases<sup>5</sup> are endemic in communities in the project area, the Borrower is encouraged to explore opportunities during the project life cycle to improve environmental conditions that could help minimize their incidence.</p>	<p><b>Traffic and Road Safety</b> Zambia has a Traffic Act which ensures the implementation of all traffic rules and regulations including protecting communities from road safety hazards and risks.</p> <p><b>Ecosystem Services</b> <b><u>Environmental Management Act No. 12 of 2011:</u></b> The principal legislation governing environmental management in Zambia is the Environmental Management Act (EMA) of 2011. The Act provides for the sustainable management of natural resources and protection of the environment, and the prevention and control of pollution. Of particular relevance is section 29 of the Act which states that “A person shall not undertake any project that may have an effect on the environment without the written approval of the Agency, and except in accordance with any conditions imposed in that approval”.</p> <p><b>Community Exposure to Disease</b> <b><u>The Public Health Act</u></b></p> <ul style="list-style-type: none"> <li>• Provides for the prevention of the occurrence of nuisance or conditions dangerous/injurious to humans.</li> <li>• Provides that the relevant local authority shall take all lawful, necessary, and reasonably practicable measures.</li> <li>• Zambia Guidelines on Management of COVID-19 provides for approaches towards managing the spread of COVID-19 including social distancing and quarantine.</li> </ul>	

ESS and Requirements	National Laws and Requirements	Gaps
<p><b>Emergency Preparedness and Response</b>  The Borrower will identify and implement measures to address emergency events. An emergency event is an unanticipated incident, arising from both natural and man-made hazards, typically in the form of fire, explosions, leaks, or spills, which may occur for a variety of different reasons, including failure to implement operating procedures that are designed to prevent their occurrence, extreme weather, or lack of early warning. The measures will be designed to address the emergency event in a coordinated and expeditious manner; to prevent it from injuring the health and safety of the community; and to minimize, mitigate, and compensate for any impacts that may occur.</p> <p><b>Security Personnel</b>  When the Borrower retains direct or contracted workers to provide security to safeguard its personnel and property, it will assess risks posed by these security arrangements to those within and outside the project site. In making such arrangements, the Borrower will be guided by the principles of proportionality and GIIP, and by applicable law in relation to hiring, rules of conduct, training, equipping, and monitoring of such security workers. The Borrower will not sanction any use of force by direct or contracted workers in providing security except when used for preventive and defensive purposes in proportion to the nature and extent of the threat. The Borrower will (i) make reasonable inquiries to verify that the direct or contracted workers retained by the Borrower to provide security are not implicated in past abuses; (ii) train them adequately (or determine that they are properly trained) in the use of force (and where applicable, firearms) and appropriate conduct toward workers and affected communities; and (iii) require them to act within the applicable law and any requirements set out in the Environmental and Social Commitment (ESCP).</p>	<p><b>Emergency Preparedness and Response</b>  <u><b>Environmental Management and Co-ordination Act 1997.</b></u>  Provides for development of emergency preparedness and response plans for minimizing risks to communities and ensure participation of communities in response.</p> <p><b>Security Personnel</b></p>	
<p><u><b>ESS 5</b></u></p>	<p>There is no specific law pertaining to involuntary resettlement in Zambia. Multiple policies exist and these are subject to different interpretation. The resettlement Policy is not mandatory and is not accompanied by a law or regulations defining resettlement requirements. Compulsory land acquisition processes are well defined in the Zambian Law. This process has put in place</p>	

ESS and Requirements	National Laws and Requirements	Gaps
	<p>measures to protect the affected persons, defines affected persons consultation process and avenues for grievance redress.</p> <p><b><u>The Lands Act Cap 184</u></b> Controls the alienation of land and the conversion of land from customary tenure to statutory. The Act empowers the President of the Republic to compulsorily acquire property. The principles of compensation are pivoted on the basis that the value of property for the purpose of compensation shall be the value of the amount which the property might be expected to realize if sold on the open market by a willing seller at the time of the publication of notice to yield possession of the property.</p> <p>Two land tenure systems exist: statutory and customary. Statutory tenure involves administration of state land by the Commissioner of Lands through local authorities. Planning and sub-division of land parcels for development is guided by the provision of the Urban and Regional Planning Act of 2015. Customary tenure is applicable in rural areas and does not allow for exclusive individual rights as land is held in trust on behalf of the community by the traditional authorities. Access to land is at the discretion of traditional authorities and due to existing cultural tendencies, this usually results in exclusion of vulnerable groups which include women, youths and persons living with disabilities. There are no legally defined physical boundaries for customary land making it prone to encroachments that contribute to land disputes.</p> <p>The Resettlement Policy has no provisions for compensating economic losses associated with livelihoods beyond standing crops and trees, thus falling short of international compensation practices.</p> <p>The resettlement policy is silent regarding persons who do not have a legal right or claim of land under occupation. Squatters/encroachers are not eligible for any compensation or support. Reinstatement of public infrastructure is silent in the resettlement policy.</p> <p><b>The Land Regulations (Customary Tenure Convention Regulation, S.I. 89 of 1996):</b> It describes processes for the Conversion of customary tenure into leasehold tenure, consideration of application to convert the customary tenure into the leasehold tenure and also the conversion of customary tenure into the leasehold tenure The proposed project area could either be under customary or</p>	

ESS and Requirements	National Laws and Requirements	Gaps
	<p>state land tenure system. The regulation is applicable to the project as it may involve land acquisition and resettlement.</p> <p><b>The Valuation Surveyors Act Cap 207:</b> Act provides guidance for the land valuation practices in Zambia by the land valuator, who is supposed to be registered by the Valuation Registration Board under the provisions of this Act. In case the project impacts the existing sources of people’s sources of livelihood or results in the restriction of access to resources and or impacts their various assets, compensation would be based on the value of their properties in using this Act.</p> <p>Whilst ZEMA is responsible for auditing the ESIA including RAPs, the resettlement process is often overseen by other departments such as the Office of the Vice President under DMMU, local authorities, private developers, and relevant line ministries. There is no clear coordinating mechanism among these government departments.</p>	
<p><b><u>Biodiversity Conservation and Sustainable Management of Living Natural Resource (ESS6)</u></b> recognises protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development.</p> <p>ESS6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. Habitat is defined as a terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living environment. All habitats support complexities of living organisms and vary in terms of species diversity, abundance, and importance.</p> <p>ESS 6 also addresses sustainable management of primary production<sup>2</sup> and harvesting of living natural resources.</p> <p>ESS6 recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, 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, including Indigenous</p>	<p>Zambia has a number of legal and statutory laws that govern biodiversity including conservation, and sustainable management as described below.</p> <p><b>The Zambia Wildlife Act No. 14 of 2015:</b> The Zambia Wildlife Act was promulgated among other functions to: Provide for the establishment, control and management of National Parks, bird and wildlife sanctuaries and for the conservation and enhancement of wildlife eco-systems, biological diversity and objects of aesthetic, pre-historic, historical, geological, archaeological and scientific interest in National Parks; and Provide for the sustainable use of wildlife and the effective management of the wildlife habitat in Game Management Areas. Section 4 of the Act stipulates the principles which apply to wildlife conservation and management which include protection of biological diversity; sustainability of the ecosystem and biological diversity; integration; equity and effective participation of local communities and traditional leaders.</p> <p><b><u>Environmental Management and Co-ordination Act 1997.</u></b></p> <ul style="list-style-type: none"> <li>Article 4 (i) of the EIA regulations require that EIAs take into account biodiversity and natural lands.</li> </ul>	<p>No significant gaps between ESS 6 and the various national laws.</p>

ESS and Requirements	National Laws and Requirements	Gaps
<p>Peoples, in biodiversity conservation and sustainable management of living natural resources is also considered.</p> <p><b><u>Objectives</u></b></p> <ul style="list-style-type: none"> <li>To protect and conserve biodiversity and habitats.</li> <li>To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.</li> <li>To promote the sustainable management of living natural resources.</li> <li>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.</li> </ul> <p><b><u>Requirements</u></b></p> <p><b><u>General</u></b></p> <p>The environmental and social assessment as set out in ESS1 will consider direct, indirect, and cumulative project-related impacts on habitats and the biodiversity they support. This assessment will consider threats to biodiversity, for example, habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take, as well as projected climate change impacts. It will determine the significance of biodiversity or habitats based on their vulnerability and irreplaceability at a global, regional, or national level and will also take into account the differing values attached to biodiversity and habitats by project-affected parties and other interested parties.</p> <p><b><u>Assessment of Risks and Impacts</u></b></p> <p>Through the environmental and social assessment, the Borrower will identify the potential project related risks to and impacts on habitats and the biodiversity that they support. In accordance with the mitigation hierarchy, the Borrower will make the initial assessment of project risks and impacts without taking into account the possibility of biodiversity offsets. The assessment undertaken by the Borrower will include identification of the types of habitats potentially affected and consideration of potential risks to and impacts on the ecological function of the habitats. The assessment will encompass any areas of potential biodiversity importance that may be affected by the project, whether or</p>	<ul style="list-style-type: none"> <li>There is no specific guidance on how to address biodiversity or natural habitats in EIAs or Project briefs.</li> </ul> <p><b><u>The Forest Conservation and Management Act 2015</u></b></p> <p>The Forest Act provides for the establishment and declaration of National Forests, Local Forests, joint forest management areas, botanical reserves, private forests and community forests; provide for the participation of local communities, local authorities, traditional institutions, non-governmental organisations and other stakeholders in sustainable forest management; provide for the conservation and use of forests and trees for the sustainable management of forests ecosystems and biological diversity; and establish the Forest Development Fund.</p> <p>The Act also provides for the implementation of the United Nations Framework Convention on Climate Change, Convention on International Trade in Endangered Species of Wild Flora and Fauna, the Convention on Wetlands of International Importance, especially as Water Fowl Habitat, the Convention on Biological Diversity, the Convention to Combat Desertification in those Countries experiencing Serious Drought and/or Desertification, particularly in Africa and any other relevant international agreement to which Zambia is a party.</p> <p>The Act is the main legal instrument for the establishment, control, utilization and management of forests. The act provides for the establishment of the Forestry Department whose main function is for the promotion of sustainable forest management.</p> <p><b><u>Assessment of Risks and Impacts</u></b></p> <p><b><u>Environmental Management Act No. 12 of 2011:</u></b></p> <p>The principal legislation governing environmental management in Zambia is the Environmental Management Act (EMA) of 2011. The Act provides for the sustainable management of natural resources and protection of the environment, and the prevention and control of pollution. Of particular relevance is section 29 of the Act which states that “A person shall not undertake any project that may have an effect on the environment without the written approval of the</p>	

ESS and Requirements	National Laws and Requirements	Gaps
<p>not they are protected under national law. The extent of the assessment will be proportionate to the risks and impacts, based on their likelihood, significance, and severity, and will reflect the concerns of project affected parties and other interested parties.</p> <p><b>Primary Suppliers</b> Where a Borrower is purchasing natural resource commodities, including food, timber, and fiber, that are known to originate from areas where there is a risk of significant conversion or significant degradation of natural or critical habitats, the Borrower’s environmental and social assessment will include an evaluation of the systems and verification practices used by the primary suppliers.</p>	<p>Agency, and except in accordance with any conditions imposed in that approval”.</p> <p><b>Primary Suppliers</b> <b><u>Environmental Management and Co-ordination Act 1997.</u></b> The Environmental Management Act and the 1997 EIA regulations set adequate requirements for the preparation of Environmental Impact Assessments. Provides for protection and conservation of the environment, environmental impact assessment, and environmental auditing and monitoring.</p>	
<p><b>Indigenous peoples/Sub-Saharan African historically underserved traditional local communities (ESS7)</b></p>	<p>Not Applicable</p>	<p>Not Applicable</p>
<p><b>Stakeholder Engagement and Information Disclosure. (ESS 10).</b> 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.</p> <p>Objectives</p> <ul style="list-style-type: none"> <li>• To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.</li> <li>• To assess the level of stakeholder interest and support for the project and to enable stakeholders’ views to be taken into account in project design and environmental and social performance.</li> <li>• 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.</li> </ul>	<p><b><u>Environmental Management Act and the 1997</u></b></p> <p>EIA regulations provide for ESIA studies to include stakeholder engagement and disclosure of information.</p> <p>Article 10 of the EIA regulations require prior consultations, but only for Environmental Impact Statements. Article 17 of the EIA regulations provide for optional public hearings.</p> <p><b><u>Disclosure</u></b> All documents submitted to ZEMA are publicly available. However, developers may claim that certain information is proprietary and thus cannot be disclosed.</p>	<p>No significant gaps between ESS 10 and the various national laws.</p>

ESS and Requirements	National Laws and Requirements	Gaps
<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul> <p><b>Engagement during Project Preparation</b></p> <p><b>Stakeholder Identification and Analysis</b></p> <p>The Borrower will identify the different stakeholders, both project-affected parties and other interested parties. As set out in paragraph 5, individuals or groups that are affected or likely to be affected by the project will be identified as ‘project-affected parties’ and other individuals or groups that may have an interest in the project will be identified as ‘other interested parties’</p> <p><b>Stakeholder Engagement Plan</b></p> <p>In consultation with the Bank, the Borrower will develop and implement a Stakeholder Engagement Plan (SEP) proportionate to the nature and scale of the project and its potential risks and impacts. A draft of the SEP will be disclosed as early as possible, and before project appraisal, and the Borrower will seek the views of stakeholders on the SEP, including on the identification of stakeholders and the proposals for future engagement. If significant changes are made to the SEP, the Borrower will disclose the updated SEP.</p> <p><b>Information Disclosure</b></p> <p>The Borrower will disclose project information to allow stakeholders to understand the risks and impacts of the project, and potential opportunities. The Borrower will provide stakeholders with access to the following information as early as possible before the Bank proceeds to project appraisal, and in a time frame that enables meaningful consultations with stakeholders on project design.</p> <p><b>Meaningful Consultation</b></p>		

ESS and Requirements	National Laws and Requirements	Gaps
<p>The Borrower will undertake a process of meaningful consultation in a manner that provides stakeholders with opportunities to express their views on project risks, impacts, and mitigation measures, and allows the Borrower to consider and respond to them. Meaningful consultation will be carried out on an ongoing basis as the nature of issues, impacts, and opportunities evolves.</p> <p><b>Engagement during Project Implementation and External Reporting</b> The Borrower will continue to engage with, and provide information to, project-affected parties and other interested parties throughout the life cycle of the project, in a manner appropriate to the nature of their interests and the potential environmental and social risks and impacts of the project.</p> <p><b>Grievance Mechanism</b> The Borrower will respond to concerns and grievances of project-affected parties related to the environmental and social performance of the project in a timely manner. For this purpose, the Borrower will propose and implement a grievance mechanism to receive and facilitate resolution of such concerns and grievances.</p> <p><b>Organizational Capacity and Commitment</b> The Borrower will define clear roles, responsibilities, and authority, as well as designate specific personnel to be responsible for the implementation and monitoring of stakeholder engagement activities and compliance with this ESS.</p>	<p><b>Engagement during Project Implementation and External Reporting</b> ZEMA’s EIA/EA regulations 2003 provide for annual environmental audits of all projects during implementation and throughout project life cycle. Further, the regulations require that the reporting (audits) be undertaken by external parties registered with ZEMA.</p> <p><b>Grievance Mechanism</b> The Environmental Management Act provides for reporting of grievances on development projects and other concerns of environmental nature to the Agency.</p> <p><b>Organizational Capacity and Commitment</b> Roles and responsibilities including clear authority lines and personnel for implementation of stakeholder engagement is required in preparation of ESIA and part of ESMP.</p>	

#### **4.4. Environmental Health and Safety Guidelines**

The World Bank Group Environment, Health and Safety (EHS) guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). They define acceptable pollution prevention and abatement measures and emission levels in World Bank financed projects. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. Application of the EHS Guidelines to this project will involve the establishment of site-specific targets, with an appropriate timetable for achieving them. The environmental screening process applied alternatives (higher, medium, or lower) levels or measures, which, if acceptable to the World Bank, become project or site-specific requirements.

Zambian regulations do not differ from the levels and measures of the World Bank EHS Guidelines, but the Zambia Refugee and Host Community Project (ZRCP) is expected to achieve whichever guidelines is more stringent. For this reason, this project will also apply the sector specific EHS guidelines on agribusiness and food production, (aquaculture, annual crop production, mammalian livestock production, aquaculture, dairy processing, fish processing, food and beverages processing, meat processing, poultry processing, poultry production and vegetable oil production and processing. General Guidelines, including Environmental, Occupational Health and Safety, Community Health and Safety at pre-construction, construction, operation, and decommissioning phases of subproject. Other sector specific EHSs include on Toll roads and healthcare facilities.

##### **4.4.1 General Environmental Health and Safety Guidelines (Environmental)**

###### **(a) Environmental**

- Air Emissions
- Energy Conservation
- Wastewater and Water Quality
- Water Conservation
- Hazardous Materials Management
- Waste Management
- Noise
- Contaminated land

###### **(b) Occupational Health and Safety**

- General Facility Design and Operation
- Communication and Training
- Physical Hazards
- Chemical Hazards
- Biological Hazards
- Radiological Hazards
- Personal Protective Equipment (PPE)
- Special Hazard Environments
- Monitoring

###### **(c) Community Health and Safety**

- Water Quality and Availability
- Structural Safety of Project Infrastructure
- Life and Fire Safety (L&FS)
- Traffic Safety
- Transport of Hazardous Materials
- Disease Prevention

- Emergency Preparedness and Response

**(d) Construction and Decommissioning**

- Environment
- Occupational Health and Safety
- Community Health and Safety

**4.4.2 Industry Sector Environmental Health and Safety Guidelines**

- (a) EHSGs on Construction Material Extraction
- (b) EHSGs on Water and Sanitation
- (c) EHSGs on Road Tolls
- (d) EHSGs on Health care facilities
- (e) EHSGs on Agribusiness

## CHAPTER 5: POTENTIAL ENVIRONMENTAL AND SOCIAL RISKS, IMPACTS AND MITIGATION MEASURES

### **The environmental risk rating is substantial.**

The proposed environmental risk rating is substantial. The potential environmental risks and impacts include at construction phase: (i) dealing with existing site contamination due to pit latrines and asbestos roofing; (ii) sedimentation of Mwafwe River due to road construction; (iii) loss of biodiversity due to vegetation clearance and the development and use of borrow pits; (iv) soil and water contamination due to poor management of solid and hazardous waste including minor electronic waste from the electrification activities; (v) Occupational and community health and safety risks e.g., exposure to increased dust, noise and vehicle emissions and injuries associated with site accidents, (iv) skin irritations from exposure to chemical hazards including wet cement and welding films , (vi) loss of cultural heritage; (vii) inadequate technical capacity of both the national and satellite PMU to manage E&S risks in line with the ESF. At operation and maintenance phase, EHS risks and impacts include component 2, (i) collapsing of infrastructure, (ii) soil and water pollution, changes in local water and air quality, occupation health and safety risks.

Potential EHS impacts and risks associated Grant financing subprojects under Component 3 include at the construction phase (i) soil and water contamination; (ii) dust emissions (iii) and (iv) respiratory illnesses due to workers' exposure to processing emissions or organic dust, OHS risks associated with use of pesticides, (vii) inadequately ventilated buildings, , (viii) ergonomics hazards from manual handling.

Components 1 and 3 have technical assistance activities which may have downstream EHS impacts. These include component 1; (i) biodiversity loss, land degradation, air and water pollution arising from improvement in legislation, thereby causing an increase in agricultural activities. To address these risks and impacts, TORs for technical activities will be reviewed to ensure that capacity building, training and any other TA are consistent with ESSs. The Bank will also conduct due diligence in supporting the Borrower in identifying appropriate methods and tools to assess and manage potential environmental and social risks and impacts and monitor performance of a project in accordance with the ESCP and the ESSs.

**The social risk classification is substantial.** The social risk was assessed against the backdrop of: (i) risks associated with land acquisition and/or physical and economic displacement of vendors, due to encroachment of the road reserve in selected areas within the refugee camp, especially as a result of the rehabilitation of existing access roads in and the need for land parcels to support proposed agribusiness interventions; (ii) risk of exclusion and potential discrimination against women, youth, and people living with disabilities from accessing project benefits, along with the risk of elite capture of project benefits, both of which could lead to tension among refugees and communities; (iii) potential incidence of GBV-SEA/SH among workers, and between project workers and refugees and host communities; (iv) labor risks, including the risk of child labor in agribusinesses, facilitated by the prevalence of this practice in the country, the risk of forced labor in the manufacturing of the solar components, and the risk of reproducing poor labor and working conditions if the participating entities fail to abide by the national legislation, especially regarding working hours, wages, overtime, compensation, and/or benefits; and (v) data privacy risks associated with the digitalizing of the process of acquiring biometric IDs, and relevant permits, which

will require data capturing of vulnerable refugees, particularly since a breach in confidentiality whilst processing personal data could put certain categories of refugees and asylum seekers at risk of exclusion. Also, the low capacity of the PMU to manage the environmental and social risks of the Project, along with the lack of clarity on the roles and responsibilities of the various government ministries and departments involved, may limit the effectiveness of the measures intended to manage the E&S risks of the project.

The environmental and social risks and impacts that the project may encounter are listed in Table 6 below.

Table 6: Environmental and Social Risks and Mitigation Measures

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
<b>Component 2.1: Road and Bridge Rehabilitation</b>			
<b>EHS Risk and Impacts at Construction Phase</b>			
Vegetation loss and soil erosion from road widening, construction of laydown area/workers 'campsite	<ul style="list-style-type: none"> <li>• Keep construction works to the existing road width.</li> <li>• Prepare an environmental project brief for a worker's camp site</li> <li>• Keep to a minimum ground vegetation loss and preserve trees.</li> <li>• Preserve the trees along the wayleave.</li> <li>• Practice topsoil stripping and stockpile for use when during site rehabilitation</li> </ul>	<ul style="list-style-type: none"> <li>• Area of site cleared</li> <li>• Stockpiled top soil</li> <li>• Campsite management plan</li> </ul>	Contractor & Kalumbila District Council
Design fault and construction of sub-standard infrastructure	<ul style="list-style-type: none"> <li>• Use of qualified staff : supervising engineer, contractors, and workers</li> <li>• Workers to be certified with the Engineering Institution of Zambia</li> <li>• Ensure adherence to road construction standards through enhanced supervision of works inclusion the testing of materials for construction.</li> <li>• Use of approved road designs</li> </ul>	<ul style="list-style-type: none"> <li>• Improved and approved designs against WB EHSs</li> <li>• Records of staff qualifications</li> <li>• Records of material testing schedule and results</li> </ul>	Contractor, MOHAIS and Kalumbila District Council
Dust emissions from land clearing excavation, levelling and materials stockpiles	<ul style="list-style-type: none"> <li>• Construct speed retarders at places where village centres are located.</li> <li>• Install speed limits and drivers trained to observe traffic rules.</li> <li>• Cover raw material transporting trucks with tarpaulins.</li> <li>• The contractor should limit their work to day-time hours only.</li> </ul>	<ul style="list-style-type: none"> <li>• No of complaints received.</li> <li>• Absence of dust on site</li> <li>• Signage of speed limit</li> <li>• Presence of speed retarders</li> <li>• No of trucks covered with tarpaulins.</li> <li>•</li> </ul>	Contractor, MOHAIS and Kalumbila District Council

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Spraying loose soil during excavation and levelling operations to minimize dust</li> <li>• Covering excavated stockpiles</li> <li>• Workers should have appropriate dust protection masks.</li> <li>• Machinery and vehicles should be inspected to ensure they are road worthy.</li> <li>• Air quality management plan should be developed as part of the CESMP</li> </ul>		
Land degradation, loss of landscape aesthetics, loss of arable and fertile land from use of borrow pits for material extraction.	<ul style="list-style-type: none"> <li>• Implement the borrow management plan and where necessary prepare an environmental project brief in compliance with ZEMA requirements and EHSGs on construction materials extraction.</li> <li>• Topsoil, overburden, and low-quality materials should be properly removed, stockpiled near the site, and preserved for rehabilitation.</li> <li>• Utilize existing borrow pits and minimize establishment of new ones</li> </ul>	<ul style="list-style-type: none"> <li>• Borrow Pit Management Plan</li> <li>• EPB with approve Decision Letter from ZEMA</li> <li>• Rehabilitated borrow pits</li> </ul>	Contractor, MOHAIS and Kalumbila District Council
Construction site waste generation	<ul style="list-style-type: none"> <li>• Segregate waste</li> <li>• All solid wastes to be appropriately stored on site and removed from the site to a designated waste disposal site.</li> <li>• Reuse of construction waste</li> </ul>	<ul style="list-style-type: none"> <li>• Well labelled waste bins (receptacles)</li> <li>• Log sheet of waste disposal</li> <li>• Absence of litter /piled waste on site</li> </ul>	Contractor, MOHAIS and Kalumbila District Council
Soil and water contamination from potential hazardous materials and oil spills from heavy equipment operation and fueling activities	<ul style="list-style-type: none"> <li>• All construction vehicles to be fueled at fuel stations or designated areas at the workers' campsite.</li> <li>• Ensure that fuel dispensing points have drip pans and contain fuel</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of contaminated soil on site</li> <li>• Presence of drip pans on site</li> <li>• Fuel storage containers on impervious bund wall</li> <li>• Spills kit on site</li> <li>• Labelled hazardous waste bin with a lid</li> </ul>	Contractor, MOHAIS and Kalumbila District Council

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<p>tanks/drums in an impervious bund of sufficient capacity.</p> <ul style="list-style-type: none"> <li>Spills should be cleaned up immediately by removing the spillage together with the polluted soil and by disposing of them at a recognized facility and in line with the hazardous waste management plan</li> <li>Ensure availability of spills kit on site</li> </ul>		
<p>Siltation affecting Mwafwe River and any other water resources</p>	<ul style="list-style-type: none"> <li>Rivers, watercourses and other water bodies shall be kept clear of felled sediments, trees, vegetation cuttings and organic waste and debris</li> <li>Restrict project activities to the actual footprint.</li> <li>Installation of sediment traps along water drainages, including, silt fences, and vegetation traps.</li> <li>Store sediments away from the riverbanks</li> </ul>	<ul style="list-style-type: none"> <li>Water resources clear of sediments and other debris</li> <li>Availability of sediment traps</li> <li>Absence of sediments from riverbanks</li> </ul>	<p>Contractor, MOHAIS and Kalumbila District Council</p>
<p>Community health and safety impacts:</p> <ul style="list-style-type: none"> <li>Respiratory diseases due to exposure to dust; hearing disturbances due to construction noise, uncontrolled access to dangerous sites( to borrow pits and construction sites); exposure to waterborne, associated diseases; and exposure to traffic accidents and drowning into borrow pits</li> </ul>	<ul style="list-style-type: none"> <li>Create side drains to prevent water from ponding</li> <li>Ensure security of the site and barricade to prevent an unauthorized entry</li> <li>Install signage around the borrow informing community to keep away</li> <li>Community awareness and emergency preparedness and response plan to be prepared and implemented</li> <li>Avoid the discharge of wastewater into water resources</li> <li>Use of flaggers or traffic controllers to control traffic</li> </ul>	<ul style="list-style-type: none"> <li>Borrow pits with constructed side drains for</li> <li>Drained borrow pits</li> <li>Safety signage around the site both the borrow pit and road construction site</li> <li>Secured site</li> <li>Traffic controllers/flaggers observed on site</li> </ul>	<p>Contractor, MOHAIS and Kalumbila District Council</p>

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Dust suppression on site</li> <li>• Preparation of the emergency preparedness and response plan</li> <li>• Creation of pedestrian walk ways</li> <li>• Barricade construction sites to restrict public accesses</li> <li>• Use of licensed drivers to reduce traffic accidents</li> <li>• Construction vehicles to be fitted with reversing alarms and use of banksmen</li> <li>• A speed limit for trucks should be considered</li> </ul>		
<p>Occupation health and safety risks:</p> <ul style="list-style-type: none"> <li>• Collision with moving equipment, exhaustion, trips, heat stroke, dehydration, falls, respiratory illnesses due to exposure to dust emissions, snakes, and insect bites (mosquitoes) and exposure to vehicular emissions</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of an OHS plan prior to commencement of works.</li> <li>• Orientation for all workers would be given on safe work practices and guidelines.</li> <li>• A site risk assessment to be conducted before commencement of works on every new worksite and risk assessment form filled control measures indicating the risk management hierarchy.</li> <li>• Training to be conducted on emergency response and incident handling. This will involve proper handling.</li> <li>• Provision of first aid box on site</li> <li>• Provision of PPE to the workers</li> <li>• Application of dust suppression techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Presence of OHS plan on site.</li> <li>• Records of trainings including participant registers.</li> <li>• Records of material used in the training</li> <li>• Risk assessment form</li> <li>• Workers observed in PPE and PPE issuance register</li> <li>• Stocked up first aid box</li> <li>• Site rules and emergency response procedures displayed on site</li> </ul>	Contractor, MOHAIS and Kalumbila District Council
<p>The lack of security at sites may increase theft in the settlement and host community and affect their general security. Increase in</p>	<ul style="list-style-type: none"> <li>• Develop and implement security measures on site</li> <li>• GBV Action Plan</li> <li>• Toolbox talks</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of theft complaints</li> <li>• Number of GBV and SEA/SH sensitization and awareness raising meetings</li> </ul>	Contractor and Satellite Social and GBV Specialist

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
incidences of HIV/AIDs and other communicable diseases and GBV/SEA/SH may go up during project implementation. will have to be implemented by the project and project beneficiaries.	<ul style="list-style-type: none"> <li>The labour management procedures</li> </ul>		
<b>EHS Risks and Impacts at Operation and Maintenance Phase (Road repair, vegetation maintenance and bridge maintenance)</b>			
Health risks: Dust emissions causing respiratory illnesses on the community and the workers (OHS risks)	<ul style="list-style-type: none"> <li>Operationalize the O&amp;M</li> <li>Routine maintenance of the road to minimize tear and wear</li> <li>Repair speed retardants and road signs</li> <li>Use of road stabilization material for dust suppression</li> <li>Ensure that the road maintenance workers are provided with PPE</li> <li>Dust suppression on the stretch to be rehabilitated</li> </ul>	<ul style="list-style-type: none"> <li>Number of complaints from the community</li> <li>Presence of speed retarders</li> <li>Installed road signage.</li> <li>Reduced dust emissions</li> </ul>	Contractor, MOHAIS and Kalumbila District Council
Road traffic accidents	<ul style="list-style-type: none"> <li>Install speed limit signage to guide motorist of the maintenance works in progress</li> <li>Maintenance of road retarders to reduce over speeding.</li> <li>Community sensitization on road safety</li> </ul>	<ul style="list-style-type: none"> <li>Safety signage around the work site (e.g., slow down maintenance works ahead)</li> <li>Repaired speed retarders</li> <li>Records of community sensitization meetings</li> </ul>	Kalumbila District Council
Vegetation loss	<ul style="list-style-type: none"> <li>Avoid the total removal of vegetation along the roadside from one wayleave boundary to next clearing all the trees.</li> <li>Instead, implement the O&amp;M informed by design.</li> <li>Do selective clearance of vegetation by roadside trimming and tree removal of the dead,</li> </ul>	<ul style="list-style-type: none"> <li>Extent of vegetation cleared</li> <li>Vegetation clearance restricted to the wayleave in line with the Wayleave Code</li> </ul>	Kalumbila District Council

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>dying, unstable or damaged trees first</li> <li>• Remove only colonizer trees which may fall on the road and create a maintenance hazard.</li> <li>•</li> </ul>		
<p>Poor road structure and material quality causing soil erosion, sediments disposition and dust emissions into nearby streams and other water bodies</p>	<ul style="list-style-type: none"> <li>• Ensure the use of good quality maintenance material to minimize exploitation of raw material due frequent maintenance activities.</li> <li>• Avoid the use of waterlogged maintenance material</li> <li>• Procure gravel and other raw materials from legalized sources.</li> <li>• Ensure proper gradation of road material to ensure quality and prolonged life span</li> </ul>	<ul style="list-style-type: none"> <li>• Routine maintenance works to be scheduled for the rain season.</li> <li>• Log sheet with records of reputable sources of gravel/other maintenance material</li> <li>• Records of material test results</li> <li>• Enhanced supervision of works</li> </ul>	<p>Kalumbila District Council</p>
<p>Water pollution from surface run off, soil erosion and material causing sedimentation of Mwafwe River and other water resources</p>	<ul style="list-style-type: none"> <li>• Regular inspection and maintenance of permanent erosion and runoff control features</li> <li>• Do not convey road and ditch runoff to the nearest stream using the most direct route instead direct it into the vegetative filter area, allowing for infiltration and ground water recharge</li> </ul>	<ul style="list-style-type: none"> <li>• Clean surface water in nearby water resources including Mwafwe River</li> <li>• Absence of complaints of water pollution from the community</li> </ul>	<p>Kalumbila District Council</p>
<p>Occupation health and safety risks: Workers 'exposure to dust emissions, traffic accidents, noise</p>	<ul style="list-style-type: none"> <li>• Implement the measures as stipulated in the O &amp; M</li> <li>• Dust suppression</li> <li>• Secure the site under rehabilitation.</li> <li>• Install safety signage at an appropriate distance to warn motorists of the maintenance works ahead.</li> <li>• Use flaggers to control traffic on site.</li> </ul>	<ul style="list-style-type: none"> <li>• O &amp; M manual</li> <li>• Absence of dust on the repaired road stretch</li> <li>• Secured site</li> <li>• Presence of safety signage</li> <li>• Flaggers on the stretch under rehabilitation</li> <li>• Smooth flow of traffic</li> <li>• Workers observed in PPE</li> <li>• Records of trainings conducted including the attendance register</li> </ul>	<p>Kalumbila District Council</p>

