

REPUBLIC OF ZAMBIA

MINISTRY OF COMMERCE, TRADE, AND INDUSTRY



Zambia Agribusiness and Trade Project, Phase II (ZATP II)

P179507

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

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ABBREVIATIONS AND ACRONYMS

AER	Agro-Ecological Regions
AfFCTA	Africa Free Continental Trade Area
AIDS	Acquired Immune Deficiency Syndrome
CBEs	Community Based Enterprises
CBM	Coordinated Border Management
CBOs	Community-Based Organizations
CEEC	Citizens Economic Empowerment Commission
C-ESMP	Contractor Environmental Social Management Plan
CFP	Chance Find Procedure
CSO	Central Statistical Office
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 Social Framework
ESHG	Environmental Safety and Health 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
FDI	Foreign Direct Investment
FIs	Financial Institutions
FMO	Financial Management Officer
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GMAAs	Game Management Areas
GRZ	Government of the Republic of Zambia
HIV	Human Immunodeficiency Virus
IPMP	Integrated Pest Management Plan
ITCZ	Intertropical Convergence Zone
LMP	Labour Management Procedures
M&E	Monitoring and Evaluation
MCTI	Ministry of Commerce, Trade and Industry
MoH	Ministry of Health
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 Conservation Commission

PA/PAZ	Productive Alliance Zambia
PFI	Participating Financial Institutions
PIM	Project Implementation Manual
PIU	Project Implementing Unit
PMC	Project Management Consultants
PMP	Pest Management Plan
POs	Producer Organisations
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
ZATP	Zambia Agribusiness and Trade Project
ZDA	Zambia Development Agency
ZEMA	Zambia Environmental Management Agency
ZPPA	Zambia Public Procurement Authority

EXECUTIVE SUMMARY

The World Bank will support the Government of the Republic of Zambia (GRZ) through the Ministry of Commerce, Trade and Industry (MCTI) in implementing the Zambia Agribusiness and Trade Project Phase II (ZATP-II). The objective of the project is to increase access to markets and finance and promote firm growth in Zambia's Agribusiness sector. The project will support the following activities: 1) Support access to markets and finance; 2) Promote Trade and Agribusiness Competitiveness; and 3) Project Management. The likely activities of the project include construction of a laboratory, warehouses, food processing facilities, development of farmers' fields, honey production, peanut butter production and construction or rehabilitation of customs buildings.

The project activities will take place in 10 provinces covering 116 districts. Specific locations of subproject activities are not known at this stage. The specific subproject location will be identified during project implementation.

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

The environmental risk rating of the ZATP-II is Moderate because the project anticipates minor construction works, such as the construction of the Zambia Metrology laboratory and infrastructure to support digital and automated trade and accreditation systems. The project also includes direct support to growth-oriented high-growth agribusinesses and small and marginal farmers associated through Producer Organizations (POs), which are moderate risk scale activities building on the success of ZATP. The subprojects under the agribusinesses, POs and farmers activities may involve horticulture, aquaculture, animal husbandry, agro-processing, and farmer field demonstration for instruction in climate adaptation and mitigation measures in agriculture. These activities may require small infrastructure works such as warehouses, fishponds, bulking centers, mechanized animal feed production and small plots of land for demonstration purposes amongst others. The continuation and the upscale of ZATP activities (as merged into ZATP-II) across a wider geographical area will see (a) the practice of climate resilient agriculture introduced to five new provinces supported by the creation of multiple farmer field schools (b) an expansion of Occupational Health and Safety (OHS) practices that were introduced into ZATP for construction, farmer and POs activities and (c) an improved subproject E&S screening and subproject design process perfected from ZATP lessons learned.

The social risk rating is Moderate, considering the nature and magnitude of the potential social risks and the impacts of subprojects and that, though the project will be implemented across the entire country, there are no significant conflict-affected areas that might have an impact on the project's implementation. Further, the proposed project's overall SEA/SH risk level is preliminarily rated as moderate, given the geographical spread and type of activities anticipated.

The potential environmental and social risks for project activities are identified as;

- Indiscriminate disposal of electronic waste causing soil and water contamination.

- Increased dust and noise levels exposing the community/workers to respiratory illnesses and hearing problems, respectively.
- Increased demand for raw material and natural resource resulting into environmental degradation.
- Generation and inadequate management of solid, construction and hazardous waste causing soil and water contamination leading to disease outbreaks.
- Uncontrolled use and application of pesticides and other agrochemicals causing soil and water contamination including OHS injuries.
- Emissions due to the use of fossil fuels from generators.
- Biodiversity and habitat loss through land conversion.
- Inadequate management of wastewater from point source which may enter the water way and cause eutrophication due to excessive nutrient and fertilizer application.
- The inadequate development, implementation, and supervision of OHS risk assessments or OHS plans in all project activities may cause unnecessary injury or death of project workers, local community members or damage to property.
- Inadequate project road safety policy and its robust implementation may cause damage to vehicles, property and /or the deaths or injuries of project drivers, vulnerable road users (pedestrians, motorcyclists, and other road users).
- Inappropriate land acquisition processes may cause involuntary resettlement.
- Risk of exclusion of or discrimination against women, youth, and people living with disabilities in selecting farmers and agribusinesses.
- Labor and working conditions risk due to failure to abide by national legislation on working hours, wages, overtime, compensation, or benefits.
- Sexual exploitation and abuse, and sexual harassment (SEA/SH) among project workers, stakeholders and/or local communities.
- Risk of child labour in farming activities and agribusinesses.
- Lack of inclusive consultations, especially where there may be excluded groups in remote locations or where there are language barriers.
- Challenges in organizing or obtaining access to grievance redress and referral processes; and
- Limited capacity of the PIU on ESF may lead to poor implementation of the ESF.

These risks will be identified, assessed, mitigated and managed through a framework approach. This ESMF has been prepared to details the procedures that address the project's potential environmental and social risks and impacts. All subprojects will be adequately screened, and the necessary and proportionate level of E&S due diligence will be implemented e.g., the development of E&S instruments. The ESMF also contains an E&S exclusion list that excludes the implementation of subproject that will cause irreversible environmental degradation and societal harm.

In addition, the following E&S instruments have been prepared as part of the ESMF to address potential environmental and social risks under the ZATP-II: Electronic Waste Management Plan, Hazardous Waste Management Plan, Nutrient and Fertilizer Management Plan, GBV action plan, Chance Find Procedures (CFP), Road Safety Policy, and standalone Stakeholder Engagement Plan (SEP) that include a Grievance Redress Mechanism (GRM), Labour Management Procedures (LMP) and Integrated Pesticide Management Plan (IPMP),.

Implementation Arrangements and Monitoring. ZATP-II PIU will oversee relevant screening processes in alignment with the Zambia Environmental Management Act of 2011 and the Environmental Impact Assessment (EIA) Regulations, Statutory Instrument No.28 of 1997, and the World Bank environmental and social screening requirements. The screening will be based on the Social and Environmental Screening checklist/ Form (see Annex 1).

The Ministry of Commerce, Trade, and Industry (MCTI) will be responsible for the overall coordination and implementation of the ZATP-II. The project at MCTI will fall under the Department of Planning and Information, which will supervise the Project Implementation Unit (PIU). The ZATP-II PIU will be responsible for the overall project coordination, including the facilitation of any decisions of a policy nature relating to the project. The PIU will be responsible for undertaking compliance monitoring and impacts mitigation measures outlined in this ESMF. The PIU must ensure that the project subprojects and TSP submit monthly reports on work progress and any challenges in observing the Environmental and Social Standards requirements. The monitoring results shall form a major part of the reports to be submitted to MCTI and the World Bank. The total estimated budget proposed for ESMF implementation is USD 705,000.

Other institutions such as ZEMA, Labour department, WARMA, and local authorities will play a vital role in monitoring subproject ESMPs in compliance with the procedures outlined in this ESMF.

A separate **Stakeholder Engagement Plan** (SEP) has been prepared for the Project, based on the World Bank's Environmental and Social Standard 10 on Stakeholder Engagement. The SEP can be found here: <https://www.mcti.gov.zm/> or <https://www.zatp.org.zm/>.

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 Environmental and Social Management Framework (ESMF) is developed to support the environmental and social due diligence provisions for activities financed by the World Bank in the Zambia Agribusiness and Trade Project II (ZATP II) (P179507) as a follow-up to the Zambia Agribusiness and Trade Project. The project will contribute to increase access to markets, finance, and firm growth in Zambia's Agribusiness sector. The Ministry of Commerce, Trade and Industry (MCTI) will implement the Project activities. The project will be implemented over a five-year duration from January 2023 to December 2028 and will cover the ten provinces of Zambia across 60 districts.

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 Stakeholder Engagement Plan (SEP), the Environmental and Social Commitment Plan (ESCP), Electronic Waste Management Plan, Integrated Pesticide Management Plan (IPMP), Hazardous Waste Management Plan, GBV action plan, Chance Find Procedures (CFP), Road Safety Policy, and standalone Stakeholder Engagement Plan (SEP) that include a Grievance Redress Mechanism (GRM), Nutrient and Fertilizer Management Plan and Labour Management Procedures (LMP).

CHAPTER 2: PROJECT DESCRIPTION

The Zambia Agribusiness and Trade Project II (ZATP - II) builds on the Zambia Agribusiness and Trade Project (P156492), which is currently operational in twenty districts in five out of ten provinces in Zambia. Based on the successful implementation of ZATP and the relevance of interventions, GRZ is keen to scale up the ZATP model across all ten provinces in Zambia. ZATP II aims to build on ZATP to close the gaps in access to markets and credit and render the agribusiness sector competitive through upstream business enabling reforms, providing quality infrastructure, and facilitating trading across Zambian borders. ZATP II will be implemented in ten provinces of Zambia as indicated in *Figure 1*.



Figure 1: District Map of Zambia

The project aims to diversify the Zambian economy to sustain private sector-led growth and create employment for Zambia's fast-growing and youthful population. The project centers on inclusion and impact at scale as it targets growth for the bottom 40 percent of earners, most of whom are employed in Zambia's agricultural sector in micro and small businesses. While doing so, the project will also future-proof Zambia's agribusiness sector and render it competitive, with an impetus on i) leveraging opportunities presented by Africa Continental Free Trade Agreement (AfCFTA); ii) aligning the private sector agenda with the Paris Agreement; and iii) mainstreaming the role of women and rural youth as Zambia transitions to an inclusive and greener economy.

The project is proposed to be an Investment Project Financing under the SUW/SML window with a credit amount of USD 170.00 million, with interventions that are mutually reinforcing across three project components: 1) Support access to markets and finance; 2) Promote Trade and Agribusiness Competitiveness; and 3) Project Management.

Component 1: Support access to markets and finance

This component supports capacity building of firms and POs within a value chain as well as fostering linkages. It addresses key constraints related to limited access to finance, inadequate integration, weak export orientation, and climate resilience of value chains. This will be achieved through an integrated approach, including TA or BDS and structured financing through an LoC and MG facility. The focus will be at the farmer and firm levels to support upskilling, increasing investments in value addition, product, and process upgrades, that are climate resilient. The interventions planned under this component directly support two sets of beneficiaries: growth-oriented agribusinesses and small and marginal farmers who are associated through cooperatives or POs, with a focus on women, rural youth, and persons with disability.

Subcomponent 1.a. Market Connect

The objective of this subcomponent is to provide tailored Technical Assistance (TA) to growth-oriented agribusiness firms and to POs to ‘upgrade’ and improve market linkages, as well as foster partnerships with off takers and buyers. This will be done through (1.1a) Provision of BDS that are holistic, demand driven and address above challenges. These well-structured training and capacity building programs aim to enhance operational efficiencies, financial skills, technical know-how, managerial skills, usage of digital technologies or platforms, adoption of climate-smart technologies and management practices.²² Value chain integration will be promoted by supporting commercialization arrangements between project-supported POs, agribusinesses and/or off-takers brought under partnership; (1.1b) financing new product certification, food safety standards and applications for new/ renewal of export licensing for eligible agribusinesses and POs by facilitating group and company level certifications that can enhance marketability of commodities/products and also reduce post-harvest losses in food systems; (1.1c) provision of business incubation and acceleration support to early stage businesses to enable them to better leverage digital technologies to enhance productivity and profitability. This would be achieved by fostering partnerships with business incubators for enabling digital platforms including e-commerce (1.1d) development of “centers of excellence” for demonstration and knowledge spill overs from the project or training youth (with a focus on women) as agriculture entrepreneurs (referred to as “Agripreneurs”) who may serve as last mile BDS providers for “bundling” services (access to climate-resilient inputs, digital solutions, advisory for climate adaptation and mitigation measures, financial services and market linkages).

Subcomponent 1.b. Productive Alliances

The objective of this subcomponent is to support transition of small and marginal farmers to market-centric approaches by improving their capacity to finance and execute productivity enhancing investments. This will be done through MG financing to farmer POs who cannot otherwise access commercial credit for productive investments. The project will support productive investments at the PO level to enable primary and secondary value addition as well as adoption of climate-resilient production technologies for stronger market participation. These investments will be identified and cleared for support through the project on a case-by-case basis

Subcomponent 1.c. Line of Credit (LoC) to support Agribusinesses.

This subcomponent will enhance access to finance by galvanizing financial intermediaries to work with growth-oriented agribusiness firms and enterprises. The project will provide a dedicated LoC and TA to financial intermediaries to ensure better assessment of agribusiness credit risk. The LoC will provide targeted bank financing to support growth-oriented agribusinesses to enable them to invest in new technologies, climate adaptation and mitigation measures, and sustainable practices. Such investments are expected to raise their productivity, access export markets, diversification, ensure climate resilience and scale-up incomes —often for longer tenors than those that are currently available in the Zambian market. This subcomponent will facilitate the flow of credit to small agri-businesses, with strong emphasis on accommodating disadvantaged/ vulnerable populations as well as climate-resilient investments.

Component 2: Promote Trade and Agribusiness Competitiveness

The objective of this component is to enable the key stakeholders in Zambia’s agribusiness sector and those benefitting from Component 1 to take advantage of improved business enabling environment, trade facilitation, and opportunities emerging from AfCFTA. This component will seek to improve trade pathways, quality infrastructure, and the business enabling environment, that is, meso-level sectoral activities that are critical for firms and farmers and in line with the AfCFTA. This component aims to modernize border procedures, systems, and policies that will ensure systems integrity during climate shocks, pandemics, and other emergencies and build resilience. Interventions would focus on MSMEs and women traders and on streamlining procedures that reduce post-harvest losses for perishables thereby fostering climate adaptation.

Component 3: Project Management

This component will ensure effective implementation of project activities, including M&E of project implementation progress. It will primarily build on the implementation experience of ZATP. The existing ZATP Project Implementation Unit (PIU) and MCTI Department of Planning and Information (DPI) will be leveraged for project administration and coordination, respectively. Component 3 will support (a) project operations; (b) implementation of the stakeholder engagement plan (SEP) and feedback mechanism to inform project implementation; (c) implementation of the project’s grievance redress mechanism (GRM); and (d) an M&E system to account for the national-level project implementation and additional subcomponents being introduced on top of existing ZATP interventions. An indicative list of activities financed under this component includes dedicated staffing of the project at the PIU including provincial level, accompanying costs to ensure fiduciary compliance and adherence to safeguards, consultancies, training and related material, project communications, office equipment (including project ICT systems), and incremental operational costs. Given the cross-cutting nature of this component, it contributes to Pillar 4 (Strengthening Policies, Institutions and Investments for Rebuilding Better) of the GCRF.

The Ministry of Commerce, Trade, and Industry will coordinate project activities, including day-to-day implementation, coordination, supervision, and overall management of project activities.

The subprojects activities may involve horticulture, aquaculture, animal husbandry, agro-processing and farmer field demonstration for instruction in climate adaptation and mitigation measures in agriculture. These activities may require small infrastructure works such as warehouses, fishponds, bulking centers, mechanized animal feed production and small plots of land for demonstration purposes amongst others. The continuation and the upscale of ZATP activities (as merged into ZATP-II) across a wider geographical area will see (a) the practice of climate resilient agriculture introduced to five new provinces supported by the creation of multiple farmer field schools (b) an expansion of Occupational Health and Safety practices that

were introduced into ZATP for construction, farmer and POs activities and (c) an improved subproject E&S screening and subproject design process perfected from ZATP lessons learned.

CHAPTER 3: ENVIRONMENTAL AND SOCIAL POLICIES, REGULATIONS, AND LAWS

3.1 Zambia Legal Framework

Table 1. Zambia Relevant Legal Framework

Law	Description and Relevance to the Project Activities
<p>Environmental Management Act, No. 12 of 2011.</p>	<p>Relevance: The implementation of the ZATP-II is likely to involve some small civil infrastructure works to construct bulking centres, abattoirs agro warehouses, food processing plants and other associated auxiliary structures in the agri-business value chain. The construction of such civil infrastructure works may cause environmental and social risks and impact on the environment through 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.</p> <p>Compliance: In compliance with the Environmental Management Act and the Environmental Impact Assessment (EIA) EIA regulations, all subprojects under the ZATP II will be screened and categorized in terms of the risk category. Depending on the risk category, an Environmental and Social Impact Assessment (ESIA) shall be conducted in accordance with the EIA regulations and World Bank Environmental and Social Standards, ESS1: Assessment and Management of Environmental and Social Risks and Impacts. In addition, site-specific ESMP shall be prepared where applicable. For low-risk category projects, the E & S screening checklist shall be adopted as the monitoring tool for compliance purposes.</p>
<p>Environmental Impact Assessment Regulations, SI No. 28 of 1997</p>	<p>Relevance: The implementation of the ZATP-II is likely to involve some small civil infrastructure works to construct bulking centres, construct abattoirs, agro warehouse, food processing plants and other associated auxiliary structures in the agri-business value chain. The construction of such civil infrastructure works may cause environmental and social risks and impact on the environment through increased dust level, generation of solid and hazardous waste, occupational health and safety (OHS) risks and impacts and community health and safety risks and impacts.</p> <p>Compliance: In compliance with the requirements of the Environmental Impact Assessment (EIA) regulations, all subprojects under the ZATP- II 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 and World Bank Environmental Social Standards, ESS1: Assessment</p>

	<p>and Management of Environmental and Social Risks and Impacts. In addition, site-specific ESMP shall be prepared where applicable. For low-risk category, the E & S screening checklist shall be adopted as the monitoring tool for compliance purposes.</p>
<p>Anti-Gender Based Violence Act, No.1 of 2011.</p>	<p>Relevance: During the implementation of the ZATP-II, one of the potential risks and impacts that may affect the host communities relate to Gender Based Violence (GBV), Sexual Exploitation Abuse and Harassment (SEAH) due to improved disposable income among the beneficiaries.</p> <p>Compliance: A GBV/SEA/SH Action Plan (Annex 12) has been developed by the ZATP-II to manage potential risks and impact related to these risks. In addition, the ZATP-II will give priority to vulnerable grouping such as women by linking them to markets and value chains to improve their financial security and independence</p>
<p>The Employment Code Act, No. 3 of 2019</p>	<p>Relevance: During the implementation of the ZATP II several workers are expected to be employed either as direct, indirect, contractual or casual workers. Such workers will require oral and written contracts of employment. Some of these workers may also be below 18 years, contrary to the requirement of this Act. In addition, some beneficiaries may pay workers’ wages that are lower than the minimum wage.</p> <p>Compliance: In compliance with the requirements of this Act, all beneficiaries under the ZATP-II will ensure that workers employed under the project are above 18 years of age and that these workers are provided with an oral or written contract of service. All beneficiaries under the ZATP II shall be expected to provide conditions of service that meet or exceed the minimum conditions of service under this Act.</p>
<p>The Roads and Road Traffic Act, No .11 of 2002 (as amended August 2022)</p>	<p>Relevance: During the implementation of the ZATP II, several vehicles will be procured for the transportation of construction materials and farm inputs. If such vehicles are not in good condition and the drivers are not licensed, there is a potential risk of road traffic accidents that may affect the surrounding communities.</p> <p>Compliance: The ZATP-II will comply with this Act by ensuring that all motor vehicles and drivers under the project are licensed, obtain insurance cover, and the vehicles are certified fit for use by the Road Traffic and Safety Agency (RTSA). For the construction of the ZMA Laboratory, a Road Traffic and Safety Management plan shall be developed in accordance with the World Bank Environmental and Social Standard, ESS4: Community Health and Safety.</p>
<p>The Public Health (infected Areas)</p>	<p>Relevance: During the implementation of the ZATP II, there is a potential risk of spreading communicable diseases from migrant workers looking for employment from the farms, construction sites and processing</p>