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Ensure proper storage of maintenance materials.</li> <li>• Provide workers with appropriate PPE.</li> <li>• Reduce workers 'load and repetitive movements.</li> <li>• Training workers on EHS prior to maintenance works</li> </ul>		
<b>Component 2.2 : Grid expansion and off-grid power generation</b>			
<b>EHS Risks and Impacts at Construction Phase</b>			
Disturbance and loss of existing vegetation and biodiversity when clearing the wayleaves for grid expansion	<ul style="list-style-type: none"> <li>• Implementation of the way leave code of conduct by the Energy Regulation Board (ERB) 2011.</li> <li>• Ensure that vegetation cleared in the wayleave is offset by planting trees in an area to be identified.</li> <li>• Ensure compliance to the Forestry Act No. 4 of 2015 and the WB ESS 6</li> </ul>	<ul style="list-style-type: none"> <li>• Records of compliance to the way leave code of conduct</li> <li>• Vegetation afforested in another area</li> </ul>	Satellite PMU and REA
Depletion of natural resources through timber sourcing for electrical poles	<ul style="list-style-type: none"> <li>• Source timber from legalized sources</li> <li>• Use of sustainable poles apart from timber ones</li> </ul>	<ul style="list-style-type: none"> <li>• Records of timber procured from a reputable source</li> <li>• Quantity of sustainable electrical poles procured</li> </ul>	Satellite PMU and REA
Soil contamination and water pollution from spillage of oil and fuel associated with construction works	<ul style="list-style-type: none"> <li>• The contractor should arrange for delivering any waste oils to an authorized company.</li> <li>• Compliance to ZEMA's Hazardous Waste Management Regulations of SI No.112 of 2013</li> <li>• Application of the World Bank ESS 3 and general EHSGs</li> <li>• Spill management plan to be part of the CESMP.</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of contaminated soil on site</li> <li>• Records of compliance to ESS3 and ZEMA requirements</li> <li>• Spill management Plan on site</li> <li>• Presence of a spills kit</li> <li>• Presence of a hazardous waste labelled storage bin</li> </ul>	Satellite PMU and REA

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Provide spills kit on site</li> </ul>		
Soil erosion and sedimentation due to excavation during installation of transmission lines (pole election)	<ul style="list-style-type: none"> <li>• Excavated soil to be used for filling the excavated hole after pole installation</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of excavated soil in the wayleave</li> </ul>	Satellite PMU and REA
Dust emissions from excavation activities for erection of electrical poles for grid expansion	<ul style="list-style-type: none"> <li>• Cover stockpile and ensure it is way from the right of way to dust nuisance to the road users</li> </ul>	<ul style="list-style-type: none"> <li>• No of complaints received</li> <li>• Reduced dust emissions on site</li> </ul>	Satellite PMU and REA
Water (surface and groundwater) pollution risks from transport, treatment and disposal of wastewater and fecal sludge from portable toilets	<ul style="list-style-type: none"> <li>• Ensure careful collection, transportation and disposal of portable toilets</li> <li>• Use of specialized trucks with units to waste disposal facilities</li> <li>• Ensure all workers involved in portable waste collection, transportation and disposal are trained</li> <li>• Ensure those engaged in transportation have spills kit and appropriate PPE (gloves, safety shoes, overalls, eye protection goggles)</li> <li>• Emergency response plan should be available including contact details</li> </ul>	<ul style="list-style-type: none"> <li>• Number and capacity of sewage tankers which have transported the collected waste to a wastewater treatment plant or pump station</li> <li>• Compliance with the Water and Sanitation Act No. 28 of 1997 and WB ESS 3</li> <li>• Records of compliance with Water Res</li> <li>• Absence of complaints</li> <li>• Workers observed in appropriate PPE</li> <li>• Records of trainings undergone by workers</li> <li>• Records of waste disposal at a designated sewage waste treatment facility</li> <li>• Spills kit available in the truck and during collection, transportation and disposal</li> <li>• Emergency response plan with contact details</li> </ul>	Satellite PMU, REA and contractor
Increase in electronic waste due to procurement of substandard off grid equipment e.g., solar panels, batteries, and installation accessories	<ul style="list-style-type: none"> <li>• Procure solar equipment in line with the electronic waste management plan.</li> <li>• Procure equipment with long shell life.</li> <li>• The tender document to include the ESMP as part of the bidding documents</li> <li>• Continuous sensitization of the community on how to manage solar equipment following end of life</li> </ul>	<ul style="list-style-type: none"> <li>• High quality solar equipment procured</li> <li>• Records of E-waste Management Plan implementation</li> <li>• ESMP as part of the tender documents and implemented accordingly</li> <li>• Records of quantities of damaged electronic equipment (batteries, panels and other components of the solar equipment)</li> </ul>	National PMU, Satellite PMU and REA

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Damaged batteries and recyclable components of the solar system to be managed in line with the E-waste management plan</li> </ul>		
<b>EHS risks and Impacts at Operations and maintenance Phase</b>			
Electronic waste generation causing chemical pollution on soil and water due to hazardous materials e.g., solar panels lithium-ion batteries	<ul style="list-style-type: none"> <li>• Continuous sensitization of the community on how to manage solar equipment following end of life</li> <li>• Electronic waste should be properly disposed off in accordance with ESMP and the e-waste management plan</li> <li>• Return damaged solar panels to the manufacturer for recycling as part of the return or replacement contract</li> <li>• Damaged or deal batteries are hazardous to land and water resources, return to the manufacturer as part of the take back or replacement contract or take to the local e-waste recycling company approved by ZEMA</li> <li>• Ensure adequate disposal of inventors and transformers</li> <li>• Conductors and other inert materials to be sold to recycling dealers</li> </ul>	<ul style="list-style-type: none"> <li>• Number of sensitization meetings conducted</li> <li>• Quantity of electronic waste properly disposed in line with the ESMP and e-waste management plan</li> <li>• Number of solar equipment replaced and sent to the manufacturer</li> <li>• Amount of scrap material delivered to recycling dealers</li> <li>• Documented method of handling scrap material removed from site</li> </ul>	REA
Use of solar equipment in irrigation may contribute to over pumping of water as it may be deemed free pumping leading to over	<ul style="list-style-type: none"> <li>• Water management measures to be developed to guide the users</li> <li>• Sensitization of beneficiaries on efficient use of solar equipment for irrigation</li> </ul>	<ul style="list-style-type: none"> <li>• Developed water management measures including the use of stop valves to prevent water overflow from tanks</li> <li>• Number of sensitizations conducted on equipment use to the beneficiaries</li> </ul>	REA

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
exploitation of ground water resources.			
Exposure to electrocution due to maintenance works on the power lines and solar equipment. OHS risk and impacts: _exposure of the workers to electrical hazards, electromagnetic fields, exhaustion and working at height	<ul style="list-style-type: none"> <li>The O&amp;M manual to have OHS section with control measures to manage OHS risks</li> <li>Provide workers with appropriate PPE.</li> <li>Reduce workers 'load and repetitive movements.</li> <li>Training workers on EHS prior to maintenance works</li> </ul>	<ul style="list-style-type: none"> <li>Records of O&amp;M implementation</li> <li>Workers with appropriate PPE</li> <li>Records of training conducted</li> </ul>	REA
Soil contamination from transformer oil leaks	<ul style="list-style-type: none"> <li>Use of spill kits to clean up contaminated oil for disposal in accordance with the Hazardous Waste Licensing Regulations of SI No.112 of 2013 of ZEMA requirements.</li> </ul>	<ul style="list-style-type: none"> <li>Absence of contaminated soil from transformer area</li> <li>Amount of oil contaminated soil disposed of line with ZEMA requirements</li> </ul>	REA
Impact on flora and fauna e.g., vegetation clearance and bird kills	<ul style="list-style-type: none"> <li>Vegetation clearance to be restricted to the way leave</li> <li>Conduct risk assessment of the birds and install avian safe standards where possible</li> </ul>	<ul style="list-style-type: none"> <li>Cleared vegetation within wayleave</li> <li>Records of risk assessment conducted, and mitigation measures implemented</li> </ul>	REA
Impact on traffic and transport	<ul style="list-style-type: none"> <li>This will be minimal, although barricading the work area will required without affecting traffic flow</li> </ul>	<ul style="list-style-type: none"> <li>Barricaded work area</li> </ul>	REA
Indiscriminate disposal of solid waste	<ul style="list-style-type: none"> <li>Provide waste receptacles to the maintenance crew for storage of generated waste</li> <li>Collect and disposal of waste in a designated disposal site</li> </ul>	<ul style="list-style-type: none"> <li>Waste receptacles provided on site</li> <li>Records of waste disposal at a designated waste disposal site</li> </ul>	REA
<b>Component 2.3: School rehabilitation and expansion</b>			
<b>EHS risks and Impacts at Construction Phase</b>			

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
Generation of asbestos waste	<ul style="list-style-type: none"> <li>• Implement the asbestos waste management plan.</li> <li>• Remove the asbestos material only when it is necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Implemented asbestos waste management plan</li> </ul>	Satellite PMU and Contractor
Environmental degradation through earth materials -e.g., unmanaged borrow pits	<ul style="list-style-type: none"> <li>• For earth materials, procure from legitimate sources to avoid encouraging environmental degradation through unmanaged borrow pits</li> </ul>	<ul style="list-style-type: none"> <li>• Log sheet of material sourced from licensed facilities</li> </ul>	Satellite PMU and Contractor
Dust emission from excavation works	<ul style="list-style-type: none"> <li>• Dust control measures should be applied such as: spray loose soil during excavation/backfilling</li> <li>• Covering excavated stockpiles,</li> <li>• Cover materials being hauled to site</li> <li>• Workers should have dust protection masks.</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of dust from site</li> <li>• Number of trucks with covered construction materials</li> <li>• Quantity of excavated soil covered</li> <li>• All workers observed with dust respirators</li> </ul>	Satellite PMU and Contractor
Vegetation loss and soil cover due piling of building materials.	<ul style="list-style-type: none"> <li>• Locating new classroom blocks on buildings on less vegetated areas.</li> <li>• Construction footprint to be restricted to the site designs and school boundaries. The loss of vegetation will be kept to a minimum within the design footprint</li> <li>• Construction workers will be sensitized on the need to conserve vegetation around the sites.</li> <li>• Designate specific areas for stock-piling construction materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Area of site cleared for school expansion.</li> <li>• Cleared site restricted to designs and school boundaries</li> <li>• No. of community sensitizations conducted</li> <li>• Stockpiled construction material stored away from vegetated site</li> <li>• Quantity of excavated soils used for compaction</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>Reuse excavated soils for foundation compaction.</li> </ul>		
<p>Risk form disasters (climate and seism hazard) including:</p> <ul style="list-style-type: none"> <li>Cracking structures</li> <li>Non-climate resilient infrastructure</li> <li>Inefficient energy use</li> <li>Poor storm management</li> <li>Blown off roofs.</li> </ul>	<ul style="list-style-type: none"> <li>Design to Zambia Bureau of Standard Codes, and WBG EHS guideline for building facilities</li> <li>An adequate building construction code will be adopted for each school and included in Project Operation Manual.</li> <li>Ensure contractors and skilled workers are registered with NCC and EIZ and apply appropriate standards and codes Life Safety and Fire Safety Codes: BS 7000-4:2013; BS 9991:2015 and BS EN 13501-2: 2018.</li> <li>Surfaces, structures, and installations design should account for easy to clean and maintain, and not allow for accumulation of hazardous compounds.</li> <li>Buildings to be designed to be structurally safe, provide appropriate protection against the environmental hazards and disasters, and have acceptable light and noise management conditions.</li> <li>Design for fire resistant in mind, with noise-absorbing materials.</li> <li>Floors should be level, even, and non-skid</li> </ul>	<ul style="list-style-type: none"> <li>Records of building construction code followed.</li> <li>Adequate building construction code adopted for each school and included in Project Operation Manual.</li> <li>Approved building standard designs.</li> <li>Energy and water efficient infrastructure</li> <li>EIZ registration certificates for workers</li> <li>Infrastructure with safety features</li> <li>Records of material testing results</li> </ul>	<p>Satellite PMU and Contractor</p>

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
Safety and security risk of learners, and community	<ul style="list-style-type: none"> <li>• Construction sites will be properly secured with warning signs and barriers, to prevent learners and the community from entering construction premises</li> <li>• Signage should inform the public of potential hazards.</li> <li>• Construction activities to abide by General EHS guidelines</li> </ul>	<ul style="list-style-type: none"> <li>• Barricaded work site</li> <li>• Installed safety warning signs</li> <li>• Compliance to WB EHSs</li> </ul>	Satellite PMU and Contractor
Poor air quality from dust and fumes from machinery (including fumes from use of generators)	<ul style="list-style-type: none"> <li>• Provide workers with appropriate dust masks</li> <li>• Sprinkle water on the ground and on earth stockpiles.</li> <li>• Minimize of use of generators as source of energy for any metal fabrication, instead procure already fabricated metal works, e.g., door frames, window frames etc.</li> <li>• Dust suppression measures employed to minimize dust.</li> <li>• Nasal filter masks as appropriate PPE</li> <li>• Dust suppression through use of water sprinkling methods.</li> <li>• Trucks would be covered during haulage of construction materials.</li> <li>• Keep construction vehicle speeds to a minimum on site.</li> <li>• Good maintenance and proper operation of construction machinery.</li> <li>• Where possible, ensure non-mechanized construction to reduce the use of machinery</li> </ul>	<ul style="list-style-type: none"> <li>• No. of workers provided with nasal filter dust masks</li> <li>• Dust suppressed around the work site</li> <li>• Absence of complaints from the learners, teachers and the community</li> <li>• Procured already fabricated metal works</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
Soil and land degradation from oil spills and foundation excavation activities	<ul style="list-style-type: none"> <li>• Ensure all fuel and oils are in original containers and stored on hard standing surfaces.</li> <li>• Avoid refueling machinery on site</li> <li>• Use of drip pans when oiling and greasing machinery</li> <li>• Reuse excavated soils for foundation compaction.</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of oil contaminated soil/land</li> <li>• Covered and well levelled excavated foundations</li> <li>• Quantity of soil used for compaction</li> </ul>	Satellite PMU and Contractor
Vegetation loss and soil cover due piling of building materials.  Soil erosion	<ul style="list-style-type: none"> <li>• Locating buildings on less vegetated areas.</li> <li>• Construction footprint to be restricted to the site designs and school boundaries. The loss of vegetation to be kept to a minimum within the design footprint and already cleared existing school premises</li> <li>• Construction workers will be sensitized on the need to conserve vegetation around the sites.</li> <li>• Designate specific areas for stock-piling construction materials.</li> <li>• Reuse extracted soils for foundation compaction.</li> <li>• Incorporate soil erosion management in site plans design.</li> <li>• Schedule construction works in the dry season to reduce soil erosion</li> </ul>	<ul style="list-style-type: none"> <li>• Area of revegetated site</li> <li>• Designated stockpile area</li> <li>• No. of sensitization meetings conducted</li> <li>• Cleared site restricted to site designs</li> </ul>	Satellite PMU and Contractor
Noise and vibrations affecting workers hearing and the learners	<ul style="list-style-type: none"> <li>• Schedule construction works during school holidays where possible</li> </ul>	<ul style="list-style-type: none"> <li>• Number of noise complaints recorded</li> <li>• Records of PPE issued</li> <li>• Records of vehicle maintenance log sheet/certificate of fitness</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Train workers on the use of PPEs for noise mitigation and reprimand those not complying</li> <li>• Switch off equipment when not in use</li> <li>• Minimise the use of machinery on site</li> <li>• Plan high level noise activities after school hours</li> <li>• Avoiding night-time construction</li> <li>• Good maintenance and proper operation of construction machinery.</li> <li>• Where possible, ensure non-mechanized construction to reduce the use of machinery</li> </ul>	<ul style="list-style-type: none"> <li>• Records of training conducted in OHS</li> </ul>	
<p>Poor solid waste and sanitation causing blockage of water channels and Vermin related illnesses</p>	<ul style="list-style-type: none"> <li>• Solid or semi solid wastes will be placed in tear resistant plastic bags judged by their thickness or durability.</li> <li>• Ensure waste segregation on site</li> <li>• All organic waste will be composted.</li> <li>• Recyclable waste to be recycled or reused on site</li> <li>• Residual waste will be stored to accumulate sufficient load to be transported to a licensed solid waste disposal site.</li> <li>• Monitor and manage waste streams and sites until disposed of appropriately by licenced dealers.</li> <li>• Sensitization workers on good housekeeping practices including waste management</li> </ul>	<ul style="list-style-type: none"> <li>• No. of waste bins on site</li> <li>• Quantity of waste appropriately segregated, stored and legally disposed of.</li> <li>• No. of times waste is collected from site</li> <li>• No. of awareness and sensitization events carried out</li> <li>• Portable toilets for workers and records of appropriate collection, transportation and disposal</li> </ul>	<p>Satellite PMU and Contractor</p>

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Provide portable toilets for workers and ensure appropriate disposal</li> </ul>		
<p>Occupational Health and Safety risks:</p> <ul style="list-style-type: none"> <li>• Sickness, falls from height, injury, insect bites, heat stroke, dust inhalation, - cuts and abrasions, musculoskeletal injuries, injuries to the eyes and increased noise.</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct a site risk assessment and provide control measures</li> <li>• Implement an OHS measures to prevent fall from heights and impact injuries (from machinery or hand tools, vehicles and dropped items) and many other OHS risks.</li> <li>• Use of fall prevention such as appropriate scaffolds with proper platforms to prevent access to fall hazard area.</li> <li>• Use of fall protection devices, e.g., full body harnesses</li> <li>• Use of other appropriate PPE (eyewear, ear plugs and nasal masks)</li> <li>• Making sure that all workers on site are masked up and Toolbox talks on health and safety.</li> <li>• Induction of workers prior to commencement of works</li> <li>• Provision of first aid box at construction site</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Site risk assessment form</li> <li>• Number of incidents/accidents recorded.</li> <li>• Records of PPE issued</li> <li>• Records of toolbox talks conducted/ material used</li> <li>• First aid box present on site</li> </ul>	Satellite PMU and Contractor
<p>Community health and safety risks: Electrical risks associated with power installations (ZESCO grid or solar grid)</p>	<ul style="list-style-type: none"> <li>• All power connection either to the national grid/off grid will be undertaken with the help of the Rural Electrification Authority (REA).</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP by REA with mitigation measures to reduce electrical risks and impacts</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
Gender based violence, sexual exploitation, abuse and harassment	<ul style="list-style-type: none"> <li>• Provide and implement a gender-based violence action plan, which will include:</li> <li>• Gender mainstreaming in employment at the worksite with opportunities provided for females to work, in consonance with local laws and customs.</li> <li>• Prevention of SEA/SH including signing of code of conduct and sensitization of contractor workers and communities</li> <li>• Grievance redresses mechanisms including non-retaliation.</li> <li>• Provide and implement an employee code of conduct.</li> <li>• Sensitization to the community on GBV/SEA/SH</li> <li>• An inclusive approach shall be adopted to provide equal opportunity and meaningful participation of women.</li> <li>• Communication about the works that will be undertaken will be shared to all project stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Number of incidents/complaints recorded.</li> <li>• Record of signed worker's code of conduct</li> <li>• Number of sensitization meetings held</li> </ul>	Satellite PMU and Contractor
<b>EHS risks and Impacts at Operational and Maintenance Phase</b>			
Contamination and pollution of water boreholes (groundwater contamination from septic tanks and soak away: e.g., <ul style="list-style-type: none"> <li>• Odor/foul smell</li> <li>• Disease spread</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure routine maintenance of the sewer system to prevent sewage from contaminating boreholes</li> <li>• Ensure routine desludging of septic tanks</li> <li>• Corrosion control on all steel works</li> </ul>	<ul style="list-style-type: none"> <li>• O&amp;M manual for WASH facilities</li> <li>• Desludging schedule of septic tanks</li> <li>• Corrosion control measures developed</li> <li>• Water quality test results</li> <li>• No. of sensitization meetings conducted</li> <li>• No. of hand washing facilities provided</li> </ul>	MOE, DEBs and School Headteachers

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Water quality monitoring and management</li> <li>• All septic tank construction will conform to the MoE guidelines for schools to ensure leaks and seepages into ground water eliminated</li> <li>• Provide training to learners on proper use of toilets and hygiene</li> <li>• Provide hand washing facilities</li> </ul>		
Depletion of groundwater resources	<ul style="list-style-type: none"> <li>• Install automatic switches on boreholes that control water pumping and prevent overflow from the tank</li> <li>• Ensure regular maintenance of the pump and the tank</li> <li>• Practice water harvesting techniques</li> <li>• Appoint a water management committee to implement water management strategies</li> </ul>	<ul style="list-style-type: none"> <li>• All drilled boreholes installed with automatic switch valves</li> <li>• O &amp; M manual of the water reticulation system</li> <li>• Water harvesting infrastructure present in schools</li> <li>• Established water management committee</li> <li>•</li> </ul>	MOE, DEBs and School Headteachers
<p>Electrical hazards: e.g., Fire risks (Loss of assets, infrastructure, Electrocution E-waste generation from photovoltaic materials</p>	<ul style="list-style-type: none"> <li>• All solar electrical installations and equipment will be inspected and assessed regularly</li> <li>• Implement energy management measures to ensure efficient energy utilization</li> <li>• Fire management and servicing of fire extinguishers</li> <li>• Regular building inspection and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Power Installation Assessments reports/Fire protection equipment log sheets test/verification reports</li> <li>• Records of compliance to building and fire safety codes</li> </ul>	MOE, DEBs and School Headteachers

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>Implementation of E-waste Management Plan</li> </ul>		
<p>Increased generation of solid waste causing blockages of school drainage and vermin related illnesses and air pollution due to open air burning</p>	<ul style="list-style-type: none"> <li>Implement waste segregation practices and provide storage bins</li> <li>Sensitize the schools against the bad vices of open air burning of waste</li> <li>All organic waste to be composted used in school gardens.</li> <li>Recyclable waste such as paper and glass to be sold to recycling dealers</li> <li>Residual waste to be stored to accumulate sufficient load for disposal to a licensed solid waste disposal facility.</li> <li>Monitor and manage waste streams and sites until disposed of appropriately by licenced dealers.</li> <li>Incorporate waste management in daily school activities to ensure learners and the surrounding communities dispose of waste in line with good disposal practices.</li> <li>E-waste to be managed and disposed of in accordance with the E-waste Management Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Waste segregated, stored and legally disposed at approved local authority dumpsite or landfill</li> <li>Records of waste disposal certificates/receipts</li> <li>No. of waste bins provided and frequency of waste collection</li> <li>Number of awareness and sensitization events carried on pupils.</li> <li>Absence of vermin and vermin related illnesses in schools</li> <li>Copy of E-waste management plan present in schools</li> </ul>	<p>MOE, DEBs and School Headteachers</p>
<b>Component 2.4: Health Facilities Upgrading and expansion</b>			
<p>Reduced air quality due to increased dust levels generated from uncovered construction materials and vehicles traversing unpaved roads in dry conditions.</p>	<ul style="list-style-type: none"> <li>Cover all trucks transporting construction materials (for example quarry dust building sand) to the site.</li> </ul>	<ul style="list-style-type: none"> <li>Number of Complaints received</li> <li>Number of speed humps observed</li> <li>Wetted roadways near health facilities</li> </ul>	<p>Satellite PMU and Contractor</p>

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Introduce measures such as speed humps to slow down the vehicles and adhere to speed limit.</li> <li>• Where practicable possible, water down unpaved section of the roadway near health centres to suppress dust</li> </ul>		
Reduced road safety of the public	<ul style="list-style-type: none"> <li>• Limit the number of vehicles to be used, sensitize drivers on the importance of adherence to the traffic rules on speed limit</li> <li>• Sensitisation of the Drivers on safety requirements and exercise caution</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced number of vehicles on site,</li> <li>• Record of trainings conducted including the attendance register</li> </ul>	Satellite PMU and Contractor
<p>Increased Respiratory diseases and physical injuries among workers</p> <p>Annoyance/sleep disturbance from increased noise levels</p>	<ul style="list-style-type: none"> <li>• Provide appropriate PPEs for workers such as dust masks, heavy duty gloves, face shields, earmuffs</li> <li>• Cover stockpiles where necessary and call for material as and when needed</li> <li>• Minimise the height of material stockpiles</li> <li>• Induction Training of workers on health and safety practices</li> <li>• Monitor noise levels to ensure that they do not exceed 40 dB (WB Environmental, Health, and Safety (EHS) Guidelines, Noise level guidelines for health centres)</li> <li>• Operation hours for the construction phase will be limited to daytime hours</li> </ul>	<ul style="list-style-type: none"> <li>• Record of PPE provided</li> <li>• No. of workers observed with PPE</li> <li>• Covered Stockpiles</li> <li>• Levelled stockpiles</li> <li>• Record of induction training – material used and attendance register</li> <li>• Record of Noise levels of 40 dB and below</li> <li>• Construction works restricted to day time</li> </ul>	Satellite PMU and Contractor
Soil and water contamination	Waste Management Plan to be included in the C-ESMP. This will include:	<ul style="list-style-type: none"> <li>• Unkempt waste</li> <li>• Labelled waste receptacles</li> <li>• Record of waste disposed/absence of waste</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Adequate labelled waste collection receptacles to be provided</li> <li>• Waste should be regularly removed from site and taken to the approved waste disposal</li> <li>• Reusable construction waste should be separated for reuse.</li> <li>• No burning of any type of the wastes generated will be allowed onsite.</li> <li>• Training of workers on waste management procedures.</li> <li>• Existing toilet facilities at the clinics to be used by contractor's workers. If portable toilets are to be utilized these will have to be maintained and emptied on a regular basis.</li> </ul>	<ul style="list-style-type: none"> <li>• Absences of complaints on air pollution from the community</li> <li>• Presence of sanitary facilities for workers</li> <li>• Records of training/material/attendance register</li> <li>• Spills kit on site</li> <li>• Records of fitness certificate of vehicles</li> <li>• Visual observation of oil leaks in the soil</li> </ul>	
	<ul style="list-style-type: none"> <li>• All construction vehicles to be refuelled at designated filling stations and prohibit the storage of fuel onsite</li> <li>• Workers should be made aware of the proper handling practices to avoid spills</li> <li>• Spill clean-up kits to be provided</li> <li>• Regular maintenance of machinery to be conducted to ensure the proper functioning to avoid unnecessary leaks.</li> <li>• Equipment/vehicle maintenance to be done at garages off site</li> </ul>	<ul style="list-style-type: none"> <li>• Training/material/attendance register</li> <li>• Spills kit on site</li> <li>• Records of fitness certificate of vehicles</li> <li>• Visual observation of oil leaks in the soil</li> </ul>	Satellite PMU and Contractor
<p>Increased injuries and fatalities among workers due to among others</p> <p>Musculoskeletal disorders due to back and other muscles and joint injuries.</p>	<ul style="list-style-type: none"> <li>• A Health and Safety Plan to be included in the C-ESMP.</li> <li>• Health and safety induction should be conducted for all workers</li> <li>• Method statements to be prepared for certain activities such as working on</li> </ul>	<ul style="list-style-type: none"> <li>• CESMP on site</li> <li>• Records of training conducted/attendance register</li> <li>• Method statements prepared and observed on site</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
<p>Skin diseases due to exposure to hazardous substances like cements and solvents</p> <p>Hand-arm vibration syndrome caused using vibrating tools</p>	<p>heights (roofing and electrical works), erecting steel/wood and those using scaffolds ladders when fixing the ceiling board</p> <ul style="list-style-type: none"> <li>• Daily Toolbox/safety talks to be conducted</li> <li>• Adequate and appropriate safety PPE to be provided to workers</li> <li>• All safety/health related activities to be documented including all illness/injury, exposures and near misses.</li> <li>• All incidents /accidents are to be investigated through ESIRT</li> <li>• Emergency response measures to be provided onsite including posting of Emergency Contacts, provision of First Aid Kits, provision of Emergency Transport Vehicle, designating of a Muster Point, provision of Fire Extinguishers/Sand Buckets</li> <li>• Rotating of workers working with vibrating tools to reduce the period of exposure</li> <li>• Maintenance of vibrating tools in good working conditions</li> <li>• Arrange tasks so that vibrating and non-vibrating tool use can be alternated.</li> <li>• Limit the number of hours a worker uses a vibrating tool. Allow employees to take 10-to-15-minute breaks from tool use every hour.</li> </ul>	<ul style="list-style-type: none"> <li>• Toolbox material and attendance register</li> <li>• Observation of PPE on workers/record of issuance</li> <li>• Incidences record register</li> <li>• Emergency Response Plan on site</li> <li>• Number of shifts allocated to use vibrating tools</li> <li>• Number of complaints from workers</li> </ul> <p>Record of training conducted/materials used</p>	

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
<p>Electrical hazards and fire risks from damaged circuit breakers/panels, exposed electrical cords and hand tools</p>	<ul style="list-style-type: none"> <li>• Train workers about the hazards of working with vibrating tools. Training should include the sources of vibration exposure, early signs and symptoms of hand-arms vibrating syndrome and work practices for minimizing vibration exposure.</li> <li>• Instruct workers to keep their hands warm and dry and to not grip a vibrating tool too tightly. Workers should allow the tool or machine to do the work</li> <li>• All electrical installations and equipment including circuit breakers will be inspected and tested prior to electric repairs, including earthing/grounding systems.</li> <li>• All the electrical equipment (the air conditioner to be installed) and wiring/lighting should conform to national electrical safety standards and codes</li> <li>• Fire-fighting equipment will be placed near room doors and at strategic points in areas of rehabilitation</li> <li>• Emergency exit points to be marked as such during rehabilitation for emergency evacuation</li> <li>•</li> </ul>	<p>Testing report approved by the electrical engineer (Kalumbila District Council)</p> <p>Presence of Emergency Response Plan on site/records of training of workers in emergency response</p> <p>Appropriately marked exit points</p>	
<p>Trips, falls, injuries, respiratory diseases</p>	<ul style="list-style-type: none"> <li>• Access to the construction/rehabilitation zone to be restricted by securing/barricading the area</li> </ul>	<ul style="list-style-type: none"> <li>• Records of sensitization meetings conducted/materials used</li> <li>• Observation of clear ways and properly stored tools</li> </ul>	<p>Satellite PMU and Contractor</p>

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• The necessary warning signs are to be installed/displayed at the clinics in both English/local language indicating that “work in progress”</li> <li>• Community sensitizations to be conducted on the rehabilitation activities to be conducted on the clinics</li> <li>• The free flow of traffic around the work site should be maintained coupled with good housekeeping practices for proper management of tools to avoid trips/falls and injuries</li> <li>• Vehicles accessing the site are expected to abide by speed limits and other traffic rules</li> <li>• Drivers should be briefed on safety requirements and exercise caution on site</li> <li>• Limit potential noisy activities to normal working hours</li> </ul>	<ul style="list-style-type: none"> <li>• Number of complaints from the community</li> </ul>	
Social conflicts arising from presence of rehabilitation personnel	<ul style="list-style-type: none"> <li>• Code of Conduct for Workers to be prepared and enforced, will be part of the CESMP/HSMP</li> <li>• Stakeholders’ engagement includes (employees in all the clinics and community members who receive health care services from the clinics)</li> <li>• The project Grievance Redress Mechanism will be implemented</li> <li>• Employment opportunities to be given to people living close to the project sites to increase social benefits by targeting recruitment of local people</li> </ul>	<ul style="list-style-type: none"> <li>• No. of complaints from communities,</li> <li>• Records of communication made to the community on the use of nearby facilities</li> <li>• Schedule of rehabilitation works</li> </ul>	
Disruption of daily healthcare services	<ul style="list-style-type: none"> <li>• Shift the services to rooms not being rehabilitated</li> </ul>	<ul style="list-style-type: none"> <li>• Code of conduct present in the signed contracts</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Use of nearby health centres as they will be contacted in advance</li> <li>• Proper scheduling of rehabilitation works (grouping the rooms)</li> <li>• Completion of works as per agreed timeline</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Number of reported complaints/grievances</li> <li>• Compliance with Code of Conduct</li> </ul>	
Sexual exploitation and abuse and sexual harassment arising from presence of construction personnel	<ul style="list-style-type: none"> <li>• Implement the GBV/SEA/SH Action Plan</li> <li>• Code of Conduct for Workers to be prepared and enforced</li> <li>• The establishment of temporary housing for workers onsite to be prohibited</li> <li>• The use of language or behaviour, in particular towards women or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate to be prohibited</li> <li>• The exchange of money, employment, goods, or services for sex, including sexual favours or other forms of humiliating, degrading or exploitative behaviour to be prohibited</li> </ul>	<ul style="list-style-type: none"> <li>• Records of implementation of the GBV/SEA/SH Action Plan</li> </ul>	Satellite PMU and Contractor
Discrimination against women/vulnerable groups in the hiring process of workers	<ul style="list-style-type: none"> <li>• Contractor to implement a fair and equitable hiring process</li> <li>• Where possible the employment of women to be encouraged</li> <li>• Employment opportunities to people living close to the project site to be provided to increase social benefits by targeting recruitment of local people</li> <li>• Wages offered to all staff should be as per Zambian labour laws</li> </ul>	<ul style="list-style-type: none"> <li>• Number of reported complaints/grievances</li> <li>• Employment register indicating the gender of workers</li> <li>• Record of physical address of the workers in the employment register</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
		<ul style="list-style-type: none"> <li>• Records of wages in the contract copy of the workers</li> </ul>	
<b>EHS Risks and Impacts at Operation and Maintenance Phase</b>			
<p>Exposure of infectious waste (include pathological and anatomical material, clothes, dressings, equipment/instruments, and other items that may have come into contact with infectious materials) to the community members and workers</p>	<ul style="list-style-type: none"> <li>• Use procedures and guidance from the WHO, WB EHS guidelines, and national plans for health facilities to properly classify, segregate, label, store, handle, and dispose of wastes</li> <li>• Provide training on medical waste management and infectious disease management</li> <li>• Segregate using yellow or red coloured bag/container, marked “infectious” with international infectious symbol. Strong, leak proof plastic bag, or container capable of being autoclaved.</li> <li>• Infectious waste to be treated using chemical disinfection; Wet thermal treatment; microwave irradiation; safe burial on clinic premises; sanitary landfill; incineration (Rotary kiln; pyrolytic incinerator; single-chamber incinerator; drum or brick incinerator)</li> <li>• Highly infectious waste, such as cultures from lab work, should be sterilized using wet thermal treatment, such as autoclaving</li> <li>• Anatomical waste should be treated using incineration</li> </ul>	<ul style="list-style-type: none"> <li>• Number of community members and workers sensitized and trained on infectious waste, medical waste</li> <li>• Number of workers trained on medical waste segregation and treatment</li> <li>• Number of incidents/complaints received/reported in relation to medical waste</li> <li>• Records of audits of waste management of the medical facilities</li> <li>• Records of sensitization meetings conducted/materials used</li> <li>•</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>Workers to use proper protective equipment and adherence to disposal guidelines</li> </ul>		
Exposure of sharps to the community members and workers	<ul style="list-style-type: none"> <li>Use procedures and guidance from the WHO, WB EHS, and national plans for health facilities to properly classify, segregate, label, store, handle, and dispose of wastes</li> <li>Provide training on medical waste management</li> <li>Segregate using yellow or red colour code, marked “Sharps”. Rigid, impermeable, puncture-proof container (e.g., steel or hard plastic) with cover. Sharps containers should be placed in a sealed, yellow bag labelled “infectious waste”.</li> <li>Treatment via chemical disinfection; wet thermal treatment; microwave irradiation; encapsulation; safe burial on hospital premises; incineration (Rotary kiln; pyrolytic incinerator; single-chamber incinerator; drum or brick incinerator)</li> <li>Following incineration, residues should be landfilled</li> <li>Sharps disinfected with chlorinated solutions should not be incinerated due to risk of generating POPs.</li> <li>Needles and syringes should undergo mechanical mutilation (e.g., milling or</li> </ul>	<ul style="list-style-type: none"> <li>Number of community members and workers sensitized and trained on infectious waste, medical waste</li> <li>Number of workers trained on medical waste segregation and treatment</li> <li>Number of incidents/complaints received/reported in relation to medical waste</li> <li>Records of audits of waste management of the medical facilities</li> <li>Records of sensitization meetings conducted/materials used</li> <li></li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	crushing) prior to wet thermal treatment.		
Exposure of pharmaceutical waste to the community members and workers	<ul style="list-style-type: none"> <li>• Use procedures and guidance from the WHO, WB EHS guidelines, and national plans for health facilities to properly classify, segregate, label, store, handle, and dispose of wastes</li> <li>• Provide training on medical waste management</li> <li>• Use brown bag or container, leak-proof plastic bag or container to segregate pharmaceutical waste</li> <li>• Treatment should use sanitary landfill; encapsulation; discharge to sewer; return expired drugs to supplier; incineration (rotary kiln; pyrolytic incinerator); safe burial of on clinic premises as a last resort</li> </ul>	<ul style="list-style-type: none"> <li>• Number of community members and workers sensitized and trained on pharmaceutical waste</li> <li>• Number of workers trained on medical waste segregation and treatment</li> <li>• Number of incidents/complaints received/reported in relation to medical waste</li> <li>• Records of audits of waste management of the medical facilities</li> <li>• Records of sensitization meetings conducted/materials used</li> </ul>	Satellite PMU and Contractor
Exposure of air pollution from inadequate incineration of waste or spread of airborne particles or aerosols	<ul style="list-style-type: none"> <li>• Control airflow and provide infiltration for intake/exhaust</li> <li>• Use procedures and guidance from the WHO, WB EHS guidelines, and national plans for health facilities to properly classify, segregate, label, store, handle, and dispose of wastes</li> <li>• Manage air filters as medical waste</li> <li>• Regularly monitor and maintain the filtration system to ensure they are working properly</li> </ul>	<ul style="list-style-type: none"> <li>• Number of community members and workers sensitized and trained on medical waste</li> <li>• Number of workers trained on medical waste segregation and treatment</li> <li>• Number of incidents/complaints received/reported in relation to air pollution caused by inadequate incineration of waste</li> <li>• Records of audits of waste management of the medical facilities</li> <li>• Records of sensitization meetings conducted/materials used</li> </ul>	Satellite PMU and Contractor

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Consider ultraviolet germ irradiation or other alternative disinfection systems</li> <li>• Incinerators should have permits issued by authorized regulatory agencies and be operated and maintained by trained employees to ensure proper combustion temperature, time, and turbulence specifications necessary for adequate combustion of waste.</li> </ul>	<ul style="list-style-type: none"> <li>• Records of regular monitoring and maintenance of filtration system</li> <li>• Records of disinfection systems</li> </ul>	
<p>Exposure of hazardous medical waste to the community members and workers through contamination of groundwater</p>	<ul style="list-style-type: none"> <li>• Hazardous liquid wastes to be stored, neutralized, and disposed of.</li> <li>• Sensitize workers and community members to avoid spillage of wastewater on the ground surface</li> <li>• Sensitize workers of the facility to appropriately use the wastewater collection and disposal facilities</li> <li>• Use procedures and guidance from the WHO, WB EHS guidelines, and national plans for health facilities to properly classify, segregate, label, store, handle, and dispose of wastes</li> <li>• Construct a disinfecting septic tank containing a chlorine port to deal with grey water from the facility</li> <li>• The latrines or septic tank and soak pit site should be regularly monitored and serviced to prevent problems or overflow</li> </ul>	<ul style="list-style-type: none"> <li>• Number of community members and workers sensitized and trained on medical waste</li> <li>• Number of workers trained on medical waste segregation and treatment</li> <li>• Number of incidents/complaints received/reported in relation to groundwater contamination through hazardous medical waste</li> <li>• Records of audits of waste management of the medical facilities</li> <li>• Records of sensitization meetings conducted/materials used</li> <li>• Records of regular monitoring of latrines/septic tank/soak pit</li> </ul>	<p>Satellite PMU and Contractor</p>

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>• Ensure the wastewater disposal is adequately budgeted for maintenance</li> <li>• Segregate waste with a high content of heavy metals (e.g., cadmium, thallium, arsenic, lead) to avoid entry into wastewater streams</li> <li>• Separate residual chemicals from containers and remove to proper disposal containers to reduce generation of contaminated wastewater.</li> </ul>		
Risk of fire in health care facilities	<ul style="list-style-type: none"> <li>• Use procedures and guidance from the WHO, WB EHS guidelines, and national plans' recommendations applicable to health care facilities</li> <li>• Install smoke alarms and sprinkler systems</li> <li>• Regular maintenance of fire safety systems in proper working order, including self-closing doors in escape routes and ventilation ducts with fire safety flaps</li> <li>• Training of staff of operation of fire extinguishers and evacuation procedures</li> <li>• Development of facility fire prevention or emergency response and evacuation plans with adequate guest information</li> </ul>	<ul style="list-style-type: none"> <li>• Number of community members and workers sensitized and trained on fire safety in health care facilities</li> <li>• Number of workers trained on fire safety</li> <li>• Number of incidents/complaints received/reported in relation to fire safety of health care facilities</li> <li>• Records of audits of fire safety systems, smoke alarms and sprinkler systems</li> <li>• Records of sensitization meetings conducted/materials used</li> </ul>	
<b>Component 3: Climate Resilience Agriculture</b>			
EHS at Construction Phase of Agro Business Infrastructure			

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
Generation and poor disposal of construction waste during works	<ul style="list-style-type: none"> <li>Waste and debris, including sediments and vegetation shall be managed and kept in temporary controlled area and transported in a secure manner for disposal in appropriate disposal facility.</li> </ul>	<ul style="list-style-type: none"> <li>Site cleared of construction debris</li> <li>Absence of open burning of construction / waste material at the site</li> </ul>	Grant Beneficiary/Contractor/Satellite Environmental Specialist
Potential increased exposure from generation of dust and noise pollution due to operation of different types of equipment and machinery	<ul style="list-style-type: none"> <li>Dust suppression measures will be undertaken, and construction and use of machinery will be restricted to normal working hours and will meet regulatory requirements. There will be no excessive idling of construction vehicles at sites.</li> </ul>	<ul style="list-style-type: none"> <li>Reduced dust emissions on site</li> <li>Compliance to working hours</li> <li>Absence of idling vehicles on site</li> </ul>	Grant Beneficiary/Contractor/Satellite Environmental Specialist
Safety and security of community during construction works	<ul style="list-style-type: none"> <li>The construction areas will be properly secured with signposting, warning signs, barriers and traffic diversions. Signage should inform the public of potential hazards.</li> <li>Provision of safe passages and walkways for pedestrians, along with active traffic management</li> <li>On the job training of workers and provision of appropriate PPE by contractors</li> </ul>	<ul style="list-style-type: none"> <li>Secured site with appropriate signage</li> <li>Safe pedestrian walkways provided</li> <li>Number of trainings and workers trained and provision of PPE?</li> </ul>	Grant Beneficiary/Contractor/Satellite Environmental and Social Specialist
Increase incidences of HIV/AIDS and sexually Transmitted infections	<ul style="list-style-type: none"> <li>Workers and community members to be sensitized on the dangers posed by HIV/AIDS or other STDs as well as the means of prevention.</li> </ul>	<ul style="list-style-type: none"> <li>Number of sensitization meetings conducted</li> <li>Records of implementation of other measures</li> </ul>	Grant Beneficiary/Contractor/Satellite Social Specialist
Loss of vegetation cover	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Minor impacts as activities are likely to be located in already established beneficiary sites</li> </ul>	Grant Beneficiary/Contractor/Satellite Environmental Specialist

<b>Risks and Impacts</b>	<b>Mitigation measures</b>	<b>Performance Indicator</b>	<b>Responsible Person</b>
Physical/economic displacement due to allocation of land parcels for proposed agribusiness interventions	<ul style="list-style-type: none"> <li>• Where necessary, develop a RAP or livelihood Restoration Plan</li> <li>• E&amp;S screening form</li> </ul>	<ul style="list-style-type: none"> <li>• RAP or Livelihood Restoration Plan</li> <li>• E&amp;S screening form</li> </ul>	Satellite Social Specialist
<b>EHS at Operation and Maintenance Phase of Agrobusiness Activities</b>			
Generation of waste	<ul style="list-style-type: none"> <li>• Environmental management plans will incorporate best practices in waste management</li> </ul>	<ul style="list-style-type: none"> <li>• Developed environmental management plans</li> </ul>	Project Beneficiary/Camp Extension Officer/Satellite Agricultural and Environmental Specialists
Use of varieties of seeds may not be suitable to local conditions and hybrids may increase costs for pest and disease management	<ul style="list-style-type: none"> <li>• Selection and varieties of seeds to be financed on the project should be climate resilience and adaptative</li> <li>• Consultation to be conducted with the Ministry of Agriculture and their extension officers.</li> <li>• The Integrated Pest Management (IPMP) will further guide on the use, storage and selection of chemicals that have minimal or negligible harm to the environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Climate resilience seed varieties</li> <li>• Number of consultations conducted</li> <li>• Integrated Pest Management Plan</li> </ul>	Project Beneficiary/Camp Extension Officer/Satellite Agricultural and Environmental Specialists
Loss of vegetation cover and indigenous plant species	<ul style="list-style-type: none"> <li>• The land clearance to be restricted to the footprint, if possible, agricultural land is already existing</li> </ul>	<ul style="list-style-type: none"> <li>• Size of farmland with vegetation cover</li> </ul>	Project Beneficiary/Camp Extension Officer/Satellite Agricultural and Environmental Specialists
Increased use of pesticides and fertilizers	<ul style="list-style-type: none"> <li>• Use of pesticides and fertilizers will be discouraged by selecting plant species that require less toxic pesticides and organic fertilizer to grow</li> <li>• Promotion of Climate Smart Agriculture</li> </ul>	<ul style="list-style-type: none"> <li>• Records of implementation of the IPMP</li> <li>• Records of agricultural activities promoting climate smart agriculture</li> </ul>	Project Beneficiary/Camp Extension Officer/Satellite Agricultural and Environmental Specialists
Increased abstraction of water, for irrigation activities	<ul style="list-style-type: none"> <li>• Promotion of water harvesting techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of water harvesting techniques</li> </ul>	Project Beneficiary/Camp Extension Officer/Satellite

Risks and Impacts	Mitigation measures	Performance Indicator	Responsible Person
	<ul style="list-style-type: none"> <li>The project will ensure that it finances activities that promote sustainable water utilization.</li> <li>It will further promote good practices in water use and management.</li> </ul>	<ul style="list-style-type: none"> <li>Water harvesting techniques on site</li> <li>Records of good practices implemented in water use and management.</li> <li>Applied good practices in water use and management</li> </ul>	Agricultural and Environmental Specialists
Soil degradation due to poor agricultural practices	<ul style="list-style-type: none"> <li>Minimize soil compaction, damage, or disturbance by using appropriate land preparation methods or machinery at the right time of year</li> <li>Consider a crop rotation program to maintain the soil coverage during the year.</li> <li>Manage soil organic matter by returning crop residues or adding compost and manures whenever available and economically viable.</li> </ul>	<ul style="list-style-type: none"> <li>Good soil quality</li> <li>Improved yield</li> <li>Number of crop rotations practiced annually</li> <li>Size of agricultural land applied with organic fertilizer</li> </ul>	Project Beneficiary/Camp Extension Officer/Satellite Agricultural and Environmental Specialists
Child and forced labour resulting from agribusiness interventions	<ul style="list-style-type: none"> <li>Develop and Implement Labour Management Procedure</li> </ul>	<ul style="list-style-type: none"> <li>Records of implementation of LMP</li> </ul>	Satellite Social Specialist

## **5.1 Risks and Mitigation Measures Specific to Disadvantaged and Vulnerable Groups**

Disadvantaged or vulnerable individuals or groups refers to those who may experience disproportional adverse impacts or exclusion, who often do not have a voice to express their concerns or understand benefits from this project at the same level as others, thus, exacerbating social and economic inequality. In the context of the Zambia Refugees and Host Communities Project, the vulnerable groups that may be at risk of exclusion from consultations and information disclosure include:

- The elderly,
- Persons with disabilities and their caretakers,
- Women-headed households,
- Child-headed households,
- The unemployed
- Refugees
- Former refugees
- Asylum seekers

Women and the youth are sometimes not included and have greater challenges accessing markets and finance. This can lead to them having limited access to information services on the Zambia refugee and host communities' project. The project will, recommend to all construction and agribusinesses to include women and youth in their activities. The project will encourage women and youth led and managed cooperatives and companies to apply for the grants under the project to access funds. Gender equality and equity training sessions will be part of the capacity building provided by the project for all beneficiaries including development of gender policies for all beneficiaries. Women-only sessions will be organized to encourage open discussions, safe spaces for information and experience sharing and learning to understand the cultural context in which women and youth businesses operate.

High illiteracy rates among the vulnerable and disadvantaged cooperatives could have an effect on access to project information, services, and financing. The project will address this by having meetings activities in local languages using mass media such as community radio stations and posters/flyers to reach the target population. Project stakeholders will also be instrumental in areas where they already have a presence in reaching vulnerable groups including those with high illiteracy. Aligning with the government 8<sup>th</sup> NDP, sustainable development goals and vision 2030, this project will be inclusive and implement the stakeholder engagement plan to ensure inclusivity.

## **5.2 Planning and Design Considerations to Avoid Environmental and Social Risks**

The planning and design considerations to avoid or mitigate against environmental and social risks and impacts include integrating E&S costs into the design of the project activities, making environmental and social risk management a key component in project design and grant proposals. For subprojects involving the procurement of equipment, E&S considerations from design stage should include purchasing of energy efficient equipment promoting the use of renewable and green energy. For construction activities, the efficient use of raw materials starting with sourcing it from legalized sources to prevent or avoid environmental degradation will be key. This will also involve construction activities that will comply with the building and fire codes where design plans will have to be approved to ensure structural design failure and fire risks are prevented at design phase of the subproject.

Other measures to consider or avoid minimize some of the potential environmental and social impacts during subproject implementation will include considering alternative sites, selecting different technologies or methodologies, considering proper waste disposal (solid and liquid) preparing for emergencies and ensuring efficient supervision and monitoring of the implementation of the E&S risk management measures.

Further, the E&S screening should also include screening the internal capacity of subprojects to identify and manage environmental and social risks as part of the risk appraisal process for grant proposals. Other measures include the Bank reviewing any Supervising Engineer or consultants TORs, contractors ESMPs that include E&S, OHS measures and induction training of workers. There will also be measures for ensuring that screening, ESMPs and OHS risk assessments inform the design of the subprojects to adequately implement the mitigation hierarchy (avoid, minimize, mitigate, offset) and then come up with the design of the subproject to mitigate E&S risks and impacts at planning stage to including the use of renewable energy applications, water saving devices, avoid the use of toxic pesticides and to ensure that E&S and OHS mitigation measures are included in the grant application.

### **Gender Equality, Gender Based Violence, Sexual Harassment, and Sexual Exploitation and Abuse**

The Project is taking gender affirmative action to ensure that the Project and its subprojects promote equality. The type of activities that will be involved might also lead to gender-based violence, sexual exploitation, abuse, and harassment especially as there is construction/rehabilitation and the possibility of labour influx in communities. This will be managed through implementation of a Project developed GBV Action plan, labour management procedures and other relevant measures which will be highlighted in site specific plans.

### **Child Labour, Forced Labour, and Violence Against Children**

Agriculture based activities are predominately known for use of child labour. Child labor in agribusinesses is facilitated by the prevalence of this practice in the country. There is a high likelihood that there may be occurrences of child labour/ forced labour resulting in violence against children. The Project will manage this through a Zero tolerance of child labour, forced labour and VAC using the Project LMP and mitigation measures highlighted in table 6. Further, the LMP will help guide on management of labour amongst project beneficiaries complementing the national labour laws and regulations.

### **Labour Influx**

Due to construction activities, labour influx is a likely risk that will occur in subproject activities. Scoping shows that this may be minimal in impact however, the project will encourage the use of local labour and require that all contractors develop site specific ESMPs and implement the project LMP while meeting national laws.

### **Disturbance to Cultural Heritage**

Construction activities may lead to archaeological finds or tangible cultural heritage. This is considered a low risk and the project will endeavor to protect all cultural finds that may be discovered during implementation through consultation with the communities and the development of chance finds procedures.

### **Limited Access to Grievance Redress Mechanism (GRM) and Referral Processes**

The project has a digitization thrust that might lead to limited access to information, the grievance redress mechanism and referral processes due to the geographical locations of some sites. To mitigate this, the GRM will be developed and implemented in such a way as

to promote conflict management at community level, so all stakeholders have access to the mechanism and referral processes at the lowest level of implementation at no cost to the potential complainant.

### **Lack of Stakeholder Engagement**

The geographical spread of the project activities may result in some stakeholders not being adequately consulted and involved in project implementation. The project has developed a stakeholder engagement plan while and grievance redress system to ensure that all concerns and feedback are given adequate attention by the Project.

### **Land Acquisition, Resettlement, and Restrictions on Land Use**

The project should not result in any land acquisition, resettlement or cause restrictions on land use. To avoid land acquisition, the Borrower will opt for sites that are already owned by the government and free of leaseholders and squatters. This ESMF provides guidance on how to screen for any land acquisition and resettlement. All projects that have the potential for involuntary land acquisition and resettlement impact will be screened out and not be funded by the project. The screening criteria will be applied to all investments to avoid land acquisition and resettlement.

### **HIV/AIDS, STIs**

Due to the nature of the projects, there is a high potential impact of transmission of HIV/AIDS & STIs and other communicable diseases amongst project and subproject staff. In the mitigation of the impact of both HIV/AIDS & STIs, the project through its ESMPs shall educate workers and host communities on risks, prevention and available treatments, whilst ensuring confidentiality and appropriate care. The impact of other communicable diseases on the other hand shall be mitigated through adherence to the laid down health and safety guidelines by Ministry of Health.

## CHAPTER 6: PROCEDURES AND IMPLEMENTATION ARRANGEMENTS

### 6.1 Environmental and Social Risk Management Procedures

The environmental and social risk management procedures will be implemented through the Project's subproject selection process. In summary, the procedures aim to do the following:

Table 7: Project Cycle and E&S Management Procedures

This process is for works subproject activities, there will be another process for technical assistance activities

Project Stage	E&S Stage	E&S Management Procedures
<b>a. Assessment and Analysis:</b> Subproject identification	Screening	<ul style="list-style-type: none"> <li>○ During subproject identification, ensure subproject eligibility by referring to the Exclusion List in <b>Error! Reference source not found.</b> below.</li> <li>○ For subproject activities, use the Screening Forms in Annex 1 to identify and assess potential environmental and social risks and impacts, and identify the appropriate mitigation measures for the subproject. Annex 1 (A) form is for sub-component 2.2, Annex 1 (B) is for sub-component 2.3, and Annex 1 (C) is for sub-component 2.4 and Annex 1 (D) for sub-component 3.2.</li> <li>○ Identify the documentation, permits, and clearances required under the government's environmental and OHS regulations</li> </ul>
<b>b. Formulation and Planning:</b> Planning for subproject activities, including human and budgetary resources and monitoring measures	Planning	<ul style="list-style-type: none"> <li>○ Based on <b>Screening Form</b> adopt and/or prepare relevant environmental and social management plans.</li> <li>○ For activities requiring Environmental and Social Management Plans (ESMPs), submit ESMPs for prior review and no objection by the World Bank prior to initiating bidding processes (for subprojects involving bidding processes) and/or launching activities (for subproject activities not subject to bidding). When activity requires an ESIA - specifically the road works in comp 2.1, the same needs to be done. In some cases, the Bank may agree with the client to conduct the post review of the ESMPs.</li> <li>○ Ensure that the contents of the ESMPs are shared with relevant stakeholders in an accessible manner and consultations are held with the affected communities in accordance with the SEP.</li> <li>○ Complete all documentation, permits, and clearances required under the government's Environmental Regulation.</li> <li>○ Train staff responsible for implementation and monitoring of plans.</li> <li>○ Incorporate relevant environmental and social, health and safety plans into contractor bidding documents.</li> <li>○ The ESMP developed should be in line with the ESMP outline meeting ESS1 requirements.</li> <li>○ The ESIA should follow the ESIA template in Annex 4.</li> </ul>
<b>c. Implementation and Monitoring:</b> Implementation support and continuous monitoring for projects	Implementation	<ul style="list-style-type: none"> <li>○ Ensure implementation of contract ESHS requirements including plans" site visits, regular reporting from the field, and other planned monitoring.</li> <li>○ Ensure implementation of CESMPs</li> <li>○ Track grievances/beneficiary feedback.</li> <li>○ Continue awareness raising and/or training for relevant staff, volunteers, contractors, communities.</li> </ul>

		<ul style="list-style-type: none"> <li>○ Train contractors on relevant management plans.</li> <li>○ Assess whether plans have been effectively implemented.</li> <li>○ Ensure that physical sites are properly restored.</li> <li>○ Ensure O&amp;M EHS Plan has been developed and adequate measures established to ensure implementation.</li> </ul>
<b>d. Review and Evaluation:</b> Qualitative, quantitative, and/or participatory data collection on a sample basis	Completion	

### 6.1.1 Subproject Assessment and Analysis – E&S Screening

As a first step, all proposed activities should be screened to ensure that they are within the boundaries of the Project’s eligible activities, and they are not considered as activities listed on the E&S Exclusion List in Table 8 below.

Table 8: Exclusion List

S/N	STATEMENT	YES	NO
1	Production or trade in weapons, not limited to mines, guns, ammunition, and explosives		X
2	Production of any hazardous good, including alcohol, tobacco, and controlled substances		X
3	Project investment on land that has been disputed ownership or tenure rights		X
4	Activities which will involve physical relocation of households or will require use of eminent domain		X
5	Projects that may lead to forced labour or child exploitation or human trafficking, subprojects that employ or engage children over the minimum age and under the age of 18		X
6	Projects that will mostly be hazardous or interfere with a child’s education or be harmful to the child’s health or physical, mental, spiritual, moral or social development		X
7	Project activities affecting physical cultural heritage such as graves, temples, churches, historical relics, archeological sites, or other cultural structures		X
8	Project activities that involve international waters		X
9	Construction activities in protected areas or priority areas for biodiversity conservation, as defined in national law		X
10	Projects involving irrigation or water supply subprojects that will depend on the storage and operation of an existing dam, or a dam under construction for the supply of water		X
11	Project activities that have the potential to cause any significant loss or degradation of critical natural habitats, whether directly or indirectly		X
12	Project Activities involving changing forestland into agricultural land or logging activities in primary forest		X
13	Purchase or use of banned/restricted pesticides, insecticides, herbicides, and other dangerous chemicals (banned under national law and World Health Organization (WHO) category 1A and 1B pesticides)		X
14	The Project will no trade in human trafficking activity		X
15	The Project will not take part in any alcoholic production		X
16	The project will not trade in any related pornography and prostitution		X
17	Production or trade in tobacco		X
18	Organizations, SMEs, agribusinesses and cooperatives with a history of fraud or any other illegal activities.		X

19	Organizations, SMEs, agribusinesses and cooperatives banned by other government agencies such as the CEEC, ZDA etc.		X
20	Contractors barred by National Council for Construction (NCC) and other statutory bodies.		X
21	SMEs, organizations, cooperatives and agribusinesses barred by the Credit Reference Bureau (CRB) of Zambia.		X
22	Production and Trade in alien plant species banned under Regional Conventions		X
23	Agricultural activities that will lead to excessive soil erosion and contribute to sedimentation of rivers or streams, harming aquatic ecosystems and reducing water quality		X
24	Agricultural activities in heavy metals contaminated sites		X
25	Project activities outside climate smart agriculture practices (agronomy, agroforestry, livestock and aquaculture, post-harvest management and energy systems)		X
26	Grid expansion activities passing through protected areas including national parks and protected forests		X
27	Off grid solar expansion activities involving large clearance of land for solar installations		X
28	Use of lead acid batteries for solar equipment		X
29	Installation of solar irrigation systems that lead to free pump and hence overexploitation of groundwater resources		X

As a second step, Environmental and Social Specialist will use the **E&S Screening Forms in Annex 1** to identify and assess relevant environmental and social risks specific to the activities and identify the appropriate mitigation measures. The Screening Form lists the various mitigation measures and plans that may be relevant for the specific activities (such as the Environmental and Social Codes of Practice, the Environmental and Social Management Plan, the Labor Management Procedures, Chance Find Procedures, etc.)

The Ministry of Home Affairs and Internal Security will also identify the documentation, permits, and clearances required under the government's Environmental Regulation.

### **6.1.2 Subproject Formulation and Planning – E&S Planning**

Based on the process above and the Screening Forms, the Environmental and Social Specialist will adopt the necessary environmental and social management measures already included in the Annexes of this ESMF (such as the ESCOPs and management plans.) or develop relevant site-specific environmental and social management plans. For Component 2.4 on healthcare facilities, a form of EHS audit be done to identify regulatory EHS non-compliances and material liabilities and a plan be developed to resolve these. For component 2.1, an ESIA will be prepared.

If site-specific ESMPs are necessary, the project will request that the beneficiary contract consultants to develop an ESMP under the identified E&S Consultants who will prepare these ESMPs, and other applicable documents as needed. The PMU and E&S Specialist will provide approval and compile ESMPs and other applicable forms. The contents of the ESMPs will be shared with relevant stakeholders in an accessible manner, and consultations will be held with the affected communities on the environmental and social risks and mitigation measures. If certain subprojects or contracts are being initiated at the same time or within a certain location, an overall ESMP covering multiple subprojects or contracts can be prepared. Preparation of the ESIA will involve identification of a Consulting firm with relevant experience and a team of experts among them the environmental and social specialists. The tasks involved include site screening to identify potential E&S risks and impacts of the project activities, preparation of the scoping and terms of reference report for submission to ZEMA and to the Bank for parallel review, once ZEMA and the Bank gives a No Objection, the consultant will proceed with conducting relevant studies according to the approved terms of reference and prepare the first draft ESIA. The draft ESIA will be submitted both to ZEMA and the Bank for parallel review until finalized and Decision Letter obtained from ZEMA and No objection granted from the Bank. Stakeholder consultation will be throughout the ESIA process and in accordance with ESS10 and the Environmental Impact Assessment Regulations SI No. 28 of 1997.

The first five ESMPs or alternatively, the first five ESMPs in each category of subproject, i.e., sub-component 2.2, 2.3, 2.4 and 3 or a different number to be agreed with the World Bank will also be submitted to the World Bank for prior review and no objection. After this first 5, the World Bank and the PMU and E&S Specialist will reassess whether prior review is needed for further ESMPs or a certain category of ESMPs).

The PMU and E&S Specialist will also complete the documentation, permits and clearances required under the government's Environmental Regulation before any project activities begin.

At this stage, Satellite PMU staff who will be working on the various subproject activities should be trained in the environmental risk management relevant to the activities they work on. The PMU should provide such training to field staff.

Standard EHS terms and conditions for bids and contracts will be prepared and used and modified for each subproject as needed.

The satellite PMU and E&S Specialist should also ensure that all selected contractors, subcontractors, and vendors understand and incorporate environmental and social mitigation measures relevant to them as standard operating procedures for civil works. The PMU and E&S Specialist should provide training to selected contractors to ensure that they understand and incorporate environmental and social mitigation measures; and plan for cascading training to be delivered by contractors to subcontractors and vendors. Contractors/subcontractors/vendors will be required to have appropriate E&S staff for implementing E&S mitigation measures depending on the level of the risk and impacts. The PMU and E&S Specialist should further ensure that the entities or communities responsible for ongoing operation and maintenance of the investment have received training on operations stage environmental and social management measures as applicable.

### **6.1.3 Implementation and Monitoring – E&S Implementation**

During implementation, the PMU will have direct oversight of the implementation of components 2 and 3, in line with GRZ's decentralization strategy. Given that the bulk of technical activities are at the district level, adherence, and implementation of the project's ESMF, will rest with the satellite PMU. The satellite PMU will hire technical service providers, contractors, and individual consultants as implementation of the activities demand. The staffing profile of the satellite PMU will include: i) project manager, ii) environmental specialist, iii) social specialist, iv) GBV specialist, v) civil engineer, vi) agribusiness specialist vii) FM, viii) procurement, ix) admin assistant. Consider whether mobile devices can be used for monitoring of projects with numerous subproject locations. Contractors implementing subproject activities, will be responsible for implementing the mitigation measures in the E&S risk management documents, with satellite PMU E&S Specialists oversight. They will ensure that monitoring practices include the environmental and social risks identified in the ESMF and will monitor the implementation of E&S risk management mitigation plans as part of regular project monitoring.

At a minimum, the reporting will include (i) the overall implementation of E&S risk management instruments and measures, (ii) any environmental or social issues arising as a result of project activities and how these issues will be remedied or mitigated, including timelines, (iii) Occupational Health and Safety performance (including incidents and accidents), (iv) community health and safety, (v) stakeholder engagement updates, in line with the SEP, (vi) public notification and communications, (vii) progress on the implementation and completion of project works, and (viii) summary of grievances/beneficiary feedback received, actions taken, and complaints closed

out, in line with the SEP. Reports from the local levels will be submitted to the PMU at the national level, where they will be aggregated and submitted to the World Bank on a quarterly basis.

Throughout the Project implementation stage, the PMU will continue to provide training and awareness raising to relevant stakeholders, such as staff, selected contractors, and communities, to support the implementation of the environmental and social risk management mitigation measures. An initial list of training needs is proposed below, in Section 6.3.

The national PMU will also track grievances/beneficiary feedback (in line with the SEP) during project implementation to use as a monitoring tool for implementation of project activities and environmental and social mitigation measures.

Last, if the National PMU becomes aware of a serious incident in connection with the project, which may have significant adverse effects on the environment, the affected communities, the public, or workers, it should notify the World Bank within 48 hours of becoming aware of such incident. A fatality is automatically classified as a serious incident, as are incidents of forced or child labor, abuses of community members by project workers (including gender-based violence incidents), violent community protests, or kidnappings.

#### **6.1.4 Review and Evaluation – E&S Completion**

Upon completion of Project activities, the PMU Environmental Specialist and Social Specialist will review and evaluate progress and completion of project activities, and all required environmental and social mitigation measures. Especially for civil works, the national PMU will monitor activities regarding site restoration and landscaping in the affected areas to ensure that the activities are done to an appropriate and acceptable standard before closing the contracts, in accordance with measures identified in the ESMPs and other plans. The sites must be restored to at least the same condition and standard that existed prior to commencement of works. Any pending issues must be resolved before a subproject is considered fully completed. The PMU will prepare the completion report describing the final status of compliance with the E&S risk management measures and submit it to the World Bank.

#### **Process for assessing and managing EHS risks in Project TA Activities**

For activities involving technical assistance under Components 1 and 3, the process for managing EHS risks include review of TORs, workplans and training materials of technical assistance activities to ensure they are compliance with the World Bank’s environmental and social standards. The project will ensure a thorough review of the specific TA sub-projects and their potential downstream implications. This should include the evaluation of, environmental degradation, pollution prevention and control techniques. The World Bank will ensure compliance with environmental and social standards during the implementation of technical assistance projects through a combination of due diligence, monitoring, engagement, grievance mechanisms, and transparency measures outlined in the ESF and related documents.

### **6.2 Implementation Arrangements**

The satellite PMU will oversee relevant screening processes in alignment with the Zambian Environmental Management Act No.12 of 2011 and the Environmental Impact Assessment (EIA)

Regulations, Statutory Instrument No.28 of 1997, and the World Bank Environmental and Social Standards and this ESMF.

The MoHAIS PMU will be responsible for the overall coordination and implementation of the ESMF. The Satellite PMU Environmental and Social Specialists will be responsible for undertaking compliance monitoring and impact mitigation measures outlined in this ESMF. The Specialist must ensure that the project implementers submit monthly reports on work progress and any challenges in observing the environmental and social requirements.

At the district level, Satellite PMU E&S Specialists (one environmental specialist and one social specialist, and GBV/SEA/SH) Specialist will lead ESMF implementation activities related to managing E&S risks for subproject implementation, such as E&S monitoring and support for the preparation of ESIA/ESMPs, implementation of the GRM, GBV/SEAH/SH, training of MoHAIS and PMU including other implementing partners and other sectors.

Table 9 below summarizes the roles and responsibilities regarding the implementation arrangements for **environmental and social management**.