<p>Corona Virus 2019, Regulations, SI 22 of 2019</p>	<p>plants. Some of these workers will be commuting daily and this will pose a health risk in case of the spread of communicable diseases such as Corona Virus.</p> <p>Compliance: The ZATP-II will comply with the provisions of the statutory instrument to ensure that the health of workers on the project site and the community are safeguarded. In addition, the project will adopt mitigation measures under the World Bank Environmental Social Standards, ESS4, on Community Health and Safety. Specially for the construction of the ZMA Laboratory, a health and safety management shall be developed as part of the C-ESMP</p>
<p>Fisheries Act No.22 of 2011</p>	<p>Relevance Some of the subprojects under the ZATP II will be involved in aquaculture farming through the production of fingerlings and the breeding of fish. The Act provides guidelines for the sustainable management of fisheries at both domestic and commercial level. In addition, the Act promotes a precautionary approach in fisheries management and works hand in hand with ZEMA by conducting environmental and social assessments for some projects.</p> <p>Compliance: In compliance with the requirements of the Act, the ZATP-II will work closely with the fisheries department and ensure that all designs and implementation of aquaculture subprojects is in line with the requirements of the Fisheries Act. The ZATP II will also adopt mitigation measures outlined under the World Bank Environmental Social Standards, ESS6, Biodiversity Conservation, and Sustainable Management of Living Natural Resources.</p>
<p>Forests Act No.4 of 2015</p>	<p>Relevance Some of the subprojects under the ZATP II may involve the clearing of natural forests to increase agricultural hectareage. In addition, some subprojects may be implemented near national forests or forest management.</p> <p>Compliance: To avoid and minimize implementation of project in reserved national forest, an exclusion list has been developed by the ZATP II to mitigate such risk. The exclusion list does not allow the implementation of subprojects in the national gazetted 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.</p>
<p>Gender Equity and Equality Act No. 22 of 2015</p>	<p>Relevance: Some of the potential beneficiaries that will be supported with a matching grant by ZATP-II are women. Hence, there is need for equity in terms of number of women beneficiaries that will be supported by the project in compliance with the Act.</p> <p>Compliance: In order to comply with the requirements of this Act, the ZATP II will support women-led</p>

	beneficiaries during business proposal development, approval and implementation. The call for business proposal shall deliberately encourage women to apply for matching grants.
Human Rights Commission Act, No. 39 of 1996	<p>Relevance: During the implementation of the ZATP-II project, there is a potential risk of the community and beneficiary's human rights being infringed due to some unfair practices such as pollution, the spread of communicable diseases, paying salaries below the minimum wage, inappropriate housing for construction workers, lack of oral or written contracts and poor sanitation facilities.</p> <p>Compliance: In compliance with the requirements of this Act, the ZATP II will ensure that the rights of workers employed by the beneficiaries are upheld. The project will also adopt international requirements for managing workers human rights and the World Bank Environmental Social Standards ESS2, ESS 3, ESS4 and ESS10.</p>
Lands Amendment Act, No.41 of 2010	<p>Relevance: The Act provides for the types of land tenures in Zambia. One of the selection criteria under the ZATP II is that beneficiaries should indicate evidence of land ownership through a title deed, or any other authentic documents provided and recognized by the Ministry of Lands. In addition, the project will also require evidence of land ownership for traditional-owned land.</p> <p>Compliance: In compliance with the requirement of the Act. All beneficiaries under the ZATP-II project will comply with this Act and ensure that all subprojects provide legitimate proof of land ownership. For traditional-owned land, the project will ensure that proof of land ownership is provided by the presiding Chiefdom.</p>
Local Government Act, No.2 of 2019	<p>Relevance: The ZATP-II will be implemented in 60 local authorities in Zambia. The implementation of these subprojects will require the support of the local authorities in terms of approval and supervision of some these construction-related 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>Compliance: In compliance with this Act, all beneficiaries under the ZATP II will adhere with the requirements of this Act by obtaining the required approvals and permits as required by the Act.</p>
National Heritage Conservation Commission Act, No.13 1994	<p>Relevance: During the implementation of the ZATP-II especially the construction of the Zambia Metrology Agency (ZMA) Laboratory and other small civil infrastructure works, there is potential risk of discovering previously unknown graves, historical or archaeological items during excavations.</p> <p>Compliance: In compliance with the requirements of this Act, the ZATP II will engage the National Heritage and Conservation Commission (NHCC) if any previously unknown items are discovered. In</p>

	<p>addition, Chance Find Procedure has been developed as part of this ESMF to provide guidelines for managing Chance Finds.</p>
<p>Occupational Health and Safety Act No. 36 of 2010</p>	<p>Relevance: During the implementation of the ZATP-II, some of the project beneficiaries will be involved construction, manufacturing, 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>Compliance: In compliance with the requirement of this Act, the ZATP-II will comply with the requirements of this Act by developing site specific ESMP that will include an occupational health safety (OHS) plan. The OHS measures will include emergency preparedness and response measures in compliance to ESS2, ESS4 and EHSGs</p>
<p>Public Health Act, No.22, 1995</p>	<p>Relevance: Some of the project interventions under the ZATP-II may cause public health risks and impacts on the host communities due to indiscriminate disposal of solid and hazardous waste that may lead to the spread of diseases.</p> <p>Compliance: In compliance with the requirement of this Act, the ZATP-II project will develop site-specific health management plan that will form part of the ESMP to avoid and minimize the spread of diseases The project will also adopt mitigation measures under the World Bank Environmental and Social Standard, ESS1 and ESS2.</p>
<p>Standards Act, No. 4 of 2017</p>	<p>Relevance: Component 2 of the ZATP -II will support agribusiness firms and producer organization with matching grants to improve their productivity. Some of these agribusiness firms and producer organization will require capacity building to improve quality of their product by adopting ZABS standards through conformity assessment services.</p> <p>Compliance: In compliance with the Act, beneficiaries under the ZATP-II will adopt the ZABS national standards and participate in conformity assessment activity to improve their product quality. The project will also adopt best management practices under the Good International Industry Practices (GIIP) to improve product quality.</p>
<p>Urban and Regional Planning Act, No.3 2015</p>	<p>Relevance: Some of the beneficiaries under the ZATP-II will be involved in small civil infrastructure works that will require planning and building permits from the respective local authorities. The local authorities are</p>

	<p>also in charge of issuing fire and public health permits for construction related works within the local authority.</p> <p>Compliance: The ZATP-II will adopt guidelines and regulations under this Act and ensure that all beneficiaries comply with this Act in collaboration with the local authority.</p>
Water Resources Management Act, No. 21 of 2011	<p>Relevance: During the implementation of the ZATP-II, some of the beneficiaries may to abstract water from ground or surface sources for domestic and irrigation purposes. Any subproject activities that are likely to affect water resources such as drilling of boreholes and implementing project interventions near or within water bodies will be required to comply with the provision of this Act.</p> <p>Compliance: The ZATP-II will ensure that all beneficiaries that intend to use ground or surface sources for implementation of their subprojects comply with the requirements of this Act.</p>
Zambia Wildlife Act, No.14 2015	<p>Relevance: Some of the subprojects under the ZATP II may be implemented near natural parks or natural wildlife corridors. This may result in animal human conflicts in terms of using same water sources and passages.</p> <p>Compliance: To comply with this Act, the ZATP-II will work hand in hand with the department of wildlife to establish wildlife corridors and avoid animal human conflict.</p>
The Zambia Metrology Act No.6 of 2017	<p>Relevance: Some of the beneficiaries under the ZATP-II will require measurements of their products through use of manual or electronic measurements. These measuring devices will require regular calibration and maintenance by the ZMA.</p> <p>Compliance: In compliance with this Act, the ZATP - II will encourage beneficiaries to regularly calibrate measuring devices using the services provided by ZMA as and when required.</p>
The Food Safety Act No.7 of 2017	<p>Relevance: Some of the beneficiaries under the ZATP II will be involved in food production and value addition activities. If not managed properly, unsafe handling of food may cause health hazards to the consumers.</p> <p>Compliance: To protect consumers and the public against health hazards due to improper handling of food, all beneficiaries under the ZATP- II will comply with the requirements of the Act.</p>

<p>National Council for Construction Act No .10 of 2020</p>	<p>Relevance: Some of the beneficiaries under the ZATP-II will be involved in small civil infrastructure works such as construction of bulking centres, agro-warehouses and the ZAM Laboratory facilities. The Act provides for training and registration of contractors and affiliation of professional as building practitioners. The Act requires that only affiliated practitioners and contractors should be allowed to practice in the construction industry.</p> <p>Compliance: In order to comply with the requirements of this Act, the ZATP-II will ensure that only contractor affiliated with the National Construction Council (NCC) are engaged.</p>
<p>The National Pensions Scheme Act No.7 of 2015</p>	<p>Relevance: Some of the beneficiaries under the ZATP II may employ direct, indirect and contract workers during subproject implementation. All workers employed under such categories will be required to get registered under the National Pensions Scheme.</p> <p>Compliance: To comply with this Act, all workers employed by subprojects under the ZATP-II will be required to get registration with the National Pension Scheme.</p>
<p>The Factory Act Cap 441 of the Laws of Zambia</p>	<p>Relevance: Component 2 of the ZATP-II will shall support SMEs and POs 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>Compliance: The ZATP II will comply with the requirement of this Act by adopting mitigations measures provided under the Act. The project will also adopt mitigation measures under the World Bank Environmental and Social Standard, ESS 2; Labour and Working Conditions.</p>

3.2 National Environmental and Social Assessment and Permitting

The main institutions, statutory bodies and agencies that will play a role in the implementation of the ZATP-II are listed as follows:

- Ministry of Commerce, Trade and Industry (MCTI)
- Ministry of Green Economy and Environment (MGEE)
- Ministry of Agriculture (MOA)
- Ministry of Fisheries and Livestock (MFL)
- Zambia Environmental Management Agency (ZEMA)
- Zambia Bureau of Standards (ZABS)
- The Zambia Metrology Agency (ZMA)
- Zambia Compulsory Standards Agency (ZCSA)

Ministry of Commerce, Trade and Industry (MCTI)

The Ministry of Commerce, Trade, and Industry (MCTI) is a Cabinet level Government Ministry of Zambia. It is responsible for the development of a globally competitive, sustainable, commercial, trade and industrial base in Zambia with the objective of contributing to the social and economic development in Zambia. The Ministry is headed by a cabinet minister and assisted by two permanent Secretaries, who are career civil servants. The Permanent Secretaries oversee the five department of the directorates that are headed by a director; Department of Foreign Trade; Department of Domestic Trade; Department of Human Resources and Administration; Department of Finance; Department of Planning and Information and Department of Industry. The ZATP- II falls under the Directorate of Planning and Information (DPI) and the Director Planning and Information will provide overall coordination of the project.

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 ZATP- II will collaborate with the ministry in implementing various agriculture value chain subprojects through business proposal development and supervision of the aquaculture subproject implementation.

Ministry of Livestock and Fisheries (MFL)

The Ministry of Fisheries and Livestock 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 ZATP -II 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 ZATP-II will require training and certification with ZABS.

Zambia Environment Management Agency (ZEMA)

The Environmental Management Act, No. 12 of 2011 establishes 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 ZATP-II will be required to have their measurements devices calibrated in accordance with the requirements of the ZAM Act.

Zambia Compulsory Standards Agency (ZCSA)

The Zambia Compulsory Standards Agency 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 ZATP-II 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 ZATP II at subproject level depending on the nature of the value chain.

- Agricultural Import Permit.
- Borehole Registration.
- Building Permit.
- Certificate of origin (Livestock, Crops, Fish)

- Drillers and Constructor License
- Environmental Impact Assessment (EIA) License.
- 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)
- Ozone Depleting License.
- Phytosanitary Certificate
- Plant Import Permit.
- Pesticide and Toxic Substance Licence.
- Plant Export Permit.
- 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).

3.3 World Bank Standards and Key Gaps with the National Framework

This project will follow the World Bank’s Environmental and Social Standards (ESSs), as well as the World Bank Group Environmental, Health and Safety Guidelines. Based on these policies, the environmental and social risk of the project is categorized as Moderate. The environmental risk rating is Moderate because the project expects Component 2 minor construction works such as the metrology laboratory and infrastructure to support digital and automated trade and accreditation on systems. Component 1 activities include the direct support to small and marginal farmers associated through Producer Organizations (POs) and high growth agribusiness, which are moderate risk scale up activities building on the success of ZATP. The social risk rating is Moderate, considering the nature and magnitude of the potential social risks and the impacts of subprojects. Though the project will be implemented across the entire country, there are no conflict-affected areas that might have an impact on the project’s implementation.

The World Bank’s environmental and social standards applicable to project activities are summarized in Table 2 below.

Table 2. Relevant World Bank ESS and Key Gaps with the National Framework

Environmental and Social Standard	Relevant	Relevance to the ZATP-II Project
ESS1 Assessment and Management of Environmental and Social Risks and Impacts	Yes	This standard is relevant. This ESS requires that the Borrower carries out an assessment of the environmental and social impacts and risks of the Project. Therefore, the Borrower has prepared this Environmental and Social Management Framework (ESMF) because the precise locations and activities of the projects are not yet known. This ESMF outlines the guidelines, procedures to assess, mitigate and monitor the environmental and social risks and impacts of the subprojects. The ESMF also includes an exclusion list, Labour Management Procedures (LMP), Chance Find Procedures and a GBV Action plan and an accountability and response framework. The ESMF also provides a rigorous E&S screening tool for all subprojects activities, a framework for an ESMP, an e-waste management plan, pesticide management plan and other related guidelines and plans to manage pollution to air, water and land, conserve and protect natural resources and minimize and adequately manage the generation of all types of waste.
ESS2 Labour and Working Conditions	Yes	This standard is relevant as project workers include: (i) Direct workers, who are people employed or engaged directly by the Borrower, such as PIU staff, project implementing agencies, consultants, and government workers; and (ii) Contracted workers, such as people employed or engaged by small or marginal farmers and agribusinesses, and workers hired to work on the construction of the Metrology laboratory or any other minor civil works on the subprojects. To manage labour risks, the Borrower has developed a Labour Management Procedures (LMP as part of the EMSF). The LMP outlines requirements related to working conditions, management of worker's relationships, occupational health and safety, code of conduct (including relating to SEA/SH), age of employment, non-discrimination in hiring workers especially those related to women's employment, provision of safe working conditions, grievance mechanism for employees, and contractor management, based on the provisions of ESS2 and ESHGs as well as national labour laws and regulations.
ESS3 Resource Efficiency and Pollution Prevention and Management	Yes	ESS 3 is relevant .The proposed project activities may generate (i) localized water and air pollution from inadequate management of construction, solid, hazardous, animal and sanitation wastes, (ii) the use of wood (for heat energy and construction material), water, river sand for construction, irrigation and food processing, (iii) use of diesel generators

		that may emit GHGs, SOx and NOx and particulate matter for energy generation., preference to fossil fuel-based energy uses, energy-intensive processes, and long lead times for Power Utility connection, (iv) the generation of e-wastes from irreparable and end of life electronic equipment used in the digitization process, (v) and the application of pesticides within subproject agricultural. Therefore, the Borrower has prepared an Integrated Pest Management Plan (IPMP), Hazardous Waste Management Plan, Electronic Waste Management Plan and a Nutrient Management Plan as part of this Environmental and Social Management Framework (ESMF) to provide appropriate mitigation measures in line with ESS3.
ESS4 Community Health and Safety	Yes	ESS 4 is relevant. Given that the project will finance technical assistance, provision of grants and loans targeting small or marginal farmers and agribusinesses, the construction of the ZMA laboratory and other minor civil works, the potential community health and safety risks may include (i) traffic and road safety risks resulting from and an increase in construction and operational related traffic in rural areas leading to vehicle impacts with local community and livestock, (ii) poorly designed and constructed infrastructure resulting in collapse, fires and a lack of climate change resilience, (iii) a lack of security at some subproject sites such as where renewable energy equipment is installed, fuel and small scale equipment, (iv) inappropriate disposal of wastes of all types (wastewater, solid, hazardous) leading to the spread of infectious diseases among the community, and community health impacts from local water resource contamination and air pollution from burning of solid and hazardous waste, (iv) SEA/SH.
ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	No	This standard is currently not relevant as the impacts of land acquisition/resettlement are expected to be on a small scale. The project will not support sub-projects that require land acquisition and result in resettlement. The only activity that may require land is the construction of a laboratory, which will be built on existing government-owned land, and no new land will be required.
ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	Yes	ESS 6 is relevant. The project activities may involve horticulture, aquaculture, animal husbandry, agro-processing and farmer field demonstration plots for climate smart agriculture, small and large infrastructure works such as warehouses, bulking centres, mechanized animal feed production, the ZMA laboratory and construction of facilities to house digital equipment. The project activities may impact on biodiversity or living natural resources (i) through land conversion to agriculture (ii) pollution discharge to water, land and air from construction, animal husbandry, agricultural activities the

		subproject would have to apply the mitigation hierarchy.
ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Relevant	ESS7 is not considered relevant to this project as there are no distinct social and cultural groups in the project area that exhibit characteristics of indigenous or traditionally under-served communities as spelled out under this standard. Should a subsequent screening process indicate that a particular group meets the requirements of ESS7 and will be impacted by this project, a social development plan which accords with this standard will be developed.
ESS8 Cultural Heritage	Yes	This standard is relevant. The ZATP-II will support the construction of the ZMA laboratory and other minor civil works. These activities are expected to occur within existing operational footprints and may involve civil works and excavations that could impact tangible cultural properties and previously unknown cultural objects. To manage these risks, a Chance Find Procedures has been developed as part of the ESMF. The sub project screening procedures will guide the identification of impacts to cultural heritage and exclude from the project (i) activities that are likely to negatively impact on tangible and intangible cultural heritage after mitigation measures are in place.
ESS9 Financial Intermediaries	Yes	This standard is relevant. The ZATP-II will provide a credit line of USD 30.00 million to an apex financial institution to provide longer-term funding sources to the underserved high-growth agribusinesses and producer organizations. Recipients of the use of these proceeds under the activity, including the apex financial institution and sub-Borrowers, are yet to be identified, as well as the targeted agribusinesses. The requirements of ESS 9 will apply to the entire portfolio of the FI's future subprojects from the date on which the legal agreement becomes effective. The apex financial institution will be required to develop, implement, and maintain an ESMS consistent with the requirements set out in ESS9. The ESMS shall include: (a) E&S policy, (b) clearly defined E&S procedures and capacity to screen projects (application of exclusion list, review of industry sector and technical aspects of the project) and conduct due diligence to evaluate E&S risk and assign risk category (low, medium and high risk), (c) systems/processes for due diligence to evaluate, monitor, review and manage E&S risks and impacts of subprojects (evaluate the E&S performance of ongoing subprojects and the portfolio periodically), (d) organizational capacity and competence including a budget and a senior management position designated for reporting on the ESMS as well as providing training and capacity-building on ESMS procedures and performance; (e) external communications and reporting mechanisms on E&S performance.
ESS10 Stakeholder Engagement and	Yes	This standard is relevant. The Borrower has prepared, disclosed, and consulted a

<p>Information Disclosure</p>		<p>Stakeholder Engagement Plan (SEP). The SEP (i) describes the project stakeholders, making a distinction between those directly affected by the project and other interested parties.</p> <p>The SEP describes the timing and methods of engagement with key stakeholders that will be used throughout the life cycle once the locations of subproject activities are known. The SEP, further, describes the type of information that will be provided to stakeholders and how feedback from stakeholders will be solicited and recorded. The SEP has also described the project level Grievance Redress Mechanism that has been developed by the borrower as per the requirements of ESS10. The GRM has been built upon existing mechanisms that have been developed under the ZATP, which is currently managed by the Borrower. Project documents, including environmental and social risk management instruments and the ESCP, will be disclosed in a timely manner to ensure a meaningful and informed engagement with all project stakeholders. Engagement with stakeholders will continue throughout project implementation</p>
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3.7. 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 ZATP II is expected to achieve whichever guidelines is more stringent. In this regard, 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.

3.7.1 General Environmental Health and Safety Guidelines (Environmental)

- a. Air Emissions and Ambient Air Quality
- b. Energy Conservation
- c. Wastewater and Water Quality
- d. Water Conservation
- e. Hazardous Materials Management
- f. Waste Management
- g. Noise
- h. Contaminated land

3.7.2: Occupational Health and Safety

General Facility Design and Operation

- a. Communication and Training
- b. Physical Hazards
- c. Chemical Hazards
- d. Biological Hazards
- e. Radiological Hazards
- f. Personal Protective Equipment (PPE)
- g. Special Hazard Environments
- h. Monitoring

3.7.3 Community Health and Safety

- a. Water Quality and Availability
- b. Structural Safety of Project Infrastructure
- c. Life and Fire Safety (L&FS)
- d. Traffic Safety
- e. Transport of Hazardous Materials
- f. Disease Prevention
- g. Emergency Preparedness and Response

3.7.4 Annual Crop Production

- a. Soil Conservation and Management
- b. Nutrient Management
- c. Crop Residue and Solid Waste Management
- d. Water Management
- e. Pest Management
- f. Use and Management of Pesticides
- g. Fertilisers
- h. Biodiversity and Ecosystems
- i. Genetically Modified Crop (GM Crops)
- j. Energy Use
- k. Air Quality

3.7.5 Aquaculture

- a. Threats to Biodiversity
- b. Source Water Quality
- c. Effects on Water Resources
- d. Food Safety Impacts and Management
- e. Contamination of Aquatic systems
- f. Hazardous Materials
- g. Water Borne Diseases
- h. Exposure to Chemicals
- i. Physical Hazards

3.7.6 Mammalian Livestock

- a. Waste Management
- b. Wastewater Management
- c. Air Emissions
- d. Ecological Impacts
- e. Animal Diseases

3.7.6 Dairy Processing

- a. Wastewater
- b. Solid waste
- c. Air mission
- d. Energy Consumption
- e. Physical Hazards
- f. Biological Hazards
- g. Chemical Hazards
- h. Food Safety Impacts and Management
- i. Noise and Vibrations
- j. Heat and Cold
- k. Resource Use and Waste Generations

CHAPTER 4: POTENTIAL ENVIRONMENTAL AND SOCIAL RISK IMPACTS AND STANDARD MITIGATION MEASURES

The project anticipates minor construction works such as the metrology laboratory and infrastructure to support digital and automated trade and accreditation on systems. The project also includes direct support to growth oriented high growth agribusinesses and small and marginal farmers associated through POs, which are moderate risk scale activities building on the success of ZATP. The subprojects under the agribusinesses, POs and farmers activities may involve horticulture, aquaculture, animal husbandry, agro-processing and farmer field demonstration for instruction in climate adaptation and mitigation measures in agriculture. These activities may require small infrastructure works such as warehouses, fishponds, bulking centers, mechanized animal feed production and small plots of land for demonstration purposes amongst others.

The environmental and social risks and impacts that the project may encounter are listed in Table 3 below.