Table 9: Implementation Arrangements

Level/Responsible Party	Roles and Responsibilities at Construction Phase
National Project Management Unit	<p>Provide support, oversight, and quality control to field staff working on environmental and social risk management.</p> <p>Collect, review, and provide quality assurance and approval to Screening Forms and ESMPs as relevant. Keep documentation of all progress.</p> <p>Oversee overall implementation and monitoring of environmental and social mitigation and management activities, compile progress reports from local levels/subprojects, and report to the World Bank on a quarterly [or biannual] basis.</p> <p>Train central and field staff and contractors who will be responsible for implementing the ESMF.</p> <p>If contracting is managed centrally, ensure that all bidding and contract documents include all relevant E&amp;S management provisions per screening forms, ESMPs, and ESCOPs.</p> <p>Oversee implementation of the GRM</p>
Satellite/Environmental and Social Specialists	<p>Ensure project activities do not fall under the Negative List. Fill out Screening Forms for relevant subproject activities and submit forms to the national level.</p> <p>If relevant, complete site-specific ESMPs for subproject activities and submit forms to the national level.</p> <p>Oversee daily implementation and monitoring of environmental and social mitigation measures, and report progress and performance to the national level monthly.</p> <p>Provide training to local contractors and communities on relevant environmental and social mitigation measures, roles, and responsibilities.</p> <p>If contracting is managed regionally, ensure that all bidding and contract documents include all relevant E&amp;S management provisions per screening forms, ESMPs, and ESCOPs.</p>
Local contractors	<p>Comply with the Project's environmental and social mitigation and management measures as specified in ESMPs, ESCOPs, and contract documents, as well as national and local legislation.</p>

	Take all necessary measures to protect the health and safety of workers and community members, and avoid, minimize, or mitigate any environmental harm resulting from project activities.
<b>Level/Responsible Party</b>	<b>Roles and Responsibilities at Operation and Maintenance Phase</b>
Kalumbila District Council (Engineering and public health departments)	Ensure the implementation of operations and maintenance manuals including the aspects of E&S risk management during maintenance and repair works.

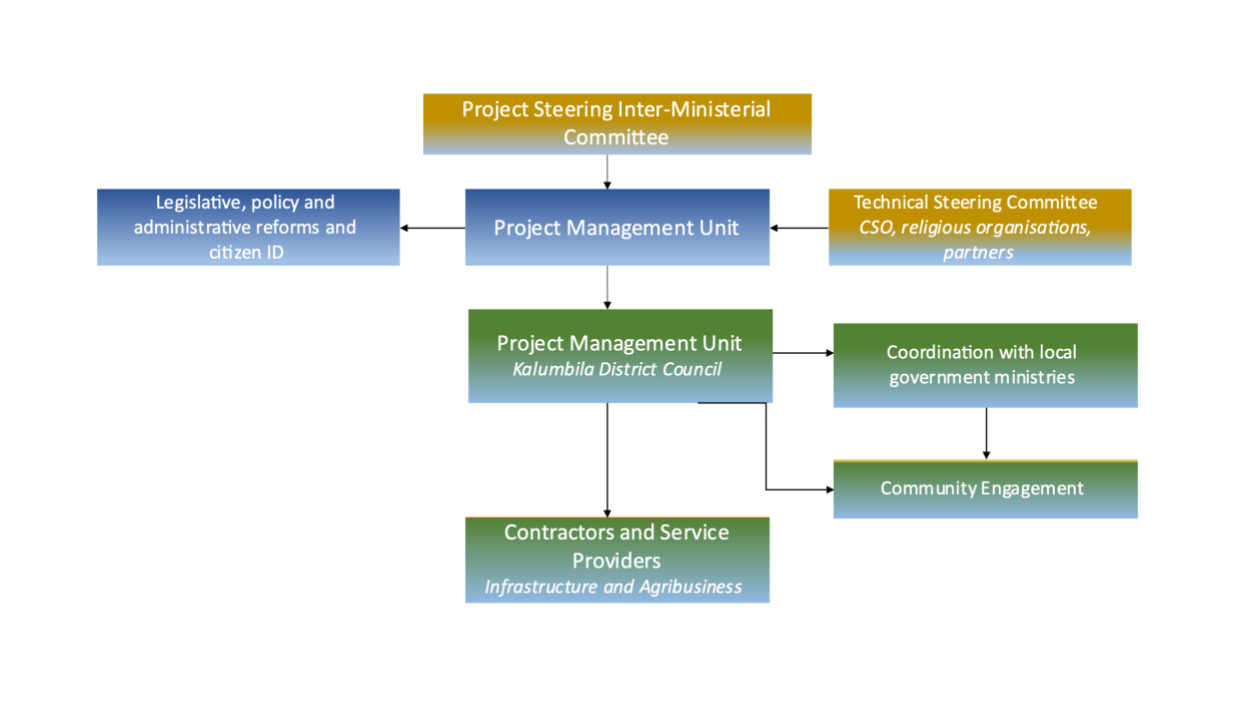


Figure 7: Implementation Arrangements

To manage and mitigate potential negative environmental and social risks and impacts, the project will apply Environmental Codes of Practice (ESCOPs); outlined in Annex 2 of this document. The ESCOPs contain specific, detailed, and tangible measures that would mitigate the potential impacts of each type of eligible subproject activity under the project. They are marked as relevant for the planning phase, the implementation phase, or the post-implementation phase of activities. They are intended to be simple risk mitigation and management measures, readily usable to the Borrower and contractors.

The ESCOPs are divided into:

- a. ESCOPs for infrastructure subprojects (general guidelines and technical guidelines)
- b. ESCOPs for livelihood support subprojects

### 6.3 Proposed Training and Capacity Building

The main stakeholders for implementation of the ESMF are the line ministries and district representatives, implementing agencies of the relevant sub-components, and the local authorities in the location of sub-projects as required. The environmental sustainability of the proposed projects will be dependent on the capacity of the implementing agencies to coordinate the planning and supervision of service providers.

Training events focusing on these thematic areas will take the form of onsite mentoring and coaching activities, workshops and specific seminars at national, provincial, and district levels where necessary awareness campaigns may be used to complement or reinforce the training.

The following additional training topics are proposed:

- Environmental Impact Assessment (EIA) Regulations in Zambia
- Introduction to World Bank Environmental and Social Standards
- Environmental and Social Screening Process and Checklists
- Preparation of simplified ESMP for sub-projects.
- Occupational Health and Safety Requirements.
- Management of Hazardous Chemicals.
- Environmental and Social Clauses in Contractors 'contract and bidding documents.
- IPMPs and Management of Pesticides, where applicable.
- World Bank Environmental Health and Safety Guidelines (EHSGs).
- Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment training.
- Labor and working conditions.
- Grievance Redress Mechanism/ Complaints Management
- Stakeholder Engagement and public disclosure.

Relevant staff in the district PMU and the MoHAIS will also be required to undergo some capacity building to have knowledge and understanding of the implementation of relevant World Bank policies triggered by the project. The awareness creation, capacity building, and training workshops will focus on (a) strengthened institutional coordination; (b) improved information for decision-makers; and (c) targeted awareness creation. The proposed training and estimated budget for capacity building are presented in Table 10 below.

Table 10: Proposed Training and Capacity Building Approach

S/N	TRAINING	MODE OF TRAINING	ASSUMPTION	BUDGET (USD)
<b>A</b>	<b>Conduct Training for the Environmental and Social Specialists on Environmental and Social Risk Management</b>			
	Introduction to World Bank Environmental Social Framework (ESF)	Local	The following shall attend the training: <ul style="list-style-type: none"> <li>• PMU-National and District</li> </ul>	To be organized by the World Bank
	Introduction to World Bank Environmental Health and Safety Guidelines (EHSGs)	International	The following shall attend the training: <ul style="list-style-type: none"> <li>• PMU-National and District</li> </ul> 2) Budget includes: <ul style="list-style-type: none"> <li>• Training fees</li> <li>• Return air ticket for international travel.</li> </ul>	23,000

			<ul style="list-style-type: none"> <li>• Per Diem</li> </ul>	
	Environmental and Social Impact Assessment for Donor-Funded Project	Local	<p>1) The following shall attend the training:</p> <ul style="list-style-type: none"> <li>• PMU-National and District</li> </ul> <p>2) Budget includes:</p> <ul style="list-style-type: none"> <li>• Training fees</li> <li>• Per Diem</li> </ul>	12,000
	Environmental and Social Risk Management for Construction Project	Local	<p>The following shall attend the training:</p> <ul style="list-style-type: none"> <li>• PMU-National and District</li> </ul> <p>1) Budget includes:</p> <ul style="list-style-type: none"> <li>• Training fees to a local training center</li> <li>• Local travel</li> <li>• Per Diem</li> </ul>	7,000
	Occupational Health and Safety Management	Local	<p>The following shall attend the training:</p> <ul style="list-style-type: none"> <li>• PMU-National and District</li> </ul> <p>1) Budget includes:</p> <ul style="list-style-type: none"> <li>• Training fees to a local training center</li> <li>• Local travel</li> <li>• Per Diem</li> </ul>	7,000
	Environmental and Social Audit	International	<p>The following shall attend the training:</p> <ul style="list-style-type: none"> <li>• PMU-National and District</li> </ul> <p>1) Budget includes:</p> <ul style="list-style-type: none"> <li>• Training fees to an international Regional Training Centre</li> <li>• Return air ticket for international travel.</li> <li>• Per Diem</li> </ul>	12,000
	Road Traffic and Safety Incident Management	Local	<p>The following shall attend the training:</p> <ul style="list-style-type: none"> <li>• PMU-National and Satellite</li> </ul> <p>1) Budget includes:</p> <ul style="list-style-type: none"> <li>• Training fees to a local training center</li> <li>• Local travel and Per Diem</li> </ul>	7,000
	Climate Change and Risk Management	International	<p>The following shall attend the training.</p> <ul style="list-style-type: none"> <li>• PMU-National and District</li> </ul> <p>1) Budget includes:</p> <ul style="list-style-type: none"> <li>• Training fees to an International Regional Training Centre</li> <li>• Return air ticket for international travel.</li> <li>• Per Diem</li> </ul>	10,000
	Disaster Preparedness and Emergency Response Management	Local	<p>The following shall attend the training:</p> <ul style="list-style-type: none"> <li>• PMU-National and District</li> </ul> <p>1) Budget includes:</p> <ul style="list-style-type: none"> <li>• Training fees to a local training center</li> <li>• Local travel and Per Diem</li> </ul>	5,000
	Disciplinary and Grievance Handling Management, including Conflict Management	Local	<p>The following shall attend the training:</p> <ul style="list-style-type: none"> <li>• PMU-National and District</li> </ul> <p>1) Budget includes:</p> <ul style="list-style-type: none"> <li>• Training fees to a local training center</li> <li>• Local travel</li> <li>• Per Diem</li> </ul>	5,000
	<b>SUBTOTAL</b>			<b>88,000</b>
<b>B</b>	<b>Conduct Training for the Project Management Unit (PMU), Consultants, Implementing Partners Ministries and Agencies, Independent Evaluation and Verification Panels on Environmental and Social Risk Management</b>			

	Introduction to World Bank Environmental and Social Framework	Local		5,000
	Stakeholder Mapping and Engagement	Local		5,000
	Aspects of Environmental and Social Impact Assessment (ESIA)	Local		5,000
	Environmental and Social Screening for Subprojects	Local		5,000
	Community Health and Safety (including Road Traffic and Safety Mitigation)	Local		5,000
	Emergency Preparedness and Emergency Response	Local		5,000
	Pest and Vector Management	Local		5,000
	GBV/SEAH/SH Risk Management	Local		5,000
	Occupational Health and Safety	Local		5,000
	<b>SUBTOTAL</b>			<b>45,000</b>
	<b>TOTAL</b>			<b>133,000</b>

## 6.4 Estimated Budget

To ensure that the project is successful, it is important that the PMU and other implementing partners are well equipped with the necessary information and skills for the project. To manage the environmental and social risks an estimated budget has been developed for the ESMF from the start of the project to the end of the project.

The ESMF budget will be implemented at national and regional level, the budget will include activities related to managing E&S risks for example screening of the E&S monitoring and support for the preparation of ESMP's, implementation of the GRM, training of the PMU including other implementing partners and other sectors.

The following table lists estimated cost items for the implementation for the ESMF, which have been included in the overall project budget in Table 11.

Table 11: ESMF Implementation Budget

Activity/Cost Item	Potential Cost (USD)
Trainings for staff Environmental and Social Specialist on E&S Risk Management (venue, travel, refreshments etc.)	5,000
Trainings for contractors (venue, travel, refreshments, etc.)	10000

Printing of awareness raising materials / grievance redress materials	10000
Software for data collection / supervision / monitoring / grievance redress	20,000
Preparation of site-specific ESMPs and other site-specific plans	15000
Cost of obtaining clearances or permits	20000
Implementation of site-specific ESMPs and other site-specific plans	50000
Independent Environmental Audit	10000
Travel and accommodation budget for environmental and social staff site visits	15000
End of Project Closure Report	25000
GBV/SEA/SH Action Plan Implementation	30,000
Training of PMU staff and consultants	15,000
<b>TOTAL Budget (4 years)</b>	<b>225000</b>

## **CHAPTER 7. STAKEHOLDER ENGAGEMENT, DISCLOSURE AND CONSULTATIONS**

A separate Stakeholder Engagement Plan (SEP) consistent with ESS10 has been prepared and the process of consultation is being documented. The SEP is expected to provide stakeholders with timely, relevant, understandable, and accessible information, in a culturally appropriate manner, free of manipulation, interference, coercion, discrimination, and intimidation. The SEP identifies relevant stakeholders to be engaged throughout the project cycle. The SEP also outlines characteristics and interests of the relevant stakeholder groups, the timing, and methods of engagement throughout the life of the project.

The SEP will be disclosed prior to project appraisal, including a record of the stakeholder engagement activities carried out so far, which include consultations with (i) Inter-Ministerial National Steering Committee for the Modernization of Refugee Host Communities and Settlement Approach (MORHCSA), Ministry of Home Affairs and Internal Security, Practice Manager for Social Sustainability and inclusion in East Africa, line ministries in Kalumbila District, Barrick Lumwana Mines held in Kalumbila, refugee leaders and the host community in Meheba Refugee Settlement and host communities. Meetings were held with the key stakeholders to prioritize project components and activities as well as their level of awareness and involvement with the proposed Project,

The consultations were an important part of the ESMF preparation and were carried out to introduce the project to the stakeholders and obtain their input into the development of the ESMF. The public consultations were carried out in Lusaka ( the location of the hosting Ministry and cooperating partners working in the refugee space) and Solwezi and Kalumbila Districts of Northwestern province where Component 2 and 3 will be implemented.

[ disclosure link for the SEP to be provided here]. Consultations made so far can be found in Table 12 below.

Table 12: Stakeholder Consultations and Engagements

Stakeholder (Group or Individual)	Dates of Consultations	Summary of Feedback	Response of Project Implementation Team	Follow-up Action(s)/Next Steps	Timetable/ Date to Complete Follow-up Action(s)
The World Bank	29th March 2023	The mission discussed the key elements required for the GRZ to access WHR financing since MHAIS qualified for the funding. Advised for the enhancement of the eligibility process by further clarifications about the scope of the policy and the content of the legislative reforms and their implementation and more detailed information about MORHCSA	The Team took into consideration the feedback from the World Bank and agreed to include all the feedback given into the project design	Provide clarifications about the scope of the policy and the content of the legislative reforms and their implementation and provide more detailed information about MORHCSA	September 2023
MORHCSA National Steering Committee (Office of the Vice President, Cabinet office, SMART Zambia, Ministries of Home Affairs and Internal Security, Education, Local Government & Rural Development, Health, Community Development and Social Services, Finance and	30th June 2023	On board with the Concept of MORHCSA to achieve digitalization, improved infrastructure, harmonization of laws and creation of economic opportunities.	The Team took into consideration the feedback from the Committee and agreed to provide the necessary information to the committee	To orient the MORHCSA committee on the objectives of MORHCSA,	17th August 2023

National Planning, Agriculture, Water Development and Sanitation, and Justice, Small and Medium Enterprise Development and Infrastructure, Housing and Urban Development)					
MORHCSA National Steering Committee (Office of the Vice President, Cabinet Office, SMART Zambia, Ministries of Home Affairs and Internal Security, Education, Local Government & Rural Development, Health, Community Development and Social Services, Finance and National Planning, Agriculture, Water Development and Sanitation, and Justice, Small and	17th August 2023	To develop sub-committees based on available expertise to spearhead the implementation of the objectives of MORHCSA as outlined in the first meeting and to be availed with the TORs of MORHCSA To develop of calendar of events to help guide the implementation of activities	The Team took into consideration the feedback from the Committee and agreed to provide the necessary information to the committee	to establish sub-committees based on available expertise for objectives of MORHCSA, to avail the TORs to MORHCSA members. To develop a calendar of activities	September 2023

Medium Enterprise Development and Infrastructure, Housing and Urban Development)					
Barrick Lumwana Mines	1st November 2023	Barrick Lumwana outlined the Corporate Social Responsibility of the mine as focusing on 5 areas being Education, Health, WASH, agricultural business and Local Development. Barrick expressed interest in implementing capital projects such as putting up a university so that its CSR would be more visible. The mine added that opportunities existed for refugees interested in the agri business as the mine required a lot of variety of foods and the demand or supply was high.	The Team took into consideration the feedback from Barrick Lumwana Mines and agreed to include the feedback given into the project design	To develop an agri business concept note to be used to engage Barrick Lumwana mines.  To make agri business one of the development objectives of the project	February 2024
Refugees and Host Community of Meheba Refugee Settlement	1st November 2023	The refugee leaders and Host Community were of the view that if the following were worked on, such as the road network, expansion and upgrading of health facilities, electrification, initiatives for livelihoods and transportation of goods to access the market, they would greatly improve the lives of the persons of concern. The refugees expressed concern that they had been raising these issues, yet nothing seemed to be done.	In response, the team indicated that once the project began implementation there would be some level of assistance and that they would start seeing results once implementation of the project commenced	To prioritize upgrade of road network, expansion and upgrading of health facilities, electrification, initiatives for livelihoods and transportation of goods to access the market, in project design	February 2024

The World Bank	3rd November 2023	<p>The Project name</p> <p>Duration of the project</p> <p>Priorities and justification [ advised to pick on a project which will create impact]</p> <p>The cost of the project in terms of budgets</p> <p>Project implementation arrangements</p> <p>Preparation of Project Documents</p>	The Team took into consideration the feedback from the World Bank and agreed to include all the feedback given into the project design	<p>The Project name</p> <p>Duration of the project</p> <p>Priorities and justification [ advised to pick on a project which will create impact]</p> <p>The cost of the project in terms of budgets</p> <p>Project implementation arrangements</p> <p>Preparation of Project Documents</p>	February 2024
Kalumbila District (Ministries of Health, Education, Agriculture, Community Development and Social Services, Water Development and Sanitation and Kalumbila District Council	31st November 2023	The priorities of the project should be aligned to policy and legal reforms, livelihood and road network under infrastructure based on the Local Area Plans considering that something was being done with regard to electrification. Capital projects would be good for long term impact but would not show immediate results and should be targeted for expansion of the project	The Team took into consideration the feedback from the line Ministries and District Council and agreed to include all the feedback given into the project design	To align the priorities of the project to policy and legal reforms, livelihood and road network under infrastructure based on the Local Area Plans considering that something was being done with regard to electrification.	February 2024
Barrick Lumwana Mines	1st November 2023	Barrick Lumwana outlined the Corporate Social Responsibility of the mine as focusing on 5 areas being Education, Health, WASH, agricultural business and Local Development. Barrick expressed interest in implementing capital projects such as putting up a university so	The Team took into consideration the feedback from Barrick Lumwana Mines and agreed to include the feedback given into the project design	<p>To develop an agri business concept note to be used to engage Barrick Lumwana mines.</p> <p>To make agri business one of the development objectives of the project</p>	February 2024

		that its CSR would be more visible. The mine added that opportunities existed for refugees interested in the agri business as the mine required a lot of variety of foods and the demand or supply was high.			
Refugees and Host Community of Meheba Refugee Settlement	1st November 2023	The refugee leaders and Host Community were of the view that if the following were worked on, such as the road network, expansion and upgrading of health facilities, electrification, initiatives for livelihoods and transportation of goods to access the market, they would greatly improve the lives of the persons of concern. The refugees expressed concern that they had been raising these issues, yet nothing seemed to be done.	In response, the team indicated that once the project began implementation there would be some level of assistance and that they would start seeing results once implementation of the project commenced	To prioritize upgrade of road network, expansion and upgrading of health facilities, electrification, initiatives for livelihoods and transportation of goods to access the market, in project design	February 2024
Kalumbila District (Ministries of Health, Education, Agriculture, Community Development and Social Services, Water Development and Sanitation and Kalumbila District Council	31st November 2023	The priorities of the project should be aligned to policy and legal reforms, livelihood and road network under infrastructure based on the Local Area Plans considering that something was being done with regard to electrification. Capital projects would be good for long term impact but would not show immediate results and should be targeted for expansion of the project	The Team took into consideration the feedback from the line Ministries and District Council and agreed to include all the feedback given into the project design	To align the priorities of the project to policy and legal reforms, livelihood and road network under infrastructure based on the Local Area Plans considering that something was being done with regard	February 2024

**ANNEXES**

**Annex 1: Environmental and Social Screening Form**

The E&S Screening procedure comprises of two stages-process: (1) Initial screening by using the **Exclusion List** in Table 8 of the ESMF; and (2) Screening the proposed activities to identify the approach for E&S risk management. This Screening Form is the second stage of screening process and is to be used for all subproject activities. The completed forms will be signed and kept in the Project ESF file. The World Bank may review a sample of the forms during implementation support visits.

**Annex 1.A: E&S Screening Form for Subcomponent 2.2 on Community Electrification**

**THE REPUBLIC OF ZAMBIA  
MINISTRY OF HOME AFFAIRS AND INTERNAL SECURITY**



**ENVIRONMENTAL AND SOCIAL SCREENING FORM FOR ELECTRIFICATION OF COMMUNITIES**

Date

**ENVIRONMENTAL AND SOCIAL SCREENING FORM**

Filled and prepared by:

Name:.....

Position:.....

Contacts: .....

**Part A: Project Background**

Name of the Proposed Project	
Location	Coordinates:
Size of the community	
Lengths of grid expansion	
Number of solar panels to be installed	
Number and type of batteries to be used	
Capacity of solar panels	

<b>Screening # 1: Project Eligibility</b>	
Is the project included in the Exclusion List? (Yes/No)	If answer is Yes, screening should be stopped and should not be continued

### Screening # 2: Environmental and Social Screening

Questions considered	Yes/No/	Comment (if yes, explain)	Mitigation
<b>Will electrification of communities cause the following:</b>			
Will the proposed project activities and its associated facilities (if any) likely to generate environmental and social impacts?			
Will it require land for its development, and therefore displace individuals, families, or businesses from land that is currently occupied, or restrict people's access to crops, pasture, fisheries, forests, or cultural resources, whether on a permanent or temporary basis?			
Will project activities affect people's economic activity/community access to land use?			
Will the subproject Require large volumes of construction materials (e.g., gravel, stone, water, timber)?			
Will the project lead to soil degradation and soil erosion in the area?			
Will the proposed project investment create risks of increased air pollution (e.g., dust, noise, vibration, gas emissions)?			
Will the proposed project involve the use of chemical and hazardous materials and/or result in the production of solid or liquid waste (e.g., water, hazardous, domestic or construction wastes), or an increase in waste production during construction or operation phase?			
Will the project affect the quantity or quality of surface waters (e.g., rivers, streams, wetlands), or groundwater (e.g., wells, reservoirs)?			
Community health and safety risks due to the transport, storage, and use and/or disposal of materials likely to create physical, chemical and biological hazards			
Will involve significant excavations, demolition, and movement of earth, flooding, or other environmental changes?			
Will the project cause habitat fragmentation during installation of transmission lines?			

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
Will the project cause risk to community safety due to both accidental and natural hazards during project construction and operation?			
Will the proposed project involve a mixed workforce (local and/or external) or lead to Occupational Health and Safety (OHS) risks such as work accidents and/or disruption to the work environment?			
Will it adversely affect natural habitats nearby, including forests, rivers or wetlands?			
Will there be any risk of accidents during the construction or operation of the Project which could affect human health or the environment?			
Will the Project release pollutants or any hazardous, toxic or noxious substances to air, land or water?			
Result in human health or safety risks during construction or later?			
Involve inward migration of people from outside the area for employment or other purposes?			
Will the Project produce solid wastes during construction or operation or decommissioning?			
Result in conflict or disputes among communities?			
Be located in or near an area where there is an important historical, archaeological or cultural heritage site?			
Result in a significant change/loss in livelihood of individuals?			
Will it adversely affect the livelihoods and /or the rights of women?			
Are there any potential risks of community and worker exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable and non-communicable diseases that could result from project activities?			
Will the proposed project involve interactions between contractors and the remote local beneficiaries and affected communities?			
Will the proposed project involve any disproportionate impacts and risks on certain groups (vulnerable groups, gender,			
Will it have a negative impact on the closest resident to the solar panels or transmission lines?			
Will the project cause disruption in traffic movement in the area?			

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
Will batteries be removed (lead acid or lithium batteries) from battery powered or back up items?			

**Part B: Brief Description of the Proposed Project Activities:**

**Format 2.0: Screening Checklist Review Form (by Environmental and Social Specialists)**

**Part D: Reviewer’s Conclusion**

Which course of action do you recommend?

ESMP

**Review form completed by:** \_\_\_\_\_ **Date reviewed:** \_\_\_\_\_

**Name:**.....

**Position:** Environmental Specialist

**Signature**.....

Name: .....

**Position / Community:** Social Specialist .....

**Signature**.....

Completion of this screening form will facilitate the identification of potential environmental and social impacts, determination of their significance, assignment of the appropriate environmental category, proposal of appropriate environmental mitigation measures.

**Google Image/Picture of the proposed site:**

**Annex 1.B: E&S Screening Form for Subcomponent 2.3 on School Rehabilitation**

**THE REPUBLIC OF ZAMBIA  
MINISTRY OF HOME AFFAIRS AND INTERNAL SECURITY**



**ENVIRONMENTAL AND SOCIAL SCREENING FORM FOR REHABILITATION AND  
EXPANSION OF SCHOOLS**

Date

**Submitted by:**

**ENVIRONMENTAL AND SOCIAL SCREENING FORM****Filled and prepared by:**

Name:.....

Position:.....

Date: .....

**Part A: Project Background**

Name of the Proposed Project	
Location	Coordinates:
Name of the School	
Number of Classrooms for rehabilitation	
<b>Screening # 1: Project Eligibility</b>	
Is the project included in the Exclusion List? (Y/N)	If answer is Yes, screening should be stopped and should not be continued

**Part B: Brief Description of Scope of the Project Activities:****Screening # 2: Environmental and Social Screening**

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
<b>Will the rehabilitation and expansion of schools cause the following:</b>			
Require land for its development, and therefore displace individuals, families, or businesses from land that is currently occupied, or restrict people's access to crops, pasture, fisheries, forests, or cultural resources, whether on a permanent or temporary basis?			
Use water during or after construction, which will reduce the local availability of groundwater and surface water?			
Affect the quantity or quality of surface waters (e.g., rivers, streams, wetlands), or groundwater (e.g., wells, reservoirs)?			
Lead to soil degradation, soil erosion in and siltation of water resources in the area?			
Will construction or renovation works require new borrow pits or quarries to be opened?			
Create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater.			

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
Create pools of water that provide breeding grounds for disease vectors (for example malaria or bilharzia)?			
Involve significant excavations, demolition, and movement of earth, flooding, or other environmental changes?			
Will there be any risk of accidents during the construction or operation of the Project which could affect human health or the environment?			
Will the Project release pollutants or any hazardous, toxic or noxious substances to air, land or water?			
Are works likely to cause significant negative impacts to air and / or water quality?			
Result in human health or safety risks during construction or operation phase?			
Is an influx of workers, from outside the community, expected? Would workers be expected to use health services of the community? Would they create pressures on existing community services (water, electricity, health, recreation, others?)			
Is there a risk of increased community exposure to communicable disease, HIV/AIDS, Malaria), or increase in the risk of traffic related accidents?			
Does the subproject involve recruitment of workforce including direct, contracted, primary supply, and/or community workers			
Will the workers be exposed to workplace hazards that needs to be managed in accordance with local regulations and EHSGs? Do workers need PPE relative to the potential risks and hazards associated with their work?			
Will the Project produce solid wastes during construction or operation or decommissioning?			
Result in conflict or disputes among communities?			
Does the subproject involve uses of goods and equipment involving forced labour, child labour, or other harmful or exploitative forms of labour?			

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
Be located in or near an area where there is an important historical, archaeological or cultural heritage site?			
Result in a significant change/loss in livelihood of individuals?			
Adversely affect the livelihoods and /or the rights of women?			
Would any public facilities, such as schools, health clinic, and church be negatively affected by construction?			
The project cause disruption in traffic movement in the area?			
Are there pit latrines to be decommissioned?			
Is the project likely to generate solid or liquid waste that could adversely impact soils, vegetation, rivers, streams or groundwater, or nearby communities?			
Do any of the construction works involve the removal of asbestos or other hazardous materials? Or unspent PV batteries?			

**Format 2.0: Screening Checklist Review Form (by Environmental and Social Specialists)**

**Part C: Summary of the risks and Impacts**

**Part D: Reviewer’s Conclusion**

Which course of action do you recommend?

**ESMP**

**Review form completed by:** \_\_\_\_\_ **Date reviewed:** \_\_\_\_\_

**Name:**.....

**Position:** Environmental Specialist.....

**Signature**.....

**Name:** .....

**Position:** Social Specialist .....

**Signature**.....

Completion of this screening form will facilitate the identification of potential environmental and social impacts, determination of their significance, assignment of the appropriate environmental category, proposal of appropriate environmental mitigation measures.

**Google Image/Picture of the proposed site:**

**Annex 1.C: E&S Screening Form for Subcomponent 2.4 on Health facility rehabilitation**

**THE REPUBLIC OF ZAMBIA  
MINISTRY OF HOME AFFAIRS AND INTERNAL SECURITY**



**ENVIRONMENTAL AND SOCIAL SCREENING FORM FOR REHABILITATION AND  
EXPANSION OF HEALTH FACILITIES**

Date

**Submitted by:**

**ENVIRONMENTAL AND SOCIAL SCREENING FORM**

**Filled and prepared by:**

Name.....

Position.....

Date: .....

**Part A: Project Background**

Name of the Proposed Project	
Location	Coordinates:
Name of the Health Facility	
Sections for Rehabilitation/Construction	
<b>Screening # 1: Project Eligibility</b>	
Is the project included in the Exclusion List? (Y/N)	If answer is Yes, screening should be stopped and should not be continued

**Part B: Brief Description of Scope of the Project Activities:****Screening # 2: Environmental and Social Screening:**

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
<b>Will the rehabilitation and expansion of health facilities cause the following:</b>			
Require land for its development, and therefore displace individuals, families, or businesses from land that is currently occupied, or restrict people's access to crops, pasture, fisheries, forests, or cultural resources, whether on a permanent or temporary basis?			
Increased dust, noise, water pollution, solid/hazardous/ toxic wastes, waste oil/fuels, public health and safety risks, possible generation of asbestos containing materials due to repair of damaged infrastructure including, but not limited to water supply and sanitation systems?			
Use water during or after construction, which will reduce the local availability of groundwater and surface water?			
Will it involve the use raw materials such as sand, gravel, aggregate and timber?			
Affect the quantity or quality of surface waters (e.g., rivers, streams, wetlands), or groundwater (e.g., wells, reservoirs)?			
Generation of solid waste from rehabilitation materials such as off-cuts from timber and ceiling boards, empty paint containers and bags of cement, liquid and hazardous waste (thinners, tile fix and paint			
Will construction or renovation works require new borrow pits or quarries to be opened?			

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
Create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater.			
Create pools of water that provide breeding grounds for disease vectors (for example malaria or bilharzia)?			
Involve excavations, demolition, and movement of earth, causing poor air quality due to increased dust levels generated from uncovered construction materials and vehicles traversing unpaved roads in dry conditions.			
Workers, health facility staff and the community accessing services in the building and nearby the project site are likely to be exposed to dust emission (especially particulate matter PM <sub>10</sub> and PM <sub>2.5</sub> ) during construction phase of the project			
Spread of infectious disease affecting community and occupational health and safety due to rehabilitation of wards?			
Are works likely to cause significant negative impacts to air and / or water quality?			
Will it cause fire safety risks due to demolition debris including timber and drywall as well as oil-based paints, solvents and other materials which are flammable under certain conditions?			
Result in human health or safety risks during construction or operation phase? E.g., increased health risks due to exposure to medical waste, toxic materials, asbestos-contaminated debris			
Are there seismic risks with regards to stability of buildings to be rehabilitated?			
Is an influx of workers, from outside the community, expected? Would workers be expected to use health services of the community? Would they create pressures on existing community services (water, electricity, health, recreation, others?)			
Is there a risk of increased community exposure to communicable disease, HIV/AIDS, Malaria), or increase in the risk of traffic related accidents?			
Does the subproject involve recruitment of workforce including direct, contracted, primary supply, and/or community workers			
Will the workers be exposed to workplace hazards that needs to be managed in accordance with local regulations and EHSs? Do workers need PPE relative to the potential risks and hazards associated with their work?			

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
Will the Project produce solid wastes during construction or operation or decommissioning?			
Noise and vibrations causing annoyance and hearing disturbance on the community nearby and those accessing health care services			
Does the subproject involve uses of goods and equipment involving forced labour, child labour, or other harmful or exploitative forms of labour?			
Result in a significant change/loss in livelihood of individuals?			
Adversely affect the livelihoods and /or the rights of women?			
Would any other public facilities, such as schools, health clinics, and church be negatively affected by construction?			
Will the project cause disruption in traffic movement in the area including access to healthcare services during construction?			
Are there pit latrines to be decommissioned?			
Is the project likely to generate solid or liquid waste that could adversely impact soils, vegetation, rivers, streams or groundwater, or nearby communities?			
Do any of the construction works involve the removal of asbestos or other hazardous materials? Or unspent PV batteries?			

**Format 2.0: Screening Checklist Review Form (by Environmental and Social Specialists)**

**Part C: Summary of the risks and Impacts**

**Part D: Reviewer’s Conclusion**

Which course of action do you recommend?