Table 3: Environmental and Social Risks and Mitigation Measures

Subproject Activity	Risks and Impacts	Mitigation Measures
Sub – Component 1.a Market Connect and Sub – Component 1.b Productive Alliances		
Crop Production	<p>Biodiversity: ESS 6 Impacts on biodiversity include:</p> <ul style="list-style-type: none"> • Biodiversity/habitat loss. • Degradation and fragmentation, • soil erosion • Invasive alien species, • Overexploitation, • Hydrological changes, • Nutrient loading pollution and • Climate change • Landscape alteration 	<ul style="list-style-type: none"> • Appropriate site selection process to be followed. e.g., project screening to ensure that subprojects are not located in areas protected by national laws such as Protected Areas, Game Management Areas and National Parks. • Promote the use of modified habitats or degraded lands and not natural or critical habitats. • Avoidance of impacts should be prioritized. Where impact avoidance is not possible, existing indigenous vegetation must be kept intact, where possible. Vegetation will be removed only as necessary where agricultural and construction activities will take place. • Where significant risks and impacts have been identified, on critical and natural habitats then the subproject will be excluded in accordance with the exclusion list. • Rivers, watercourses and other water bodies shall be kept clear of felled trees, vegetation cuttings and organic waste and debris. • Restrict project activities to the actual footprint; • The project shall not deliberately introduce any alien species with a high risk of invasive behavior regardless of whether such introductions are permitted under the existing regulatory framework. All introductions of alien species will be subjected to a risk assessment as part of the environmental and social assessment) to determine the potential for invasive behavior alien crop or plant species shall be imported into the country without the necessary permit requirements and without a risk assessment being conducted in compliance with national environmental and social safeguard law and regulations. • The project will implement measures to avoid the potential for accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbor alien species • Where alien species are already established in the country or region of the proposed project, the project will exercise diligence in not spreading

		<p>them into areas in which they have not already become established. Where feasible, the project will take measures to eradicate such species from the natural habitats over which the project has management control.</p> <ul style="list-style-type: none"> • Where cutting or clearing of vegetation is unavoidable revegetate and replant trees elsewhere. • For subprojects involving small scale producers in the same geographical area, the project will ensure that they operate in a sustainable manner where cumulative risks and impacts will be assessed. project will ensure the use of good management practices, available technologies and GIIPs.
	Use of Forced labor	<ul style="list-style-type: none"> • Conducting due diligence on suppliers and contractors to ensure they do not engage in forced labor practices. • Providing training to employees and contractors on how to identify and report forced labor. • Conducting regular audits and inspections to identify and address forced labor practices. • Ensuring that workers are paid fair wages and provided with safe and healthy working conditions. • Monitoring and addressing recruitment practices to prevent debt bondage and other forms of forced labor. • Ensuring that all contracts and agreements with suppliers and contractors include provisions prohibiting forced labor.
	Use of Child labor	<ul style="list-style-type: none"> • No recruitment of children or people under 18 years for any work. This will be contained in the Labour Management Procedures • Contractor/Beneficiary shall be required to comply with the employment act and the LMP. • Use of documentation to verify minimum age requirement such as use of national identification cards. • This responsibility shall be reflected in contractor's and consultants' contracts. • The Project and all stakeholders shall comply with the Labour Management Procedures annexed as annex 10. • The beneficiary/Contractor shall adopt and implement the requirements of ESS 2 as part of the ESMP. • Sensitization to beneficiaries and the community against child labor

	<p>Air- ESS3 Emissions such as CO₂, NO_x, SO_x and particulate matter from the operation of mechanized equipment or combustion by-products from the disposal or destruction of crop residues or processing causing air pollution</p>	<ul style="list-style-type: none"> • General EHS Guidelines for mobile and stationary sources will apply. • Avoid open burning for land preparation, weed control, and post-harvest treatments. • Promote controlled burning in energy production facilities to extract thermal energy for beneficial use. • Prohibit burning of pesticide-treated agricultural wastes and by-products (e.g., pesticide containers) to avoid unintended emissions of persistent organic pollutants (POPs) • Adopt IPM strategies to avoid and reduce use of pesticides and associated drift. • Monitor and minimize ammonia emissions resulting from nitrogen fertilizer and manure use. • Consider incorporating fertilizer at planting to minimize ammonia emissions. • Reduce the risk of fire by reducing the build-up of potential groundcover fuel sources and controlling weeds and invasive species. • Evaluate the substitution of non or low-emission energy sources for combustion methods. • Ensure proper maintenance and operation of combustion equipment (irrigation engines, tractor engine, etc.) and consider replacing old units or retrofitting air emission controls. • Modify field operations where possible (e.g., reducing the number of in-field passes with machinery, reduced tillage operations, or improved logistics to minimize travel distances). • Establish cover crops where possible; retain residues and reduce tillage intensity to avoid dust and soil degradation due to wind erosion. Where water supplies are ample, water application to cropped areas and access roads may reduce the risk of airborne dust. • Establish natural wind barriers such as vegetative field borders, hedgerows, herbaceous wind.
	<p>Greenhouse emissions causing climate change: ESS3</p>	<ul style="list-style-type: none"> • Conduct resources efficient farming in line with ESS3. • Identify sources of on-farm GHG emissions and establish a GHG management plan that includes methods of mitigating emissions and a monitoring program.

		<ul style="list-style-type: none"> • Follow the nutrient management plan to ensure that the nutrient balance is right for maximum crop uptake, the quantity of nitrogen matches crop needs, and the timing of application coincides with active growth stages refer to the nutrient and fertilizer management plan. • Reduce fossil energy use by adopting energy-efficient production and management practices. • Where feasible, consider using renewable energy (e.g., solar, wind, biofuel) for crop drying or t power irrigation pumps. • Drain water from wetland rice soils during the growing season to reduce methane emissions
	<p>Inappropriate management of chemicals and hazardous material leading to soil and water contamination. ESS3</p>	<ul style="list-style-type: none"> • Ensure all packaging for pesticides and herbicides is collected from the field after use and properly stored until final disposal. • Do not burn packaging, plastics, or other solid waste. Dispose of this waste in designated waste disposal facilities or by recycling. • Consider large container and/or bulk systems for fuels, oils, fertilizers, and chemicals to reduce the volume of waste containers. • Examine alternative product formulations and packaging (e.g., biodegradable material). • Manage expired and unwanted pesticides as hazardous wastes in accordance with the General EHS Guidelines and ZEMA requirements. • Adopt best management practices and guidelines provided under the ZATP-II project Integrated Pest Management Plan and the Hazardous Waste Management Plan. • Conduct onsite training to beneficiaries on the safe handling, transportation, storage of hazardous materials including disposal of pesticides containers. • Provide information to beneficiaries on alternative safe pesticides and agrochemicals. • Conduct training on vegetable production and use of organic fertilizers. • Implement the developed hazardous waste management plan annexed to the ESMF.
	<p>Land acquisition causing land use restrictions and involuntary resettlement. ESS5</p>	<ul style="list-style-type: none"> • All activities requiring land acquisition, imposing land use restrictions and/or resulting in resettlement will be screened out. • Implementation of all project activities shall be on pre-owned land.

	<p>Production of high value crops may have disproportionate impact on the poor and vulnerable groups who cannot afford to produce high value crop</p>	<ul style="list-style-type: none"> • Conduct consultations with poor and vulnerable groups at subproject level to solicit their inputs. • Undertake deliberate onsite training and transfer knowledge on production of high value crops. • Conduct mentoring and coaching eligibility criteria requirements for poor/vulnerable to be future applicants for similar grants and line of credit.
	<p>Unfavorable labor practices with low wages, long working hours and no benefits causing poor living conditions and ergonomic risks-muscular injuries: ESS2</p>	<ul style="list-style-type: none"> • Contractor/Beneficiary shall be required to comply with the Employment Act. • Prepare contracts in line with the employment Act. This responsibility shall be reflected in contractor’s contract. • The Project, beneficiary/Contractor and all stakeholders shall adopt and implement requirements of the Labor Management Procedures. • Sensitization on the Labor Grievance Management procedures and the project GRM
	<p>GBV/SEA/SH: Incidences of gender-based violence, sexual exploitation, abuse and harassment</p>	<ul style="list-style-type: none"> • Implementation of the SEA/SH Action Plan • All project staff, consultants, contractors, and beneficiaries will be trained in GBV/SEA/SH prevention measures and protocols. • GBV/SEA/SH directories and referral services will be made available to all stakeholders from community to ministerial levels. • Implementation of the GBV/SE/SH training curriculum for all project beneficiaries and stakeholders. • All beneficiaries will be made aware of the GRM available and will also be able to lodge complaints pertaining to GBV/SEA/SH
	<p>Poor agricultural practices leading to Climate Change</p>	<ul style="list-style-type: none"> • Practice Climate Smart Agriculture. • Plant Early maturing seed varieties. • Practice water harvesting techniques such as construction of small dams, weirs. • Conduct training on Climate Smart Agriculture. • Obtain insurance cover for the cultivated crops. • Promote the use of energy efficient agricultural equipment with low carbon footprint, e.g., use of solar powered irrigation equipment, or agro processing equipment, and water harvesting practices.

	Cultivation of hillsides leading to soil erosion and sedimentation and land degradation: ESS 6	<ul style="list-style-type: none"> • Subproject beneficiaries engaged in crop production in hilly lands shall be provided technical support through Ministry of Agriculture (MoA) and the project Technical Support Provider (TSP). • Undertake soil conservation measures such as terracing, contour farming, agro - forestry. • Adopt requirements of ESS 6: Biodiversity conservation and sustainable management of living natural resources.
	Inappropriate water management practices leading to water depletion: ESS3	<ul style="list-style-type: none"> • Conduct a water balance and develop a water irrigation plan. • Whenever feasible, adopt water-efficient irrigation systems, such as micro-sparing, drippers, and fertigation. • Consider the soil infiltration capacity to select the best irrigation system and avoid the runoff water. • Ensure regular maintenance of the irrigation system, as well as that of its associated channels and infrastructure. • Reduce evaporation by avoiding irrigation during periods when evaporation is elevated. (e.g., in periods of higher temperatures, reduced humidity, or high wind) • Use trickle or drip irrigation techniques, if practical. • Reduce evapotranspiration by using shelterbelts and windbreaks. • Reduce seepage losses in supply channels by lining them or using closed pipes. • Consider collecting storm water through catchments. • Employ a cutback furrow irrigation technique, slowing or stopping irrigation water well. • Before the water reaches the end of the furrow and discharges to the environment. • If herbicides are used, ensure they are applied at the appropriate time of year to most. • effectively control undesirable vegetation and reduce its water consumption. • Increase water storage capacity for use during dry spells. • Practice water harvesting technologies. • Develop weirs to capture water for use during dry season. • Practice mulching to minimize evapotranspiration of water. • Plant drought resistant crops with long root penetration.

		<ul style="list-style-type: none"> • Explore rearing of drought resistant animals.
	<p>OHS risks.</p> <p>Physical hazards:</p> <ul style="list-style-type: none"> • Operational and workplace hazards (Slips, trips, and falls (inadequate workplace) resulting in sprains, strains, and fractures. • Ergonomics hazards from manual handling, lifting weights, or repetitive movements; Sharp and moving objects in the workplace; and Over-exposure to noise, vibration, and extreme or adverse weather conditions • Machinery and vehicles (Accidents may occur in the use of machines and vehicles, including worker transportation, farm tractors, harvesting machinery, and a variety of other machines used on farms. These may include: <ul style="list-style-type: none"> ○ Vehicle collisions; vehicle and machinery roll-overs. ○ uncontrolled movement resulting in personal injury (e.g., crushing by moving vehicles); damage or loss of asset; injury, entrapment, or death due to faulty or ○ unguarded equipment and machinery (e.g., moving parts and pinch points on machinery and vehicles). ○ entrapment due to unplanned starting, activation, or engagement of equipment (e.g., rollers). 	<ul style="list-style-type: none"> • Conduct and develop site specific OHS risk assessment that includes type of risks, control measures, responsible personnel, monitoring requirements, frequency and resources required. In line with EHSGs, preventive and protective measures to be introduced according to the following order of priority: <ul style="list-style-type: none"> ○ Eliminating the hazard by removing the activity from the work process. Examples include substitution with less hazardous chemicals, using different manufacturing processes, etc. ○ Controlling the hazard at its source through use of engineering controls. Examples include local exhaust ventilation, isolation rooms, machine guarding, acoustic insulating, etc. ○ Minimizing the hazard through design of safe work systems and administrative or institutional control measures. Examples include job rotation, training in safe work procedures, lock-out and tag-out, workplace monitoring, limiting exposure or work duration, etc. ○ Providing appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE. ○ Integrate OHS aspects in subproject designs, i.e., from procurement of equipment with safety guards for rotating parts of the equipment to the implementation of the OHS management plan. • All workers to be provided with appropriate PPE against all physical hazards, including full body harness from fall from height, protection from dust, pathogens, hazardous chemicals, etc. in accordance with recognized international safety standards and guidelines. • Orientation for all staff would be given on safe work practices and guidelines and ensure that they adhere to these. • Training to be conducted on incident handling. This will involve proper handling of any electrical or motorized equipment, etc. and sensitization on various modes of escape, conduct, and responsibility during such incidences.

	<ul style="list-style-type: none"> • Confined and restricted space entry (e.g., processing bins and silos, product storage bins, water tanks, inadequately ventilated buildings, areas treated with pesticides, etc.) include risk of asphyxiation. • explosions due to gas, dust, or fumes (e.g., residual petroleum fumes); and entrapment or enclosure within the confined space. • Serious injury or fatality can result from inadequate preparation when entering a confined space or in attempting a rescue from a confined space. <p>Biological risks: Exposure to organic dust</p> <p>Safety risks</p> <ul style="list-style-type: none"> • Risk of fire and explosion from combustible dust and silo safety • Chemical hazards leading to diseases and death 	<ul style="list-style-type: none"> • Integrate the cost of procuring agricultural equipment mobile equipment at project design stage and ensure it is fitted with suitable alarm, including backup alarms. The backup alarm must be audible while the equipment is in operation. • Safety training of workers on precaution on traffic safety • The operator must conduct daily vehicle inspections to ensure all the safety requirements are met. • A safety observer must be assigned to watch the movement of mobile/heavy equipment. • The observer must ensure that people are kept clear of suspended loads and mobile equipment. The observer/ watcher shall use clear communication with the equipment operator. • The safety observer must be trained in his/her role to ensure safe positioning. He/she must wear a high-visibility vest at all times during the work. • Entry into all confined spaces should be restricted and subject to permitted supervision by properly trained persons, as described in the General EHS Guidelines. • Restricted areas should be clearly marked and clearly conveyed to personnel and contractors. • Store only dry grain (and dry, well-cured forages and hay) to reduce microorganism growth. • Do not use compressed air or steam for cleaning. • Equip tractors, loaders, or combined harvesters (threshing machines) with a cab and suitable filtration/ventilation. • Develop and implement procedures for entering a confined space. • Ensure adequate ventilation, dust capture and extraction. • Avoidance and control of ignition sources bear silos, e.g., smoking, faulty electrical installations, welding, cutting etc.
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	Exclusion of or discrimination against women, youth, and people living with disabilities in the selection of farmers and agribusinesses.	<ul style="list-style-type: none"> • Engaging with marginalized farmers and their communities to understand their perspectives and priorities, and to build trust and collaboration. • Providing targeted support to marginalized farmers, such as access to finance, training, and technical assistance, to help them overcome barriers to participation in the project. • Ensuring that project activities and benefits are accessible and inclusive to all, regardless of gender, ethnicity, or other factors that may lead to exclusion. • Establishing clear and transparent criteria for participation in the project and ensuring that they are applied fairly and consistently. • Providing information and communication materials in local languages and formats that are accessible to marginalized groups. • Monitoring and evaluating the project's impact on marginalized farmers and making adjustments as needed to ensure that they are benefiting from the project.
Livestock production	Improper management of animal waste (cow dung, goat droppings, chicken waste)	<ul style="list-style-type: none"> • Ensure production and manure storage facilities are constructed to prevent urine and manure contamination of surface water and groundwater (e.g., use concrete floors, collect liquid effluent from pens, and use roof gutters on buildings to collect and divert clean stormwater). • Keep waste as dry as possible by scraping wastes instead of flushing with water to remove waste.

	<ul style="list-style-type: none"> • Reduce the amount of water used during cleaning (e.g., by using high-pressure, low-flow nozzles). • Minimize the surface area of manure in storage. • Cool the manure surface to maintain low temperatures (e.g., by using cooling fins on the manure surface). • Locate manure stacks away from water bodies, floodplains, wellhead fields, or other sensitive habitats. • For feedlots, ensure that solid waste (e.g., bedding and muck) is gathered regularly and is not permitted to lie on the ground for long periods of time. • Design, construct, operate, and maintain waste management and storage facilities to contain all manure, litter, and process wastewater including runoff and direct, precipitation. • Dry and Reuse Manure as a source of energy (Biogas). • Develop the Standard Operating Procedures for managing waste streams. • Ensure that manure is applied to agricultural field only during periods that are appropriate for its use as plant nutrient just before the start of the growing season. • Develop animal waste management plan
<p>Ecological impacts of livestock production e.g., water contamination and air emissions</p>	<ul style="list-style-type: none"> • Prevent animal access to surface and ground water sources using fencing and barriers. • Prevent overgrazing of pasteurized land through rotational grazing based on seasonal and local ecosystems resilience. • Before converting land to livestock production, survey the proposed project area to identify, categorize, and delineate natural and modified habitant types and ascertain their biodiversity value. • Ensure effective waste management to avoid and minimize ecological impacts. • Develop and implement an effective pest management plan to avoid and minimize risk and impact on the ecosystem. • Ensure that any natural or modified habitant is not converted into livestock production. Use of livestock trails to reduce soil trampling and gully formation / erosion near streams. • Provide for minimum disturbance to surrounding areas when managing livestock.

<p>Potential risk of biogas e.g., explosion, fire, asphyxia, risks from hydrogen sulfide poisoning</p>	<ul style="list-style-type: none"> • Ensure adequate ventilation, good working practices, and adequate personal protective equipment (PPE) when working with biogas. • Where possible, digester associated tasks and maintenance should be conducted without anyone having to enter confined spaces. • System should be put in place so that confined space entry is not required to perform maintenance works on the bio digester. No open flames should be used near the bio digester. • Explosion proof equipment, non-sparking tools should be used around bio digester. • There should be no smoking near the digester and related biogas lines. • Develop standard operating procedures for • Never enter a facility where manure is stored or where there is a suspected biogas leak because natural ventilation may not suffice to dilute potential explosion hazards. • Do not enter a facility if a person has been found unconscious. • Adequately display emergence preparedness contacts in case of an incident. • Ensure the farm workers are trained and are aware of the potential risks of biogas. • When handling manure slurry exercise appropriate precautions by using PPE because manure slurry contains bacteria, viruses and other parasites. • It is recommended to wash hands before eating and drinking and before touching the eyes or other mucous membranes. • Keep the digester facility clean to minimize biological hazards and spread of odors and fly populations. • Install gas sensors to detect potential gas leaks. • Conduct safety talks to farm workers responsible for operation and maintenance of the bio digester. • Contact the manufacture for maintenance and services requirements and availability of services. • Improve the productivity and efficiency of livestock production through improvements in nutrition and genetics to lower the

	<ul style="list-style-type: none"> production of greenhouse gas emissions. • Supplement livestock diets with nutrients. • Increase the carbon to nitrogen ratio to reduce methane production. • Minimize the amount of manure production through implementation of a waste management plan.
Land degradation resulting in soil erosion, desertification and loss of soil fertility due to overgrazing	<ul style="list-style-type: none"> • Supplement pasture forage with stored livestock feed. • Pull livestock from pasture where need arises and use stock feed. • Plant forage for use on certain hectareage of the farm for use during the dry spell of the year. • Practice concept of zero grazing using artificial stocks. • Planting tree and other growing grass to minimize effects of overgrazing.
Animal diseases and resulting into high mortalities	<ul style="list-style-type: none"> • Establish sound biosecurity protocols for the entire poultry operation that control animals, feed, equipment, and personnel, entering the facility (for example, quarantine periods for new animals, washing and disinfecting equipment, showering and protective clothing and footwear for personnel and keeping out stray animals, rodents, and birds); • Prevent the interaction of wild birds with feed, as this interaction could be a factor in the spread of avian influenza from sparrows, crows, etc. • Sanitize bird housing areas; • Establish a detailed animal health program supported by segregating sick birds and develop management procedures for adequate and removal and disposal of dead birds); and • Train workers in the application of animal health products. • Sanitize animal housings and ensure regular dipping of animals. • Identify and segregate sick animals and develop management procures for adequate removal and disposal of dead animals.
Overgrazing of rangelands, leading to soil erosion and land degradation	<ul style="list-style-type: none"> • Subproject beneficiaries engaged in range grazing shall be provided technical support through Ministry of Agriculture (MoA) and project Technical Support Provider (TSP) on fodder producing and sustainable utilization of grazing lands. • Undertake soil conservation measures such as fodder production. • Encourage benefices to practice Zero grazing.

	Conflict in open-access grazing	<ul style="list-style-type: none"> • Seek clearance from traditional leadership and ward chairperson on buffer zones. • Conduct consultation between the stakeholders in line with ESS 10. • In line with the Project Grievance Redress Mechanism (GRM), constitute a Community Grievance Redress Community (GRC) to manage grievance at community level.
	Use of Child and forced labor	<ul style="list-style-type: none"> • No recruitment of children or persons under 18 years for any work. • Contractor/Beneficiary shall be required to comply with the Employment Act and all National Labour laws. • Sensitization to beneficiaries and the community against use of child and forced labor in line with the SEP. • The Project and all stakeholders shall comply with the Labor Management Procedures, annexed to this ESMF. • The beneficiary/Contractor shall adopt and implement the requirements of ESS 2 as part of the ESMP.
	Exclusion of or discrimination against women, youth, and people living with disabilities in the selection of farmers and agribusinesses.	<ul style="list-style-type: none"> • Engaging with marginalized farmers and their communities to understand their perspectives and priorities, and to build trust and collaboration. • Providing targeted support to marginalized farmers, such as access to finance, training, and technical assistance, to help them overcome barriers to participation in the project. • Ensuring that project activities and benefits are accessible and inclusive to all, regardless of gender, ethnicity, or other factors that may lead to exclusion. • Establishing clear and transparent criteria for participation in the project and ensuring that they are applied fairly and consistently. • Providing information and communication materials in local languages and formats that are accessible to marginalized groups. • Monitoring and evaluating the project's impact on marginalized farmers and making adjustments as needed to ensure that they are benefiting from the project.
	Theft of animals	<ul style="list-style-type: none"> • Obtain insurance for all animals. • Ensure housing for animals is adequately secured. • Ensure resources are allocated towards security measures.

		<ul style="list-style-type: none"> • Periodic sensitization meetings on consequences of theft
	HIV/AIDS, STIs and COVID-19	<ul style="list-style-type: none"> • The project will disseminate information on HIV/AIDS, STI infection, prevention and management. • Information on health care services will be made readily available. • Use of condoms and other such protective measures will be encouraged especially on construction sites. • The project will train all workers on special occupational health and safety guidelines and practices to follow during the COVID-19 crisis in line with government and WB regulations
	GBV/SEA/SH: Incidences of gender-based violence, sexual exploitation, abuse and harassment	<ul style="list-style-type: none"> • Implementation of the SEA/SH Action Plan • All project staff, consultants, contractors and beneficiaries will be trained in GBV/SEA/SH prevention measures and protocols. • GBV/SEA/SH directories and referral services will be made available to all stakeholders from community to ministerial levels. • Implementation of the GBV/SE/SH training curriculum for all project beneficiaries and stakeholders. • All beneficiaries will be made aware of the GRM available and will also be able to lodge complaints pertaining to GBV/SEA/SH
	Improper Management and disposal of dead carcasses causing soil and groundwater contamination.	<ul style="list-style-type: none"> • Inform the District Veterinary officer. • If animal has drugs and not fit for human consumption, animal shall be burnt through ZEMA certified incinerators. • If the animal is certified fit for consumption by the Veterinary Officer, the animal shall be sold or consumed as per the decision of the owner. • Reduce mortalities through proper animal care and disease prevention. • Collect carcasses on a regular basis to prevent putrefaction. • No carcasses shall be disposed of using the compost method. All carcasses will be reported to the local authority public health department. • A post-mortem shall be conducted and depending on the results, the carcasses may be incinerated in the presence of the public health officers or burnt where incineration facilities are not available under the guidance of the local authority public health authority. • Use reliable commercially available options approved by local authorities that dispose of carcasses. Where no authorized collection of carcasses is available, on-site burial may be one of the only viable alternatives, if allowed by the authorities.

		<p>Whether on-site or off-site, the burial area should be designed and located to avoid contamination by vapors or leachate from buried, decaying carcasses. Open burning should be avoided</p>
	Inadequate management of process wastewater resulting into soil and water contamination	<ul style="list-style-type: none"> • Reuse water used for cleaning milking equipment to clean the milking parlor. • Reduce water use and spills from animal watering by preventing overflow of watering devices and using calibrated, well-maintained self-watering devices. • Install vegetative filters to trap sediment. • Install surface water diversions to direct clean runoff around areas containing waste. • Implement buffer zones to surface water bodies, avoiding land spreading of manure within these areas. • Reduce leachate from silage by allowing plant material to wilt in the field for 24 hours, varying cutting and harvesting times, and adding moisture-absorbent material as the silage is stored.
Aquaculture Production	Risks and impact on poor design and implementation of aquaculture subprojects	<ul style="list-style-type: none"> • Conduct screening of all aquaculture subproject in accordance with the ESMF screening procedures. • Design and implement mitigation measures to achieve no loss of biodiversity through post restoration of fish habitats, • Avoid the need to frequently abandon and replace improperly designed fish ponds and build aquaculture ponds. • Assess soil properties prior to pond construction to ensure that the bottom sealing layer of the soil has percolation rates lower enough to satisfactory hold pond water. • Assess the soil pH and presence of pesticides and other pollutant residues prior to construction especially if the land was previously used for intensive agriculture to avoid anthropogenic and natural pollutants that may hinder the viability of the ponds. • Construct ponds with a slope of 2:1 or 3:1 based on soil type as this adds to the stability of the pond banks and reduces soil erosion and weeds. • Avoid pond construction in areas that have a slope of more than 2%, as this will require energy intensive construction and maintenance. • Stabilize the embankments to prevent soil erosion.

		<ul style="list-style-type: none"> • Carry out construction work during the dry season to reduce sediment runoff that may pollute adjacent waters. • Install temporary silt fences during construction to slow down and catch any sediments. • Ensure that the embankments around brackish water ponds systems are high enough to form a physical division between agriculture and aquaculture. • Ensure that the saline/brackish water discharges are properly treated and before disposal. • Consider reuse of wastewater from hatcheries into irrigation of vegetables. Where this is not possible consider water treatment with chlorine at acceptable concentrations for the receiving waters. • Consider the hydrology of the region in the design of the ponds and ensure that the pond embankments are high enough to contain the pond water and prevent escape of the species during period of heavy rainfall and flooding. • Establish a contingency plan if there is an escape of the species being cultivated into the natural waters. • Ensure that appropriate discussion is held at community level to avoid conflicts of interest when agricultural land is transferred to aquaculture production. • Regularly monitor feed uptake to determine whether it is being consumed and adjust feeding rates accordingly. • Develop site specific ESMP depending on screening results. • Ensure all designs are reviewed by the District Fisheries Officer (DFO) prior to subproject implementation. • Only qualified contractors with proven expertise shall be engaged to construct the ponds. • Ensure officer from the local fisheries office supervises the contractor during the construction phase of the subproject. • Ensure adherence to ZEMA and aquaculture regulations such as fish bans, export permits/import permits, non-importation of alien species. • Ensure the subprojects devote 10 % of the implementation budget for environmental and social compliance adherence. • If antibiotics are required to manage fish diseases, only apply approved recommended antibiotics in strict accordance with the manufacturer's
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<p>Procurement, construction, installation and operation of processing, manufacturing equipment and facilities.</p>	<p>Occupational Health and Safety accidents and injuries including</p> <ul style="list-style-type: none"> • Fall from heights, injuries (from moving, vehicles and dropped items) • Cuts and abrasions, • Musculoskeletal injuries from lifting heavy weights. <ul style="list-style-type: none"> • COVID – 19 infections <ul style="list-style-type: none"> • Exposure to biological dust causing chronic pulmonary obstructive disease. 	<p>instructions.</p> <ul style="list-style-type: none"> • Conduct a risk assessment, develop and implement an OHS plan. • Integrate OHS aspects into the project design, e.g., ensuring that rotating parts of the equipment are fitted with safety guards. • Provision of preventive and protective measures including modification, substitution, or elimination of hazardous conditions or substances, • Training of project workers, documentation of and reporting of occupational accidents, diseases and incidents. • Use a mechanical method of lifting. • Limit weight to a one or two-person lift • Train workers in safe lifting techniques • Ensure job rotations (swap lifting with less physical tasks) • Ensure rest or stretch breaks are taken in line with Employment Act No. 3 of 2019. <ul style="list-style-type: none"> • Conduct mandatory medical screening of all workers. • Undertake an awareness campaign on site or through project outreach and info materials of endemic and contagious diseases and educate workers. • Provide the necessary protective equipment such as masks, and sanitizer. • Coordinate with local Ministry of Health (MoH) diseases surveillance unit. <ul style="list-style-type: none"> • Ensure all machines are regularly maintained to prevent the escape of fugitive dust emissions and all dust extraction devices are connected to an external exhaust system. • Install local exhaust and ventilation systems (should be designed into all newly built facilities and the cost included in the grant amount) • Appropriate scaled local exhaust and ventilation systems to be retrofitted into all existing structures under the project. • Ensure all machines are regularly maintained to prevent the escape of fugitive dust emissions and all dust extraction devices are connected to an external exhaust system. • Conduct toolbox talks on the importance of protecting the workers' respiratory system, the maintenance and wearing of the masks, the
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<ul style="list-style-type: none"> Poor lighting systems causing, causing eye irritation or over the long term. <p>Exposure to chemical burns/pesticides</p>	<p>correct functioning of the exhaust and ventilation systems and regular maintenance of machinery.</p> <ul style="list-style-type: none"> Workers provided with suitable respiratory protection masks (N95) or other applicable protection. Conduct an OHS risk assessment and ensure a storage /processing plants have sufficient space, well organized, well-lit and well ventilated. Develop Standard Operation Procedures (SOP) for all installed equipment and facilities. Conduct induction training for all workers at time of employment and conduct refresher sessions as required. Conduct risk assessment at the construction site. Ensure all workers on construction sites have the right Personal Protective Equipment (PPE). In line with requirements of ESS 1 and 2, identify risks and impacts associated with the implementation of the subproject and develop an OHS management plan. All agro-processing plants to be constructed and operated in line with the EHSGs. Implement the IPM plan
<p>Use of Child and forced labor</p>	<ul style="list-style-type: none"> No children under the age of 18 shall be employed. All potential beneficiaries to be screened against child and forced labour. Sensitizations against child and forced labor in implementation areas. Reporting channels to be publicized through the GRM which will take complaints concerning child and forced labour.
<p>Non-compliance of labor laws and regulations</p>	<ul style="list-style-type: none"> Contractors to comply with ESMPs/EPB recommendations on campsite management plans. Monitor and ensure there are no unfavorable labor practices with low wages, long working hours and no benefits causing poor living conditions and ergonomic risks for all project workers. Ensure contracts meet labour law requirements.
<p>GBV/SEA/SH due to labor influx</p>	<ul style="list-style-type: none"> Develop a Code of Conduct including management of GBV/SEA/SH for contractors. Conduct awareness to beneficiaries on project zero tolerance on

		<p>GBV/SEA/SH</p> <ul style="list-style-type: none"> • Create awareness to beneficiaries on the existing reporting channels and referral pathways as highlighted in the GBV/SEA/SH Action Plan and Project GRM. • Implement the project Gender Based Violence (GBV)/Sexual Exploitation Abuse (SEA) and Sexual Harassment (SH) Action Plan annex 8.
	Inadequate Solid waste management	<ul style="list-style-type: none"> • Provide waste bins for collection of solid waste. • Engage a service provider for collection of solid waste on a regular basis. • Ensure solid waste is characterized for possible recycling. • Develop a Solid Waste Management Plan (SWMP) in line with ESS 3
	Inadequate Wastewater management	<ul style="list-style-type: none"> • Ensure that wastewater recycled or treated prior to discharge. • Use of onsite wastewater treatment methods. • Ensure all sewer leakages and blockages are maintained. • Develop a Wastewater Operation and Maintenance Manual as part of the ESMP in line with ESS 3, Resource Efficiency and Pollution Prevention and Management.
Construction and operation of collection, sorting, aggregation, post-harvest, packing structures and transportation facilities	Inadequate Solid waste management	<ul style="list-style-type: none"> • Provide waste bins for collection of solid waste. • Engage a service provider for collection of solid waste on a regular basis. • Ensure solid waste is characterized for possible recycling. • Develop a Solid Waste Management Plan (SWMP) in line with ESS3: Resource Efficiency and Pollution Prevention and Management
	Inadequate wastewater management	<ul style="list-style-type: none"> • All costs for E&S are to be included in the grant proposals, contracts, procurement documents. • Ensure all runoff water is drained to natural drainage systems. • Ensure all sanitary waste is drained to soak away for treatment. • Ensure all sewer leakages and blockages are maintained. • Develop a Wastewater Operation and Maintenance Manual as part of the ESMP in line with ESS 3, Resource Efficiency and Pollution Prevention and Management
	<p>OHS: ESS2 Occupational Health and Safety accidents and injuries including</p> <ul style="list-style-type: none"> • Exposure to chemical burns/pesticides. • Fall from heights, injuries (from moving, vehicles and dropped items). 	<ul style="list-style-type: none"> • Substitute chemicals with less harmful alternatives • Obtain Material Safety Data Sheets (MSDS) for all chemicals in the facility and follow recommendations for storage and use, • Provide a store with sufficient space, well organized, well-lit and well ventilated.

	<ul style="list-style-type: none"> • Cuts and abrasions. • Musculoskeletal injuries from lifting heavy weights. • Exposure to water borne diseases. 	<ul style="list-style-type: none"> • Define the storage area and put-up clear signs. • Provide the appropriate PPE as stated in the MSDS. • Appropriately equipped first-aid stations should be easily accessible throughout the place of work, and eyewash. • Stations and/or emergency showers should be provided close to all workstations where the recommended first-aid response is immediate flushing with water. For subprojects requiring application of pesticides, identify Integrated Pest Management Plan (IPMP) techniques relevant. • Include strict adoption of Occupational Health and Safety requirements in the operations and maintenance of the subproject facilities. • Conduct induction training for all workers at time of employment. • Conduct risk assessment at the construction sites. • Ensure all workers on construction sites have the right Personal Protective Equipment (PPE) e.g., honey collectors. • Ensure the working housing satisfies the minimum requirements in terms OHS. • Ensure adequate sanitary facilities for workers. • Ensure adequate security at camp site. • Ensure adequate lighting at camp site. • ZATP-II Project to continuously monitor Contractor to comply with ESMP requirements on OHS. • Refer to the E&S guidelines for civil works contracts, annex 7.
	<p>GBV/SEA/SH: Incidences of gender-based violence, sexual exploitation, abuse and harassment</p>	<ul style="list-style-type: none"> • Implementation of the SEA/SH Action Plan • All project staff, consultants, contractors and beneficiaries will be trained in GBV/SEA/SH prevention measures and protocols. • GBV/SEA/SH directories and referral services will be made available to all stakeholders from community to ministerial levels. • Implementation of the GBV/SE/SH training curriculum for all project beneficiaries and stakeholders. • All beneficiaries will be made aware of the GRM available and will also be able to lodge complaints pertaining to GBV/SEA/SH
	<p>Non-compliance of labor laws and regulations</p>	<ul style="list-style-type: none"> • Contractors to comply with ESMPs/EPB recommendations on campsite management plans. • Monitor and ensure there are no unfavorable labor practices with low wages, long working hours and no benefits causing poor living

		<ul style="list-style-type: none"> • conditions and ergonomic risks for all project workers. • Ensure contracts meet labour law requirements.
	Inaccessibility of the grievance redress mechanism and redressal process	<ul style="list-style-type: none"> • The project shall record, track and manage grievances and feedback in line with the Grievance Redress Mechanism. • All grievance redress committees shall be fully functional at all levels. • All communities and the public should be sensitized on procedures and processes of the GRM. • Alternative sources of accessing the GRM shall be advertised.
	Exclusion of or discrimination against women, youth, and people living with disabilities in the selection of farmers and agribusinesses	<ul style="list-style-type: none"> • Engaging with marginalized farmers and their communities to understand their perspectives and priorities, and to build trust and collaboration. • Providing targeted support to marginalized farmers, such as access to finance, training, and technical assistance, to help them overcome barriers to participation in the project. • Ensuring that project activities and benefits are accessible and inclusive to all, regardless of gender, ethnicity, or other factors that may lead to exclusion. • Establishing clear and transparent criteria for participation in the project and ensuring that they are applied fairly and consistently. • Providing information and communication materials in local languages and formats that are accessible to marginalized groups. • Monitoring and evaluating the project's impact on marginalized farmers and making adjustments as needed to ensure that they are benefiting from the project.
Sub – Component 1.c Line of Credit (LoC) to support Agribusinesses Productive Alliances		
Access to finance to SMEs	Lack of information on financial services and banking products	<ul style="list-style-type: none"> • An ESMS shall be developed by the financial institution and to ensure that all World Bank and national regulations are met. • The ESMS shall include (a) environmental and social Policy (b) Clearly defined environmental and social procedures and capacity to screen projects (including application of the exclusion list, review of industrial sector and technical aspects of the ZATP II) and conduct due diligence to determine E & S risks. (c) systems and processes for due diligence to evaluate, monitor, review and manage E&S risks and impacts of subprojects including evaluating the E&S performance of ongoing

		<p>subprojects and the portfolio periodically), (d) organizational capacity and competency and; (e) communications and reporting mechanisms on E&S performance.</p> <ul style="list-style-type: none"> • • FIs before implementation will conduct stakeholder engagements to ensure that products meet market demand and also to ensure beneficiaries know the products being offered. • All financial services offered by the apex FI and FIs shall be advertised to all potential beneficiaries and stakeholders.
	Inability to access finance due to lack of collateral	<ul style="list-style-type: none"> • Financial institutions will ensure to publicize their selection criteria. • Apex and participating FIs will be encouraged to develop innovative products targeting potential beneficiaries unable to provide collateral.
	Lack of capacity and knowledge on financing	Sensitization on requirements to access finances will be made know to all stakeholders.
	Exclusion of marginalized groups	<ul style="list-style-type: none"> • Engaging with marginalized farmers and their communities to understand their perspectives and priorities, and to build trust and collaboration. • Providing targeted support to marginalized farmers, such as access to finance, training, and technical assistance, to help them overcome barriers to participation in the project. • Ensuring that project activities and benefits are accessible and inclusive to all, regardless of gender, ethnicity, or other factors that may lead to exclusion. • Establishing clear and transparent criteria for participation in the project and ensuring that they are applied fairly and consistently. • Providing information and communication materials in local languages and formats that are accessible to marginalized groups. • Monitoring and evaluating the project's impact on marginalized farmers and making adjustments as needed to ensure that they are benefiting from the project.
Sub – Component 2.a. Trade Facilitation and Trade in Goods		
Procurement of electronic equipment	Inadequate management of electronic waste causing soil and water contamination	a) Procurement of electrical and electronic waste Tender documents for procurement of IT should have specifications guiding on

		<p>the electronic waste management.</p> <p>All electronic equipment to be purchased in line with e-waste management plan and ESS 3 objectives.</p> <p>b) Collection of electrical and electronic waste</p> <ul style="list-style-type: none"> • Any e-waste generated as a result of end of life, it shall be stored in separate containers. • The containers should be labeled as “e-waste”. Labelling system should be clear and well known to the public and workers to ensue general safety. <p>c) Storage and Transpiration of electrical and electronic waste</p> <ul style="list-style-type: none"> • It should be with special vehicle by licensed contractor. • Before the start of transporting this e-waste, a form should be filled by the generator and transporter indicating the amount of e-waste. • A written permission for transporting the e-waste to registered treatment facility should be issued by ZEMA. • Transboundary of e-waste is not allowed unless a written permission is issued by ZEMA. <p>d) Treat and disposal of electrical and electronic waste</p> <p>Existing technical facilities for treating and disposing of e-waste should be assigned before the start of the ZATP-II project</p>
Construction of Laboratory facility and other minor civil small works	Loss of vegetation due to site clearance	<ul style="list-style-type: none"> • An E & S screening shall be conducted and the potential risks and impacts on biodiversity or habitans due to project activities will be mitigated by developing good practices guidelines for such activities in line with requirements of ESS 6. • No subproject will be implemented on critical and natural habitats as it is part of the ZATP II exclusion list.
	Cultural heritage: ESS8	A chance find procedure, annex 9 shall be used to manage any materials that may be of cultural heritage

	Risks of structural failure and fire	<p>Requirement for structural and resilient building design to be as follows:</p> <ul style="list-style-type: none"> • Contractor should be registered with National Construction Council (NCC) with Grade 1 Building and Housing Certificate (B). • All designs to be approved by the local authority. • Designs shall use incorporate SABS fire protection requirements SABS 0400 - 1990; Part T – Fire Protection that provides code of practice for fire safety in designs, management, and use of builds, provides a best practice for fire safety. • Ensure adequate space between groups of building to limit spread of fire. • Provide escape and access for firefighting equipment. • Ensure provision of adequate water provision in case of fire. • Provide early warning system in case of fire. • Design to incorporate emergency assembly point. • Design to incorporate locations for fire hydrants. • All construction buildings will follow local building codes, local fire department regulations, local legal/insurance requirements, and in accordance with an internationally accepted Life & Fire Safety standard. • Inclusion of buffer strips or other methods of physical separation around project sites to protect the public from major hazards associated with hazardous materials incidents or process failure, as well as nuisance issues related to noise, odors, or other emissions. • Incorporation of siting and safety engineering criteria to prevent failures due to natural risks posed by earthquakes, tsunamis, wind, flooding, landslides, and fire. To this end, all project structures should be designed in accordance with engineering and design criteria mandated by site-specific risks, including but not limited to seismic activity, slope stability, wind loading, and other dynamic loads. • Application of locally regulated or internationally recognized building codes to ensure structures are designed and constructed in accordance with sound architectural and engineering practice, including aspects of fire prevention and response. • Engineers and architects responsible for designing and constructing facilities, building, plants and other structures should certify the applicability and appropriateness of the structural criteria employed.
	Exposure to hazardous substances such as cement	Provision of adequate PPE to workers such as mouth masks, goggles, and gloves.

	<p>Emergency preparedness and response for (incidents, accidents, fires, explosions, leaks or spills)</p>	<ul style="list-style-type: none"> • Construction workers should be educated to adhere to basic rules with regard to protection of public health, including most importantly hygiene and disease (HIV/AIDS) prevention. • Recruitment of local people as general labor force as priority • Utilization of the LMP (annex 10) and project GRM. • Develop and implement waste management plans. • Develop and implement Emergency Response Plans • Develop Code of Conduct for stakeholders and participants • Implement measures and actions to control the safety of deliveries of hazardous materials and of storage, transportation and disposal. • Ensure the contractor implements a hazardous waste management plan. • Secure storage facilities for oils, diesel at camp and minimize spillage. • Use of well-maintained vehicles and construction equipment to reduce oil leaks that may affect water resources. • Implement the hazardous waste management plan. • Develop and implement Emergency Response Plans (ERPs) in coordination with the district local authorities within the project areas of implementation and the affected communities. • ESMPs/CESMPs to have the ERPs that will address the emergence events. • The ERP to consider the emergency prevention, preparedness and response arrangements put in place with project workers under ESS2. • The ERP will include: engineering controls such as containment, automatic alarms, and shut off systems; identification of and secure access to emergency equipment available on site and nearby; notification procedures for designated emergency responders; diverse media channels for notification of the affected community and other stakeholders; training program for emergency responders including drills at regular intervals; public evacuation procedures; designated coordinator for ERP implementation, and measures for restoration and cleanup of the environment following any major accident.
	<p>GBV/SEA/SH</p>	<ul style="list-style-type: none"> • Implementation of the SEA/SH Action Plan • All project staff, consultants, contractors and beneficiaries will be trained

		<p>in GBV/SEA/SH prevention measures and protocols.</p> <ul style="list-style-type: none"> • GBV/SEA/SH directories and referral services will be made available to all stakeholders from community to ministerial levels. Implementation of the GBV/SE/SH training curriculum for all project beneficiaries and stakeholders. • All beneficiaries will be made aware of the GRM available and will also be able to lodge complaints pertaining to GBV/SEA/SH
	Dust generation and exhaust emissions causing air pollution leading to respiratory diseases in workers and the community	<ul style="list-style-type: none"> • Install speed limits at the construction site to minimize dust generations. • Ensure that all workers have the right PPE for dust suppression. • Continuously water the site to minimize dust. • ZATP-II Project to continuously monitor Contractor to comply with ESMP requirements on dust management. • The construction contractors need to 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. • The project should ensure the use of good quality fuel and lubricants only.
	Indiscriminate disposal of solid waste	<ul style="list-style-type: none"> • Designate sites for waste disposal. • Engage a solid waste service provider for collection of solid waste on a regular basis;
	Water use: ESS3 Reduced water quality and quantity	<ul style="list-style-type: none"> • Minimize water uses. • Conduct a water balance, develop and implement a water management strategy. • Obtain permits for water abstraction from WARMA. • Conduct periodic water quality tests. • Install stop valve to control water usage.
	Energy use: ESS3	<ul style="list-style-type: none"> • Constructed buildings designed to use renewable energy sources and promote sustainable development. • Purchase equipment with less energy demand • Purchase of equipment with multiple energy source alternative instead of one.
	Raw material use: ESS3	<ul style="list-style-type: none"> • Project activities to ensure efficient management of raw materials.