**ESMP**

**Review form completed by:** \_\_\_\_\_ **Date reviewed:** \_\_\_\_\_

**Name:**.....

**Position:** Environmental Specialist.....

**Signature**.....

**Name:** .....

**Position:** Social Specialist .....

**Signature**.....

Completion of this screening form will facilitate the identification of potential environmental and social impacts, determination of their significance, assignment of the appropriate environmental category, proposal of appropriate environmental mitigation measures.

**Google Image/Picture of the proposed site:**

**Annex 1.D: E&S Screening Form for Subcomponent 3.2 on Agribusiness Investments**

**THE REPUBLIC OF ZAMBIA  
MINISTRY OF HOME AFFAIRS AND INTERNAL SECURITY**



**ENVIRONMENTAL AND SOCIAL SCREENING FORM FOR AGRICULTURAL SUB-PROJECT  
ACTIVITIES**

Date

**Submitted by:**

**ENVIRONMENTAL AND SOCIAL SCREENING FORM**

**Filled and prepared by:**

Name:.....

Position:.....

Date: .....

**Part A: Project Background**

Name of the Proposed Project	
Location	Coordinates:
Name of the Subproject	
Estimates cost	

Type and Nature of the Subproject	
<b>Screening # 1: Project Eligibility</b>	
Is the project included in the Exclusion List? (Y/N)	If answer is Yes, screening should be stopped and should not be continued

**Screening # 2: Environmental and Social Screening**

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
<b>Will the agricultural activities:</b>			
Use land that is currently occupied or regularly used for productive purposes (e.g., gardening, farming, pasture, fishing, and others)			
Result in the temporary or permanent loss of crops, fruit trees or household infrastructure such as granaries, outside toilets and kitchens?			
Use water during or after construction, which will reduce the local availability of groundwater and surface water?			
Affect the quantity or quality of surface waters (e.g., rivers, streams, wetlands), or groundwater (e.g., wells, reservoirs)?			
Lead to soil degradation, soil erosion in and siltation of water resources in the area?			
Harvest or exploit a significant amount of natural resources such as trees, soil or water?			
Create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater.			
Create pools of water that provide breeding grounds for disease vectors (for example malaria or bilharzia)?			
Involve significant excavations, demolition, and movement of earth, flooding, or other environmental changes?			
Will there be any risk of accidents during the construction or operation of the Project which could affect human health or the environment?			

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
Will the Project release pollutants or any hazardous, toxic or noxious substances to air, land or water?			
Are works likely to cause significant negative impacts to air and / or water quality?			
Result in human health or safety risks during construction or operation phase?			
Build or rehabilitate any energy system, e.g., for irrigation or agro processing?			
Is there a risk of increased community exposure to communicable disease, HIV/AIDS, Malaria), or increase in the risk of traffic related accidents?			
Involve food processing?			
Will the workers be exposed to workplace hazards that needs to be managed in accordance with local regulations and EHSGs? Do workers need PPE relative to the potential risks and hazards associated with their work?			
Build or rehabilitate any structures or buildings?			
Involve the construction or rehabilitation of any, weirs or reservoirs for irrigation?			
Depend on water supply from an existing source, weir, or other water diversion structure?			
Will the Project produce solid wastes during construction or operation or decommissioning?			
Result in conflict or disputes among communities?			
Does the subproject involve uses of goods and equipment involving forced labour, child labour, or other harmful or exploitative forms of labour?			
Be located in or near an area where there is an important historical, archaeological or cultural heritage site?			
Result in a significant change/loss in livelihood of individuals?			

Questions considered	Yes/ No/	Comment (if yes, explain)	Mitigation
Adversely affect the livelihoods and /or the rights of women?			
Involve the use of pesticides or other agricultural chemicals, or increase existing use?			
Is the project likely to generate solid or liquid waste that could adversely impact soils, vegetation, rivers, streams or groundwater, or nearby communities?			
Cause poor water drainage and increase the risk of water-related diseases such as malaria or dysentery or cholera?			

**Format 2.0: Screening Checklist Review Form (by Environmental and Social Specialists)**

**Part C: Summary of the risks and Impacts**

**Part D: Reviewer’s Conclusion**

Which course of action do you recommend?

**ESMP**

**Review form completed by:**                      **Date reviewed:**

**Name:**.....

**Position:** Environmental Specialist.....

**Signature**.....

**Name:** .....

**Position:** Social Specialist .....

**Signature**.....

Completion of this screening form will facilitate the identification of potential environmental and social impacts, determination of their significance, assignment of the appropriate environmental category, proposal of appropriate environmental mitigation measures.

**Google Image/Picture of the proposed site:**

## Annex 2: Environmental and Social Codes of Practice

### a. ESCOPs for Infrastructure Subprojects

#### General ESCOP for Infrastructure Subprojects

Issue	Environmental Prevention/Mitigation Measures	Responsible Party
1. Noise during construction	<p>a) Plan activities in consultation with communities so that noisiest activities are undertaken during periods that will result in least disturbance. (Planning phase)</p> <p>b) Use when needed and feasible noise-control methods such as fences, barriers or deflectors (such as muffling devices for combustion engines or planting of fast-growing trees). (Implementation phase)</p> <p>c) Minimize project transportation through community areas. Maintain a buffer zone (such as open spaces, row of trees or vegetated areas) between the project site and residential areas to lessen the impact of noise to the living quarters. (Implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Specialists</li> </ul>
2. Soil erosion	<p>a) Schedule construction during dry season. (Planning phase)</p> <p>b) Contour and minimize length and steepness of slopes. (Implementation phase)</p> <p>c) Use mulch, grasses or compacted soil to stabilize exposed areas. (Implementation phase)</p> <p>d) Cover with topsoil and re-vegetate (plant grass, fast-growing plants/bushes/trees) construction areas quickly once work is completed. (Post-Implementation phase)</p> <p>e) Design channels and ditches for post-construction flows and line steep channels/slopes (e.g., with palm fronds, jute mats, etc.). (Post-Implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Specialist</li> </ul>
3. Air quality	<p>a) Minimize dust from exposed work sites by applying water on the ground regularly during dry season. (Implementation phase)</p> <p>b) Avoid burn site clearance debris (trees, undergrowth) or construction waste materials. (Implementation phase)</p> <p>c) Keep stockpile of aggregate materials covered to avoid suspension or dispersal of fine soil particles during windy days or disturbance from stray animals. (Implementation phase)</p> <p>d) Reduce the operation hours of generators /machines /equipment /vehicles. (Implementation phase)</p> <p>e) Control vehicle speed when driving through community areas is unavoidable so that dust dispersion from vehicle transport is minimized. (Implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Specialist</li> </ul>
4. Water quality and availability	<p>a) Activities should not affect the availability of water for drinking and hygienic purposes. (Implementation phase)</p> <p>b) No soiled materials, solid wastes, toxic or hazardous materials should be stored in, poured into or thrown into water bodies for dilution or disposal. (Implementation phase)</p> <p>c) Avoid the use of wastewater pools particularly without impermeable liners.</p> <p>d) Provision of toilets with temporary septic tank. (Implementation phase)</p> <p>e) The flow of natural waters should not be obstructed or diverted to another direction, which may lead to drying up of riverbeds or flooding of settlements. (Implementation phase)</p> <p>f) Separate concrete works in waterways and keep concrete mixing separate from drainage leading to waterways. (Implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Specialist</li> </ul>
5. Solid and hazardous waste	<p>a) Segregate construction waste as recyclable, hazardous and non-hazardous waste. (Implementation phase)</p> <p>b) Collect, store and transport construction waste to appropriately designated/controlled dump sites. (Implementation phase)</p> <p>c) On-site storage of wastes prior to final disposal (including earth dug for foundations) should be at least 300 metres from rivers, streams, lakes and wetlands. (Implementation phase)</p> <p>d) Use secured area for refuelling and transfer of other toxic fluids distant from settlement area (and at least 50 metres from drainage structures and 100 metres from important water bodies); ideally on a hard/non-porous surface. (Implementation phase)</p> <p>e) Train workers on correct transfer and handling of fuels and other substances and require the use of gloves, boots, aprons, eyewear and other protective equipment for protection in handling highly hazardous materials. (Implementation phase)</p> <p>f) Collect and properly dispose of small amount of maintenance materials such as oily rags, oil filters, used oil, etc. Never dispose spent oils on the ground</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Development Specialist</li> </ul>

	<p>and in water courses as it can contaminate soil and groundwater (including drinking water aquifer). (Implementation phase)</p> <p>g) After each construction site is decommissioned, all debris and waste shall be cleared. (Post-Implementation phase)</p>	
6. Asbestos	<p>a) If asbestos or asbestos containing materials (ACM) are found at a construction site, they should be clearly marked as hazardous waste. (Implementation phase)</p> <p>b) The asbestos should be appropriately contained and sealed to minimize exposure. (Implementation phase)</p> <p>c) Prior to removal, if removal is necessary, ACM should be treated with a wetting agent to minimize asbestos dust. (Implementation phase)</p> <p>d) If ACM is to be stored temporarily, it should be securely placed inside closed containers and clearly labeled. (Implementation phase)</p> <p>e) Removed ACM must not be reused. (Implementation and post-implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Development Specialist</li> </ul>
7. Health and Safety	<p>a) When planning activities of each subproject, discuss steps to avoid people getting hurt. (Planning phase)</p> <p>It is useful to consider:</p> <ul style="list-style-type: none"> <li>• Construction place: Are there any hazards that could be removed or should warn people about?</li> <li>• The people who will be taking part in construction: Do the participants have adequate skill and physical fitness to perform their works safely?</li> <li>• The equipment: Are there checks you could do to make sure that the equipment is in good working order? Do people need any particular skills or knowledge to enable them to use it safely?</li> <li>• Electricity Safety: Do any electricity good practices such as use of safe extension cords, voltage regulators and circuit breakers, labels on electrical wiring for safety measure, aware on identifying burning smell from wires, etc. apply at site? Is the worksite stocked with voltage detectors, clamp meters and receptacle testers?</li> </ul> <p>b) Mandate the use of personal protective equipment for workers as necessary (gloves, dust masks, hard hats, boots and goggles). (Implementation phase)</p> <p>c) Follow the below measures for construction involve work at height (e.g., 2 meters above ground (Implementation phase):</p> <ul style="list-style-type: none"> <li>• Do as much work as possible from the ground.</li> <li>• Do not allow people with the following personal risks to perform work at height tasks: eyesight/balance problem; certain chronic diseases – such as osteoporosis, diabetes, arthritis or Parkinson’s disease; certain medications – sleeping pills, tranquillisers, blood pressure medication or antidepressants; recent history of falls – having had a fall within the last 12 months, etc.</li> <li>• Only allow people with sufficient skills, knowledge and experience to perform the task.</li> <li>• Check that the place (e.g., a roof) where work at height is to be undertaken is safe.</li> <li>• Take precautions when working on or near fragile surfaces.</li> <li>• Clean up oil, grease, paint, and dirt immediately to prevent slipping; and</li> <li>• Provide fall protection measures e.g., safety harness, simple scaffolding/guard rail for works over 4 meters from ground.</li> </ul> <p>d) Keep worksite clean and free of debris on daily basis. (Implementation phase)</p> <p>e) Provision of first aid kit with bandages, antibiotic cream, etc. or health care facilities and enough drinking water. (Implementation phase)</p> <p>f) Keep corrosive fluids and other toxic materials in properly sealed containers for collection and disposal in properly secured areas. (Implementation phase)</p> <p>g) Ensure adequate toilet facilities for workers from outside of the community. (Implementation phase)</p> <p>h) Rope off construction area and secure materials stockpiles/ storage areas from the public and display warning signs including at unsafe locations. Do not allow children to play in construction areas. (Implementation phase)</p> <p>i) Ensure structural openings are covered/protected adequately. (Implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Development Specialist</li> </ul>

	<p>j) Secure loose or light material that is stored on roofs or open floors. (Implementation phase)</p> <p>k) Keep hoses, power cords, welding leads, etc. from laying in heavily travelled walkways or areas. (Implementation phase)</p> <p>l) If school children are in the vicinity, include traffic safety personnel to direct traffic during school hours, if needed. (Implementation phase)</p> <p>m) Control driving speed of vehicles particularly when passing through community or nearby school, health centre or other sensitive areas. (Implementation phase)</p> <p>n) During heavy rains or emergencies of any kind, suspend all work. (Implementation phase)</p> <p>o) Fill in all earth borrow-pits once construction is completed to avoid standing water, water-borne diseases and possible drowning. (Post-Implementation phase)</p>	
8. Other	<p>a) No cutting of trees or destruction of vegetation other than on construction site. [Implementing agency] will procure locally sourced materials consistent with traditional construction practices in the communities. (Planning phase)</p> <p>b) No hunting, fishing, capture of wildlife or collection of plants. (Implementation phase)</p> <p>c) No use of unapproved toxic materials including lead-based paints, unbonded asbestos, etc. (Implementation phase)</p> <p>d) No disturbance of cultural or historic sites. (Planning and implementation phases)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Specialists</li> </ul>

#### Specific ESCOPs for Infrastructure Subprojects

Subproject Type	Environmental Prevention/Mitigation Measures	Responsible Party
<b>Buildings</b>		
Rehabilitation of Schools and health facilities rehabilitations.	<p>a) Provide adequate drainage in the building's immediate surroundings to avoid standing water, insect related diseases (malaria, etc.) and unsanitary conditions. (Implementation phase)</p> <p>b) Include sanitary facilities such as toilets and basins for handwashing. (Implementation phase)</p> <p>c) Restrict use of asbestos cement tiles as roofing. (Implementation phase)</p> <p>d) Tiled floors are preferred for easier cleaning and more hygienic. (Planning and implementation phases)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Construction Company</li> <li>• Environmental &amp; Social Specialist</li> </ul>
	<p>a) Design of schools, community markets should follow relevant requirements on life and fire safety required by National Building Codes and relevant guidelines from the concerned Ministries. (Planning phase)</p> <p>b) Schools: Maximise natural light and ventilation systems to minimise needs for artificial light and air conditioning; use large windows for bright and well-ventilated rooms. (Planning phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Specialists</li> <li>• Ministry of Education and Health</li> </ul>
<b>Roads, Bridges</b>		
Rehabilitation of gravel road and Mafwe Bridge	<p>General Considerations:</p> <p>a) Control placement of all construction waste (including earth cuts) to approved disposal sites (at &gt;300 m from rivers, streams, lakes, or wetlands). If we do have to dispose spent oil unexpectedly, we should use safe disposal method capable by rural community. For example- burning spent oil as fuel. (Implementation phase)</p> <p>b) Erosion control measures should be applied before the rainy season begins, preferably immediately following construction. Maintain, and reapply the measures until vegetation is successfully established. (Implementation and post-implementation phases)</p> <p>c) Sediment control structures should be applied where needed to slow or redirect runoff and trap sediment until vegetation is established. (Implementation and post-implementation phases)</p> <p>d) Avoid road construction in unstable soils, steep slopes and nearby riverbanks. Additional measures (see the section below) need to be applied should there be no alternatives for road alignments. (Planning phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• Environmental &amp; Social Specialists</li> <li>• Ministry of Education and Health</li> </ul>
	<p>Protect slopes from erosion and landslides by the following measures (Implementation phase):</p> <p>a) Indigenous Species, fast-growing grass on slopes prone to erosion. These grasses help stabilise the slope and protect soil from erosion by rain and</p>	

Subproject Type	Environmental Prevention/Mitigation Measures	Responsible Party
	<p>runoff. Locally available species possessing the properties of good growth, dense ground cover and deep root shall be used for stabilisation.</p> <p>b) Provide interceptor ditch, particularly effective in the areas of high intensity rainfall and where slopes are exposed. This type of ditch intercepts and carries surface run-off away from erodible areas and slopes before reaching the steeper slopes, thus reducing the potential surface erosion.</p> <p>c) For steep slopes, a stepped embankment (terracing) is needed for greater stability.</p> <p>d) Place a retaining wall at the lower part of the unstable slope. The wall needs to have weeping holes for drainage of the road sub-base, thus reducing pressure on the wall.</p> <p>e) Rocks (riprap) can be used in addition to protect the slope.</p> <p>f) Prevent uncontrolled water discharge from the road surface by sufficiently large drainage ditches and to drain water away from the down slope.</p>	
Bridges (less than 20 meters)	<p>Erosion protection (Planning and implementation phases):</p> <p>a) The main method of slope and erosion protection is the construction of gabions (gravity walls that support bridges, embankment or slopes which have a potential to slip) and ordinary stone pitching.</p> <ul style="list-style-type: none"> <li>• The slope of gabions should be in the ratio of at least 1 vertical: 2 horizontals. Flatter slopes may be adopted depending on the site terrain.</li> <li>• The filling of the gabions should be from strong and competent rock which is laid very closely packed to maximize the weight.</li> <li>• Bracing wire should be used to prevent the gabion bulging out. The bracing wire should be placed at each third of the gabion height.</li> <li>• The gabions should be firmly anchored into the ground by founding the gabions below the expected scour depth level.</li> <li>• In cases where stone pitching is not provided, the top layer should be covered by soil to encourage the growth of grass and the stabilization of the slopes.</li> </ul> <p>b) Stone pitching may be provided as the only erosion protection measure in those cases where the erosion potential is deemed minimal. Stone pitching is not very resistant to strong water current and is mainly used as the top finish on gabion walls.</p> <p>Water Quality and Fauna (Implementation phase):</p> <p>a) Restrict duration and timing of in-stream activities to lower flow periods (dry season) and avoid periods critical to biological cycles of valued flora and fauna (e.g., spawning)</p> <p>b) Water flow diversion should be avoided; if it is impossible to avoid, impacts should be assessed, and mitigation proposed.</p> <p>c) Establish clear separation of concrete mixing and works from drainage areas and waterways.</p>	<p>PMU Contractor Environmental &amp; Social Specialist</p> <p>• PMU • Contractor • E&amp;S Specialists</p>
<b>Water Supply</b>		
Drilling of boreholes	<p>a) Site wells so that appropriate zone of sanitary protection can be established. (Planning phase)</p> <p>b) A groundwater well usually has a wide-open water area. It is necessary to provide a cover/roof/wire mesh on top to protect this area from falling leaves or debris. (Implementation phase)</p> <p>c) Wells should always be located upstream of the septic tank soak-away. Build the soak-away as far away as possible from the well (minimum 15 m/50 feet) as it can influence the quality of the drinking water when it is too close. (Planning and implementation phases)</p> <p>d) Before using a new water source, test water quality and when intended for potable purposes ensure water meets the national drinking water standard. Water quality should also be monitored in the case of all well rehabilitation. (Post implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• E&amp;S Specialists</li> </ul>
Rainwater harvesting	<p>a) Rainwater storage reservoir should be intact, connected to roof gutter system, with all faucets and piping intact. (Implementation phase)</p> <p>b) If distribution pipes are attached into the storage reservoir, install the distribution pipes 10cm above the storage/tank bottom for better use of the storage capacity. (Implementation phase)</p> <p>c) Cover must be fitted tightly onto the top of the storage reservoir to avoid overheating and growth of algae (from direct sunlight), and to prevent insects,</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Contractor</li> <li>• E&amp;S Specialists</li> <li>• Ministry of Water Development</li> </ul>

Subproject Type	Environmental Prevention/Mitigation Measures	Responsible Party
	<p>solid debris and leaves from entering the storage tank. (Implementation phase)</p> <p>d) A ventilation pipe with fly screen should be placed in the cover to help aerate the tank/reservoir which is necessary for good water quality. (Implementation phase)</p> <p>e) Roof gutters need to be cleared regularly, as bird and animal feces and leaf litter on roofs or guttering can pose a health risk if they are washed into the reservoir tank. (Post-implementation phase)</p> <p>f) Reservoir tanks need an overflow so that in time of really heavy rain, the excess water can drain away. The overflow should be designed to prevent backflow and stop vermin/rodents/insects entering the system. A good design will allow the main storage tank to overflow at least twice a year to remove built up of floating sediment on the top of the stored water and maintain good water quality. (Planning and implementation phases)</p>	<p>&amp; Sanitation</p>
<b><i>Electrification: Grid Expansion and Solar Energy Installations</i></b>		
Solar power supply	<p>a) Tidy wiring for easy maintenance and reduces the risk of accidents. (Implementation phase)</p> <p>b) Need to raise community awareness on electrical hazards and health and safety concerns, as well as proper maintenance of solar panels (Implementation and post-implementation phases)</p> <p>c) Need to raise community awareness on proper disposal of solar panels, specifically avoiding disposal of panels near water bodies (post-implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Construction Company</li> <li>• Environmental &amp; Social Development Specialist</li> <li>• Ministry of Green Economy &amp; Environment</li> <li>• Ministry of Energy</li> </ul>
<b><i>Access to Sanitation</i></b>		
Public latrines/toilets	<p>a) All toilets must have a septic tank made from non-permeable material such as concrete, plastic or fiberglass to provide primary treatment of fecal waste. (Implementation phase)</p> <p>b) PVC pipe used to connect pour-flush toilet to a septic tank must be buried underground or covered over (with cement) for protection and to prevent exposure to sunlight. (Implementation phase)</p> <p>c) Metal pipe is a preferred choice to be used as the gas vent pipe on septic tanks. Never use PVC pipe as it is unable to withstand long-term exposure to sunlight. (Implementation phase)</p> <p>d) A toilet should be at least 20 meters from water sources (well, spring, river). (Planning and implementation phases)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Construction Company</li> <li>• Environmental &amp; Social Development Specialist</li> <li>• Ministry of Infrastructure</li> </ul>
<b><i>Wastewater Systems</i></b>		
Wastewater sewerage and treatment	<p>a) Septic tanks must have a vent pipe to prevent the build-up of gas inside the chamber and shall have a 'manhole' that provides access inside the tank if needed. (Implementation phase)</p> <p>b) Ensure that the septic tanks have two chambers: first chamber is for settling of sludge, and the second chamber is for aerobic treatment. These chambers will generally treat wastewater better. Partially treated septic tank effluent can pollute groundwater and surface water. (Implementation phase)</p> <p>c) Do not discharge septic tank effluent to an open drain or other surface water. The effluents need to be treated before final disposal. This may be achieved through: (i) an underground leach field, (ii) a vegetated leach field, or (iii) a pit for soaking away. (Implementation phase)</p> <p>d) Community awareness should be raised so that the community inspects the septic tanks periodically and ensures that the septic tanks are emptied every few years for the tank to continue to function properly. (Implementation and post-implementation phases)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Construction Company</li> <li>• Environmental &amp; Social Development Specialist</li> <li>• Ministry of Water Development &amp; Sanitation</li> <li>• Ministry of Infrastructure, Housing Urban &amp; Development</li> </ul>
Solid Waste Management	<p>a) Solid waste depots/disposal need to be located on hard-standing areas that prevent waste entering surface or groundwater. (Implementation phase)</p> <p>b) Waste depots/storage/disposal should be contained, sealed and/or roofed/covered to prevent storm water contamination. Wastes need to be emptied regularly. (Implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Construction Company</li> <li>• Environmental &amp; Social</li> </ul>

Subproject Type	Environmental Prevention/Mitigation Measures	Responsible Party
		<ul style="list-style-type: none"> <li>Development Specialist</li> <li>• Local Council</li> <li>• Ministry of Water Development &amp; Sanitation</li> <li>• WARMA</li> </ul>

*b. ESCOPs for Livelihood Support Subprojects*

**ESCOPs for Livelihood Support Subprojects**

Risk/Concern	Environmental Prevention/Mitigation Measures	Responsible Party
<b>General</b>		
To minimize water pollution	<ul style="list-style-type: none"> <li>a) Avoid any activity causing excessive erosion and turbidity. (Planning phase)</li> <li>b) Keep waste and hazardous materials away from surface water bodies, drinking water sources and do not dispose of waste in streams or rivers. (Implementation phase)</li> <li>c) Properly dispose contaminated wastewater and hazardous materials, if any, passing through conventional treatment process such as screening, settling, oil-water separation, etc. (Implementation phase)</li> <li>d) Avoid contamination of drinking water source (e.g., well) from inflow of waste materials and pollutants. (Implementation phase)</li> <li>e) Avoid large-scale animal farming and aquaculture activities in water catchment area. (Planning and implementation phases)</li> </ul>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Environmental &amp; Social Development Specialist</li> <li>• Ministry of Livestock &amp; Fisheries</li> </ul>
To minimize air pollution	<ul style="list-style-type: none"> <li>a) Limit burning post-harvest waste material in close proximity to village; choose days with limited wind for burning; limit number and size of areas for burning per day; do not burn non-agricultural waste such as garbage, plastics or animal waste. Rather than burning post-harvest waste, consider alternative good practices such as composting to produce organic fertilizer or utilization as fuel for bioenergy production. (Planning and implementation phases)</li> <li>b) Reduce dust generation through application of water where practical. (Implementation phase)</li> <li>c) Limit idling of vehicles, machineries equipment. (Implementation phase)</li> </ul>	<ul style="list-style-type: none"> <li>• PMU Environmental &amp; Social Specialist</li> <li>• Ministry of Agriculture</li> <li>• Ministry of Fisheries &amp; Livestock</li> </ul>
To minimize noise disturbance	<ul style="list-style-type: none"> <li>a) Repair and maintain machineries for safe and quiet operation. (Implementation phase)</li> <li>b) Avoid emission of continuous/noisy sounds during working. (Implementation phase)</li> </ul>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Agro-Sub-constructor</li> <li>• Environmental &amp; Social Development Specialist</li> </ul>
To minimize soil pollution	<ul style="list-style-type: none"> <li>a) Store petrol / diesel on impermeable floor (e.g., compacted clay, concrete floor) and surrounded by an embankment or berm. (Implementation phase)</li> <li>b) Storage for hazardous materials including petroleum should be above ground and isolated. (Implementation phase)</li> <li>c) Establishing an appropriate disposal area for hazardous materials and waste where prevents hazardous material from leaching into the soil and surface water. (Implementation phase)</li> <li>d) Do not dispose hazardous wastes anywhere except in areas designated by pollution control agencies. (Implementation phase)</li> </ul>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Agribusiness Sub-constructor</li> <li>• Environmental &amp; Social Development Specialist</li> </ul>
To minimize impact from non-agricultural waste generation	<ul style="list-style-type: none"> <li>a) Collect waste systematically, store and dispose at appropriately designated dump sites, far away from households. (Implementation phase)</li> <li>b) Reuse and recycle appropriate and viable materials. (Implementation phase)</li> <li>c) Segregate hazardous and non-hazardous wastes. (Implementation phase)</li> </ul>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Agribusiness Sub-constructor</li> <li>• Environmental &amp; Social Development Specialist</li> </ul>
To minimize emergency risks	<ul style="list-style-type: none"> <li>a) Build appropriately designed infrastructure safe from natural hazards. (Planning and implementation phases)</li> <li>b) Avoid areas prone to natural hazard events (flooding, spring tides, etc.), steep slopes and vulnerable to erosion and landslides, etc. (Planning and implementation phases)</li> </ul>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Agribusiness Sub-constructor</li> <li>• Environmental &amp;</li> </ul>

		Social Development Specialist
To secure the safety	<p>a) Proper use and management of hazardous materials and waste. (Implementation phase)</p> <p>b) Awareness of dangers on working area, occupation, health and safety equipment through signage where applicable. (Implementation phase)</p> <p>c) Lock storage of fuels, paints, and chemicals. (Implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Agribusiness Sub-constructor</li> <li>• Environmental &amp; Social Development Specialist</li> </ul>
<b>Agriculture Support to Farmers</b>		
	<p>a) Use sustainable agricultural practices / approaches / technologies. (e.g., Agroforestry Practices, Polycultures and Crop rotation, Integrated Pest Management (Planning and implementation phases)</p> <p>b) Reduce top-soil losses from erosion and the reduction in soil fertility. (Cover Crops and Mulches (Establishing leguminous ground cover and applying plant residues), Grass Barriers (planting grass in strips along the contour lines), etc.) (Implementation phase)</p> <p>c) Induce conservation and efficient use of water. (Planning and implementation phases)</p> <p>d) Reduce misuse of agrochemicals, contributing to a reduction of toxic substances in soil and water. (Planning and implementation phases)</p> <p>e) Reduce usage of pesticides and promote integrated pest management approaches recommended by DOA. (Planning and implementation phases)</p> <p>f) Reduce, recycle and reuse the agricultural waste (natural, animal, plant waste). (Implementation phase)</p>	<ul style="list-style-type: none"> <li>• PMU</li> <li>• Selected Agribusiness Sub-constructor</li> <li>• Environmental &amp; Social Development Specialist</li> <li>• Ministry of Agriculture</li> </ul>

## Annex 3: The Borrow Pit Management Plan

### **Objective**

This Borrow Pit Management Plan is developed to identify and mitigate potential risks associated with the borrow pits which will be located along the roads or forestry bush areas in the Meheba Refugee Settlement. The objective of this plan is to ensure the safety of personnel, equipment, and the environment during the use of the borrow pits. The plan will take account of potential environmental health and safety hazards, including drowning hazards, water-borne disease vectors, impacts on local land holdings, land-use, and other impacts. The plan will also include restoration measures for the site after decommissioning, such as removal and stockpiling of topsoil layers. Where the borrow pits are to be left open, for their use in regular maintenance programs, the responsibility for their management should be assigned to the government entity in charge of road maintenance and compliance with the borrow pit management plan monitored.

### **The Legal Framework**

The components of the Borrow Pit are regulated by the following national legislation and the World Bank Environmental and Social Standards requirements:

- Mines and Minerals Development Act No 11 of 2015
- Environmental Management Act No.12 of 2011.
- Environmental Management (Licensing) Regulations (SI.No.112 of 2013).
- World Bank Environmental and Social Standards (ESSs).
- Environmental Health and Safety and Guidelines on .
- Occupational Health and Safety Act No. 36 of 2010
- Environmental Impact Assessment Regulations No 28 of 1997.
- Public Roads Act of 2002.
- National Environmental Policy.
- Procedures Manual for Environmental and Social Management in the Roads Sector in Zambia of December 2006

The following factors are anticipated to be affected by the planned development of the borrow pits:

#### **Environmental hazards**

Borrow pits are of concern for human health and safety. They can turn into a breeding area for mosquitoes and other pests in the rainy season should they become flooded with water. On the other hand, children may use the collected water as a form of recreation and contract possible waterborne diseases or in other instances can even drown leading to a loss of life, which can cause uncertainty in the community.

#### **Landslide accidents:**

Some abandoned borrow pits can be threatening to public safety due to their dangerous vertical walls that are prone to landslides after heavy rains that enhance saturation and liquefaction.

#### **Ecosystem**

Clearing of vegetation for borrow pits and not restoring it to its original state is a distortion of ecosystem, which can lead to loss of life and ecosystem services, groundwater contamination and loss of arable land.

#### **Land use and waste management**

The geologic setting of the area calls for proper land use and waste management practices to protect the soil and water resources of the area.

#### **Groundwater**

The incidence of high porosity and permeability as well as a shallow water table makes the groundwater in the area very vulnerable to pollution.

#### **Land management**

Human activities that trigger erosion, such as roadside excavation, abandoned borrow pits and roadside waste disposal, must not be allowed.

Public awareness: Community-based low-technology land management practices and public awareness programs through workshops could halt the development of many gullies from abandoned borrow pits.