		<ul style="list-style-type: none"> • The project to adopt measures specified in the EHSGs and other GIIPs to support efficient use of raw materials.
	<p>Occupational health and safety risks:</p> <ul style="list-style-type: none"> • Fall from heights, injuries (from moving, vehicles and dropped items) • Cuts and abrasions, • Musculoskeletal injuries from lifting heavy weights. • Exposure to chemical burns/pesticides • Exposure to biological dust causing chronic pulmonary obstructive disease, poor lighting systems causing, causing eye irritation over the long term. • Transmission of contagious diseases, Covid19, HIV/AIDs/STDs, vector borne diseases 	<ul style="list-style-type: none"> • A Risk assessment shall be conducted prior to commencement of construction works. • All workers shall be made aware of the associated risks at each and every phase of construction. • The RA will form part of the CESMP. • ZATP-II Project to continuously monitor Contractor to comply with ESMP requirements on OHS risks related with working at heights. • Conduct mandatory medical screening of all workers. • Undertake an awareness campaign on site or through project outreach and info materials of endemic and contagious diseases and educate workers. • Provide the necessary protective equipment such as masks, and sanitizer. • Coordinate with local Ministry of Health (MoH) diseases surveillance unit. • Develop an emergency Response Plan in line with ESS1: Assessment and Management of Risks and Impacts. • Provide adequate toilets and bathrooms at workers' camps. • Develop a campsite management plan as part of the C-ESMP. • Provide waste receptacles at worksites and campsite.
	<p>Labour laws non-compliance</p>	<ul style="list-style-type: none"> • Implement the Labor Management Procedures as annexed under annex 10. • Ensure adherence to the Employment Act and other labor requirements. • Recruitment of workers through District Labor Office if possible. • All workers to be issued with oral or written (long-term) contracts. • All workers to sign Code of Conduct that includes zero tolerance to GBV/SEA/SH. • Contractor shall be required to comply with the Employment Act all times. This responsibility shall be reflected in contractor's contract.

	Us of Child and Forced Labour	<ul style="list-style-type: none"> • Conducting due diligence on suppliers and contractors to ensure they do not engage in forced labor practices. • Providing training to employees and contractors on how to identify and report forced labor. • Conducting regular audits and inspections to identify and address forced labor practices. • Ensuring that workers are paid fair wages and provided with safe and healthy working conditions. • Monitoring and addressing recruitment practices to prevent debt bondage and other forms of forced labor. • Ensuring that all contracts and agreements with suppliers and contractors include provisions prohibiting forced labor.
	Lack of capacity for managing social and environmental risks among on supervising consultants and contractors	<ul style="list-style-type: none"> • The project to submit TORs for supervising consultants/engineers and contractors to the Bank for review. • Ensure that the Supervising Consultant contract have provision for key safeguards personnel (Environmental Specialist and Social Specialist). • Similarly, the Contract for the Contractor should have key provisions for Environmental Specialist and Social Specialist and Occupational Health and Safety Officer.
	Air pollution from dust emissions, exhaust gases and particulate matter	<ul style="list-style-type: none"> • Construction contractors to 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. • The project should ensure the use of good quality fuel and lubricants only. • If dust generation at the project/construction site becomes a problem, limited wetting of sites and or unloading and reloading points should be done to reduce dust raising. • Construction traffic speed control measures should be enforced on unpaved roads (speed limits through communities should be ≤ 50km/hr. on unpaved roads and near or at project site should be ≤ 30 km/hr.). • Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use.

		<ul style="list-style-type: none"> • Implement clean/renewable energy technologies. • Reduction of carbon emissions both by using energy more efficiently and by increasing the use of renewable sources of energy
	Noise and vibration	<ul style="list-style-type: none"> • Construction activities 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. • This will be achieved by making it a component of contractual agreements with the construction contractors. • Contractors will be required to implement best driving practices when approaching and leaving the site (speed limit of ≤ 30 km/hr.) to minimize noise generation created through activities such as unnecessary acceleration and breaking squeal. • Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use.
	Soil and land degradation	<ul style="list-style-type: none"> • Minimize land clearing areas as much as possible to avoid unnecessary exposure of bare ground to the elements of the weather. • Re-vegetate cleared areas as early as possible using native plant species. • Targeted management of biodiversity, such as protection or restoration of ecosystems, wetlands and forests
Capacity building training activities	GBV/SEA/SH	<ul style="list-style-type: none"> • Implementation of the SEA/SH Action Plan • All project staff, consultants, contractors and beneficiaries will be trained in GBV/SEA/SH prevention measures and protocols. • GBV/SEA/SH directories and referral services will be made available to all stakeholders from community to ministerial levels. • Implementation of the GBV/SE/SH training curriculum for all project beneficiaries and stakeholders. • All beneficiaries will be made aware of the GRM available and will also be able to lodge complaints pertaining to GBV/SEA/SH
	Exclusion of marginalized groups	<ul style="list-style-type: none"> • Establishing clear and transparent criteria for participation in the project activities and ensuring that they are applied fairly and consistently. • Providing information and communication materials in local languages and formats that are accessible to marginalized groups. • Monitoring and evaluating the project's impact on marginalized farmers

		and making adjustments as needed to ensure that they are benefiting from the project.
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Occupational Health and Safety

Occupational risk assessment is a method for estimating health risks from exposure to various levels of a workplace hazard. Understanding how much exposure to a hazard poses health risks to workers is important to appropriately eliminate, control, and reduce those risks. The risk assessment will be undertaken during project proposal formulation so that costs associated with OHS are part of the budget. This applies for POs and agribusiness firms. When completing the form, technical service providers will assist the communities while the enterprises may engage relevant government departments or private experts for support. Agriculture, processing and manufacturing and construction activities have a risk of occupational health and safety issues. Workers are at risk of death, accidents and injuries, near misses, unsafe acts if OHS control measures are not in place. Contractor will provide preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances informed by the assessment and plan. Whenever PPEs are required for the work, it must be provided at no cost for the workers. The Labour Management Procedures (LMP), and site specific ESMPs will also be used to manage OHS issues. 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 of ensuring that screening, ESMPs and OHS risk assessments inform the design of the subprojects to adequately implement the mitigation hierarchy (avoid, minimise, mitigate, offset) and ensure that OHS mitigation measures are included in the grant application.

Community Health and Safety – ESS4

Project activities, equipment use, and infrastructure development can increase community risks and impacts. Hence, under ESS4, the health, safety and security risk and impacts on project affected communities will need to be avoided or mitigated under ESS4. The project will have to evaluate the risks and impacts associated with infrastructure and equipment design and safety, traffic and road safety, ecosystem services, community exposure to health issues, management and safety of hazardous materials, emergency preparedness and response. Construction of laboratory infrastructure, processing plants and agro-warehouses and installation of equipment may increase community health and safety risks and impacts. These are also likely to be increased by traffic and road safety risks resulting from construction traffic due to movement of vehicles transporting raw materials to construction sites resulting into vehicle collisions with the local community. The lack of security at agro-processing plants, agro-warehouse may increase theft in the area and affect community security. The project will have to reduce such risks by developing security measures for the area. Spread of Covid-19, increase in incidences of HIV/AIDs and other communicable diseases and GBV/SEA/SH may go up during project implementation. The labour management procedures will have to be implemented by the project and project beneficiaries. Inappropriate management and disposal of wastewater, solid, and hazardous waste may lead to the spread of infectious diseases among the community members as their local water resource may be contaminated. Burning of solid, hazardous waste and agricultural residues (waste) may cause air pollution and expose the project affected community to respiratory diseases.

Inappropriate storage of hazardous materials (fuel, fertilizer, pesticides and electronic waste) may cause community exposure to health risks through water and air pollution. Lack of emergency response plans at project sites may lead to spread of contaminants, fire and explosion risks, including injuries and fatalities. It is, therefore, imperative that the emergency response plans (ERPs), and their coordination systems are place. The ERP will include: engineering controls such as containment, automatic alarms, and shut off systems;

identification of and secure access to emergency equipment available on site and nearby; notification procedures for designated emergency responders; diverse media channels for notification of the affected community and other stakeholders; training program for emergency responders including drills at regular intervals; public evacuation procedures; designated coordinator for ERP implementation, and measures for restoration and clean-up of the environment following any major accident.

4.1 Risks and Mitigations Measures Specific to Disadvantage 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 voice to express their concerns or understand benefit from this project at the same level as others, thus, exacerbating social and economic inequality. In the context of ZAPT-II, the vulnerable groups that may be at risk of exclusion from consultations and information disclosure include:

- I) Smallholder farmers especially women, youth, and persons with disability (PWD).
- II) Resource-poor communities in marginalized selected geographical areas in project districts.

Women and youth are typically excluded and have greater challenges accessing markets and finance. In addition, existing gender norms, power structures, and division of labor could constrain them from accessing information services on ZAPT II activities. The project will, therefore, recommend to all producer organizations and productive alliances, SMEs, and agribusinesses to include women and youth their activities. The project will encourage women-led and managed POs, PAZ, and agribusinesses to apply through calls for proposals, further, the Line of Credit sub-component will also set a criterion that encourages women and youth led agribusinesses 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 especially in the new provinces where the ZATP II was not present to understand the cultural context in which women and businesses operate.

High illiteracy rates among smallholder farmers including women could also impede access to project information, services, and financing. The project will address this by having outreach activities in local languages using mass media such as community radio stations to reach the masses. Government district offices (District Officer's and Camp Officers) will be used as a medium of information dissemination. For financing, the FIs, already established channels of communication will be used to raise awareness about the project. 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 8th NDP, sustainable development goals and vision 2030, this project will be inclusive and implement the stakeholder engagement plan to ensure inclusivity.

4.2 Planning and Design Considerations for Avoidance of Environmental and Social Risks and Impacts

The planning and design considerations to avoid or mitigate against environmental and social risks and impacts include integrating of the E&S costs into the design of subproject activities, making environmental and social risk management to be the key component in subproject 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 manufacturing and processing subproject activities, efficient use of water in addition to energy should be considered where cleaner production will have to be incorporated into project design. 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. energy. Other measures to consider o avoid or 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 to that, the E&S screening should also include the 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 of 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. As this project is an agribusiness project, 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 through the use of the Project LMP and mitigation measures highlighted in table 3. 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 endeavour 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 will develop a stakeholder's engagement plan 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 and its potential beneficiaries are envisioned to 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 and COVID 19

During scoping of the project, it became apparent that the project would likely support subprojects (agribusinesses and cooperatives) that shall employ locals and import labour from surrounding areas. This influx of project and subproject employees has the potential impact of transmission of HIV/AIDS & STIs and COVID 19 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 COVID 19 on the other hand shall be mitigated through adherence to the laid down health and safety guidelines by Ministry of Health.

CHAPTER 5: PROCEDURES AND IMPLEMENTATION ARRANGEMENTS

5.1 Environmental and Social Risk Procedures

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

Table 4 Project Cycle and E&S Management Procedures

Project Stage	E&S Stage	E&S Management Procedures
a. Assessment and Analysis: Subproject identification	Screening	<ul style="list-style-type: none"> -During subproject identification, ensure subproject eligibility by referring to the <i>Exclusion List in Table 5</i> below. - For all activities, use the <i>Screening Form in Annex 1</i> to identify and assess potential environmental and social risks and impacts, and identify the appropriate mitigation measures for the subproject. - Identify the documentation, permits, and clearances required under the government's Environmental Regulation.
b. Formulation and Planning: Planning for subproject activities, including human and budgetary resources and monitoring measures	Planning	<ul style="list-style-type: none"> - Based on <i>Screening Form</i> adopt and/or prepare relevant environmental and social procedures and plans. -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). In some cases, the Bank may agree with the client to conduct the post review of the ESMPs. - 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. - Complete all documentation, permits, and clearances required under the government's Environmental Regulation. - Train staff responsible for implementation and monitoring of plans. - Incorporate relevant environmental and social procedures and plans into contractor bidding documents; train contractors on relevant procedures and plans.
c. Implementation and Monitoring: Implementation support and continuous monitoring for	Implementation	<ul style="list-style-type: none"> - Ensure implementation of plans through site visits, regular reporting from the field, and other planned monitoring. - Track grievances/beneficiary feedback. - Continue awareness raising and/or training for relevant staff, volunteers, contractors, communities.

projects		
d. Review and Evaluation: Qualitative, quantitative, and/or participatory data collection on a sample basis	Completion	- Assess whether plans have been effectively implemented. - Ensure that physical sites are properly restored.

a. 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 the table below. No subprojects or project interventions in critical or natural habitats should be considered.

Table 5 Exclusion List

S/N	STATEMENT	YES	NO
1	Project investments or activities involving harmful or exploitative forms of forced labour/harmful child labour		X
2	Production or trade in any product or activity deemed illegal under the Zambia Laws or Regulations or Regional and International Conventions and agreements		X
3	Production or trade in weapons and ammunition		X
4	Gambling, Casinos or Equivalent enterprises		X
5	Production or Value addition activities involving narcotic substances		X
6	Production or trade in radioactive substances		X
7	Production or trade in asbestos fiber		X
8	Production or Trade in unmanaged forests		X
9	Production or Trade in Products containing Polychlorinated Bisphenols (PCBs)		X
10	Production or Trade, Storage, Transportation of significant volumes of hazardous chemicals and commercial scale use of hazardous chemicals		X
11	Production or Trade in Pesticides/Herbicides/Fungicides subject to phase in accordance with the Stockholm Conventions		X
12	Investments in extractive industries such as logging and milling timber		X
13	Production or Trading in Ozone depleting substances		X
14	Activities that would significantly convert natural habitats or significantly alter potentially important biodiversity and cultural resources areas		X
15	Project investments in natural game parks		X
16	Trade in wildlife or wildlife products		X
17	Activities that would require involuntary land acquisition and the relocation of households		X
18	Project investments in disputed areas or territories.		X
19	Production or Trade in Persistent Organic Pollutants (POPs)		X
20	Production or Trade of alien fish species banned under Regional		X

	Conventions		
21	Production and Trade in alien plant species banned under Regional Conventions		X
22	SMEs, organisations, cooperatives and agribusinesses barred by the Credit Reference Bureau (CRB) of Zambia.		X
23	Contractors barred by National Council for Construction (NCC) and other statutory bodies.		X
24	Organisations, SMEs, agribusinesses and cooperatives banned by other government agencies such as the CEEC, ZDA etc.		X
25	Organisations, SMEs, agribusinesses and cooperatives with a history of fraud or any other illegal activities.		X
26	Production or Trade of alien or non-indigenous animals (livestock) under regional conventions and national laws.		X
27	Activities that are likely to negatively impact tangible and intangible cultural heritage after mitigation measures are in place.		X
28	Production or trade in tobacco		X
29	Production or trade in alcoholic beverages		X
30	Any trade related to pornography and prostitution		X
31	Any trade related to human trafficking		X
32	Trade in goods without required export or import licenses or other evidence of authorization of transit from relevant countries of export, import and, if applicable, transit.		X

As a second step, the Environmental and Social (E&S) Consultants under the Technical Service Providers (TSP) will use the E&S Screening Form 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 Management Plan, the Labour Management Procedures, Chance Find Procedures, etc.)

The TSP E&S Consultants will also identify the documentation, permits, and clearances required under the government's Environmental and Social Regulation.

b. Subproject Formulation and Planning – E&S Planning

Based on the process above and the Screening Form, the TSP E&S Consultants will adopt the necessary environmental and social management measures already included in the Annexes of this ESMF (such as HWMP, E-WMP, NFMP, IPMP, LMP, etc.) or develop relevant site-specific environmental and social management plans.

If site-specific ESMPs are necessary, the project will request that the beneficiaries contract consultants to develop the ESMPs under the supervision of the TSP E&S Consultants who will prepare other applicable documents as needed. The PIU E&S Specialists will provide approval and compile ESMPs and other applicable forms in compliance with Bank requirements and ZEMA EIA regulations. 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. Some moderate risk subprojects may also benefit from

the preparation of a site-specific environmental and social assessment prior to the preparation of an ESMP.

The World Bank and the PIU E&S Specialists will reassess whether prior review is needed for all ESMPs or a certain category of ESMPs (for example, for activities exceeding a certain budget, for certain types of activities).

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

At this stage, staff who will be working on the various subproject activities should be trained in the environmental and social management plans relevant to the activities they work on. The PIU E&S Specialists should provide such training to field staff.

The PIU E&S Specialists 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 PIU E&S Specialists 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 risks and impacts. The PIU E&S Specialists 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.

c. Implementation and Monitoring – E&S Implementation

During implementation, the TSP E&S Consultants will conduct regular monitoring visits. Describe the mechanisms, responsible parties, and the frequency for project supervision. Consider whether mobile devices can be used for monitoring of projects with numerous subproject locations. If there are contractors implementing subproject activities, the contractors will be responsible for implementing the mitigation measures in the E&S risk management documents, with PIU E&S Specialists oversight.

The E&S Consultants working to implement the project 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, (viii) summary of grievances/beneficiary feedback received, actions taken, and complaints closed out, updates on Labor GRM and child and forced labor in line with the SEP and (ix) Implementation of the GBV/SEA/SH Action plan.. Reports from the local levels will be submitted to the PIU E&S Specialists 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 PIU 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 PIU 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 PIU 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-GBV/SEA/SH incidents), violent community protests, or kidnappings.

d. Review and Evaluation – E&S Completion

Upon completion of Project activities, the PIU 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 PIU Environmental Specialist and Social Specialist will monitor activities with regard to 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 PIU Environmental and Social Specialists 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.

5.2 Implementation Arrangements

The PIU 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 Screening Requirements*.

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

At the National level, PIU E&S Specialists (one environmental specialist and one social specialist, also managing GBV/SEA/SH) 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/ESPMs, implementation of the GRM, GBV/SEAH/SH, training of MCTI and PIU including other implementing partners and other sector, and other technical assistance support to the 5 regions. At the district level, TSP E&S Consultants will implement the monitoring and associated E&S standards requirements with PIU E&S specialists' oversight.

The table below summarizes the roles and responsibilities regarding the implementation arrangements for **environmental and social management**.

Table 6 Implementation Arrangements

Level/ Responsible Party	Roles and Responsibilities
National/ regional: Environmental and Social Specialists.	<ul style="list-style-type: none"> • Provide support, oversight, and quality control to field staff working on environmental and social risk management. • Collect, review, and provide quality assurance and approval to Screening Forms and ESMPs as relevant. Keep documentation of all progress. • 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. • Train central and field staff and contractors who will be responsible for implementing the ESMF. • If contracting is managed centrally, ensure that all bidding and contract documents include all relevant E&S management provisions per screening forms, ESMPs. • Oversee implementation of GRM
Regional/local field staff: TSP E&S Consultants	<ul style="list-style-type: none"> • 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. • If relevant, complete site-specific ESMPs for subproject activities and submit them to the national level. • Oversee daily implementation and monitoring of environmental and social mitigation measures, and report progress and performance to the national level monthly. • Provide training to local contractors and communities on relevant environmental and social mitigation measures, roles, and responsibilities. • If contracting is managed regionally, ensure that all bidding and contract documents include all relevant E&S management provisions per screening forms, ESMPs.
Local contractors	<ul style="list-style-type: none"> • Comply with the Project’s environmental and social mitigation and management measures as specified in ESMPs, and contract documents, as well as national and local legislation. • 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.

5.3 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:

1. Environmental Impact Assessment (EIA) Regulations in Zambia
2. Introduction to World Bank Environmental and Social Standards
3. Environmental and Social Screening Process and Checklists
4. Preparation of simplified ESMP for sub-projects.
5. Occupational Health and Safety Requirements.
6. Management of Hazardous Chemicals, including agrochemicals.
7. Environmental and Social Clauses in Contractors' contract and bidding documents.
8. IPMPs and Management of Pesticides, where applicable.
9. World Bank Environmental Health and Safety Guidelines (EHSGs).
10. Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment training.
11. Labor and working conditions.
12. Grievance Redress Mechanism/ Complaints Management
13. Stakeholder Engagement and public disclosure.
14. Good Manufacturing Practices

Relevant staff in the PIU and the MCTI 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 target group will consist of selected officers directly involved in the implementation of ZATP-II.

Table 7 Proposed Training and Capacity Building Approach

S/N	TRAINING	MODE OF TRAINING	ASSUMPTION	BUDGET (USD)
A	Conduct Training for the Environmental and Social Specialists on Environmental and Social Risk Management			
	Introduction to World Bank Environmental Social Framework (ESF)	Local	The following shall attend the training: <ul style="list-style-type: none"> • Project Manager • Environmental Specialist • Social Specialist • Procurement Specialist 	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"> • Project Manager • Environmental Specialist • Social Specialist • Procurement Specialist. 2) Budget includes: <ul style="list-style-type: none"> • Training fees • Return air ticket for international travel. • Per Diem 	23,000
	Environmental and Social Impact Assessment for Donor-Funded Project	Local	1)The following shall attend the training: <ul style="list-style-type: none"> • Project Manager • Environmental Specialist • Social Specialist • Procurement Specialist. 2) Budget includes: <ul style="list-style-type: none"> • Training fees • Per Diem 	22,000
	Environmental and Social Risk Management for Construction Project	Local	The following shall attend the training: <ul style="list-style-type: none"> • Project Manager • Environmental Specialist • Social Specialist • Procurement Specialist. • Infrastructure Specialist 1) Budget includes: <ul style="list-style-type: none"> • Training fees to a local training center • Local travel • Per Diem 	7,000
	Occupational Health and Safety	Local	The following shall attend the training:	7,000

	Management		<ul style="list-style-type: none"> • Project Manager • Environmental Specialist • Social Specialist • Procurement Specialist. <p>1) Budget includes:</p> <ul style="list-style-type: none"> • Training fees to a local training center • Local travel • Per Diem 	
	Environmental and Social Audit	International	<p>The following shall attend the training:</p> <ul style="list-style-type: none"> • Project Manager • Environmental Specialist • Social Specialist • Procurement Specialist. <p>1) Budget includes:</p> <ul style="list-style-type: none"> • Training fees to an international Regional Training Centre • Return air ticket for international travel. • Per Diem 	22,000
	Road Traffic and Safety Incident Management	Local	<p>The following shall attend the training:</p> <ul style="list-style-type: none"> • Project Manager • Environmental Specialist • Social Specialist • Procurement Specialist. <p>1) Budget includes:</p> <ul style="list-style-type: none"> • Training fees to a local training center • Local travel and Per Diem 	7,000
	Climate Change and Risk Management	International	<p>The following shall attend the training.</p> <ul style="list-style-type: none"> • Project Manager • Environmental Specialist • Social Specialist • Procurement Specialist. <p>1) Budget includes:</p> <ul style="list-style-type: none"> • Training fees to an International Regional Training Centre • Return air ticket for international travel. • Per Diem 	22,000
	Disaster Preparedness and Emergency Response Management	Local	<p>The following shall attend the training:</p> <ul style="list-style-type: none"> • Project Manager • Environmental Specialist • Social Specialist 	7,000

			<ul style="list-style-type: none"> • Procurement Specialist. 1) Budget includes: <ul style="list-style-type: none"> • Training fees to a local training center • Local travel and Per Diem 	
	Disciplinary and Grievance Handling Management, including Conflict Management	Local	The following shall attend the training: <ul style="list-style-type: none"> • Project Manager • Environmental Specialist • Social Specialist • Procurement Specialist. 1) Budget includes: <ul style="list-style-type: none"> • Training fees to a local training center • Local travel • Per Diem 	7,000
	SUBTOTAL			123,000
B	Conduct Training for the Project Implementation Unit (PIU), Consultants, Implementing Partners Ministries and Agencies, Independent Evaluation and Verification Panels on Environmental and Social Risk Management			
	Introduction to World Bank Environmental and Social Framework	Local		7,500
	Stakeholder Mapping and Engagement	Local		7,500
	Aspects of Environmental and Social Impact Assessment (ESIA)	Local		7,500
	Environmental and Social Screening for Subprojects	Local		7,500
	Community Health and Safety (including Road Traffic and Safety Mitigation)	Local		7,500
	Emergency Preparedness and Emergency Response	Local		7,500
	Pest and Vector Management	Local		7,500
	GBV/SEAH/SH Risk Management	Local		7,500
	Occupational Health and Safety	Local		7,500
	Gender Inclusiveness in Subproject Proposal	Local		7,500
	SUBTOTAL			75,000
	TOTAL			200,000

5.4 Estimated Budget

To build the capacity of the PIU and other Implementing Partners and to manage environmental and social (E&S) risk, an estimated budget for ESMF implementation has been developed for the entire project lifecycle. The implementation of the ESMF budget will be done at two levels.

National Level

This will cover ESMF implementation activities related to managing E&S risk for subproject implementation, such as screening E&S monitoring and support for the preparation of EPBs/ESMPs, implementation of the GRM, training of MCTI and PIU including other implementing partners and other sector, and other technical assistance support to the 5 regions.

Regional Level

At the district level, a budget for E&S monitoring will be under the consultancy fees for the Technical Service Providers (TSPs) for monitoring and associated E&S standards requirements. All costs related to environmental and social risk mitigation measures and ESMP(s) preparation and implementation costs will be an integral part of the Project and will be included in the annual work plan and budgets. The cost estimates will make adequate provisions for monitoring and supervision and for contingencies.

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

Table 8 ESMF Implementation Budget

ACTIVITY	POTENTIAL COST (USD)
Training to the Environmental and Social Specialists on E&S Risk Management	100,000
Training to the Project Implementation Unit (PIU), Consultants, Implementing Partners Ministries and Agencies, Independent Evaluation and Verification Panels, on Environmental and Social Risk Management	100,000
GBV/SEA/SH Action Plan Implementation	105,000
Integrated Pest Management Plan (IPMP) Implementation	100,000
Screening of Subprojects	100,000
ESMP compliance monitoring and Reporting	100,000
Independent Environmental Audit	50,000
End of Project Closure Report	50,000
TOTAL BUDGET (5 years)	705,000

CHAPTER 6: GRIEVANCE REDRESS MECHANISM

ZATP-II will establish and maintain a functional grievance redress mechanism (GRM) to guide the receipt and mediation of complaints and respond to questions from project stakeholders and project-affected persons, including cases linked to Gender Based-Violence (GBV), sexual exploitation and abuse (SEA) and sexual harassment (SH). The GRM will build up on the existing GRM for the ZATP, currently being implemented by the same PIU.

6.1 Objectives

The GRM is intended to:

- Provide avenues for stakeholders to seek information and ask questions on the ZATP-II.
- Provide project affected people with avenues for lodging concerns, complaints and resolving a dispute arising from project activities.
- Ensure that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants.
- Provide avenue for vulnerable groups and survivors of GBV/SEA/SH to have equal access to grievance redress process and support.
- Avoid project-community conflicts and improve community support for the project activities.
- Improvement of the Project's performance including environmental and social performance through ensured monitoring of grievance redress processes and periodic progress reporting.

Although project affected parties have the right to seek redress in court, the project recognizes that court cases are known to be cumbersome and time consuming. Therefore, the project, through this GRM intends to propose an alternative simple but functional first point procedure for aggrieved project affected persons to amicably seek redress to their complaints. Nonetheless, aggrieved persons would remain free to access the court system without any hindrance or retribution from the project as provided for, by the laws of Zambia.

6.2 Principles of the GRM

The operationalization of this GRM shall be guided by the following principles:

- An accessible, inclusive, and free GRM, broadly disclosed, which facilitates the resolution of concerns and grievances in a safe, confidential, and timely manner.
- A grievance mechanism that allows stakeholders to file complaints by various means (face-to-face, mail, email, phone, text, website, and in person) and anonymously when desired.
- A grievance mechanism that provides a clear, impartial, and objective procedures for handling and responding to complaints, including timelines for acknowledgement, decisions, and appeals.
- A grievance process free of retaliation, abuse, or discrimination.
- A grievance mechanism that provides an avenue for lodging GBV/SEA/SH cases in a safe, confidential, and non-stigmatizing manner and with a referral pathway for such cases; and
- A GRM that is survivor centered.

6.3 Types of Information Request and Grievances Anticipated

Drawing from the ZATP, the grievances anticipated on this project could fall into the following categories.

- Request for information on how to:
 - access project matching grant and development fund.
 - access project loans.
 - collaborate with implementing agencies.
 - participate in project activities and meetings.
- Community health and safety related risks and impacts.
- Selection criteria for project beneficiaries for participation in project activities.
- Exclusion of vulnerable groups.
- GBV/SEA/SH.
- Contractual and Labour management related grievances.
- Beneficiary governance related grievances.

6.4 Internal Management of the GRM

The overall management of the GRM will reside with the ZATP-II Social Safeguard Specialist with support of the PIU. The Social Safeguard Specialist will specifically be responsible for:

- The disclosure of the GRM to project stakeholders.
- Sensitization of implementing partners and staff on the GRM.
- Keeping records of all complaints received, updating, and closing complaints.
- Pre-empting and facilitating activities of Grievance Redress Committees (GRC).
- Checking if all grievances have been addressed and follow-up actions have been taken.
- Escalating cases to Ministerial GRC.
- Providing information to GRCs on GBV/SEA/SH service providers in their districts and referring survivors of GBV/SEA/SH cases to Gender Based Violence (GBV) service providers.
- Monitoring and producing quarterly, bi-annual and annual performance report on the GRM.

ZATP-II will implement an effective GRM, with the objective of helping third parties to avoid resorting to the judicial system as much as possible. Z-JET's GRM includes four successive tiers of extra-judicial grievance review and resolution: (i) the first tier is the GRC at community level; (ii) the second tier is the GRC at District level; (iii) the third tier is the GRC at PIU; and finally, (iv) the fourth tier is the GRC comprising senior ministry officials in the Ministry GRC. Complainants can seek redress from the judicial system at any time. The step-by-step process does not deter them from approaching the courts.

6.5 Grievance Redress Process

The four-stage grievance resolution process involves the following main steps:

- i. Receipt of grievances.
- ii. Screening for standing.
- iii. Community GRC (first stage).
- iv. District GRC (second stage).
- v. Project Implementation Unit (PIU) GRC (third stage).

- vi. Ministerial GRC (fourth stage).
- vii. Closure of grievances.
- viii. Grievance records and documentation.

Description of these steps is as below.

6.5.1: Receipt of grievances

Anyone from the affected communities or anyone believing they are affected by the Project can submit a grievance:

- a. By completing a written grievance/complaint registration form that will be available at: (i) project beneficiary premises (ii) at the District Cooperative Development Office; (iii) on the Project’s website; and (iv) at the Project’s regional offices and PIU in Lusaka. A grievance registration form is provided in Annex II. The Project’s GRC Focal Person at each entry point will assist any stakeholders who may need help completing the grievance form, review the received grievances, record them in a grievance database, and submit them to the PIU Social Safeguards Specialist.
- b. Verbal or in-person submission of grievances: (i) through project GRM Focal Persons at Community (Beneficiary) level, District level, PIU level and Ministerial levels. Grievances received verbally will be written down by the GRC Focal Person and the grievance logged into the grievance database. A case number and details of the logged grievance will be forwarded to the complainant, giving them the opportunity to correct the Focal Person if the grievance has not been noted down correctly and for easy follow-up.
- c. Suggestion boxes: these will be accessible at: (i) District offices; (ii) PIU Lusaka and regional offices; and (iii) MCTI premises.
- d. By contacting the Social Safeguards Specialist (SSS): (i) through a grievance dedicated phone number; (ii) in person either at the PIU Lusaka Office or out in public; and (iii) via the grievance dedicated email or the Social Safeguards email address.
- e. Letters: Letters can be written to the Project PIU addressed to the Project Manager with a copy to the SSS.
- f. Social media platforms: Grievances can also be submitted through the project’s Facebook, Twitter and YouTube pages and WhatsApp groups.

The SSS, Communication Specialist and GRC Focal Persons will explain the possibilities and ways to raise a grievance to local communities and stakeholders during meetings organised in each affected area at the time of disclosure and during project implementation. The GRM procedures will be disclosed through the Project’s website and will also be advertised in newspapers, on posters and brochures in each community, district and at regional offices. Information material on the GRM will also be made available at project meetings and regional offices.

All grievances will be registered and tracked by SSS in the Grievance database. Once a grievance is logged, the related event(s) that caused the grievance will be tracked to prevent similar grievances. The status numbers and trends of grievances will be discussed between, the Regional Facilitators and GRC Focal Persons during bi-weekly E&S meetings during implementation of the project.

6.5.2: Screening for ‘Standing’

Once a grievance is received, the GRC Focal Person (should it warrant, the GRC) will determine whether the complaint has ‘standing,’ i.e., warrants further consideration as an acceptable grievance.

If the matter has standing, grievance information will be recorded in a grievance database by ZATP-II GRC Focal Person. The following information will be recorded: (i) Name and contact details, (ii) Details of the grievance and how and when it was submitted, acknowledged, responded to and closed out. All grievances will be acknowledged within 3 days of receipt; and responded to no later than 30 days. Once a grievance is logged, the related event(s) that caused the grievance will be tracked to ensure proper close-out of the grievance and prevent similar grievances from recurring in the future.

If the grievance is deemed ineligible, the GRC Focal Person will record the reason and document that the complainant has been informed of this decision and the basis for this explained. Ineligible cases will generally be those that Focal Person and GRC are confident have not occurred because of the actions of ZATP-II or its Contractor/Sub-Contractors. If the complainant is not satisfied with this outcome, they can pursue further action by submitting their case to the PIU GRC or the appropriate court of law.

GRC Focal Persons will determine whether the resolution of the grievance is the responsibility of the ZATP-II Contractor (or their sub-contractors), beneficiary or beneficiary contractors. If the grievance is the responsibility of any of the above, SSS shall review, comment, and approve any corrective actions.

After logging the grievance, SSS and/or the GRC Focal Person will inform the complainant within 7 days.

6.5.3: Tier 1: Community Grievance Redress Committee (1st stage)

Beneficiary POs and SMEs will be able to receive and manage grievances through their organisation-based complaints management systems. A GRC will be established or strengthened made up of:

1. Minimum of three (3) members for an Agribusinesses (SMEs), the Chairperson/ owner of the business, and including a respectable community member; and
2. Minimum of five (5) members for a PO/PA, the Chairperson and Secretary of the PO/PA who are by default members of the GRC.

The responsible function will be trained on how to manage grievances and how to transfer cases to the District GRC if the organisation is unable to manage the case.

Once a standing grievance has been logged, the community GRC will be engaged to define a solution to solve the grievance. At this stage the grievance is reviewed in an informal (oral) way and the Grievance Redress Committee members make and sign the minutes on the matter. If at Tier 1, the PAP’s complaint is not resolved the PAP is informed about grievance resolution procedures of Tier 2. A PAP has the right to use the procedures of Stage 2 without applying to Tier 2 procedures. The timeframe for resolving the Tier 1 grievance is 7 days. The GRC shall convene as per necessity (but at least once a month).

The meeting will start without the complainants by reviewing all PAP complaints received since the last GRC meeting, and to propose a solution to all grievances since the last meeting. Then, the GRC will welcome the complainants whose grievances had been reviewed during the previous meeting to discuss proposed resolution.

For each grievance, the GRC will determine whether additional investigations are warranted. If so, additional information will be collected before the next GRC meeting and will also be provided to the PAP before the meeting. The GRC will then inform the PAP about the date, time and place of its review meeting, and invite the PAP accordingly. The GRC will receive the complainant and discuss with them a solution to their grievance. The committee shall draw up and sign the minutes of their discussion on the matter. If the grievance is satisfactorily resolved, the PAP will also sign the minutes in acknowledgement of the agreement, or the satisfaction acknowledgement form annexed as Annex IV. In cases where the project has agreed to put in place additional measures, these will be specified, with a timetable for delivery, in the minutes of the meeting. If the grievance remains unresolved, the PAP will be informed of the Tier 2 GRC and the escalation process. If the complainant chooses, the GRC will assist him/her in escalating the grievance to Tier 2 (the complainant should be informed of his/her rights and obligations, rules, and procedures of making a grievance, format of grievance, terms of grievance submission, etc.).

The GRC, through the GRC Focal Person, will notify the ZATP-II Social Safeguard Specialists on all cases relating to major incidents and accidents within 48 hours, and GBV/SEA/SH cases within 24 hours. Such cases would require the active involvement of the PIU in the resolution process and reporting to the World Bank.

6.5.4: Tier 2: District Grievance Redress Committee (2nd stage)

At district level, District Grievance Redress Committees (DGRCs) will be established in all districts without ZATP presence and strengthened in all districts with ZATP activity implementation. These committees will manage grievances outside the scope of and referred by the community GRCs and those directly lodged at district levels.

The GRC will be composed of 7 members:

1. District Cooperative Union Representative (Chairperson).
2. District Cooperative Development Officer (Secretary).
3. District Marketing Development Officer.
4. District Fisheries Officer.
5. District Livestock Officer.
6. District Forestry Officer.
7. Senior Agriculture Officer.

Members of the GRC will be invited in accordance with the types of complaints to be addressed. The Project Regional facilitator can join any District GRC during any meeting.

Should the GRC require further information, the PAP shall be invited to the GRC meeting and a resolution offered. If the grievance remains unresolved, the PAP will be informed of the availability of Tier 3 GRC. If the complainant chooses, the District GRC shall assist him/her in escalating the case to Tier 3 and be made aware of the courts of appeal option. The District GRC shall aim to resolve all cases within fourteen (14) days of receipt.

6.5.5: Tier 3: Project Implementation Unit (PIU) Grievance Redress Committee (3rd stage)

The PIU Committee will comprise of a four (4) -member committee:

1. Project Manager (Chairperson).
2. Social Safeguard Specialist (Secretary).
3. Environmental Safeguard Specialist.
4. Regional Facilitator (respective).

The committee shall choose to include one or more project staff or reputable and independent third parties on the committee deliberations when necessary.

This committee shall mediate all unresolved complaints from the district and community level, complaints from activities of implementing partners as well as complaints that may be received directly at the PIU level through the project level complaint lodging points described in grievance receipt above. The time frame for grievance resolution at PIU level is 4 weeks or 30 days. Where the PIU GRC is unsuccessful in resolving a case or the Complainant unsatisfied with resolution provided, such cases shall be referred to the Ministerial Grievance Redress Committee for deliberation.

6.5.6: Tier 4: Ministerial Grievance Redress Committee (4th stage)

Another high-level grievance redress panel that will assist in the resolution of complaints on ZATP-II would be the Ministerial Grievance Redress Committee (MGRC). The MGRC will report all cases and findings to the PS-MCTI. It will be composed of:

1. Director- from Human Resource and Administration (Chairperson).
2. Director- Planning and Information (Secretary).
3. Director- Cooperatives Development.
4. Director- Domestic Trade.
5. Director- Industry.
6. Director- Foreign Trade.
7. Director- Finance.
8. Project Manager, Z-JET.

The ZATP-II Manager will report on all cases referred to by PIU GRC to the MGRC. It will also consider PIU Human resource and Administration related grievances, cases referred to by PIU GRC and those directly received at Ministerial level.

The Committee will require the ZATP-II management to prepare a proposed response to each grievance, which after discussion and approval, will be implemented. At subsequent MGRC meetings, ZATP-II Manager will report on the progress of implementation. Where MGRC deems the grievance as highly significant, the PS-MCTI will also be informed within 5 days of their discussion and recommended action. Mediation or judicial redress options shall be made clear to the complainant.

All grievances and their management will be reported to the Project Technical Working Group and Project Steering Committee through reports and project implementation presentations to ensure that over-all project oversight is comprehensive and being managed according to the stipulated requirement.

6.5.7: Closure of grievances

A grievance will be considered “resolved” or “closed” when a resolution satisfactory to both parties has been reached, and after corrective measures have been successfully implemented. When a proposed solution is agreed between the Project and the complainant, the time needed to implement it will depend on the nature of the solution. However, the actions to implement this solution will be undertaken within one month of the grievance having resolution options and will be tracked until completion. Once the solution is implemented or is implemented to the satisfaction of the complainant, a grievance satisfaction form will be signed by the complainant or the complainant will verbally express satisfaction, stating that the complainant considers his/her grievance closed.

In certain situations, however, the Project may “close” a grievance even if the complainant is not satisfied with the outcome. This could be the case, for example, if the complainant is unable to substantiate a grievance, or it is obviously speculative or fraudulent, or anonymous grievances in which the complainant cannot be reached and non-responsive complainants (non-responsive complainant cases will be closed after 4 weeks of successive endeavors by PIU GRC to contact the complainant). In such situations, the Project’s efforts to investigate the grievance and to arrive at a conclusion will be well documented and the complainant advised of the situation. The SSS will not dismiss grievances based on a cursory review and close them unless the complainant has been notified and had the opportunity to provide supplementary information or evidence.

6.6 Mediation

At any point in the grievance redress process, the complainant and the GRC can transfer the case to mediation for resolution should party desire to do so. In this case, the Zambian Arbitration Act 19 of 2000 will apply, in which an independent mediator will be appointed to preside over the case and negotiate a resolution.

6.7 Appeal to court

If the complainant remains dissatisfied with the mediation effort of the project grievance committee, the complainant has the option to pursue appropriate recourse via judicial process of choice. The ZATP-II will allow any aggrieved person the right of access to Court of law. Courts of law will be a “last resort” option, in view of the above mechanism and thus any costs incurred will not be borne by the project.

6.8 Grievance records and documentation

ZATP-II will nominate a GRC Focal Person to manage a grievance database at each level of the GRM and keep a record of all grievances received. The grievance database will show information exemplified in Annex I. The database will contain case number; the date and nature of the grievance; any follow-up actions taken; the solutions and corrective actions implemented; and how and when this decision was communicated to the complainant and the date of grievance.

Bi-weekly reports from all GRCs through the GRC Focal Persons will be submitted to the SSS. Grievance monitoring and reporting will occur in Z-JET’s quarterly, bi-annual, and annual reports.

6.9 Protocol for Handling GBV/SEA/SH Cases

The ZATP-II will follow the following procedures in handling GBV/SEA/SH related complaints.

Uptake of GBV/SEA/SH cases: All grievance lodging points outlined under receipt of grievances will be open for uptake of GBV/SEA/SH complaints. When a survivor comes forward to report a case of GBV/SEA/SH, the recipient will record the survivors' account of the incident. This is expected to be conducted in a private setting and ensure that all specific vulnerabilities are taken into consideration. To maintain confidentiality and minimize stigmatization, below is the list of elements that will be recorded on complaint forms Annex II

- Age and sex of survivor.
- Type of alleged incident (as reported).
- Whether the alleged perpetrator relates to the project, as indicated by the survivor.
- Whether the survivor was referred to a service provider.

Where the complainant is not the survivor, the GRC Focal Person will encourage the complainant to reach out to the survivor and explain the potential benefit of coming forward alone or with the person reporting the case. All GBV/SEA/SH cases will be reported to the World Bank within 48 hours through the ZATP-II Social Safeguard Specialist and recorded in the grievance database, shown as Annex I.

Referral of GBV/SEA/SH Survivors: The GRC Focal Person will examine the case and seek the consent of the survivor to refer the case to PIU GRC and recommend that the survivor access external GBV service providers as listed Annex V. In the case of children and persons with intellectual disability, this will be done with full consent of the survivor's guardian. Depending on the case reported, the support services may include one or more of the following services.

- Health – examination or treatment, collection of forensic evidence, provision of post-exposure prophylaxis/ abortion services.
- Legal/Justice – Legal advice/support to survivors and witnesses to understand benefits/barriers of taking care through legal process; support to ensure that prosecution and case closure happens with few or no delays.
- Psychosocial Support – Emotional support/crisis counseling; Social/community reintegration.
- Safety/Security – protection of survivors and witnesses, investigation of the case, arrest of alleged perpetrator.

These service providers will be:

- Required to use their respective GBV case management procedures to provide the essential services required by the survivor.
- Required to maintain confidentiality, safety, and security of survivors in accordance with best practices, in particular ensuring survivor centeredness through the processes and seeking the consent of the survivor when personal data must be shared.

Acknowledge and Follow-up: After registering the case, the Safeguard Focal Person will inform the PIU GRC within 24 hours of receipt and provide an acknowledgment to the complainant or survivor within 2 working days of receipt. A sample acknowledgement letter is provided at Annex III.