To mitigate these risks, the following mitigation measures will be applied:

Activity	Risk/Impacts	Mitigation Measures	Responsibility
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Site selection/ Site preparation	<ul style="list-style-type: none"> <li>• Loss of vegetation</li> <li>• Loss of habitat</li> <li>• Visual scarring</li> <li>• Soil erosion</li> </ul>	<ul style="list-style-type: none"> <li>• Complete a preliminary site assessment prior to undertaking excavation.</li> <li>• Avoid using sensitive areas or sites that drain directly to the sensitive area.</li> <li>• Ensure borrow pits will not be located in wetlands or densely vegetated areas and located at least 50 m from a watercourse.</li> <li>• Test pits/excavations to confirm the quantity and quality of material in the proposed site.</li> <li>• Determine presence of any ground water.</li> <li>• Design must comply with the standards.</li> <li>• Utilize existing borrow pits to avoid opening new sites.</li> <li>• Contractor shall always carefully consider what machinery is appropriate to the task while minimizing the extent of environmental damage and unnecessary movements should be prohibited.</li> </ul>	Satellite PMU and contractor
Excavation Operation	Personnel injury or illness	<ul style="list-style-type: none"> <li>• Ensure personnel are properly trained and equipped with PPEs.</li> <li>• Regularly inspection of pits for hazards (e.g., uneven terrain, falling objects)</li> <li>• Develop emergency response plan for personnel injury or illness.</li> </ul>	Satellite PMU and contractor
	Air emissions	<ul style="list-style-type: none"> <li>• Limit vehicle speeds on unsurfaced roads.</li> <li>• Rehabilitate disturbed areas with vegetation as soon as operation is completed.</li> <li>• Maintain equipment and vehicles in good working order to avoid excessive emissions.</li> <li>• Borrow pit working floors should be sprayed with water from time to time to reduce dust emission during operations.</li> <li>• Spray roads, material stockpiles and screening areas</li> </ul>	Satellite PMU and contractor
	Collapse of pit walls or floor	<ul style="list-style-type: none"> <li>• Ensure pit is properly excavated and sloped.</li> <li>• Install shoring or bracing as needed.</li> <li>• Regularly inspect pit for signs of instability</li> </ul>	Satellite PMU and contractor
	Equipment damage or loss	<ul style="list-style-type: none"> <li>• Ensure equipment is properly maintained and operated.</li> <li>• A maintenance schedule should be prepared to ensure that equipment is in its best form to no cause unnecessary pollution such as noise, emissions and makes effective use of energy.</li> <li>• Equipment used in the borrow pit process must be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.</li> <li>• Regularly inspect pit for hazards (e.g., uneven terrain, debris)</li> <li>• Develop emergency response plan for equipment damage or loss.</li> </ul>	Satellite PMU and contractor
	Environmental contamination	<ul style="list-style-type: none"> <li>• Regularly monitor for signs of contamination</li> <li>• Develop emergency response plan for environmental contamination.</li> <li>• Topsoil shall be stored separately from subsoil and other overburden material.</li> <li>• Stockpiles shall not be allowed to become contaminated with oil, diesel, petrol, garbage or any other material, which may inhibit the later growth of vegetation</li> </ul>	Satellite PMU and contractor

Blasting	Flying stones Noise and vibrations Dust	<ul style="list-style-type: none"> <li>• Avoid blasting and consider alternatives to blasting, such as hydraulic hammers or other mechanical methods.</li> <li>• If blasting cannot be avoided, do the following: <ul style="list-style-type: none"> <li>• All blasting and handling of blasting materials should be done in accordance with the Explosives Act and the Mines and Minerals Development Act.</li> <li>• A risk assessment must consider the safety of the people, infrastructure, and the surrounding environment. A pre and post blasting survey should be done.</li> <li>• A blasting time schedule shall be distributed to all surrounding villages indicating the time and date for blasting activities. It is recommended that blasting takes place during daylight hours.</li> <li>• Blasting shall be carried out that ground vibration, air blast and scatter are kept within such limits as to avoid damage to adjacent structures/machinery already placed at the works.</li> <li>• Any fly rock should be cleared after blasting</li> </ul> </li> </ul>	Satellite PMU and contractor
	Water accumulation and flooding	<ul style="list-style-type: none"> <li>• Install drainage measures (e.g., pumps, pipes)</li> <li>• Regularly monitor water levels Develop emergency response plan for flooding.</li> </ul>	Satellite PMU and contractor
Stock piling	Drainage disruption Surface disturbances	<ul style="list-style-type: none"> <li>• Establishment of buffer zones from the edge of extraction areas</li> <li>• Adoption of settlement ponds, sumps, and lagoons designed to allow adequate retention time.</li> <li>• Geotechnical monitoring of slopes, disposal sites, and water drainage</li> </ul>	Satellite PMU and contractor
Loading, hauling, and transportation	Increased risk of accidents Noise Soil contamination from oil/fuel leaks	<ul style="list-style-type: none"> <li>• Avoid unnecessary excessive vehicle movement.</li> <li>• Noise that could cause a major disturbance should only be carried out during daylight hours and with advance warning provided as above.</li> <li>• The maintenance of vehicles equipment to take place only in the maintenance workshops which are not located on the borrow pit. No vehicle may be extensively repaired in any place other than in the maintenance yard.</li> </ul>	Satellite PMU and contractor
Reinstatement of Borrow Pits	Land degradation when sourcing material for re-instatement	<ul style="list-style-type: none"> <li>• Fill excavated site with suitable materials.</li> <li>• Use material stored from excavation activities.</li> <li>• Develop suitable surface slopes, drainage ditches and conduits to prevent water from collecting at the sites.</li> <li>• Establish a vegetation cover corresponding to at least 75% of the cover present prior to excavation.</li> <li>• Affected land should be rehabilitated to acceptable uses consistent with local or regional land use plans. Land that is not restored for a specific community use should be seeded and revegetated with native species</li> </ul>	Satellite PMU and contractor
Review and Monitor	Ensure the Borrow Pit Management Plan Implementation	<ul style="list-style-type: none"> <li>• Borrow Pit Management Plan will be reviewed and revised as necessary, every quarter to avoid lapses and ensure consistency.</li> <li>• Review borrows pit management and monitoring reports.</li> <li>• Review reinstated borrow pit areas prior to completion of road works.</li> </ul>	Satellite PMU and contractor

## **Annex 4: Environmental and Social Impact Assessment Template**

### **EXECUTIVE SUMMARY**

Briefly describe the proposed project, location, investment cost, alternatives considered, major impacts, and environmental management commitments objectives, relevant legislation, technology, project alternatives, main findings and lifespan.

### **TABLE OF CONTENTS**

#### **1.0 INTRODUCTION**

- Give a brief project background, objectives.
- Summary description of the project including project rationale
- The developer's physical address and the contact person.
- Particulars of Shareholders and Directors
- Track Record (Previous Experience of Enterprise)
- Brief description of the Location
- % age of shareholding by each shareholder
- The developer's physical address and the contact person and details.
- Total Project Cost/Investment
- Proposed Project Implementation Date

#### **2.0 LEGAL AND POLICY FRAMEWORK**

##### **2.1 Policy, legal and institutional framework relevant to the project**

- Policy, legal and institutional framework relevant to the project
- Relevant World Bank Environmental and Social Standards
- Specific sections of the cited policy, legal and institutional framework relevant to the proposed project.
- Relevance of cited sections to the proposed development
- Compliance (how the development complies/will comply to the cited sections)

##### **2.2 International agreements and Conventions**

- International agreements and conventions relevant to the proposed project.
- Specific sections of the agreements and conventions relevant to the proposed project.
- Relevance of cited sections of the agreement or convention to the proposed development
- Compliance (how the development complies/will comply to the cited sections)

### **3.0 DESCRIPTION OF THE PROJECT**

#### **3.1 Location**

- Describe the project location supported by a location map drawn to an appropriate scale with a legend, direction of the True North. The location map must be printed on at least "A3" paper size for it to be clear.
- Provide the spatial extent of the proposed project site (Province, City/ Municipality/ district, specific site)
- Provide landmarks and their distances from the proposed site to help identify proposed project site.
- Identify surrounding developments.
- Provide coordinates of the proposed site where applicable

#### **3.2 Nature of the Project**

- Raw materials (including hazardous materials and their storage on site)
- Process and technology (including flow diagrams)
- Products and by-products
- Production capacity
- Schedule and lifetime of the project

#### **3.3 Main activities**

- Site preparation phase
- Construction phase

- Operation phase
- Closure phase

#### **4.0 PROJECT ALTERNATIVES**

- i. Identification of alternatives such as but not limited to:
  - a) Project need
  - b) Site
  - c) Design
  - d) Technology
  - e) Process
  - f) Raw materials
  - g) Justification for the selected option(s)
- ii. Analysis of each of the identified alternatives
- iii. List of chosen alternatives in order of preference
- iv. Reasons for choosing the preferred alternatives and rejecting the other alternatives.

#### **5.0 DESCRIPTION OF THE BASELINE ENVIRONMENT**

##### **5.1 Ecological Resources**

###### **a. Fauna**

- Terrestrial species (Include common names and respective scientific names)
- Aquatic species (Include common names and respective scientific names)
- Identification of rare or endangered species (Include common names and respective Scientific names)

###### **b. Flora**

- Terrestrial species (Include common names and respective scientific names)
- Aquatic species (Include common names and respective scientific names)
- Identification of rare or endangered species (Include common names and respective scientific names)

###### **c. Birds**

- Field survey of bird species (Include common names and respective scientific names)
- Identification of rare and endangered bird species

##### **5.2 Geology and Hydrogeology**

##### **5.3 Drainage**

##### **5.4 Climate**

##### **5.5 Landscape and Topography**

##### **5.6 Land Use and Soils**

##### **5.7 Ground and Surface Water**

##### **5.8 Air quality and Noise**

##### **5.9 Social, Economic and Cultural Issues**

- Economic activities
- Education
- Labour
- Gender, GBV (including SEA/SH)
- Culture

##### **5.10 Built Environment**

#### **6.0 ENVIRONMENTAL & SOCIAL IMPACTS**

Identify and discuss:

##### **6.1 Positive Impacts**

- 6.1.1 Socio-economic Environment
- 6.1.2 Physical Environment
- 6.1.3 Biological Environment

##### **6.2 Negative Impacts**

- 6.2.1 Socio-economic Environment
- 6.2.2 Physical Environment
- 6.2.3 Biological Environment

### 6.3 Methodology of Impact Evaluation

Evaluation of impacts for significance should combine:

- the frequency of occurrence of the impact
- the duration of the impact
- the severity of impact
- the spatial extent of the impact
- the sensitivity of the element being impacted.

### 7.0 ENVIRONMENTAL SOCIAL MANAGEMENT PLAN

State the Environmental Management Commitments for mitigating negative Environmental Impacts identified in Section 6.0 and measures for enhancing positive impacts.

7.1 Environmental Monitoring Plan (These should include environmental management cost estimates, responsible personnel, and the frequency of monitoring)

Aspect	Impact	Mitigation/ Enhancement measure	Frequency of Monitoring	Time frame	Performance indicator	Responsible person	Cost

7.2 Budget

7.3 Implementation Timeline

### 8.0 STAKEHOLDER ENGAGEMENT AND PUBLIC DISCLOSURE

- Methodology conducted in selecting and engaging stakeholders.
- List of stakeholders consulted and involved in project implementation.
- Methods and channels of communicating with stakeholders.
- Summary of consultations held.
- Channels to be employed to disclose the ESMP.

### 9.0 GRIEVANCE REDRESS MECHANISM

- Procedures for receiving grievances/complaints and feedback.
- Channels of grievance/complaint and feedback receipt
- Methods of resolving feedback and associated timelines.

### 10.0 DECLARATION OF AUTHENTICITY OF REPORT CONTENTS

#### 11.0 BIBLIOGRAPHY

#### 12.0 APPENDICES

- Maps and satellite images
- Figures (tables, charts, graphs, models, photographs).
- Certificate of Incorporation
- Investment License
- Title deeds or lease agreements
- Certificates of Incorporation
- Agreements
- Asset valuation reports
- Approval documents
- Any other relevant supporting documents or information that cannot be presented in the main report.
- Minutes and pictures of stakeholder consultations

## Annex 5: Environmental and Social Management Plan Template

Environmental and social risks and impacts are strongly linked to subproject location and scope of activities. This ESMP should be customized for each specific subproject location and activities.

### 1. Subproject Information

<b>Subproject Title:</b>	
<b>Estimated Cost:</b>	
<b>Start/Completion Date:</b>	

### 2. Site/Location Description

*This section concisely describes the proposed location and its geographic, ecological, social and temporal context including any offsite investments that may be required (e.g., access roads, water supply, etc.). Please attach a map of the location to the ESMP.*

### 3. Subproject Description and Activities

*This section lists all the activities that will take place under the subproject, including any associated activities (such as building of access roads or transmission lines, or communication campaigns that accompany service provision).*

### 4. ESMP Matrix: Risk and Impacts, Mitigation, Monitoring

*This section should identify anticipated site-specific adverse environmental and social risks and impacts; describe mitigation measures to address these risks and impact; and list the monitoring measures necessary to ensure effective implementation of the mitigation measures. It may draw from the ESMF's pre-identification of potential risks/impacts and mitigation measures, as applicable, and drill down further to ensure relevance and comprehensiveness at the site-specific level. For subprojects involving construction, two sets of tables may be needed, for the construction phase and the operation phase.*

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring		
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility

### 5. Capacity Development & Training

*Based on the implementation arrangements and responsible parties proposed above, this section outlines any capacity building, training or new staffing that may be necessary for effective implementation.*

### 6. Implementation Schedule and Cost Estimates

*This section states the implementation timeline for the mitigation measures and capacity development measures described above, as well as a cost estimate for the implementation. The cost estimate can focus on the line items that will be covered by the project implementing agency, with costs of mitigation measures to be implemented by the contractor left to the contractor to calculate.*

### 7. Attachments

ESCOPs, relevant E&S management plans, GRM etc.

## IV. Review & Approval

<b>Prepared By:</b> .....(Signature) <b>Position:</b> ..... <b>Date</b> .....	
<b>Reviewed By:</b> .....(Signature) <b>Position:</b> ..... <b>Date</b> .....	<b>Approved By:</b> .....(Signature) <b>Position:</b> ..... <b>Date</b> .....

## Annex 6: The Electronic Waste Management Plan

### 1.0 Scope

In this project, there are potential environmental and social risks and impacts related to the electronic waste through activities under the Subcomponent 1.2, where electronic devices such as computers, monitors, printers, peripheral equipment, biometric registration kits, etc. will be used by INRIS offices in the rollout of new national ID cards to refugees in all three refugee hosting districts (Kalumbila, Nchelenge, and Kaoma). In addition, the electrification using a mix of solar and grid expansion under Component 2 may generate e-wastes related to discarded solar panels, etc. This Electronic Waste Management Plan (EWMP) has been mandated by World Bank (WB) ESS3: Resource Efficiency and Pollution Prevention and Management to identify and mitigate potential environmental and social risks and impacts related to management of electronic waste during the implementation of the Zambia Refugee and Host Communities project. The EWMP is a living document that shall be reviewed and updated throughout the implementation of the project. The EWMP applies to all project beneficiaries that will be supported by the Zambia Refugee and Host Communities Project. Site specific ESMP will be updated using information contained in this EWMP.

### 2.0 Consideration on Electronic Waste Management

The Zambia Refugee and Host Communities Project will manage environmental and social risks and impacts of the project throughout the project life cycle in a systematic manner, proportionate to the nature and scale of the project and to the potential risks and impacts. The generation of all forms of electronic waste is one of those risks and impacts that must be considered during preplanning, construction, operations, and the decommissioning phases of the project.

Electronic waste management planning for the Zambia Refugee and Host Communities project shall be conducted as early as possible to identify, avoid, minimize and mitigate the risks and impacts related to electronic waste. The EWMP aims at developing sound management practices and procedures within the Zambia Refugee and Host Communities project areas. Electronic waste includes hazardous, solid, demolition or construction, clinical and electronic waste. The focus of this plan is on electronic waste or E-waste. This e-waste management plan should be implemented throughout the project's lifecycle to protect the environment, safeguard the health of the local communities, and comply with The World Bank Environment, Health and Safety Guidelines (EHS) and Good International Industry Practice (GIIP).

### 3.0 E-Waste Definitions

Electronic waste (E-waste) is a term used to cover items of all types of electrical and electronic equipment (EEE) and its parts that have been discarded, irreparable or at the end of life. Although E-waste is a general term, it is considered to cover laptops, desktops, tablets, TV's, mobile phones, registration equipment and household appliances. E-waste contains materials that, if mishandled, can be hazardous to human health and the environment, but, most importantly, also materials that are valuable and scarce.

### 3.1 Toxicity and Radioactive Nature of E-waste to the Human, Water, Soil, and Animals

Electrical and electronic equipment contain different hazardous materials, which are harmful to human health and the environment if not disposed of carefully. While some naturally occurring substances are harmless in nature, their use in the manufacture of electronic equipment often results in compounds, which are hazardous (e.g., chromium becomes chromium VI). Lead, mercury, cadmium, and polybrominated flame retardants are found in electronic equipment and are all persistent, bio-accumulative toxins (PBTs). They can create environmental and health risks when computers are manufactured, incinerated, landfilled, or melted during recycling. PBTs, are a dangerous class of chemicals that have longevity in the environment and bioaccumulate in living tissues. PBTs are harmful to human health and the environment and have been associated with cancer, nerve damage and reproductive disorders. Table 1 is a selection of the toxic substances in E-waste.

**Table 1. Toxic Substances in E-waste**

Substance	Occurrence in E-waste
<b>Halogenated compounds</b>	
TBBA (tetrabromo-bisphenol-A) PBB (polybrominated biphenyls) PBDE (polybrominated diphenyl ethers)	Fire retardants for plastics (thermoplastic components, cable insulation) TBBA is presently the most widely used flame retardant in printed
Chlorofluorocarbon (CFC)	Cooling unit, Insulation foam
PVC (polyvinyl chloride)	Cable insulation

<b>Heavy metals and other metals:</b>	
Arsenic	Small quantities in the form of gallium arsenide within light emitting diodes
Barium	Getters in CRT
Beryllium	Power supply boxes which contain silicon-controlled rectifiers and x-ray lenses
Cadmium	Rechargeable NiCd-batteries, fluorescent layer (CRT screens), printer inks and toners, photocopying-machines (printer drums)
Chromium VI	Data tapes, floppy-disks
Lead	CRT screens, batteries, printed wiring boards
Lithium	Li-batteries
Mercury	Fluorescent lamps that provide backlighting in LCDs, in some alkaline batteries and mercury wetted switches
Nickel	Rechargeable NiCd-batteries or NiMH-batteries, electron gun in CRT
Rare Earth elements (Yttrium, Europium)	Fluorescent layer (CRT-screen)
Selenium	Older photocopying-machines (photo drums)
Silver	Capacitors, switches (contacts), batteries, resistors
Zinc sulphide	Interior of CRT screens, mixed with rare earth metals

### **Arsenic**

Arsenic is a poisonous metallic element, which is present in dust and soluble substances. Chronic exposure to arsenic can lead to various diseases of the skin and decrease nerve conduction velocity. Chronic exposure to arsenic can also cause lung cancer and can often be fatal.

### **Barium**

Barium is a metallic element that is used in sparkplugs, fluorescent lamps, and "getters" in vacuum tubes. Being highly unstable in the pure form, it forms poisonous oxides when in contact with air. Short-term exposure to barium could lead to brain swelling, muscle weakness, damage to the heart, liver, and spleen. Animal studies reveal increased blood pressure and changes in the heart from ingesting barium over a long period of time. The long-term effects of chronic barium exposure to human beings are still not known due to lack of data on the effects.

### **Beryllium**

Beryllium has recently been classified as a human carcinogen because exposure to it can cause lung cancer. The primary health concern is inhalation of beryllium dust, fume, or mist. Workers who are constantly exposed to beryllium, even in small amounts, and who become sensitized to it can develop what is known as Chronic Beryllium Disease (berylliosis), a disease that primarily affects the lungs. Exposure to beryllium also causes a form of skin disease that is characterized by poor wound healing and wart-like bumps. Studies have shown that people can still develop beryllium diseases even many years following the last exposure.

### **Brominated flame retardants (BFRs)**

The three (03) main types of BFRS used in electronic and electrical appliances are Polybrominated biphenyl (PBB), Polybrominated diphenyl ether (PBDE) and Tetrabromo-bisphenol - A (TBBPA). Flame-retardants make materials, especially plastics and textiles, more flame resistant. They have been found in indoor dust and air through migration and evaporation from plastics. Combustion of halogenated case material and printed wiring boards at lower temperatures releases toxic emissions including dioxins, which can lead to severe hormonal disorders. Major electronics manufacturers have begun to phase out brominated flame-retardants because of their toxicity.

### **Cadmium**

Cadmium components may have serious impacts on the kidneys. Cadmium is adsorbed through respiration but is also taken up with food. Due to the long half-life in the body, cadmium can easily be accumulated in amounts that cause symptoms of poisoning. Cadmium shows a danger of cumulative effects in the environment due to its acute and chronic toxicity. Acute exposure to cadmium fumes causes flu-like symptoms of weakness, fever, headache, chills, and sweating and muscular pain. The primary health risks of long-term exposure are lung cancer and kidney damage. Cadmium also is believed to cause pulmonary emphysema and bone disease (osteomalacia and osteoporosis).

### **Chlorofluorocarbons (CFCs)**

Chlorofluorocarbons are compounds composed of carbon, fluorine, chlorine, and sometimes hydrogen. Used mainly in cooling units and insulation foam, they have been phased out because when released into the atmosphere, they accumulate in the stratosphere and have a deleterious effect on the ozone layer. This results in increased incidence of skin cancer in humans and in genetic damage in many organisms.

### **Chromium**

Chromium and its oxides are widely used because of their high conductivity and anti-corrosive properties. While some forms of chromium are nontoxic, Chromium (VI) is easily absorbed in the human body and can produce various toxic effects within cells. Most chromium (VI) compounds are irritating to eyes, skin, and mucous membranes. Chronic exposure to chromium (VI) compounds can cause permanent eye injury, unless properly treated. Chromium VI may also cause DNA damage.

### **Dioxins**

Dioxins and furans are a family of chemicals comprising 75 different types of dioxin compounds and 135 related compounds known as furans. Dioxins is taken to mean the family of compounds comprising polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). Dioxins have never been intentionally manufactured but form as unwanted by-products in the manufacture of substances like some pesticides as well as during combustion. Dioxins are known to be highly toxic to animals and humans because they bio-accumulate in the body and can lead to malformations of the fetus, decreased reproduction and growth rates and cause impairment of the immune system among other things. The best-known and most toxic dioxin is 2, 3,7,8-tetrachlorodibenzo-p-dioxin (TCDD).

### **Lead**

Lead is the fifth most widely used metal after iron, aluminum, copper, and zinc. It is commonly used in the electrical and electronics industry in solder, lead-acid batteries, electronic components, cable sheathing, in the glass of CRTs, etc. Short-term exposure to high levels of lead can cause vomiting, diarrhea, convulsions, coma or even death. Other symptoms are appetite loss, abdominal pain, constipation, fatigue, sleeplessness, irritability, and headache. Continued excessive exposure, as in an industrial setting, can affect the kidneys. It is particularly dangerous for young children because it can damage nervous connections and cause blood and brain disorders.

### **Mercury**

Mercury is one of the most toxic yet widely used metals in the production of electrical and electronic applications. It is a toxic heavy metal that bio-accumulates causing brain and liver damage if ingested or inhaled. In electronics and electrical appliances, mercury is highly concentrated in batteries, some switches and thermostats, and fluorescent lamps.

### **Polychlorinated biphenyls (PCBs)**

Polychlorinated biphenyls (PCBs) are a class of organic compounds use in a variety of applications, including dielectric fluids for capacitors and transformers, heat transfer fluids and as additives in adhesives and plastics. PCBs have been shown to cause cancer in animals. PCBs have also been shown to cause several serious non-cancer health effects in animals, including effects on the immune system, reproductive system, nervous system, endocrine system, and other health effects. PCBs are persistent contaminants in the environment. Due to the high lipid solubility and slow metabolism rate of these chemicals, PCBs accumulate in the fat-rich tissues of almost all organisms (bioaccumulation).

### **Polyvinyl chloride (PVC)**

Polyvinyl chloride (PVC) is the most widely used plastic, used in everyday electronics and appliances, household items, pipes, upholstery, etc., PVC is hazardous because contains up to 56 percent chlorine which when burned produces large quantities of hydrogen chloride gas, which combines with water to form hydrochloric acid and is dangerous because when inhaled, leads to respiratory problems.

### **Selenium**

Exposure to high concentrations of selenium compounds cause selenosis. The major signs of selenosis are hair loss; nail brittleness, and neurological abnormalities (such as numbness and other odd sensations in the extremities).

## **4.0 Electronic Waste Management Plan**

### **4.1 E-Waste Management under the Zambia Refugee and Host Communities Project**

This Electrical Waste Management Plan (E-Waste MP) will be implemented throughout the Zambia Refugee and Host Communities Project lifecycle. The scope of this EWMP also applies to the use of electronic devices used for the project. The plan is required to be adopted during project implementation period when the project finances electrical/electronic equipment (computers, tablets, mobile phones, laptops, etc.) are replaced, irreparable or at their end of life. This plan shall comply with the existing Zambian legislation and regulations, World Bank Environmental Health and Safety Guidelines (WB EHS) and Good International Industrial Practice (GIIP).

### **4.2 Aim of Electronic Waste Management Plan**

The aim is this E-Waste management plan, to provide guidelines and procedures to beneficiaries under the Zambia Refugees and Host Communities project on how to manage risks related to management of electronic waste.

### 4.3 Objective

The overall objectives of the waste management assessment are summarized below: (i) to assess the activities involved for the proposed project and determine the type, nature, and estimated volumes of waste to be generated; (ii) to identify any potential environmental impacts from the generation of waste at the project sites; (iii) to recommend appropriate waste handling and disposal measures in accordance with the current legislative requirements, WB ESHG and GIIP.

### 4.4 Legal Framework

#### 4.4.1 Zambian Environmental Law

The Environmental Management (Licensing) Regulations (SI. No 112 of 2013) implements the Environmental Management Act 2011 and concerns a wide variety of matters regarding environmental protection including air quality control, waste management, hazardous waste, and other substances harmful to the environment such as pesticides and ozone-depleting substances. E-Waste belongs to the fifth schedule, regulation 18 (1), list of hazardous wastes, 'Waste electronic or electronic assemblies' Any contractor that is contracted to treat, handle, transport, store, dispose of, transit, trade in shall hold a ZEMA hazardous waste license. Project related E-waste could end up in a landfill site. However, any hazardous waste disposal using this method, the landfill must be managed in accordance with the guidelines prescribed in the regulation's ninth schedule and in accordance with section 24. (2) the requirements of an operator at a hazardous waste disposal site. There will be no transboundary movement of project related hazardous waste.

#### 4.4.2 Electronic Waste Management in Zambia

##### Legal and Policy Assessment of E-Waste Management in Zambia

Currently, Zambia does not have explicit regulations on e-waste. However, the regulations of e-waste are part of the Environmental Management (Licensing) Regulations, Statutory Instrument No.112 of 2013 (the Licensing Regulations), under the hazardous waste regulations. The definition of hazardous waste covered e-waste, which category had been specifically identified as a waste stream under the fifth to seventh schedules of the licensing Regulations. Part IV of the Licensing Regulations provided for licensing of the generation, transportation, storage, handling, pre-treatment, treatment, export, import, trade in transit and disposal of hazardous waste.

The extended Producer Responsibility Statutory Instrument (SI) No. 65 of 2018 is also used to regulate e-waste. The SI encourages reuse, recycling or recovery before disposal. The SI also extends the responsibility of the producer to the post-consumer stage of the product lifecycle. This offers an opportunity for both manufacturers and importers to take back and recycle the products placed in the national markets.

Following a Performance Audit on Management of E-waste in Zambia by the Auditor General in September 2020, a Parliamentary Committee recommended an in-depth assessment on the gaps in policy and legislation on e-waste, quantities and types of e-waste generated and disposed of by different categories of players in the country needs to be conducted. The assessment will provide enough information to guide the scope of the policy and regulatory framework. The Committee also noted that without a very clear Policy and regulatory framework, it has been very difficult for Local Authorities who are a key player to manage e-waste in its entirety from generation, segregation, collection, handling, storage, transportation, categorization, treatment, recycling and final disposal including the after care of e-waste disposal sites.

However, Zambia is a signatory to the Basel Convention of 1989 where member states agreed to ensure that disposal of hazardous waste was consistent with the protection of human health and the environment whatever the place of their disposal. The Convention regulates the transboundary- movement of hazardous waste and other waste and obliges its parties to ensure that such wastes are managed and disposed of in an environmentally sound manner or to export the waste to a country with the necessary facilities.

- In view of the above, on 29 April 2016, ZICTA signed a Memorandum of Understanding (MoU) with Zambia Environmental Management Agency (ZEMA). The MoU was entered into to establish the way the parties will collaborate and interact with each other with respect to the effective management of the new and rapidly growing stream of electrical and electronic waste and the enablement of a sustainable environment insofar as it relates to ICTs. The scope of the ZICTA-ZEMA MoU is outlined below:
  - Developing and monitoring of standards and guidelines for environmentally sound management and disposal of electronic waste to avoid duplication of efforts and to also maximize benefits on the use of limited resources.
  - Developing standards and mechanisms to promote green ICTs, energy efficiency and environmental sustainability.
  - Protecting human health and the environment which shall be achieved by recognizing the mandate given to the Authority by the ICT Act to establish and publish technical standards relating to all electronic communications equipment and to perform type approval of all ICT equipment to be used in Zambia based on these standards.

The Zambia Bureau of Standards (ZABS) is the body responsible for standards formulation, quality control, quality assurance, and import and export quality inspections. By June 2021, ZABS and the Energy Regulation Board (ERB) supported by Africa Clean Energy Technical Assistance Facility (ACE TAF) adopted and gazetted the International Electrical Commission (IEC) 62257-9-5 and 62257-9-8 Standards for both solar systems and solar home systems.

The ZABS and ZICTA are leading the adoption of e-waste standards with 11 proposed standards of which 4 have been adopted. Under the existing legal frameworks, some private sector players have ceased the opportunity to collect, dismantle, repackage e-waste and transport the waste to neighbouring countries for recycling.

#### 4.3 World Bank Environmental and Social Standards (ESS)

The project will follow national legislation, ESHG and GIIP for the management of E-waste. The project will avoid the disposal of E-waste by reuse, recycle and recover. Where E-waste cannot be reused, recycled, or recovered then the project will treat, destroy or dispose of E-waste in accordance with The Environmental Management (Licensing) Regulations (SI. No 112 of 2013). That is, when hazardous waste management is conducted by third parties, the project will use ZEMA license hazardous waste contractors and all E-waste will be disposed of in hazardous waste landfill in accordance with the Environmental Management (Licensing) Regulations (SI. No 112 of 2013).

The WB ESHG promotes waste prevention, reuse, and recycling, good housekeeping, inventory control, avoidance of damage and instituting procurement measures that allow the return of reusable material. It requires the segregation of hazardous type wastes from other waste, its appropriate storage (labelled containers) and record keeping. It allows collection, transport, and disposal in accordance with the Environmental Management (Licensing) Regulations (SI. No 112 of 2013). The ESHG also requires monitoring records for hazardous waste collected, stored, or shipped using the recommended procedures (see below).

#### 4.4. Good International Industry Practice (GIIP)

The GIIP promotes the use of an obligation on distributors to offer to consumers a take-back system where electronic waste-items may be disposed of free of charge. There are two types of take-back systems, and that distributors of EEE items must offer one of these schemes to their customers. Examples include free in-store take-back scheme where distributors accept E-waste items from customers purchasing equivalent new items. Distributors take-back scheme where consumers can dispose of WEEE items free of charge at designated collection facilities. E-waste generators should manage and dispose of E-waste responsibly in ways already mentioned in the preceding paragraphs. In addition, when purchasing a new electrical item arrange with the retailer to collect the old one. Businesses and other users (i.e., schools, hospitals, and government agencies) of electrical and electronic goods (EEE) must ensure that all separately collected E-waste is treated and recycled.

### 5.0 Identification of Electronic Waste

#### Anticipated Electronic Waste Generation

Under Component 1.b of the Zambia Refugee and Host Communities Project, will procure different Information and Communication Technologies (ICTs) which will be used in the issuance of the new biometric cards. This component will aim to rationalize the existing permits and documents issued to refugees into one format and improve the application process. The documents will be stored digitally for ease of access with appropriate data protection safeguards. This exercise will be aligned to the national process and will also benefit the host community.

Different ICTs equipment will be procured such as computers, laptops, scanners, printers, biometric registration kits, plotters; Servers and chassis for data storage and backup facilities; networking and connectivity (LAN/WAN); and other equipment, video surveillance, electronic queue, access control devices for offices. Also, the obsolete ICTs will be discarded and replaced with new ICTs. The obsolete ICTs and the newly procured ICTs after the end of their useful life will become the electronic waste.

Table 2 provides some of the ICT's devices that will be procured under the ZRCP the actual specifications and quantities of these ICTs will be known during project implementation.

**Table 2: Overview of Information Technologies Equipment (ICTs)**

S/N	ITEM	QUANTITY
1	Laptops/Desktops	To be advised (TBA
2	Document Scanners	TBA
3	Mid-range Printers	TBA
4	Entry-level Printers	TBA
5	Communication Equipment	TBA
6	Chassis for Servers and Storages	TBA
7	Servers	TBA

8	Network Equipment for Data Center	TBA
9	Data Storage	TBA
10	Video Surveillance Package	TBA
11	Automated Digital Devices	TBA
12	Biometrics Registration kits	TBA

It is expected from the above table that electronic waste generation will most likely be after the project life of 4 years. The quantities of electronic waste expected to be generated will only be known after the actual quantities to be procured have been known.

Similarly, the list, type and quantities of obsolete ICTs is not yet available and shall only be known during project implementation. Once the quantities are known, the electronic waste management plan shall be updated accordingly.

A post project environmental audit shall be required to ensure that the disposal of the ICTs devices is according to this electronic waste management plan.

### **5.1 Proposed Mitigation Measures**

This electronic waste management plan contains proposed mitigation measures through which electronic waste under the Zambia Refugee and Host Communities Project may be managed in compliance with the Environmental Management Act No.12 of 2011 that is read together with the Environmental Management (Licensing) Regulation, Statutory Instrument No.112 of 2013.

The proposed mitigation measures have also adopted the World Bank Environmental and Social Standards (ESS) in particularly ESS3: Resource Efficiency and Pollution Prevention and Management, World Bank Environmental Safety and Health Guidelines (WB ESHG) and Good International Industry Practice.

The mitigation measures are aimed at avoiding, minimizing, and reducing potential environmental and social impacts related to generating and disposal of electronic waste during the implementation of the Zambia Refugee and Host Communities project. Table 3 presents a description of some of the mitigation measures that have been proposed under the Zambia Refugee and Host Communities project.

## **5.2 Procurement**

The first mitigation measure is to ensure that all electronic devices are procured from retailers and sources that are credible. All electronics purchased must be of high quality, with date of manufacture and warranty clearly stated. This will avoid procurement of poor quality, refurbished, or used second hand electronic devices with a shorter lifecycle that leads to a rapid generation of E-waste. All items should be purchased where applicable, with protective covers and insurance. If possible, retailers or source of electronic items should be engaged where a repair, renewal, recycling or take back scheme option is offered. If the retailer or source does not offer some or all these options, then the project is to locate legally licensed facilities that do repair or recycle electronic items. If such options do not exist, then disposal should follow the Environmental Management (Licensing) Regulations (SI. No 112 of 2013).

## **5.3 Awareness and Sensitization**

The national and satellite PMU shall conduct awareness and sensitization for the end users of electronic devices on the proper methods of disposal once the electronic devices become damaged, irreparable or obsolete. The awareness and sensitization should emphasize on the usefulness and significance of E-waste recycling, and the need for returning all-electronic items procured by the project to a national or decentralized Office.

## **5.4 Disposal**

The last option in the management of E-waste is disposal. All E-waste should be segregated from other waste, collected at a designated collection point at either the national or decentralized office site, inventories, stored in a labelled container.

When preparing for shipment the following should be implemented:

- Name and identification number of the material(s) composing the E-waste.
- Physical state of the E-waste such as, solid, liquid, gaseous or a combination of one or more of these.
- Quantity in terms of kilograms or liters and number of containers.
- Waste shipment tracking documentation to include quantity and type, date dispatched, date transported, and date received, record of the originator, the receiver and the transporter name.
- Method and date of storing, repacking, treating or disposing at the facility, cross-referenced to specific manifest document numbers applicable to the E-waste.
- Location of each E-waste within the facility, and the quantity at each location.

Any contractor that is contracted to treat, handle, transport, store, dispose of, transit, trade in shall hold a ZEMA hazardous waste license because project related E-waste may end up in a landfill site. Should the E-Waste from the project be disposal a landfill, then the landfill must be managed in accordance with the guidelines prescribed in the regulation's ninth schedule and in accordance with section 24. (2), the requirements of an operator at a hazardous waste disposal site. There will be no trans-boundary movement of project related hazardous waste.