Fact Analysis: After receiving the case, the PIU GRC will analyze the facts of the allegation by determining whether (i) the allegation falls within the definition of GBV/SEA/SH; and (ii) the

alleged perpetrator is an individual associated with the ZATP-II. If the GRC confirms these two elements, it shall proceed to handle the case or otherwise discontinue the case and write to inform the survivor or complainant. Only GBV/SEA/SH complaints allegedly committed by any individual associated with the ZATP-II may be considered by the project after referring to GBV service providers.

If the survivor does not wish to pursue disciplinary action against the alleged perpetrator the case will be closed after providing referral assistance. The Safeguard Focal person shall record the survivor's preference and indicate that in the acknowledgement form as well.

Determine recourse action: The PIU GRC will review all cases referred to it to determine and agree upon a course of action for handling and resolving the case. The appropriate institution that employs the perpetrator takes the agreed disciplinary action in accordance with the employer's code of conduct and national legislation. Disciplinary actions may include informal warning; formal warning; additional training, loss of salary, suspension, or termination of employment depending on the severity of the case. A survivor may continue to receive support from the appropriate GBV service providers while the case is being handled by the PIU GRC.

As necessary, a survivor representative or an independent reputable third party may be invited to serve on the resolution panel. To avoid conflict of interest, the composition of the GRC may also change depending on the nature and source of the allegation. The Safeguard Focal Person shall write to inform the survivor about the course of action and disciplinary action taken against the perpetrator.

Instances where the case is being handled by a service provider, the Service Provider will work with the survivor or guardian to develop a comprehensive plan that identifies what the survivor needs and how these needs may be met. The survivor will be referred to connect with a range of service providers which correspond to their needs. The Safeguard Focal Person shall continue to track, monitor, and collaborate with service providers on all such cases until they are resolved.

Closing GBV/SEA/SH cases: Closing of GBV/SEA/SH cases will occur at these instances:

- If the survivor does not wish to place an official complaint with the perpetrator's employer.
- If after investigation, the GRC determines that the allegation does not fall within the definition of GBV/SEA/SH and the alleged perpetrator is not associated with the project.
- If when the case is pursued, and the GRC confirms that the disciplinary action taken is appropriate and has been implemented conclusively.
- If a Service Provider follows its internal procedure to meet the needs of the survivor on the case.

In all these instances, the GRC Focal Person may require the survivor or its representative to sign a statement to acknowledge satisfaction using the form provided at annex IV.

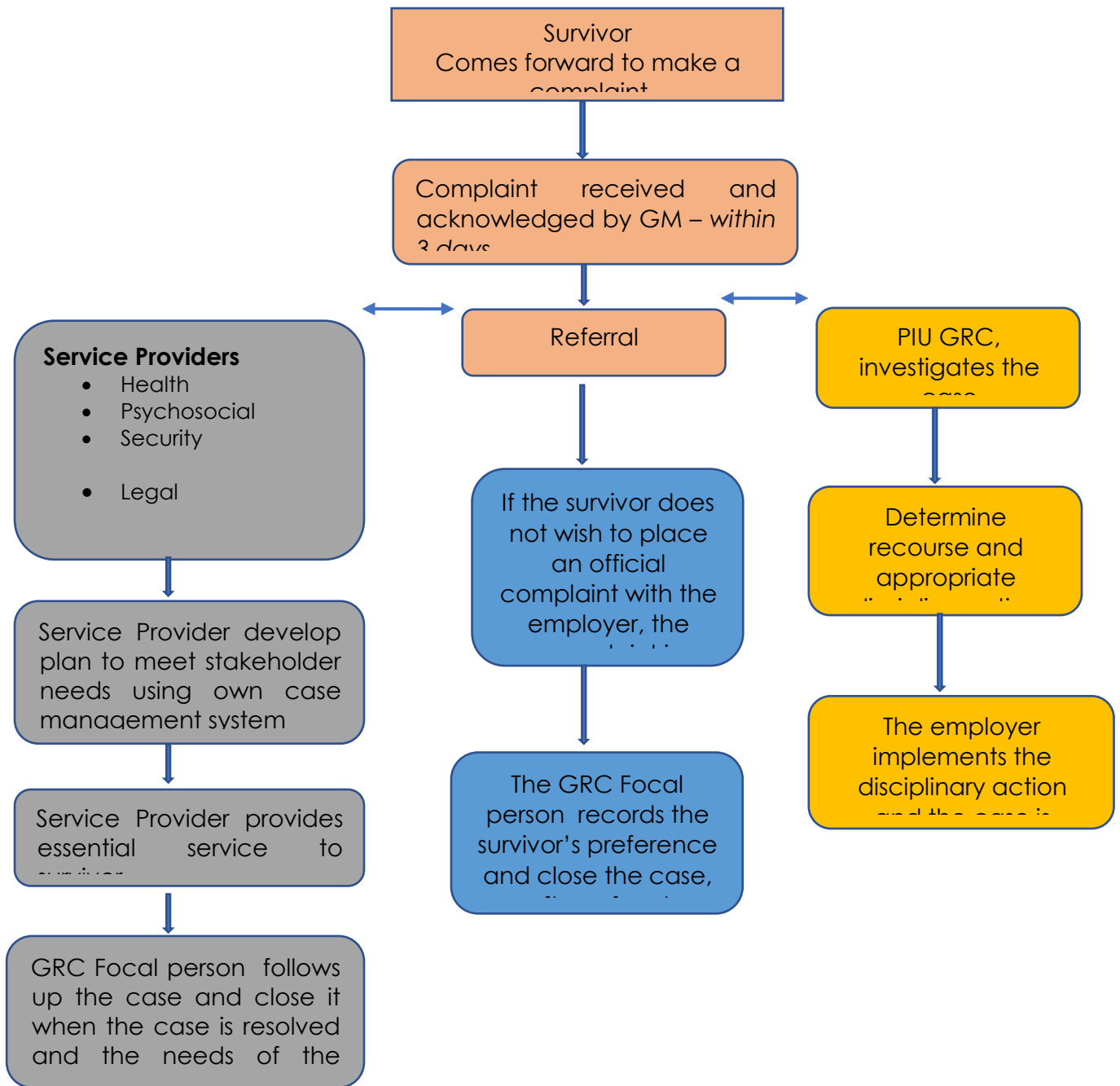


Figure 2: Case Management Procedure for SEA/SH cases

CHAPTER 7: STAKEHOLDER ENGAGEMENT, DISCLOSURE, AND CONSULTATIONS

A separate Stakeholder Engagement Plan (SEP) has been prepared for the Project, based on the World Bank's Environmental and Social Standard 10 on Stakeholder Engagement. The SEP can be found here: <http://www.zatp.org.zm/wp-content/uploads/2023/04/ZATP-II-Stakeholder-Engagement-Plan.pdf>.

This ESMF, as well as the SEP and the Environmental and Social Commitment Plan (ESCP) that have been prepared for this project, have been disclosed in draft form stakeholder consultations on the following website <https://www.mcti.gov.zm/> or <http://www.zatp.org.zm>.

Consultations that have so far been held are tabulated in **Table 9** below. Further consultations are in Annex 3.

Table 9 Stakeholder Consultation Details

No.	Date	Name of Stakeholder	Institution	Location	Method of engagement	Concern/ Issues Raised
1	20-Mar-23	Dr. Choombe - PACO SP	Min. of Agriculture	Choma, SP	Face-to-face meeting	Recommendation that the Independent Evaluation (IE) proposal template include a section allowing the IE to make recommendations to the PO based on their proposal on E&S management.
2.	21-Mar-23	Ms. Limose Chamvu	District Livestock Technician	Choma-SP	Face-to-face meeting	Due Diligence should be decentralized so that each District is given chance to conduct DD and later recommend that PIU should now verify unlike the current situation where Due Diligence is done without the involvement of local government officers.
3.	21-Mar-23	Ms. Mutinta Kabeleka	DAZ-Field Facilitator-Southern Region	Choma- SP	Face-to-face meeting	ESMF limited awareness of PPE, safe disposal of pesticide/chemical bottles and required permits/certificates
4.	21-Mar-23	Mr. Maluza	Choma DFU-Manager	Choma-SP	Face-to-face meeting	ESMF limited awareness on PPE, safe disposal of pesticide/chemical bottles and required permits/certificates and lack of knowledge on IPMPs.
5.	28-Mar-23	Mr. M. Chunga	Zibuzizwa Kusosela	Choma-SP	Face-to-face meeting	ESMF limited awareness on PPE, safe disposal of pesticide/chemical bottles and required permits/certificates and lack of knowledge on IPMPs.
6.	29-Mar-23	Ms. I Mwendo	Eliezer Agro-SME	Choma-SP	Face-to-face meeting	ESMF limited awareness on PPE, safe disposal of pesticide/chemical bottles and required permits/certificates and lack of knowledge on IPMPs.

CHAPTER 8 : ANNEXES

ANNEX 1: Environmental and Social Screening Checklist

ENVIRONMENTAL AND SOCIAL SCREENING FORM/CHECKLIST – ZATP II

1. Subproject Information

Subproject Title	
Subproject Location	
Regional Unit in Charge	
Estimated Cost	
Start/Completion Date	
Brief Description of Subproject	

Note: For the construction of the laboratory, use the ESMP format in Annex 2 and for other activities, use section 7 of the ESMP in Annex 2.

2. Environmental and Social Screening Questionnaires

Questions	Answer		Next Steps
	Yes	No	
<i>ESSI Assessment and Management of Environmental and Social Risks and Impacts</i>			
1. Is the subproject likely to have significant adverse environmental impacts that are sensitive and unprecedented that trigger the ‘Ineligible Activities’ or other exclusion criteria?			If “Yes”: Exclude from project.
2. Does the subproject involve <u>new construction</u> or <u>significant expansion</u> of ponds, solid waste management systems, shelters, roads (including access roads), community centers, schools, bridges and jetties?			If “Yes”: 1. Prepare a site-specific E&S Assessment and/or ESMP for the proposed subproject, based on the template in Annex 2. 2. Include E&S risk management measures in bidding documents.
3. Does the subproject involve <u>renovation</u> or <u>rehabilitation</u> of any small-scale infrastructure, such as groundwater wells, latrines, showers/washing facilities, or			If “Yes”: 1. Apply relevant measures based on the ESCOPs in Annex

shelters?			12 (unless one of the questions below raises specific environmental risks and requires a site-specific ESMP). 2. Include E&S risk management measures in bidding documents.
4. Will construction or renovation works require new borrow pits or quarries to be opened?			If “Yes”: 1. Prepare a site-specific ESMP/EPB for the proposed subproject, based on the template in Annex 2. 2. Include E&S risk management measures in bidding documents.
5. Does the project lead to any risks and impacts on, individuals or groups who, because of their particular circumstances, may be disadvantaged or vulnerable.			If “Yes”: Apply relevant measures described in the ESMF and SEP.
<i>ESS2 Labour and Working Conditions</i>			
6. Does the subproject involve uses of goods and equipment involving forced labour, child labour, or other harmful or exploitative forms of labour?			If “Yes”: Exclude from project.
7. Does the subproject involve recruitment of workforce including direct, contracted, primary supply, and/or community workers?			If “Yes”: Apply LMP.
8. 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?			If “Yes”: Apply LMP.
9. Is there a risk that women may be underpaid when compared to men when working on the project construction?			If “Yes”: Apply LMP.
<i>ESS3 Resource Efficiency and Pollution Prevention and Management</i>			
10. Is the project likely to generate solid or liquid waste that could adversely impact soils, vegetation, rivers, streams or groundwater, or nearby communities?			If “Yes”: 1. Prepare a site-specific ESMP/EPB for the proposed subproject, based on the template in Annex 2. 2. Include E&S risk management measures in bidding documents.
11. Do any of the construction works involve the removal of asbestos or other hazardous materials?			If “Yes”: Apply asbestos guidance provide in the ESCOP in Annex 11.
12. Are works likely to cause significant negative impacts to air and / or water			If “Yes”:

quality?			1. Prepare a site-specific ESMP for the proposed subproject, based on the template in Annex 2. 2. Include E&S risk management measures in bidding documents.
13. Does the activity rely on existing infrastructure (such as discharge points) that is inadequate to prevent environmental impacts?			If “Yes”: 1. Prepare a site-specific ESMP for the proposed subproject, based on the template in Annex 2. 2. Include E&S risk management measures in bidding documents.
14. Is there any potential to have impact on soil or water bodies due to agro chemicals (e.g., pesticides) used in farmlands due to the consequences of the subproject activities (e.g., development of irrigation system, agriculture related activities, seed and fertilizer assistance, procurement of pesticides)?			If “Yes”: Apply the Integrated Pest Management Plan and the Fertilizer and Nutrient Management Plan.
<i>ESS4 Community Health and Safety</i>			
15. Is there a risk of increased community exposure to communicable disease (such as COVID-19, HIV/AIDS, Malaria), or increase in the risk of traffic related accidents?			If “Yes”: Apply LMP and relevant measures in SEP.
16. 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?)			If “Yes”: Apply LMP.
17. Is there a risk that SEA/SH may increase as a result of project works?			If “Yes”: Apply LMP.
18. Would any public facilities, such as schools, health clinic, and church be negatively affected by construction?			If “Yes”: Apply relevant measures based on the ESCOPs in Annex 2 (unless one of the other questions in the screening form raises specific environmental and social risks and requires a site-specific ESMP).
19. Will the subproject require the government to retain workers to provide security to safeguard the subproject?			If “Yes”: Prepare a site-specific ESMP for the proposed subproject, including an assessment of potential risks and mitigation measures of using security personnel.
20. Is the project located in a drought or water scarcity area?			If “Yes “What will be the source of water, ground or surface water? If it’s “ground water” conduct a water demand assessment in consultation with WARMA and obtain a water abstraction permit depending on the results of the water assessment.

			Have consultations been conducted with other ground water users? If it's "surface water" conduct a water demand assessment in consultation with WARMA and obtain a water abstraction permit depending on the results of the water assessment? If "Yes" for both ground and surface water "Conduct stakeholder consultations with the community and other stakeholders.
ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement			
20. Will the subproject require the involuntary acquisition of new land (will the government use eminent domain powers to acquire the land)?			If "Yes": Exclude from the Project.
21. Will the subproject lead to temporary or permanent physical displacement (including people without legal claims to land)?			If "Yes": Exclude from the Project.
22. Will the subproject lead to economic displacement (such as loss of assets or livelihoods, or access to resources due to land acquisition or access restrictions)?			If "Yes": Exclude from the Project.
23. Has the site of the subproject been acquired through eminent domain in the past 5 years, in anticipation of the subproject?			If "Yes": Exclude from the Project.
24. Are there any associated facilities needed for the subproject (such as access roads or electricity transmission lines) that will require the involuntary acquisition of new land?			If "Yes": Exclude from the Project.
25. Is private land required for the subproject activity being voluntarily donated to the project?			If "Yes": Refer to the ESMF.
ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources			
26. Does the subproject involve activities that have potential to cause any significant loss or degradation of critical habitats whether directly or indirectly, or which would lead to adverse impacts on natural habitats?			If "Yes": Exclude from project.
27. Will the project involve the conversion or degradation of non-critical natural habitats?			If "Yes": 1. Prepare a site-specific ESMP for the proposed subproject, based on the template in Annex 3. 2. Include E&S risk management measures in bidding documents.
28. Will this activity require clearance of mangroves?			If "Yes": Exclude from project.
29. Will this activity require clearance of trees, including inland natural vegetation?			If "Yes": 1. Prepare a site-specific ESMP for the proposed subproject, based on the template in Annex 3.

			2. Exclude from project if more than x hectares of tree and vegetation cutting is expected. 2. Include E&S risk management measures in bidding documents.
30. Will there be any significant impact on any ecosystems of importance (especially those supporting rare, threatened or endangered species of flora and fauna)?			If “Yes”: Exclude from project.
<i>ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities</i>			
31. Are there any Indigenous Peoples or Sub-Saharan African Historically Underserved Traditional Local Communities present in the subproject area and are likely to be affected by the proposed subproject negatively?			If “Yes”: Prepare an Indigenous Peoples Plan OR Include the requirements of an Indigenous Peoples Plan in the SEP.
<i>ESS8 Cultural Heritage</i>			
32. Is the subproject to be located adjacent to a sensitive site (historical or archaeological or culturally significant site) or facility?			If “Yes”: Apply Chance Find Procedures in Annex 10
33. Locate near buildings, sacred trees or objects having spiritual values to local communities (e.g., memorials, graves or stones) or require excavation near there?			If “Yes”: Apply Chance Find Procedures in Annex 10.

3. Conclusion

Based on the result from the screening above, please list the E&S risk management instruments to be prepared / adopt and implemented:

- a)
- b)

Name and title of person who conducted screening:

Date of screening:

ANNEX 2: Generic Environmental and Social Management Plan (ESMP)

INTRODUCTION

The project aims at improving environmental and social management of project beneficiaries. The choice of remediation technique will be technology neutral and will be determined based on assessment of environmental, social, health and other related risks associated with each site in line with the World Bank Environmental and Social Standards. Once the site details are analyzed for level of contamination; remediation targets identified and design firmed up, an Environmental and Social Management Plan will be prepared to supplement the designed mitigation measures.

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	Mitigati on/ Enhanc ement measur e	Freque ncy of Monito ring	Time frame	Performanc e 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 3: Minutes of Stakeholders Consultations



Republic of Zambia

MINISTRY OF COMMERCE, TRADE, AND INDUSTRY
ZAMBIA AGRIBUSINESS AND TRADE PROJECT

Activity and or Back to Office Report STAKEHOLDER ENGAGEMENT WORKSHOP

Activity Title	
EFTA No.	
Lead (Name and Title)	Eng. Golden Makayi
Dates of the activity (Start & End Date)	Tuesday 7 th March, 2023
Location: Province/District/Community	Lusaka, Mulungushi International Conference Centre
Is the activity in the work plan? Yes, <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>(If yes indicate activity and Budget line Number)</i>	
Brief description of the activity In line with the requirements during project intention, a stakeholder engagement workshop was held for the Zambia Agribusiness and Trade Project (ZATP II) which is currently under the design phase with the World Bank. The Project aims to contribute to increased access to markets, finance and firm growth in Zambia's Agribusiness and Trade Sector and is also being designed to build on the success of the Zambia Agribusiness and Trade Project (ZATP) as well as to contribute support the private sector through direct investments and business development services in Zambia's Agribusiness sector.	
Objective (s) of the activity <ol style="list-style-type: none"> 1) Share information on the probable new project design which will be implemented by the Ministry of commerce, Trade and Industry 2) Engage stakeholders for potential collaboration during the implementation of the project. 3) Engage stakeholders for input and feedback on the current Zambia Business Support Project design 	
Expected output (s) of the activity: <ol style="list-style-type: none"> 1) ZATP II information disseminated to stakeholders. 2) Ideas and feedback on the project design obtained. 3) Identification of sectors for possible collaboration during project implementation. 	
Details of the activity: The meeting agenda is as attached as an Annex to the report. The meeting structure consisted of opening remarks by the Chairperson (Zambia Agribusiness and Trade Project Coordinator – Director Planning and Information Mr. Edwin L. Zimba) followed by a presentation of the Zambia Agribusiness and Trade Project (ZATP II) made by the Project Manager Eng. Golden Makayi. In his presentation, the Manager highlighted the following: <ul style="list-style-type: none"> • The Project will build on the Zambia Agribusiness and Trade Project which is only operational in five out of the ten provinces in the Country thereby scaling up to the other five provinces currently not being covered. • ZATP II will aim to contribute to increased access to markets, finance and promote firm growth in Agribusinesses in Zambia 	

- ZATP II will focus on three components:

1. Enhance Access to markets and finance.

1a Market Connect- business development services and technical assistance focusing on value addition, product and process upgrades, standards and certification, branding etc. to small and marginal farmers.

1b Productive Alliances in Zambia – support to integrating small and marginal farmers into value chains through agreements with offtakes, enhancing investments to build capacity and will be done through matching grant investments.

1c Line of Credit/ Credit Guarantee Scheme- designed to enhance access to finance targeted beneficiaries.

2. Promote Trade and Agribusiness Competitiveness

2a Export orientation- quality infrastructure and trade facilitation

2b Strengthening regulatory and institutional capacity framework for agribusiness and trade.

3. Project Management

-Fiduciary

-Environmental and social standards

-Communication

- M&E

The complete presentation is attached in the Annex of the report for ease of reference.