## **5.5 Electronic Waste Management Monitoring Plans and Indicators**

### **6.0 Monitoring of Environmental and Social Indicators**

The goal of monitoring is to measure the success rate of the project and determine whether interventions proposed to manage risks and impacts related to management of E-Waste have been successful, or whether further interventions are needed or monitoring extended to the two sites.

#### **5.5.3 Monitoring**

The Ministry of Home Affairs and Internal Security (MoHAIS) implementing this project will be responsible for overall monitoring and evaluation of this E-waste management plan. The results of the monitoring reports will be submitted to the Bank. The Zambia Refugee and Host Communities project will conduct regular monitoring and spot checks through the environmental and social specialist under the satellite PMU under the Zambia Refugee and Host Communities project.

#### **5.5.3 Bank's Monitoring Support**

The Bank will provide second line of monitoring compliance and commitments made in the E-Waste Management Plans through implementation support mission and spot check monitoring as and when need arises. In addition, the MoHAIS through the national and statellite PMU will submit monitoring reports to the Bank as part of its reporting on a quarterly, biannual and annual basis. The Bank support and supervision missions will review these reports and provide feedback.

## **6.0 Monitoring Roles and Responsibilities**

### **6.1 Ministry of Home Affairs and Internal Security**

The Ministry of Home Affairs and Internal Security (MoHAIS) will provide overall coordination and supervision of the Zambia Refugee and Host Communities project through the Office of the Commissioner for Refugees. The Zambia Refugee and Host Communities project will fall under the Office of the Commissioner for Refugees.

### **6.2 Project Implementation Unit**

The Zambia Refugee and Host Communities project which falls under the MoHAIS at the Office of the Commissioner for Refugees which will be responsible for project administration and coordination. This will include support to implement environmental and social management activities, which include e-waste management plan. Component 4 of the project will support overall project operations and implementation of the stakeholder engagement plan and feedback mechanism to inform project implementation.

### **6.3 Zambia Environmental Management Agency**

The Zambia Environmental Management Agency (ZEMA) is a statutory body that was formed under the Environmental Management Act, No 12 of 2011. Some of the functions of ZEMA include integrating environmental management, protecting and conservation of natural resources The agency also ensures prevention and control of environmental pollution and environmental degradation by conducting environmental audit and monitoring.

In relation to this development, some of the functions of ZEMA are to review environmental impact assessment reports and undertake environmental auditing and monitoring. The Act also provides for public participation in decision-making and access to environmental information.

**Table 6-1: The Electronic Waste Management and Monitoring Plan**

Potential Risk and Impact	Proposed Mitigation Measures	Indicator for Monitoring	Responsibility	Budget (USD)
<p><b>Air Pollution</b> through improper disposal which leads to release of toxic, hazardous, and carcinogenic gaseous.</p>	<p>Procure Electronic devices from credible manufactures to avoid purchasing second hand, refurbished or obsolete devices with a short shelf life or already categorized as E-Waste. If possible, select sources offering repair and take back schemes. Ensure insurance coverage and electronic physical protective devices are fitted.</p>	<p>Warranty and take back schemes for Electronic Devices purchased.</p>	<p>ZRCP</p>	<p><b>TBA</b></p>
<p><b>Human Health</b> Impacts due to poor disposal.</p>	<p>Reuse and recycle all E-waste where applicable and possible.</p>	<p>Credibility of manufacturers supplying the electronic devices</p>		
<p><b>Pollution of Water Sources</b> Electrical and electronic equipment contain different hazardous materials, which are harmful to human health and the environment if not disposed of carefully</p>	<p>Reuse and recycle all E-waste where applicable and possible.</p> <p>Establish E-Waste collection points at ZRCP subprojects where there is potential for e-waste generation: including collection bins/receptacles.</p> <p>Conduct awareness and sensitization targeting the users of the electronic devices to ensure that they engage in best practice for E-waste management.</p>	<p>Availability of E-waste receptacles at ZRCP Offices</p>		
<p><b>Soil Contamination</b> Electrical and electronic equipment contain different hazardous materials, which are harmful to human health and the environment if not disposed of carefully. This may lead to soil contamination including landfills</p>	<p>Procure Electronic devices from credible manufactures to avoid purchasing second hand, refurbished or obsolete devices with a short shelf life or already categorized as E-Waste. If possible, select sources offering repair and take back schemes.</p> <p>Ensure insurance coverage and electronic physical protective devices are fitted.</p> <p>Reuse or recycle all E-waste using credible firms registered with ZEMA.</p> <p>Establish E-Waste Collection Centers at all ZRCP offices: including collection bins/receptacles.</p> <p>Use licensed hazardous waste contractors and licensed hazardous waste landfill sites.</p>	<p>Warranty and take back schemes for Electronic Devices purchased.</p>	<p>ZRCP</p>	<p><b>TBA</b></p>
		<p>Credibility of manufacturers supplying the electronic devices</p>		
		<p>Availability of E-waste receptacles at all ZRCP offices</p>		
		<p>Number of awareness and training conducted for users of electronic devices on E-waste.</p>		
		<p>E-waste certificates of disposal using licensed hazardous waste contractors and licensed</p>		
		<p>Number of awareness and training conducted for users of electronic devices on E-waste.</p>		
		<p>E-waste certificates of disposal using licensed hazardous waste contractors and licensed hazardous waste landfills.</p>		

	<p>Create and maintain records of all E-waste items for disposal, securely store and prepare for shipment correctly.</p> <p>Conduct awareness and sensitization targeting the users of the electronic devices to ensure that they engage in best practice for E-waste management.</p>			
<p><b>Growth of informal E-waste disposal centers.</b></p> <p>Improper and indiscriminate disposal of E-waste is likely to lead to the exponential increase of informal waste disposal centers in communities near at all ZRCP offices which further exacerbates the problem of E-waste</p>	<p>Procure Electronic devices from credible manufactures to avoid purchasing second hand, refurbished or obsolete devices with a short shelf life or already categorized as E-Waste.</p> <p>Conduct awareness and sensitizations.</p> <p>Where possible, select sources offering repair and take back schemes. Ensure insurance coverage and electronic physical protective devices are fitted.</p> <p>Establish E-Waste Collection Centers at all ZRCP offices: including collection bins/receptacles.</p> <p>Use licensed hazardous waste contractors and licensed hazardous waste landfill sites.</p> <p>Create and maintain records of all E-waste items for disposal, securely store and prepare for shipment correctly.</p>	<p>Warranty and take back schemes for Electronic Devices purchased.</p> <p>Credibility of manufacturers supplying the electronic devices</p> <p>Availability of E-waste receptacles at all ZRCP offices</p> <p>Number of awareness and training conducted for users of electronic devices on E-waste.</p> <p>E-waste certificates of disposal using licensed hazardous waste contractors and licensed hazardous waste landfills.</p>	ZRCP	TBA
<b>TOTAL</b>				<b>TBA</b>

## **Annex 7: Waste Management Plan**

### **1.0 Scope**

The scope of this waste management plan (WMP) applies to all project beneficiaries that will be supported by the Zambia Refugee and Host Communities project on how to manage non-hazardous and hazardous waste streams. This WMP has been mandated by the project Environmental and Social Commitment Plan (ESCP) and the World Bank ESS3: Resource Efficiency and Pollution Prevention and Management to identify and mitigate potential environmental and social risks and impacts related to management of hazardous and non-hazardous. The WMP addresses the management of all waste streams related to agricultural activities – chemicals, solid, and liquid waste, including hazardous and non-hazardous waste likely to be generated under Zambia Refugee and Host Communities project activities. This plan covers the preconstruction, construction, and operational/decommissioning phases of subproject activities.

### **2.0 Purpose**

The waste management plan aims to provide guidelines on waste reduction, segregation, collection, and disposal practices in accordance with Zambian laws, World Bank environmental and social standards and the EHSGs on practices, to avoid pollution and contamination of the natural environment and negative impacts on the occupational, community health and safety in and around project areas. The Zambia Refugee and Host Communities project is committed to applying the waste hierarchy and will seek to be a zero-waste disposal undertaking. This plan is the primary a tool to guide all undertakings towards waste management.

### **3.0 Waste Management Considerations under the Zambia Refugee and Host Communities Project**

The generation of waste is one of those risks and impacts that must be considered during preparation, construction, operations, and the decommissioning phases of the project. Waste management under the Zambia Refugee and Host Communities project shall be conducted as early as possible to identify avoid, minimize and mitigate the risks and impacts related to hazardous and non-hazardous waste streams.

### **4.0 Objective**

The objectives of this plan assessment are: (i) to assess the activities involved for the proposed project and determine the type, nature, and potential sources of waste to be generated; (ii) to identify any potential environmental impacts from the generation of waste at the project sites; (iii) to recommend appropriate waste handling and disposal measures in accordance with the World Bank environmental and social standards and the national environmental requirements.

### **5.0 Legal Framework**

The waste management plan shall be guided by the following national legislation and World Bank safeguards requirements:

- Environmental Management Act No.12 of 2011).
- Environmental Management (Licensing) Regulations (SI.No.112 of 2013).
- World Bank Environmental and Social Standards (ESSs).
- Environmental Health and Safety and Guidelines (EHSG)

### **5.0 The Waste Management Hierarchy**

Under Component 1 b, 2 and 3 of the Zambia Refugee and Host Communities project, different types of waste streams will be generated during the implementation of the various subprojects for firms and producer organization, and construction of school infrastructure, health infrastructure, the road and off grid-electrification. This includes hazardous and non-hazardous waste. The waste hierarchy presents waste management stages commencing with the most preferable option to the least preferable option. Waste prevention is the most preferred option, followed by reuse, recycling, recovery including energy recovery and as the last option is safe disposal, see Figure 8.

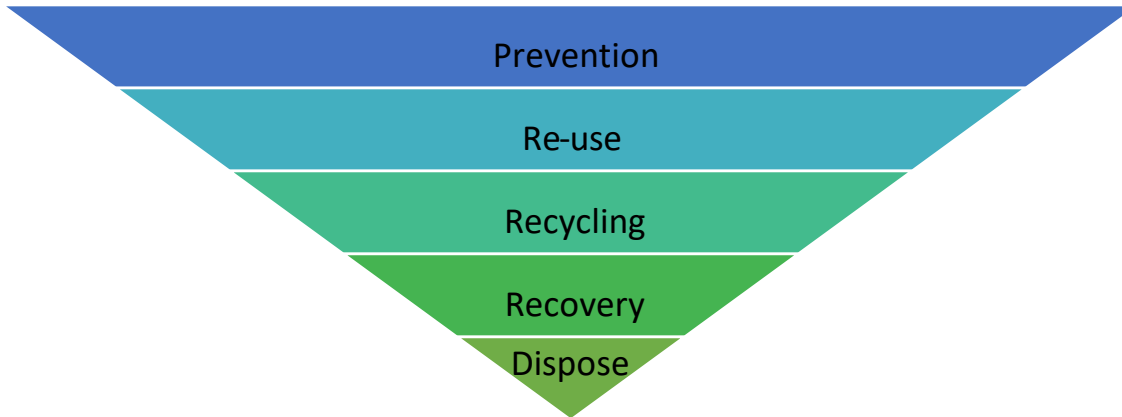


Figure 8: Stages of the Waste Management Hierarchy

These stages are described in more detail below:

### **Prevention**

The subproject will be required to strictly manage purchasing of raw materials to ensure there is minimal wastage. The focus is to prevent raw materials, ingredients, and products from becoming waste in the first place. Any surplus raw materials or produce not meeting exporting standards or products that have been sent back after being exported owing to defects should be reduced recycled or reused by donating to charity lawfully within the country or sending for other necessary applicable use.

The subproject should be committed to avoiding the generation of waste and not using hazardous materials. Where the use of hazardous materials is unavoidable, efforts should be made to identify replacement materials that are non-hazardous through continued research and development.

### **Re-use**

All the agricultural waste from crop harvest residues will be re-used in the cultivation process and soil conditioning. All biodegradable waste to be composed for agricultural use.

### **Recycling**

The subprojects will seek to turn waste into a new product of economic value, such as composting of organic wastes to a standard that meets needed quality. This compost could be used in farming to facilitate improvements in soil conditions and hence improve farmland production levels.

### **Recovery**

Recovery of waste is usually most successful when done in bulk. Therefore, a centralized recovery facility is preferable. Forms of recovery include composting, or anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat and power) from waste. It is recommended that the solid waste management system be modified and improved to make it compatible with the requirements of the proposed bio-methanation technology. In this regard, a biodigester may be used as a combined heat and power system using domestic waste streams, or a composting facility for managing garden waste.

### **Disposal**

Disposal is deemed the last resort and must occur in an environmentally responsible manner. Disposal results in waste going to landfill or to incineration without energy recovery and is the least preferred environmental option.

### **Waste Categories**

Non-hazardous waste will generally include domestic waste, agricultural, commercial waste and construction and demolition debris, sanitation residue. The main waste categories anticipated are:

Biodegradable waste (food and domestic waste, green waste (vegetables, flowers, leaves, fruits) etc.

Recyclable material (paper, glass, bottles, cans, metals, certain plastics, etc.); and

Inert waste (construction and demolition waste, rocks, street gravel, drain silt, debris, etc.).

### Anticipated Waste Generation under Zambia Refugee and Host Communities Project

The Zambia Refugee and Host Communities project is anticipated to generate both hazardous and non-hazardous waste. Specifically, hazardous waste to be generated include e-waste, hydrocarbons contaminated soil, expired pesticides and empty pesticides containers, electronic waste, and laboratory waste. Non-hazardous waste will include food waste, agricultural waste, paper, cardboards, glass, metal waste etc. It is worth noting that electronic waste will be managed using the e-waste management plan while other hazardous waste streams and the non-hazardous will be managed using this waste management plan. The sources of waste and waste generators and the anticipated content of the solid waste to be generated are presented in the table below.

Source	Waste Generators	Solid Waste Content
<b>Agricultural Waste</b>	Farmland, farm fields and plots	Crop harvest by products (crop stems, pods, husks, cobs remnants etc.)
<b>Commercial</b>	PO, SMEs, Laboratory, project beneficiaries	Paper, cardboard, plastics, wood, food wastes, glass, metals, special wastes, hazardous wastes
<b>Construction and demolition</b>	New construction sites, renovation sites, demolition of buildings	Wood, steel, concrete, rubble, contaminated soil, paper

Under Component 2, the project aims to upgrade and expand two health centers, to be identified jointly by the MoHAIS and the Ministry of Health. The project will primarily invest on the improvement of existing physical infrastructure that includes fully equipped maternity units, staff housing, electricity and support to WASH. Following the World Bank's Environmental Health and Safety and Guidelines (EHG), healthcare facilities should establish, operate, and maintain a health care waste management system (HWMS). The facility operators should undertake regular assessment of waste generation quantities and categories to facilitate waste management planning and investigate opportunities for waste minimization on the continuous basis.

#### Type of waste generated from health facilities:

- Chemical waste (e.g., formaldehyde, photographic chemicals, halogenated and nonhalogenated solvents, organic chemicals for cleaning/disinfecting, inorganic chemicals)
- Biological waste (e.g., items contaminated with blood, bloody fluids, other infectious materials)
- General waste (e.g., paper, plastic, food)

Sharps (e.g., needles, scalpels, blades, knives, infusion sets, saws, broken glass, nails, etc.)

**Health facilities waste segregation, collection, and storage:** These health facilities waste should be segregated at the point of generation to avoid mixing hazardous waste with general waste. This includes using different color-coded bins and labels for sharps, infectious waste, chemical waste, pharmaceutical waste, and general waste. The collected waste should be stored securely to prevent spillage, leakage, or exposure. The storage areas must be secure and well-ventilated.

**Health facilities waste treatment and disposal:** Infectious waste should be treated by autoclaving, microwaving, or incineration to kill pathogens. Sharps should be placed in puncture-proof containers and treated by autoclaving or incineration. Chemical waste should be neutralized or treated to render it non-hazardous before disposal. Pharmaceutical waste should be rendered unusable and non-retrievable through encapsulation or inertization.

Radioactive waste should be managed with specialized containment and disposal procedures. The treated waste should be disposed of according to local regulations and environmental standards.

The health care facilities should have protocols for dealing with emergencies related to healthcare waste, including spill kits and personal protective equipment.

## **6.0 Environmental and Social Risk and Impacts of Waste**

### **6.1 Environmental and Social Risk and Impacts of Hazardous Waste**

The potential environmental and social risk related to management of hazardous waste streams are summarized as follows:

- Procurement of expired pesticides or those nearly shelf-life causing an increase in hazardous waste.
- Procurement of banned or restricted chemicals with unknown formulation causing health and environmental risks.
- Spillages during loading, offloading and transportation that may cause soil, ground and surface water contamination.
- Improper storage of hazardous waste causing air, soil and water contamination.
- Improper handling leading to community and occupational health and safety risks such as skin burns, allergies.
- Odor and nuisances to nearby communities.
- Bioaccumulation causing ecosystem degradation.

### **6.2 Environmental and Social Risk and Impacts of Non-Hazardous Waste**

- Over procurement of materials leading to onsite handling, generation of reworking and offcuts on site.
- Generation of smells and odors during storage.
- Contamination of ground and surface water sources during storage.
- Improper storage of non-hazardous waste causing air, soil and water contamination.
- Occupational health and safety risks.
- Long term pilling of concrete waste may cause soil and air pollution during storage.
- Spillage and dropping of waste whilst in transit to the dump site causing odor nuisance.
- Smells and doors to road users whilst in transit.
- Community health and safety risk to other road users.
- Occupational health and safety to operators during transit.
- Inappropriate transportation of non-hazardous waste leading to community health and safety risk.
- Illegal disposal of waste and leachate causing ground and surface water contamination.
- Scavenging causing community health and safety.

## **7.0 Proposed Mitigation Measures**

This waste management plan contains proposed mitigation measures through which waste that will be generated during the implementation of the Zambia Refugee and Host Communities project may be managed in compliance with the Environmental Management Act No.12 of 2011 that is read together with the Environmental Management (Licensing) Regulation, Statutory Instrument No.112 of 2013.

The proposed mitigation measures have also adopted the World Bank Environmental and Social Standards (ESS), particularly ESS3: Resource Efficiency and Pollution Prevention and Management, World Bank Environmental and Health Safety Guidelines (WB ESHG) and Good International Industry Practice.

The mitigation measures are aimed at avoiding, minimizing, and reducing potential environmental and social impacts related to the generation and disposal of waste during the implementation of the Zambia Refugee and Host communities project Table 4 and 5 presents a description of some of the mitigation measures that have been proposed under the Zambia Refugee and Host Communities project.

## **7.0 Monitoring and Reporting**

### **7.1 Performance Monitoring**

The goal of monitoring is to measure the success rate of the project and determine whether interventions proposed to manage risks and impacts related to management of waste have been successful, or whether further interventions are needed, or monitoring is to be extended in some areas.

### **7.2 Inspections**

Site inspection must be conducted by the national and satellite PMU and where possible by the public health officers from the local authorities. The subprojects will be monitored regularly by the Environmental and Social Safeguards Specialists with a formally documented inspection monthly. Inspections will ensure that all aspects of this WMP are being enforced and that specific waste management elements are verified.

### **7.3 Waste Audit**

A waste audit shall be conducted after a year of operation on all waste data collected, to identify waste streams, quantities, fate and develop ways to reduce waste generation.

### **7.4 Roles of Implementing Agency**

The Ministry of Home Affairs and Internal Security implementing this project will be responsible for overall monitoring and evaluation of this waste management plan. The results of the monitoring reports will be submitted to the World Bank.

### **7.5 World Bank's Monitoring Support**

The World Bank will provide second line of monitoring compliance and commitments made in the ESCP through implementation support mission and spot check monitoring as and when need arises. In addition, the MoHAIS through the national PMU will submit monitoring reports to the Bank as part of its reporting on a quarterly, biannual and annual basis. The World Bank support and supervision missions will review these reports and provide feedback.

## **8.0 Monitoring Roles and Responsibilities**

### **8.1 Ministry of Commerce, Trade and Industry**

The Ministry of Home Affairs and Internal Security (MoHAIS) will provide overall coordination and supervision of the Zambia Refugee and Host Communities project through the Office of the Commissioner for Refugees under which the project falls.

### **8.2 Project Implementation Unit**

The Zambia Refugee and Host Communities project that falls under MoHAIS Office of the Commissioner for Refugees Department will be responsible for project administration and coordination. This will include support to implement environmental and social management activities, which include waste management plan.

### **8.3 Zambia Environmental Management Agency**

The Zambia Environmental Management Agency (ZEMA) is a statutory body that was formed under the Environmental Management Act, No 12 of 2011. Some of the functions of ZEMA include integrating environmental management, protecting and conservation of natural resources.

Table 7-1: The Hazardous Waste Management and Monitoring Plan

Activity	Potential Risk and Impact	Proposed Mitigation Measures	Indicator	Responsibility	Budget (USD)
<b>Procurement</b>	Procurement of expired pesticides or those nearly shelf-life causing an increase in hazardous waste.	Only order the quantity of material that you need. Substitute hazardous waste with less non-hazardous waste.	Purchase orders	ZRCF	<b>TBA</b>
	Procurement of banned or restricted chemicals with unknown formulation causing health and environmental risks	Evaluate options for substitution of hazardous materials with non-hazardous ones.	Quantity of hazardous materials substituted  Laboratory results	ZRCF	
		Provide training and conduct awareness raising among beneficiaries on the importance of reading the label to check for the expiry dates.	Training Records  Number of beneficiaries trained	ZRCF	
		Camp extension officers to be allocated to project beneficiaries to provide guidance on procurement of certified products with long shelf life.	Name of Camp Officers	ZRCF	
		Conduct sensitization and awareness training to beneficiaries to procure only ZEMA and ZAMRA certified pesticides and animal health care products.	Number of sensitisations conducted  Attendance register	ZRCF	

			List of ZEMA certified agro dealers		
		Instituting procurement measures that recognize opportunities to return usable materials such as containers and which prevents the over ordering of materials	Warrants Receipts	ZRCP	
<b>Transportation</b>	Accidental spills during loading, offloading and transportation causing soil and groundwater contamination	The transportation of hazardous waste should be done in a safe way so that it does not result in spillage during transportation.	Road Safety Certificate	ZRCP	<b>TBA</b>
		The surface of the transport vehicle should be impervious, and equipped with containment arrangement and spill kits, to manage releases, in case of any accident.	Number of spill kits Procedure for managing incidental spill	ZRCP	
		Procure spill kits and institute suitable control measures in case of accidental spillage of hazardous waste.	Purchase Orders Number of spill kits	ZRCP	
		Hazardous waste to be transported by a ZEMA licensed transporter in an appropriate conveyor to contain any spillage	Road Traffic Certificate ZEMA Licence	ZRCP	

		<p>When preparing for transportation the following should be implemented: Name and identification number of the material(s) composing the hazardous waste.</p> <p>Physical State. Quantity kilograms or Litres, number of containers).</p> <p>Hazardous waste transport tracking documentation to include, quantity and type, date dispatched, date transported, and date received, record of the originator, the receiver, and the transporter.</p> <p>Method and date of storing, repacking, treating, or disposing at the facility, cross-referenced to specific document numbers applicable to the hazardous waste.</p> <p>Location of each hazardous waste within the facility, and the quantity at each location.</p> <p>Transporter/Contractor must have a ZEMA hazardous waste license.</p>	<p>Name of hazardous material</p> <p>Quantity of material</p> <p>Physical state of material</p> <p>Number of containers</p> <p>Tracking Number</p> <p>Date of dispatch</p> <p>Certificate of Origin</p> <p>Name of disposal site</p>		
<b>Storage</b>	<p>Improper storage of hazardous waste causing air, soil and water contamination. Occupational health and safety risks due to skin contact with hazardous materials.</p>	<p>Ensure adequate ventilation where hazardous waste is stored.</p> <p>Ensure all hazardous waste are properly labelled with proper danger signage.</p> <p>Never mix hazardous and non-hazardous waste streams</p> <p>Maintain an accurate record of all hazardous material</p>	<p>Label of hazardous waste.</p> <p>Inventory of hazardous waste.</p> <p>Quantity of non-hazardous waste.</p>	ZRCP	<b>TBA</b>

		Minimizing hazardous waste generation by implementing stringent waste reduction and segregation strategies.			
		Segregate wastes into different secondary containment based on hazard class (corrosive acid, corrosive base, flammable, oxidizer)	List of hazardous waste and their nature		
		Label the hazardous waste under storage and all hazardous waste should be stored in clearly labelled storage bins. Keep waste containers closed and sealed when not adding waste.	Labels indicating hazardous waste		
		Storage facilities should be set away from water sources, residential and built-up areas, as well as livestock and food storage areas.	Distance of storage facilities from residential/residential and food storage areas.		
		Storage facilities must have appropriate ventilation, secondary containment, and emergency showers and kits.	Number of emergency showers		
		Conduct soil and water quality test in case of extensive spillages.	Number of water quality tests		
		Develop and operationalize Standard Operating Procedures (SOP) for managing spillage during storage.	Copy of standard operating procedures		

		Training workers on release prevention, including drills specific to hazardous waste as part of emergency preparedness response training.	Number of trainings conducted  Number of people trained		
		All hazardous storage facilities to be properly labelled indicating with 'Danger Sign' or 'hazardous waste'.	Number of Labels displayed		
		Weekly visual inspection of all hazardous waste collection and storage areas for evidence of accidental releases and to verify that the hazardous waste is properly labelled and stored.	Number of inspections conducted		
		Weekly visual inspection of labelling, quantities, and containers conditions.	Labels  Quantities of hazardous material on site		
		Weekly inspection of loss or identification of cracks, corrosion, or damage to protective equipment, or floors.	Visual images of weekly inspections  Monthly inspection reports		
		Documenting any changes to the storage facility, and any significant changes in the quantity of materials in storage.	Monthly reports Virtual images		
		Regular audits of hazardous waste segregation and collection practices.	Audit Reports		

		Tracking of hazardous generation trends by type and amount, preferably by facility departments.	Monthly Reports		
		Obtain a hazardous waste licence from ZEMA.	ZEMA Licence		
		Workers involved in the management of hazardous waste shall be provided with Personal Protective Equipment (PPE)	All workers equipped with PPE		
<b>Handling</b>	Improper handling leading to community and occupational health and safety risks such as skin burns, allergies. Spillages or leaks causing air, soil and water contamination.	Where practicable, avoiding or minimizing the use of hazardous materials.	Quantity of hazardous substituted	ZRCP	<b>TBA</b>
		Prior to handling, a hazard assessment should be conducted, and control measures provided	Risk assessment report		
		Conduct awareness and sensitization on dangers of handling hazardous waste.	Number of awareness conducted		
		Keep MSDS at appropriate locations in storage facilities.  Standard operating procedures must be developed and implemented to handle hazardous waste	Material Safety Data Sheet displayed  Standard Operating Procedures developed  Number of trainings conducted		

		<p>Correct PPE such as gloves, overalls, eye protection, must always be worn when handling hazardous waste.</p>	<p>Purchase order of PPE</p> <p>All workers equipped with PPE</p> <p>Distribution list of PPE</p>		
		<p>Ensure that spills are cleaned up immediately using appropriate spill kits; spills and should not be washed away into watercourses or drains.</p>	<p>Standard Operating Procedures for emergency spills</p> <p>Number of spill kits procured</p>		
		<p>Conduct sensitization and awareness to beneficiaries on risk of handling hazardous substances</p>	<p>Number of sensitisations conducted</p> <p>Attendance register</p>		
		<p>Ensure all hazardous waste are properly labelled indicating the “Danger “sign.</p>	<p>Danger sign on the label</p>		
		<p>Training workers on release prevention, including drills specific to hazardous materials as part of emergency preparedness response training.</p>	<p>Number of sensitisations conducted</p> <p>Attendance register</p>		

<b>Disposal</b>	<p>Occupational health and safety risks to operators contact with hazardous materials. Odour and nuisances to nearby communities.</p> <p>Contact with the skin during handling of hazardous waste.</p> <p>Bioaccumulation of hazardous causing ecosystem damage</p> <p>Soil, surface, and ground water contamination due to accidental spillage.</p> <p>Impairment of ambient air quality.</p> <p>Reuse of containers containing hazardous waste posing a health risk.</p> <p>Indiscriminate disposal of hazardous waste containers causing environmental degradation</p>	Explore possibilities of recycling of the hazardous waste material.	Number of firms dealing in recycling	ZRCP	TBA
		Ensure all workers have correct PPE for handling hazardous materials	Purchase orders Number of workers with PPE Distribution list		
		Dispose hazardous waste as soon as soon as they are longer needed.	Name of transporter Name of disposal site Records for disposal Quantity and type		
		Develop and implement Standard Operating Procedures (SOP) for managing spillage during disposal.	Copy of Standard Operating Procedure		
		Periodically monitor soil, ground, and surface water quality	Schedule of monitoring Certificate of analysis		
		Conduct sensitization and awareness to beneficiaries on risk of handling hazardous substances.	Number of sensitisations conducted Attendance Register		

		Training workers on release prevention, including drills specific to hazardous materials as part of emergency preparedness response training.	Number of sensitisations conducted Attendance Register Emergency preparedness procedure		
		At no given time should empty container of hazardous waste be washed for reuse for domestic purposes. Conduct awareness and sensitization on the hazards of using empty containers that contained hazardous waste.	Number of sensitisations conducted Attendance Register Number of collection bins for hazardous waste.	ZRCP	
		Conduct due diligence of the dumpsite to ensure it is requested by the local authority and ZEMA.	Name of disposal site Authorisation from local authority ZEMA licence	ZRCP	
		<b>TOTAL</b>			<b>TBA</b>

**Table 7-2: The Non-hazardous Waste Management Plan**

<b>Activity/Source</b>	<b>Potential Risk and Impact</b>	<b>Proposed Mitigation Measures</b>	<b>Indicator</b>	<b>Responsibility</b>	<b>Budget (USD)</b>
<b>Design</b>	Over procurement of materials leading to onsite handling, reworking and offcuts on site	Designers encourages to use standard dimensions to avoid wastage of materials.	Purchase Orders	ZRCP	<b>TBA</b>
		Detailed designed plans and instructions provided to estimators, workers, and contractors to improve accuracy of material take offs and avoid reworking.	Detailed design estimates Bill of Quantities	ZRCP	
		Use prefabricated products as much as possible to reduce onsite handling, reworking and offcuts.	Number of Prefabs	ZRCP	
		Untreated timber should be specified in all applications where this is allowed to encourage future recycling.	Material Specifications	ZRCP	
<b>Material Selection and Cost estimates</b>	Onsite handling of unused materials leading to reworking and offcut on site	Materials should be selected based on affordability and low environmental and social impacts  Select materials that has recyclable or recyclable content.	Material Specifications Bill of Quantities	ZRCP	<b>TBA</b>
<b>Procurement</b>	Over procurement leading to generation of non-hazardous waste if not properly stored.	Only order the quantity of material that you need.	Purchase orders	ZRCP	<b>TBA</b>

		Ensure that only reusable packing materials are procured	Material Specifications		
			Training Records		
			Number of beneficiaries trained		
		Ensure that only reusable packing materials are procured.	Material Specifications		
		Procure in bulk to minimize packing	Warrants Receipts		
		Purchase wisely and use recyclable materials.			
		Procure spill kits and institute suitable control measures in case of accidental spillage of hazardous waste.	Purchase Orders Number of spill kits		
			Road Traffic Certificate		
			ZEMA Licence		
			Name of hazardous material Quantity of material Physical state of material Number of containers Tracking Number Date of dispatch Certificate of Origin Name of disposal site		
<b>Handling</b>	Occupational health and safety risk to operators.	Ensure all workers have the right PPE.	Number of workers with right Personal Protective Equipment (PPE).	ZRCP	<b>TBA</b>

			Distribution Register for PPE.		
	Smells and odours	Ensure non-hazardous waste operators have the right Personal Protective Equipment (PPE).	Number of workers with right Personal Protective Equipment (PPE).  Distribution Register for PPE	ZRCP	
		Ensure adequate non-hazardous waste bins are in place	Number of bins for non-hazardous waste	ZRCP	
		Segregate waste into non-hazardous and hazardous	Quantity of non-hazardous waste segregated.	ZRCP	
		Cover non-hazardous waste with tarpaulins.	Surface area of non-hazardous waste covered.	ZRCP	
	Contamination of ground and surface water sources.	Store non-hazardous substances on impervious surface to prevent seepage or leakage.	Hazardous waste storage facilities with impervious surface  Number of water quality tests conducted.  Certificate of analysis	ZRCP	
<b>Storage</b>	Improper storage of non-hazardous waste causing air, soil and water contamination.  Occupational health and safety risks due to skin contact with hazardous materials.	Ensure adequate waste bins for storage of non-hazardous waste.	Number of bins for non-hazardous waste	ZRCP	<b>TBA</b>

Long term piling of concrete waste may cause soil and air pollution	Ensure all operators are equipped with the right Personal Protective Equipment (PPE).	Number of operators with right Personal Protective Equipment (PPE)  Distribution List	ZRCP
	Waste bins should be kept away from public view and be accessible whenever possible.	Distance of waste bins' location from public view	ZRCP
	Ensure the waste bins are lockable to avoid scavengers from collecting waste.	Number of locks on waste bins	ZRCP
	Fruits and vegetable scraps, eggshells, grass clippings and leaves and other farm residues can all be composted.	Number of compost sites	ZRCP
	Recycle biodegradable waste through composting where possible.	Number of compost sites	ZRCP
	Segregate non-hazardous waste from hazardous waste.	Quantity of non-hazardous and hazardous segregated	ZRCP
	Deliveries should be done just on time to avoid stock piling of non-hazardous materials.	Schedule of delivery	ZRCP
	Sensitize workers on managing non-hazardous waste.	Number of sensitisation meeting conducted.  Attendance registers.	ZRCP

		Tracking of non-hazardous waste generation trends by type and amount, preferably by facility departments.	Monthly Reports	ZRCP	
		Obtain licence from ZEMA for transport of non-hazardous waste	ZEMA Licence	ZRCP	
<b>Transport</b>	Road traffic accidents if waste transportation vehicles not fully compliant with road traffic regulations	Ensure all vehicles are fully compliant with road traffic and safety requirements.  Ensure the drivers are competent to operate such vehicle.	Drivers Licence  Competence Licence  Road Tax  Road Fitness Certificate	ZRCP	<b>TBA</b>
	Spillage and dropping of non-hazardous waste whilst in transit to the dump site.	Vehicles transporting waste should be covered.  Containment arrangement and spill kits, to manage releases, in case of any accident.	Number of spill kits  Emergency preparedness procedures and spills kit available	ZRCP	
	Smells and doors to road users whilst in transit.	Ensure the vehicle transporting waste is fully enclosed.  Avoid transporting non-hazardous waste with high moisture content	Enclosed Operation Vehicles.  Percentage of Moisture content	ZRCP	
	Community health and safety risk to other road users.	Conduct sensitisation meetings to transporters of non-hazardous waste.  Conduct sensitisation meetings to nearby communities on risk of non-hazardous waste.	Number of sensitisations meetings conducted.  Attendance register	ZRCP	

	Occupational health and safety to operators	<p>Ensure operators have the right Personal Protective Equipment (PPE).</p> <p>Sensitise operators on management of non-hazardous waste whilst in transit.</p>	<p>Number of workers with Personal Protective Equipment (PPE)</p> <p>Number of sensitisation meeting conducted.</p>	ZRCF	
	Spillage of waste whilst on transit to the disposal site	Training workers on release prevention, including drills specific to hazardous materials as part of emergency preparedness response training.	<p>Number of sensitisation meeting conducted</p> <p>Attendance Register</p> <p>Emergency preparedness procedure</p>	ZRCF	
	In appropriate transportation of non-hazardous waste	Non-hazardous waste to be transported by a ZEMA licensed transporter in an appropriate conveyor to contain any spillage.	<p>Name and identification number of the material</p> <p>Quantity kilograms or Litres, number of containers).</p> <p>Quantity and type, date dispatched,</p> <p>Date transported</p> <p>Date received, record of the</p>	<p>ZRCF</p> <p>ZRCF</p> <p>ZRCF</p> <p>ZRCF</p> <p>ZRCF</p>	

			Name of Transporter.	ZRCP	
			Location of dumping facility	ZRCP	
			ZEMA hazardous waste license	ZRCP	
<b>Disposal</b>	Occupational health and safety risks to operators	Ensure all operators have the right Personal Protective Equipment (PPE).	Number of operators with PPE.	ZRCP	<b>TBA</b>
	Generation of smells and odours	Ensure that the dump site is located away from residential areas.	Distance of dump site from residential areas.	ZRCP	
		Ensure that the non-hazardous waste has very little moisture content to minimise odours and smells.	Percentage of moisture content	ZRCP	
		Ensure that the dump site has facilities of capturing leachates to help eliminate odours.	Quantity of leachate collected	ZRCP	
		Install mechanical units that draw air into the dump site.	Number of mechanical units for odour management	ZRCP	
	Ground and surface water contamination	Conduct periodic water quality monitoring.	Certificate of analysis Number of tests conducted	ZRCP	

	Indiscriminate disposal of non-hazardous waste containers	At no given time should empty container of hazardous waste be washed for reuse for domestic purposes.  Conduct awareness and sensitization on the hazards of using empty container that contained hazardous waste	Number of sensitisations conducted  Attendance Register  Number of collection bins for hazardous waste	ZRCP	
	Illegal disposal of non-hazardous waste	Conduct due diligence of the dumpsite to ensure it is requested by the local authority and ZEMA. Ensure disposal certificates are issued for any waste disposed.	Name of disposal site  Authorisation from local authority  ZEMA licence	ZRCP	
	Scavenging of non-hazardous waste	Ensure the storage sites are secured and lockable where possible.  Conduct sensitisation and raise awareness on risk of handing non-hazardous waste and recycling opportunities.	Notices of restrictions displayed.  Number of sensitisations conducted.  Attendance list.	ZRCP	
	<b>TOTAL</b>				<b>TBA</b>

## Annex 8: The Asbestos Management Plan

### 1.0 Introduction

The Asbestos Management Plan (AWP) is a guidance document that will be used to prepare a site-specific AWP when the site screening process reveals that asbestos roof tops will be removed for subject project activities under rehabilitation and expansion of schools and health facilities. The AWP has been prepared to outline the proper handling and disposal of asbestos containing material. Asbestos is a known carcinogen and requires the implementation of strict and specific management measures to protect the human health and the environment. Therefore, this AMP also details the correct personal protective equipment (PPE), operating procedures, incident management and record keeping requirements.

### 1.1 Objectives

- Provide guidance on how to manage asbestos and asbestos contaminated material (ACM) if discovered on site.
- Ensure appropriate procedures are in place for safe removal, handling, packaging, transportation, storage, and disposal of asbestos.
- Provide guidance to manage incidents related to inappropriate management of asbestos.
- Ensure the appropriate record keeping for asbestos' disposal and incidents.

### 1.2 Legislation Guidelines

The regulations and guidelines considered in the preparation of the AWP include the following:

- National Policy on the environment
- Environmental Management Act No. 12 of 2011 read with (Amendment) Act No.8 of 2023
- Environmental Management Licensing Regulations (SI.112 of 2013)
- The Occupational Health and Safety Act No. 36 of 2010
- The World Bank Environmental and Social Standards (ESSs)
- The World Bank Group Environmental, Health, Safety Guidelines (ESHGs) for Construction Materials Extraction

### 1.3: Definitions

<b>Asbestos</b>	Asbestos is a naturally occurring mineral that occurs in rock and soil composed of long, thin, needle like fibrous crystals. .
<b>Asbestos Containing Material (ACM)</b>	Any material, object, product or debris that contains asbestos.
<b>Bonded ACM</b>	Asbestos containing material containing a bonding compound reinforced with asbestos fibers.
<b>Un Bonded ACM</b>	Asbestos containing material that does not contain a bonding compound reinforced with asbestos fibers.
<b>Friable ACM</b>	Un-bonded asbestos containing material that, when dry, is or may become crumbled pulverized or reduced to powder by hand pressure
<b>Fixed</b>	This is asbestos that is attached or secured in position such as asbestos cement sheet screwed or nailed.
<b>Foreman/Project Manager</b>	Also means contractor and sub-contractor
<b>Installed</b>	Where it has been specifically placed for a purpose such as asbestos containing refractory bricks placed on top of each other or loose asbestos containing insulation blown into a ceiling space.
<b>Removal</b>	Asbestos removal work requires the appointment of a Principal Contractor authorized by ZEMA because asbestos removal work is a high-risk construction activity.

<b>Asbestos Material Report</b>	A report by an appropriately qualified person (Principal Contractor or ZEMA Inspector) which states: <ul style="list-style-type: none"> <li>• Where and what the types of materials that were found.</li> <li>• The form of the materials.</li> <li>• The condition of the material (i.e., friable, poorly bonded, unstable).</li> <li>• The potential health risks to site workers.</li> <li>• Where the asbestos has been disposed.</li> </ul>
<b>Asbestos Register</b>	A register that must be kept by the owner of the site and which must: <ul style="list-style-type: none"> <li>• Contain information, including any changes/updates, from the Asbestos Report.</li> <li>• Be available for inspection by any person requiring inspection.</li> <li>• Be available to all site workers.</li> <li>• Be available to any contractors.</li> </ul>
<b>Competent Person</b>	A competent person is a person who possesses adequate qualifications, such as suitable training and sufficient knowledge, experience, or skill, to perform a specific task safely
<b>ESHG</b>	Environmental Safety and Health Guidelines
<b>GIIP</b>	Good International Industry Practices
<b>Hygienist</b>	A person having attained training and experience to undertake Occupational Hygiene services to the Asbestos removal industry
<b>HEPA</b>	High Efficiency Air Filters
<b>RTSA</b>	Road Transport and Safety Agency
<b>PPE</b>	Personal Protective Equipment
<b>ZEMA</b>	Zambia Environmental Management Agency

### 1.3 Health Impacts

Asbestos is a known carcinogen that can cause mesothelioma, lung cancer and asbestosis. Asbestos fibres inhaled deep into the lungs can result in damage to mesothelial cells in the body and lead to the development of a type of cancer called mesothelioma. Lung cancer, which differs from mesothelioma and specifically affects the lungs, can also result from asbestos exposure. Asbestosis, a non-cancerous condition, caused by the scarring of the lung tissue from asbestos fibres, which results in a reduced ability of the lungs to transfer oxygen to the blood. The latency periods range between 35-40 years for mesothelioma, 20-30 years for lung cancer and 15-20 years for asbestosis.

### 1.4 Classification of asbestos

Asbestos is classified as friable and non-friable. Friable asbestos is that which can easily be crumbled, pulverized or reduced to powder. Examples of friable asbestos are tiles, clutch plates, and pipe insulation. Non-friable asbestos is a common form of asbestos that is held together with a strong binder e.g., roofing sheets. Asbestos fibres in non-friable asbestos may be released through damage, mishandling or weathering. Asbestos material in a non-friable state is less toxic than the crushed one. It is therefore, advised not to disturb the asbestos containing material that is in stable state.

### 1.5 Proposed Activities under the Asbestos Management Plan

The following proposed activities should be considered as conducted as part of the asbestos management plan:

- Asbestos roofs should only be removed when necessary and as informed by technical assessment. The mitigation hierarch needs to apply as part of the management plan. Where feasible, avoid the removal of the asbestos containing material.
- Prepare a site-specific asbestos management plan prior to commencement of works.
- Ensure that a contractor engaged to handle asbestos material has a valid hazardous waste license for the from ZEMA.
- Identify a suitable and licensed dump site for disposal of the Asbestos Containing Material (ACM) with guidance from ZEMA.

- Conduct a due diligence and site visit on the contractor identified to handle the asbestos and dump site and ensure that they are fully licensed with ZEMA and have the required capacity for transportation and disposal of the asbestos containing material.
- Identify resources including financial requirements for disposal of the asbestos roofing sheets.
- If there is no suitable dump site in Zambia for disposal of the asbestos roofing sheets, consider the export option, in line with ZEMA requirements and the Rotterdam Convention and the Basel Convention on the Control of Trans-Boundary Movement of Hazardous Waste and their Disposal to which Zambia is a Party.

## **1.6 Procedures for Asbestos Removal**

The project should ensure that the contractor follows the procedures that have been outlined in this AMP for removal, transportation, and disposal of the asbestos roofing sheets. The E&S Specialists from the Satellite PMU should oversee the handling and final disposal of the asbestos roofing sheets.

### **1.6.1 Personal Protective Equipment and Clothing**

The Personal Protective equipment (PPE) shall meet the asbestos related requirement of the ZABS Standards, ZS 009:19773: Asbestos Cement Insulating Board and ZS006:1973: Asbestos Cement Flat Sheets: Semi and Fully Composed, ISO standards prEN ISO 13982-1, the World Bank Environmental Health and Safety Guidelines (ESHGs) and Good International Industry Practices (GIIP). The requirements of the World Bank ESHG and GIIP have taken precedent since they have a higher standard. All personnel must ensure appropriate PPE is worn when handling asbestos. PPE must be put on in the following order:

#### **Safety Goggles**

Safety goggles are a type of Personal Protective Equipment (PPE) that are worn on the eye for its protection. The goggles essentially fit tightly to the eye, with suction, and are secured with a strap that goes around the back of the head. The safety goggles will be used to protect workers from damage to the eye against asbestos particles that may strike the eye. For this AMP, the purpose of safety goggles is to protector the worker from particulate asbestos fibres that may strike the eye.

#### **Respirator or Mask**

A Respirator mask is a device designed to protect the wearer from inhaling hazardous atmospheres that includes fumes, vapors, gases and particulate matter such as dusts and airborne pathogens such as viruses. There are two main categories of respirators: the air purifying respirator, in which respirable air is obtained by filtering a contaminated atmosphere, and the air supplied respirator, in which an alternate supply of breathable air is delivered. Within each of these category, different techniques are employed to reduce or eliminate noxious airborne contaminants. For this AMP, the purpose of respirators is to protector the worker inhaling particulate asbestos fibres that may penetrate and impregnate the body, through lack of appropriate PPE when handling asbestos roofing sheets.

#### **Disposable coveralls**

Disposable coveralls are an item of personal Protective equipment (PPE) designed to cover the body and other clothing to protect against dirt and other contaminants. Coveralls are one piece and loose fitting for ease of movement, with sleeves, full legging and often with a hood to cover the head. For this AMP, the purpose of disposable coveralls is to offer protection from exposure to hazardous asbestos fine fibres particles that may penetrate and impregnate the skin, through lack of proper PPE when handling the asbestos roofing sheets.

#### **Disposable gloves**

Disposable gloves are gloves that are used once and thrown away. The, recommended disposable gloves for asbestos handling are Ideal Grip gloves, 7.0 mil, 240mm long sleeves. The Ideal Grip Gloves are made using specifically formulated nitrile, offering superior strength and comfort stretch whilst maintaining levels of dexterity. For this AMP, the purpose of disposable coveralls is to offer protection from exposure to hazardous asbestos fine fibres particles that may penetrate and impregnate the skin, through lack of proper PPE when handling the asbestos roofing sheets.

#### **Disposable overshoes or washable boots**

##### **(i) Disposable overshoes**

Disposable overshoes are single use soft, lightweight and durable protective shoe covering that can be worn to prevent possible exposure to contamination carried on the feet. They are ideal for workplaces that have a potential to expose workers to hazardous environment. The disposable overshoes are designed to use only once and their prolonged use or more than a single use will minimize the functions for which it had been manufactured.

**(ii) Washable boot**

A boot that protects from asbestos handling and can be decontaminated and reused. The washable boots have a strong thermal, chemical and mechanical resistance, but are also gas tight. The washable boots are non-skid on steel and ceramic tile floors and can be decontaminated. They are also quick drying as they have no inner lining. They are tear resistant and have a better grip on the floors than disposable overshoes.

**3 Disposal of Personal Protective Equipment (PPE)**

The following procedures shall apply for disposal of overalls and coveralls that shall be used during the disposal of asbestos roofing sheets:

**(i) Disposal of overalls and coveralls**

- All used overall and coverall used during asbestos disposal shall be disposed of as part of asbestos waste:
- Overall and coverall shall not be reused again due to potential contamination of asbestos:
- When the task is complete, the overalls and coverall shall be wrapped in a polythene plastic and disposed of together with the sheets.

**(ii) Disposable Gloves**

- All workers must wash their hands and fingers thoroughly after removal and disposal of gloves:
- All used disposable gloves should be disposed of as part of the asbestos waste.

**(iii) Footwear**

- All reusable footwear should be decontaminated and sealed in double polythene plastic bags:
- Any defect on footwear should be reported immediately for replacement or repair:
- All non-reusable footwear shall be sealed in double polythene plastic bags and disposed together with the asbestos roofing materials:
- All workers must wash their hands and fingers thoroughly after removal and disposal of footwear.

**(iv) Used Asbestos PPE**

- All used asbestos PPE should be wrapped in a polythene plastic for disposal a dumpsite together with the asbestos containing roof sheets.
- All workers must wash their hands and fingers thoroughly after removal and disposal of used PPE.

**(v) Removal of PPE and Personal Decontamination**

- A decontamination area shall be identified with water available to remove contaminated overalls and clean the boots with water:
- Separate work sections shall be provided for dressing up before and after work and this should include a facility for showering:
- Before removing the used PPE, any visible asbestos shall be removed from protective clothing using an asbestos vacuum or wet wiping:
- The removal of the PPE shall be as follows (a) Disposable overshoes and washable boots (b) Disposable coveralls (c) Disposable goggle and (d) Respirator or mask:
- Coveralls and overalls shall be removed by taking arms out of the sleeves and rolling the sleeves inside out and then rolling the coveralls down the body:

- Non disposable respirators should be thoroughly cleaned, and any contaminated filters removed for appropriate disposal:
- Used disposable PPE shall be placed in a sealed heavy duty 200µm (micrometers) (minimum thickness) polythene bag:
- The outside of the bag should be wiped down using a damp cloth:
- The bag shall be sealed with duct tape and labelled as “Asbestos Waste”:
- After disposing the PPE, the workers should thoroughly clean their face, hands, and fingers with soapy water.

### **1.7 Removal Process Responsibility**

The Satellite PMU will have an oversight of the removal process with the following personnel:

#### **(a) Site workers**

- Attend Toolbox talks as required by the contractor.
- Wear appropriate PPE during the disposal of the asbestos roofing sheets.
- Alert the contractor of any new asbestos roofing sheets that may still be on site:
- Avoid at all costs entering the secured temporary storage where the asbestos roofing sheets are stored.

#### **(b) Environmental Health and Safety Officer**

- Implement, maintain and update the asbestos management plan:
- Ensure all workers on site are trained in the identification, handling, temporary storage, disposal of asbestos containing materials and are aware of the asbestos management plan:
- Ensure correct handling and disposal procedures are implemented:
- Maintain adequate supplies of appropriate PPE and ensure all workers have appropriate PPE:
- Maintain adequate supply of asbestos wrapping materials:
- Conduct Toolbox talks, briefings, training on to wear PPE correctly a procedure for handling and removal of asbestos roofing sheets namely wrapping the asbestos roofing sheets, handling the asbestos roofing sheets, incident management in case the PPE fails or the asbestos breaks:
- The Toolbox talks shall also include Health risks associated with asbestos, common sources of asbestos wastes and asbestos disposal procedures.

#### **(a) Dump Site Operator**

- Adhere to the requirement of the asbestos management plan:
- Wear appropriate PPE when handling asbestos roofing sheets:
- Ensure application of appropriate handling and disposal procedures:
- Maintain asbestos management register with clear traceability:
- Ensure the hazardous waste license is valid:
- Ensure the dump site is properly secured to avoid scavengers.

### **1.7 Packaging Procedure**

The packaging of the asbestos roof sheets will be done using the following steps:

- Avoid breaking of the asbestos roofing sheets as much as possible during packaging:
- Line the base of the transporting vehicle with a polythene plastic:
- Place the packaging asbestos roofing sheets gently onto the transporting vehicle:
- Cover the packaged asbestos roofing sheets right round with polythene sheeting and seal with adhesive tape:
- Label the asbestos roofing sheets “Asbestos Waste, No unauthorized opening.
- Take a photo of the packaged asbestos roofing sheets:
- Complete the waste register and have it signed by both the contractor and ZRCP Environmental Specialist.
- The asbestos roofing sheets should be completely covered with a polythene plastic and clearly labelled “Asbestos Waste, No unauthorized Opening” in a lockable secured confinement:

- A fresh polythene plastic to be used to line the inside of the secured confinement.

### **1.8 Transportation of Asbestos**

The transportation of hazardous waste such as the asbestos roofing sheets is regulated by ZEMA under the Environmental Management (Licensing) Regulations (S.I No.112 of 2013. The project will only engage a ZEMA licensed transporter as a subcontractor to, package and transport the asbestos roofing sheets to a dump site yet to be identified. The other requirements that the transporter must adhere to are:

- Use an enclosed vehicle that is easy to clean and lock.
- The vehicle should be lined with plastic material.
- All workers should wear appropriate PPE:
- The vehicle should be fully licensed with Road Traffic and Safety Agency (RTSA):
- The driver should be a holder of a valid driving license:
- The vehicle must ensure internal air circulation is used and windows are closed on arrival at the dump site:
- The driver must follow instructions of the dump site operator.

### **2.0 Asbestos Related Incidences**

Asbestos related incidents include the spillage and escape of asbestos fibers or exposure to asbestos through lack of appropriate Personal Protective Equipment (PPE) and clothing.

The following measures shall be undertaken in the event of no compliance and these incidents occurs.

#### **(i)Accidental Asbestos Friable Release**

In the event there is a release of non-friable asbestos during the handling, loading and unloading, the following must be done:

- Clear the area or site personnel and vehicles:
- Notify the Site Engineer immediately:
- Trained workers wearing appropriate Personal Protective Equipment (PPE) should manage the broken roofing sheets:
- All asbestos and dust should be wet down with a fine mist:
- All broken ACM should be wrapped and rewrapped and properly sealed:
- All broken parts of the roofing sheets are to be sealed in plastic and clearly labelled “hazardous material”. This includes capturing and sealing of any small debris that may be found on the ground:
- The Site Safety Officer should complete an incident report and submit to the Satellite PMU within 24 hours:
- The National PMU shall in turn inform the World Bank on the presence of asbestos through an incident report within 24 hours of receipts of such from the contractor.
- The Satellite PMU through the national ESCP shall also inform ZEMA on the presence of asbestos at the site.
- The Incident report should include the following information:
  - Date
  - Personnel Involved
  - Quantity of asbestos
  - Description of incident
  - Actions and management measures undertaken.
  - Future preventative measures

### **4.3 Exposure to Asbestos**

If a site worker is exposed to asbestos without the use of appropriate Personal Protective Equipment (PPE), the following decontamination procedures must be undertaken:

- Immediately went down the site worker affected with fine spray or mist of water:
- Avoid any water on the respiratory cartridge:
- The affected site worker must then walk to the onsite decontamination area nearest shower facility to avoid contamination of vehicles or machinery:
- Remove all disposable overalls and place them in a sealed bag that is clearly labelled” hazardous material”:
- The affected worker should shower to remove all dust and asbestos fibers with particular focus on the hair, face, hands and fingernails.
- The affected worker must then change into clean clothing:
- The bag must be labelled with “Asbestos Hazardous Waste Material” and disposed of with the asbestos roofing sheets.

## **Annex 10: The Chance Find Procedures**

This procedure is included as a standard provision in the implementation of ZRCP contracts to ensure the protection of cultural heritage (Archaeological and Historical Sites). All implementing partners, beneficiaries and contractors will be required to observe this procedure as documented hereafter.

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 and ZRCP through the Social Specialist, who in turn should notify the responsible authorities, in particular the National Heritage Conservation Commission (NHCC) and the concerned.
- NHCC will oversee 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 could resume only when permission is given from the concerned officers from Zambia Heritage Conservation Commission (NHCC) after the decision concerning management of environmental and social risks and impacts related to heritage are 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 11: GBV Action Plan Template

GBV Action Plan for SUBSTANTIAL risks levels for Zambia Refugee and Host Communities Project

Intention	Implementation						Impact				
Area of focus	Key mitigation measures	Key mitigation action steps	Responsible party	Date to begin	Date Due	Funding break down	Target	Responsible for monitoring	Supporting measure	Progress status	Progress Notes
<b>1. ACCOUNTABILITY &amp; RESPONSE FRAMEWORK</b>	<b>1.1. Develop and implement Code of conduct for project personnel</b>	Develop GBV/SEAH Code of conduct	PIU	1st QTR, 2025	End of 1st QTR, 2025	0	SPMU, Consulting Firm,	PIU	<i>Code of conduct is developed and available</i>	Not started	to be implemented
		Translate Code of Conduct into appropriate local language	PIU	2nd QTR, 2025	End of 2nd QTR, 2025	2000	SPMU, Consulting Firm,	PIU	<i>Translated Code of Conduct in local languages</i>	Not started	to be implemented
		Conduct initial training on the Code of Conduct for all project personnel on the Code of Conduct	PIU	2nd QTR, 2025	End of 2nd QTR, 2025	5000	SPMU, Consulting Firm,	PIU	<i>List of personnel trained, Training Report</i>	Not started	to be implemented
		Conduct annual refresher training for all project personnel on the Code of Conduct	PIU	1st QTR 2026	End of 4th QTR 2029	8000	SPMU, Consulting Firm,	PIU	<i>List of personnel trained, Training reports</i>	Not started	to be implemented
		Quarterly Monitor the implementation of the Code of conduct	PIU	1st december 2025	End of 1st QTR, 2025	0	,SPMU, Consulting Firm,	Ministry of Home Affairs and Internal Security	<i>M&amp;E report</i>	Not started	to be implemented
		<b>1.2 Map GBV service providers in all areas of project implementation</b>	Develop tools for mapping GBV/SEAH Service providers	PIU	1st QTR 2025	End of 1st QTR, 2025	0	,SPMU, Consulting Firm,	PIU	<i>Tools for service provider mapping developed</i>	Not started

								<i>and is available</i>			
		Conduct mapping of GBV/SEAH Service providers	PIU	2nd QTR, 2025	End of 2nd QTR, 2025	0	Local NGOs, MCDS S, CBOs	PIU	<i>service mapping report</i>	Not started	to be implemented
		Update the service providers mapping list annually	Implementing agency	1st QTR 2026	4th QTR 2029	0	PIU SPMU	PIU	<i>Updated service mapping reports</i>	Not started	to be implemented
1.3. Establish SEA/SH pathways		Identify localized referral protocols and pathways to be integrated in the project GM	Implementing agency	1st QTR 2025	End of 1st QTR, 2025	0	PIU SPMU ,consulting firms	PIU	Localized referral protocols and pathways identified and integrated in the project GRM	Not started	to be implemented
		Update referral pathways annually based on services mapping updates	PIU	1st QTR 2026	4th QTR 2029	0	SPMU	PIU	<i>updated service mapping</i>	Not started	to be implemented
1.3 Set up the GRM as the response and management protocol to SEA/SH and GBV cases		Develop GBV/SEAH sensitive GRM including survivor-centered SOPs to receive, manage and respond to GBV/SEAH complaints and feedback mechanisms	PIU	2nd QTR, 2025	End of 2nd QTR, 2025	0	SPMU	PIU	<i>SOPs, GRM tools developed</i>	Not started	to be implemented

		Develop intake forms, referral protocols forms, information sharing tools, Grievance Log etc.	PIU	2nd QTR, 2025	30th June 2025	0	SPMU	PIU	<i>Referral forms ,intake forms, grievance log developed</i>	Not started	to be implemented
		Conduct initial training on the GRM for all project personnel	PIU	3rd QTR 2025	End of 3rd QTR 2025	5000	SPMU	PIU	<i>List of personnel trained, training report</i>	Not started	to be implemented
		Conduct Annual refresher training for all project personnel on the GRM	PIU	1st QTR 2026	4th QTR 2029	8000	SPMU	PIU	<i>List of personnel trained, training report</i>	Not started	to be implemented
		Mobilize expertise as needed to provide TA to the operationalization of SEA/SH risks mitigation measures, including SEA/SH sensitive GM	PIU	3rd QTR 2025	4th QTR 2026	10000	SPMU	PIU	Expertise to provide TA to the operationalization of SEA/SH risks mitigation measures, including SEA/SH sensitive GRM mobilized	Not started	to be implemented
		Roll out and implement GBV/SEAH sensitive GRM	PIU	3rd QTR 2025	4th QTR 2029	SEP Budget	SPMU	PIU	<i>awareness raising, sensitization reports</i>	Not started	to be implemented
	1.4 Clearly define the SEA/SH requirements and expectations in	Add specific language and outline SEA/SH requirements and expectations in bid documents and contracts	PIU	3rd QTR 2024	2nd QTR, 2025	0	Contractors / Consulting firms	PIU	<i>SEA inclusive BID and Contracts documents</i>	Not started	to be implemented

	<b>bid documents and contracts</b>	Ensure that SEA/SH requirements and expectations on training are included in contracts with consultants/contractors	PIU	3rd Quarter, 2024	2nd Quarter, 2025	0	SPMU, Contractors/ Consulting firms	PIU	<i>GBV/SEAH sensitive training requirement included in BID and Contracts documents</i>	Not started	to be implemented
		Monitor the implementation of the SEA/SH requirements and expectations in bid documents and contracts	PIU	3rd Quarter, 2024	2nd Quarter, 2025	0	Contractors / Consulting firms	PIU	<i>SEA inclusive BID and Contracts documents</i>	Not started	to be implemented
<b>2. TRAINING &amp; COMMUNITY AWARENESS RAISING PLAN</b>	2.1 Implement trainings on GBV/SEAH and plan targeting all categories of project personnel, contractors and workers	Mobilize expertise to ensure that project related training is of quality, survivor-centered	PIU	2nd QTR 2025	4th QTR 2025	10000	SPMU, Contractors/ Consulting firms	PIU	<i>SEA inclusive BID and Contracts documents</i>	Not started	to be implemented
		Conduct initial training of all project personnel, contractors and workers on GBV/SEAH and reporting requirements	PIU	2nd QTR 2025	qtr 4 ,2025	5000	SPMU, Contractors/ Consulting firms	PIU	<i>List of trained personnel, training report</i>	Not started	to be implemented
		Conduct refresher- or on-the-job training/awareness as part of project personnel, workers and civil servants ongoing training	PIU	1st QTR 2026	4th QTR 2029	8000	PIU, SPMU, Contractors/ Consulting firms	PIU	<i>List of trained personnel, training report</i>	Not started	to be implemented

	2.2 Conduct <b>community awareness plan</b> targeting various targeted community' groups	Conduct quarterly awareness raising activities on GBV/SEAH and reporting requirements	Implementing agency	3rd QTR 2025	End of 4th QTR 2029	SEP Budget	SPMU, Community GBV groups	PIU	<i>Activity Reports</i>	Not started	to be implemented
		Develop and review awareness materials, messages, IEC, etc. annually, based on community's feedbacks, consultations and evolving understanding of risks	PIU	1st QTR 2025	4th QTR 2029	15000	SPMU, Community groups	piu	<i>IEC materials available</i>	Not started	to be implemented
<b>3. Mobilization of GBV expertise</b>	3.1 <b>Recruit GBV services providers</b> to facilitate access to timely, safe and confidential services for survivors in areas where these services are unavailable	Develop TOR and recruit a GBV service provider	PIU	2nd QTR 2025	End of 2nd QTR 2025	20000	SPMU	PIU	<i>GBV service providers recruited</i>	Not started	to be implemented
	3.2 <b>Mobilize GBV specialist in the supervising engineer's team</b> with specific skills to supervise implementation of risks	Develop TOR and recruit a GBV specialist with SEA/SH monitoring tasks inc. supervision of signing of Code of conduct, on adequate rollout of SEA/SH sensitive GM mechanisms,	PIU	2nd QTR 2025	End of 2nd QTR 2025	0	SPMU	PIU	<i>GBV specialist recruited</i>	Not started	to be implemented

	mitigating measures	on liaison/coordination with GBV services providers.									
		Monitor the execution of the GBV specialist' SEA/SH related tasks	PIU	3rd QTR 2025	End of 4th QTR 2029	0	SPMU,Local NGOS , MCDSS,traditional leadership	PIU	<i>Monitoring Reports</i>	Not started	to be implemented
<b>4. Monitoring and Reporting</b>	4.1 Quarterly monitoring of the implementation of the GBV/SEAH Action Plan	Conduct quarterly monitoring of the implementation of the GBV Action Plan	PIU	1st QTR 2025	End of 4th QTR 2029	40000	SPMU,Local NGOS , MCDSS,traditional leadership	PIU	<i>Monitoring Reports</i>	Not started	to be implemented
	4.2 Reporting on implementation of the GBV/SEAH Action Plan	Conduct monthly, quarterly and annual reporting on the implementation of the GBV Action plan	PIU	2nd QTR 2025	End of 4th QTR 2029	0	SPMU	PIU	<i>Progress Reports</i>	Not started	to be implemented

## Annex 12: Road Safety Policy

This annex applies to all drivers of project vehicles (Government vehicles) and contractor's vehicles. All drivers must sign this annex to acknowledge that they will comply with the stated driver rules.

S/N	SAFE DRIVER RULES
1.	All drivers of vehicles or operators of machinery must hold a current and valid driver's licence or competency certificate suitable to the appropriate class and type of vehicle or machinery driven or operated
2.	Know the safe operating limitations of your vehicle, particularly relating to safe maximum loads and gradients.
3.	If a government owned project vehicle complies with all current Government transport policies.
4.	Carry out daily checks on your vehicle and report all defects immediately. Do not take the vehicle on the road if it is not roadworthy.
5.	Do not exceed the posted speed limits or drive at a lesser speed when the conditions of the road prohibit traveling at the posted speed limit e.g., driving on potholed roads, during rainy season or in poor visibility etc.
6.	Do not drive during dark hours.
7.	Do not drive while tired. Pull off the road to a safe space and rest.
8.	Keep the vehicle tidy and free from items which may hinder the operation of vehicle controls.
9.	Do not reverse without checking behind the vehicle for pedestrians, vehicles or obstructions.
10.	Do not drive when your abilities are impaired by ill health, poor vision or prescribed drugs.
11.	Drivers must comply with a zero percent alcohol limit and do not drive if you are on illegal drugs or legal drugs (if they impair your driving)
12.	Use of a hand-held mobile telephone devices while driving a vehicle or mobile plant is prohibited as it is a safety risk and is against the law.
13.	Wear seat belts at all times when the vehicle is in motion on a public road or at the work site.
14.	Where visibility from the driving position is restricted, use visibility aids or a signaler. Stop if you lose sight of the signaler or the visibility aid becomes defective.
15.	Do not remain on vehicles during loading operations, unless the driver's position is adequately protected.
16.	Ensure that all passengers wear a seat belt when the vehicle is in motion on a public road or at the work site.
17.	Do not carry people on the bed of a truck or in the cargo area of pickup trucks

18.	Smoking in any vehicle by either drivers or passengers is prohibited.
19.	Do not exceed the load/weight capacity of any vehicle. Loads shall be within the safe weight limit for the vehicle and should not project beyond the vehicle body in such a manner as to present a hazard to other vehicles, pedestrians or adjacent structures. All loads being transported by vehicle must be properly and adequately secured.
20.	Ensure that windows and mirrors are kept clean and clear.
21.	Do not attempt to get on or off moving vehicles.
22.	Do not make adjustments with the engine running and guards removed.
23.	Know the site emergency procedures.
24.	Understand the system of signals used on site.
25.	Follow site procedures and comply with all site rules.
26.	Follow established site traffic routes.
27.	Visiting drivers: seek appropriate authority to enter the site and operate vehicles.
28.	Do not smoke during refuelling operations.
29.	Adequately plan journeys to avoid nighttime driving and excessive speed.
30.	All vehicles shall be provided with copies of valid third-party test certificate and registration document shall be available for verification.
31.	Vehicles shall not block access or emergency points.
<p><i>I, "[Enter Name of Driver]" do hereby acknowledge that I have been provided with a copy of these regulations and I will strictly abide by them in execution of my duties as driver to ensure safety of myself and others.</i></p>	
<b>DRIVER'S NAME:</b>	
<b>SIGNATURE:</b>	
<b>DATE:</b>	