The matters arising from the presentation were as follows:

QUERY	RESPONSE
1) How will the project ensure inclusion of the Small and marginalized farmers? Are there targeted strategies being used to reach out to the intended target audience?	Through the use of communication. Deliberate efforts will be made to reach out to the targeted audience
2) Promotion of technology, how will the project ensure that technology is adopted?	Technology will be adopted through platforms like mobile platforms (mobile money), technology in equipment (laptops, storage facilities)
3) One of the illustrations shown on Access to finance was on animal breeds. When talking financial access, what kind of information or aid is the project looking at for moveable assets?	The project is mainstreaming and thinking around moveable assets. Currently, consultations are being made on purchasing of moveable assets
4) On warehousing and certifications, is the trade component going to look into warehouse receipt systems?	
5) On access to finance, this has not been accessible to most people due to the restrictions for marginalized people. How will the project ensure that finance is provided to the people that need this finance?	The access to finance will be tackled by the line of credit
6) On the standards presented, can these be addressed in a similar manner and on issues of pollution how are these standards being distinct?	The difference between the ESS1- <i>Assessment and Management of Environmental and Social Risks and Impacts</i> is used mainly for assessments. and ESS3- <i>Resource Efficiency and Pollution Prevention and Management</i> is specific management plans to manage pesticides and e-waste.
7) What kind of infrastructure is the project looking at?	Construction of a Zambia Metrology Agency laboratory and minor works
8) There is a project under Ministry of Infrastructure that deals with supporting rural communities with roads, markets and shades, is the ZATP II making any deliberate efforts to take advantage of the infrastructure being developed under the	The Project has taken note of the projects under Ministry of Infrastructure and will work with them`

project under infrastructure housing and urban development?	
9) How will the project prepare producers for the domestic and international markets?	The project is working with quality and standardization institutions such as ZABS, ZMA to ensure the production is in line with international standards
10) Are there any post or after support services?	The Project will have after service provision to its beneficiaries

SECTOR FEEDBACK

1. NAME OF INSTITUTIONS REPRESENTED

Ministry of Finance, Forest Africa, Ministry of Commerce, Trade and Industry, Small Scale Industries Associations, Zambia Development Agency and True Bond Multipurpose Cooperation

NO	Possible areas of collaboration with ZATP II
1.	Trade facilitation (MCTI)
2.	Access to finance (Forest Africa)
3.	Continuation of technical assistance (Forest Africa)
4.	Market Access
5.	Value addition
6.	Financial linkages and market linkages, trade facilitation
7.	Capacity building information exchange
8.	Project coordination with MCTI
9.	Resource mobilisation with Ministry of Finance
10.	Policy Guidance
11.	Ensuring no anti- competitive tendencies in business
12.	Project must collaborate with CCPC
	Concerns of ZATP II
1.	Any additional financial support for beneficiaries under ZATP?
2.	Possibility of blended finance e.g., a combination of Matching Grant support and loan
3.	Can the project consider a refundable grant with no interest?
4.	How will the project promote agribusiness competitiveness?
5.	Structured markets without middlemen
6.	Mode of feedback from marginalized groups
7.	Working with farmers associations
8.	Consideration of additional infrastructure e.g., feeder roads, bridges etc
9.	Trade logistics
10.	Investment in value addition
11.	Funding for communications/awareness campaigns
	Preferred means of communication
1.	Meetings through traditional leadership
2.	Community radio programs
3.	Emails to stakeholders
4.	Bulk messages to SMEs
5.	Community group discussions
6.	Print media (to include local languages) e.g., fliers, brochures, newspapers etc
7.	Communication through religious leaders

2. NAME OF INSTITUTIONS REPRESENTED

Zambia Metrology Agency, Gender Division, National Association for Small Holder Farmers, Palabana Dairy Cooperative, Ministry of Small and Medium Enterprise Development, Afriseed, Zambia Chamber of Commerce, Zambia Governance Foundation, Zambia Bureau of Standards

NO	Possible areas of collaboration with ZATP II
1.	Coordination of gender related issues
2.	Upscaling can be done with consulting firms
3.	Improved access to information such as fertilizers and seed companies with emphasis on climate issues
4.	Digitisation should help SMEs have continued flow of communication and access to information

5.	Information on mechanization and information dissemination
6.	Identify lead contacts in the value chain
7.	Information Dissemination
8.	Infrastructure development points/centers
9.	Adequate infrastructure mechanisms throughout the value chains
10.	Quality Control
11.	Certification and coordination of qualification institutions
12.	Collaborating on standards from various stakeholders to ensure quality is ensured in value chains
13.	Digitisation of feedback and information sharing
	Concerns of ZATP II
1.	-Collaboration with gender division on GBV and matters of sexual harassment can be done through principal gender officers -Safety of victims of GBV - After care for victim
2.	Collaborate and identify consulting firms to help beneficiaries have better positions
3.	Mechanization is lacking for farmers and other beneficiaries
4.	Information dissemination and understanding it is a challenge
5.	Strategies need to be put in place to communicate to the grassroots (the farmers)
6.	Value chain requirements must be outlined and clear to ensure issues such as finances
7.	Clear interventions e.g., NASHF created four centres in each district and used solar TVs to communicate to the beneficiaries in good time
8.	- Centres where farmers can meet is difficult. Infrastructure development is key
9.	- Quality of storage and warehousing facilities that are of good standards -there should be monitoring systems to see the quality of warehouse management. It must be of international standard. -Quality control emphasis through the value chain -ensure support of storage facilities to meet at least minimum standards
10.	- Institutions should have independent evaluations and standards in relation to their expertise -Procedures should be clear on what standards apply to various value chains
11.	Livestock should also have standards and qualifications
	Grievance redress mechanisms need to be strengthened
	Preferred means of communication
1.	Through written communication to the gender division
3. NAME OF INSTITUTIONS REPRESENTED	
Agric Technology, Quality Infrastructure (Zambia Metrology Agency), Zambia Chamber of Commerce, Ministry of Commerce, Trade and Industry Afriseed, Emsika, Poultry Association of Zambia	
NO	Possible areas of collaboration with ZATP II
1.	Provision of metrology services. Calibration verification, certification, technical support (packaging and labelling requirements)
2.	Emsika (farmers training) -Digital learning portal -Agro input supply platform -Agric ERP system- digital interlink
3.	Provision of Business Development Services in collaboration with provincial and District chambers of commerce and industry
4.	Infrastructure development promotion of smart agricultural practices
5.	Market penetration and product quality and certification assurance
6.	Access to finance
7.	Value chain synergies -Input supply -Climate smart training and farmers mobilization
8.	Agro processing, bio-safety infrastructure, residue controls, bulking centres
9.	Market linkages/ local export -Product traceability -Support to poultry value chain
10.	Farmer extension services business enabling reforms value addition
	Concerns of ZATP II
1.	Timely funding disbursement

2.	Clear KPI and timely communication
3.	Engage sector specialization project evaluation
4.	Robust M&E Framework
5.	SME graduation and reduced dependency on grant funding
	Preferred means of communication
1.	Emails
2.	Letters
3.	Radio.
4.	TV
5.	Social Media

4. NAME OF INSTITUTIONS REPRESENTED

Ministry of Commerce, Trade and Industry- National Trade Facilitation, Palabana Dairy Cooperative, Ministry of Finance and National Planning, Ministry of Fisheries and Livestock, Small Scale Industrial Association of Zambia, Ministry of Small and Medium Enterprise Development, Ministry of Infrastructure, Housing and Urban Development

NO	Possible areas of collaboration with ZATP II
1.	Trade facilitation
2.	Streamlining regulation and improving institutional capacity
3.	Provision of information on trade facilitation
4.	Market linkages for fisheries and livestock products, linkages to credit and finance
5.	Market information and dissemination, training (entrepreneurship)
6.	Livestock production disease control- Animal Health
7.	Fisheries (production and productivity)
8.	Technical Support
9.	Value addition
10.	Upscaling of macro to industrial businesses/ advocacy and information distribution
11.	MSME- Capacity building in governance of cooperatives and entrepreneurship
12.	Business information- provision facilitation of business and market linkages
13.	Facilitation of access to finance
14.	Monitoring and evaluation of outcomes in accordance with the seventh National Development Plan
15.	Provision of information on rural infrastructure
16.	Provision of infrastructure to ease access to markets, storage facilities, management of livestock (deep tanks)
	Concerns of ZATP II
1.	Digitization of boarder processes
2.	Capacity building and technical support (post) must be prioritized (considered)
3.	Stronger collaborations in livestock and fisheries services
4.	Pasture challenges
5.	Sustainability of businesses after the project monitoring
6.	Issues around renewable energy and greening
7.	Digitalization of remote areas and targeting of beneficiaries
8.	Delayed funding
9.	Impacts
10.	Department of cooperatives is now at MSMED- must be part of the project
11.	Delay on project delivery
12.	Structure of the access to finance
13.	Application process requirements
14.	Funding timelines must align with the value chains
15.	Help small farmers to move away from seasonal farming to all year-round production through irrigation and other services
16.	Market linkage support, more offtakes (price dictation)
17.	Easy access of farming equipment (mechanization)
18.	How will the project collaborate with the credit guarantee scheme?
19.	ZATP II must work in conjunction with already running projects under Ministry of

	infrastructure, Housing and Urban Development
20.	Policy consistency for mandates that have moved to different Ministries in terms of disbursements to beneficiaries
	Preferred means of communication
1.	Email
2.	Stakeholder forums
3.	Annual reviews
4.	Media – Radio and TV
5.	Letter correspondence
6.	Mid-term reviews
7.	Reports circulated
8.	Social Media Platforms

Challenges and mitigations

- Limited time of sending out invitation letters to stakeholders

Recommendations:

- Prior planning for similar activities

Submitted to:	Project Manager- ZATP
Date submitted:	9th March 2023

Attachments:

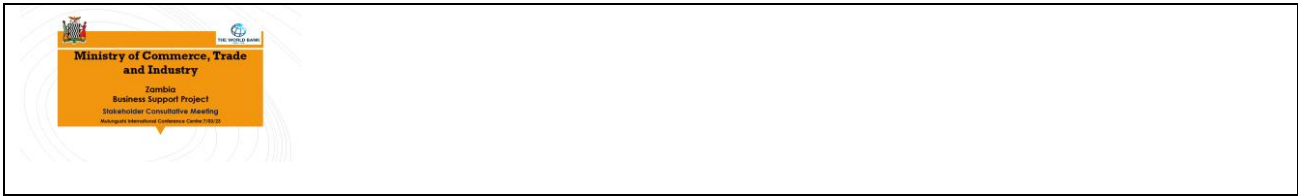
(i) Agenda



**MINISTRY OF COMMERCE, TRADE AND INDUSTRY
ZAMBIA AGRIBUSINESS AND TRADE PROJECT
STAKEHOLDER ENGAGEMENT AGENDA
7th March 2023**

TIME	AGENDA ITEM	RESPONSIBLE PERSON
08:30 - 09:00	Registration	All
09:00 – 09:15	Opening remarks	Director Planning and Information - MCTI
09:15 – 09:45	ZATP II Presentation	Project Manager - ZATP
09:45 -10:20	Plenary Feedback Session	Communications Specialist - ZATP
10:20 - 10:40	Q&A	All
10:40 – 11:00	TEA BREAK	All
11:00 – 11:40	Break away discussion sessions for stakeholders	All
12:00 – 12:45	Presentation of sector feedback	Sector representatives
12:45 – 13:00	Closing remarks	PM
13:00 – 14:00	LUNCH	All
	CLOSE OF MEETING	

(ii) ZATP II Presentation



ANNEX 4: Electronic Waste Management Plan (E-WMP)

1.0 Scope

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 ZATP-II. 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 ZATP-II. Site specific ESMP will be updated using information contained in this EWMP.

2.0 Consideration on Electronic Waste Management

The ZATP-II 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 ZATP-II shall be conducted 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 ZATP-II 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 (EHSG) 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, 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 mostly found toxic substances in E-waste.

Table 1. Toxic Substances in E-waste

Substance	Occurrence in E-waste
Halogenated compounds	
PCB (polychlorinated biphenyls)	Condensers, Transformers
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
Heavy metals and other metals:	
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)
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 Tetrabromobisphenol - 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, aluminium, 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, diarrhoea, 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 ZATP-II

This Electrical Waste Management Plan (E-Waste MP) will be implemented throughout the ZATP-II 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 ZATP-II on how to manage risk 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 Electrotechnical 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 EHSR 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 EHSR 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-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 2.a of the ZATP II, different Information and Communication Technologies (ICTs) will be procured to upgrade the existing information Systems in boarder areas. This component will involve strengthening the existing Data Centers and its back up systems, equipping new and updating existing ICTs, provision of digital and automated systems. Improving coordinated border management (CBM) including national and corridor coordination and improving trade procedures and reducing inspections. A gaps assessment on ICT needs of primary border agencies and digital solutions is underway while technical assistance on determining an appropriate model for CBM is also being developed.

Different ICTs will be procured such as computers, scanners, printers, 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 ZATP II. 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

It is expected from the above table that electronic waste generation will most likely be after the project life of 5 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 ZATP-II 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 ZATP-II. Table 3 presents a description of some of the mitigation measures that have been proposed under the ZATP-II.

Table 3: Electronic Waste Management and Monitoring Plan

Potential Risk and Impact	Proposed Mitigation Measures	Indicator for Monitoring	Responsibility	Budget (USD)
<p>Air Pollution 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>Reuse and recycle all E-waste where applicable and possible.</p> <p>Establish E-Waste collection points at ZATP-II 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>Warranty and take back schemes for Electronic Devices purchased.</p>	<p>ZATP-II</p>	<p>40,000</p>
<p>Human Health Impacts due to poor disposal.</p>		<p>Credibility of manufacturers supplying the electronic devices</p>		
<p>Pollution of Water Sources Electrical and electronic equipment contain different hazardous materials, which are harmful to human health and the environment if not disposed of carefully</p>		<p>Availability of E-waste receptacles at ZATP-II Offices</p> <p>Number of awareness and trainings 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>Soil Contamination 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</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 ZATP-II 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</p>	<p>ZATP-II</p>	<p>30,000</p>

	<p>ZATP-II 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>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>contractors and licensed hazardous waste landfills.</p>		
<p>Growth of informal E-waste disposal centers.</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 ZATP-II 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 ZATP-II 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 ZATP-IIs 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>	ZATP-II	30,000
TOTAL				100,000

5.2 Procurement

The first mitigation measure is to ensure that all electronic devices are procured from retailers and sources that are credible. All electronic devices to be 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 PIU shall conduct awareness and sensitization for the end users of electronic devices on the proper methods of disposal of 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 collection centre that should be established at each hub and satellite centre.

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 point at each hub and satellite site, inventoried, 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 litres, 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 disposed at 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 transboundary movement of project related hazardous waste.

5.5 Electronic Waste Management Monitoring Plans and Indicators

5.5.1 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 is to be extended in some areas.

5.5.3 Monitoring

The Ministry of Commerce, Trade and Industry (MCTI) 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. Due to the spatial extent of the ZATP-II, the project will conduct regularly monitoring and spot checks using environmental and social specialist under the Technical Service Providers (TSP) and Regional Facilitators that will be operating in the provincial regions under the ZATP-II.

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 MCTI through the PIU will submit monitoring reports to the Bank as part of its reporting on a monthly, 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 Commerce, Trade and Industry

The Ministry of Commerce, Trade and Industry (MCTI) will provide overall coordination and supervision of the ZATP-II through the Department of Planning and Information and Department of Industry. The ZATP- II falls under the Directorate of Planning and Information (DPI) and the Director Planning and Information will provide overall coordination of the project.

6.2 Project Implementation Unit

The ZATP-II that falls under MCTI Directorate of Planning and Information (DPI) 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 3 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.

ANNEX 5: The 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 ZATP-II 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 ZATPT-II 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 ZATP-II 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 ZATP II

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 ZATP-II 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 (Licencing) Regulations (SI.No.112 of 2013);
- World Bank Environmental and Social Standards (ESSs);
- Environmental Health and Safety and Guidelines

5.0 The Waste Management Hierarchy

Under Component 1 and 2 of the ZATP-II, different types of waste streams will be generated during the implementation of the various subprojects for firms and producer organisation, and

construction of the Zambia Metrology Agency (ZMA) Laboratory. 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 3.

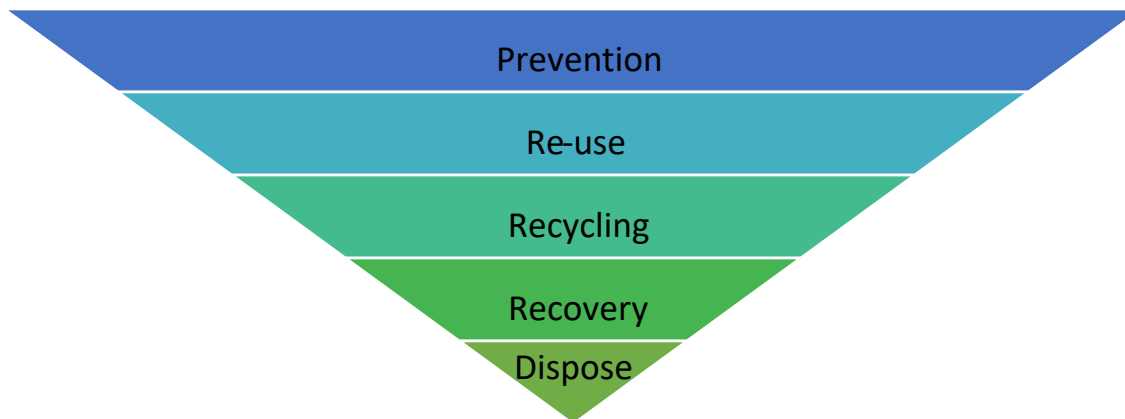


Figure 3: Stages of the Waste Management Hierarchy

These stages are described in more detail below:

Prevention

The subproject should 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 centralised 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, 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 ZATP II

ZATP-II 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 (Annex 4). 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	Typical waste generators	Solid waste content
Industrial	Process by PO, Laboratory, project beneficiaries	Food wastes, paper, cardboard, plastics, ashes, special wastes (e.g., bulky items, consumer electronics, batteries, oil, tyres) and limited industrial hazardous wastes.
Source	Typical waste generators	Solid waste content
Agricultural Waste	Farmland, farm fields and plots	Crop harvest by products (crop stems, pods, husks, cobs remnants etc.)
Commercial	PO, SMEs, Laboratory, project beneficiaries	Paper, cardboard, plastics, wood, food wastes, glass, metals, special wastes, hazardous wastes
Construction and demolition	New construction sites, renovation sites, demolition of buildings	Wood, steel, concrete, rubble, contaminated soil, paper

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 summarised 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 odours 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 piling of concrete waste may cause soil and air pollution during storage;
- Spillage and dropping of waste whilst in transit to the dump site causing adour 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 ZATP-II 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 ZATP-II. Table 4 and 5 presents a description of some of the mitigation measures that have been proposed under the ZATP-II.

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 PIU and where possible by the public health officers from the local authorities. The subprojects will be monitored on regularly by the TSP 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 Commerce, Trade and Industry (MCTI) 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. Due to the spatial extent of the ZATP-II, the project will conduct regular monitoring and spot checks using environmental and social specialists under the Technical Service Providers (TSP) and Regional Facilitators that will be operating in the provincial regions under the ZATP-II.

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 MCTI through the PIU will submit monitoring reports to the Bank as part of its reporting on a monthly, 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 Commerce, Trade and Industry (MCTI) will provide overall coordination and supervision of the ZATP-II through the Department of Planning and Information and Department of Industry under which the ZATP- II falls.

8.2 Project Implementation Unit

The ZATP-II that falls under MCTI Directorate of Planning and Information (DPI) 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 5-1 provides the key activities, risks, impacts and mitigation measures for hazardous waste which include diseased animal carcasses, expired pesticide, empty pesticides containers and oil leaks that may be generated under ZATP II. Electronic waste is covered under the e-waste management plan(Annex 4).

Table 5-1: Hazardous Waste Management and Monitoring Plan

Activity	Potential Risk and Impact	Proposed Mitigation Measures	Indicator	Responsibility	Budget (USD)
Procurement	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	Only order the quantity of material that you need. Substitute hazardous waste with less non-hazardous waste.	Purchase orders	ZATP-II SME PO	50,000
		Evaluate options for substitution of hazardous materials with non-hazardous ones.	Quantity of hazardous materials substituted Laboratory results	ZATP-II SME PO	
		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	ZATP-II SME PO	
		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	ZATP-II SME PO	

		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 List of ZEMA certified agro dealers	ZATP-II SME PO	
		Instituting procurement measures that recognize opportunities to return usable materials such as containers and which prevents the over ordering of materials	Warrants Receipts	ZATP-II SME PO	
Transportation	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	ZATP-II	50,000
		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	ZATP-II SME PO	
		Procure spill kits and institute suitable control measures in case of accidental spillage of hazardous waste.	Purchase Orders Number of spill kits	ZATP-II SME PO	

		<p>Hazardous waste to be transported by a ZEMA licensed transporter in an appropriate conveyor to contain any spillage</p>	<p>Road Traffic Certificate ZEMA Licence</p>	<p>ZATP-II SME PO</p>	
		<p>When preparing for transportation the following should be implemented: Name and identification number of the material(s) composing the hazardous waste. Physical State. Quantity kilograms or Litres, number of containers). 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. Method and date of storing, repacking, treating, or disposing at the facility, cross-referenced to specific document numbers applicable to the hazardous waste. Location of each hazardous waste within the facility, and the quantity at each location. Transporter/Contractor must have a ZEMA hazardous waste license.</p>	<p>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</p>		

Storage	<p>Improper storage of hazardous waste causing air, soil and water contamination.</p> <p>Occupational health and safety risks due to skin contact with hazardous materials.</p>	<p>Ensure adequate ventilation where hazardous waste is stored.</p>	<p>Label of hazardous waste.</p>	<p>ZATP-II SME PO</p>	<p>50,000</p>
		<p>Ensure all hazardous waste are properly labelled with proper danger signage.</p>	<p>Inventory of hazardous waste.</p>		
		<p>Never mix hazardous and non-hazardous waste streams</p>	<p>Quantity of non-hazardous waste.</p>		
		<p>Maintain an accurate record of all hazardous material</p>			
		<p>Minimizing hazardous waste generation by implementing stringent waste reduction and segregation strategies.</p>			
<p>Segregate wastes into different secondary containment based on hazard class (corrosive acid, corrosive base, flammable, oxidizer)</p>	<p>List of hazardous waste and their nature</p>				
<p>Label the hazardous waste under storage and all hazardous waste should be stored in clearly labelled storage bins.</p> <p>Keep waste containers closed and sealed when not adding waste.</p>	<p>Labels indicating hazardous waste</p>				
<p>Storage facilities should be set away from water sources, residential and built-up areas, as well as livestock and food storage areas.</p>	<p>Distance of storage facilities from residential/residential and food storage areas.</p>				

		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		

Handling	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	ZATP-II SME PO	50,000
		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		
		Correct PPE such as gloves, overalls, eye protection, must always be worn when handling hazardous waste.	Purchase order of PPE All workers equipped with PPE Distribution list of PPE		

		Ensure that spills are cleaned up immediately using appropriate spill kits; spills and should not be washed away into watercourses or drains.	Standard Operating Procedures for emergency spills Number of spill kits procured		
		Conduct sensitization and awareness to beneficiaries on risk of handling hazardous substances	Number of sensitisations conducted Attendance register		
		Ensure all hazardous waste are properly labelled indicating the "Danger "sign.	Danger sign on the label		
		Training workers on release prevention, including drills specific to hazardous materials as part of emergency preparedness response training.	Number of sensitisations conducted Attendance register		
Disposal	. Occupational health and safety risks to operators contact with hazardous materials.	Explore possibilities of recycling of the hazardous waste material.	Number of firms dealing in recycling	ZATP-II SME PO	50,000

<p>Odour and nuisances to nearby communities. Contact with the skin during handling of hazardous waste. Bioaccumulation of hazardous causing ecosystem damage Soil, surface, and ground water contamination due to accidental spillage. 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>	<p>Ensure all workers have correct PPE for handling hazardous materials</p>	<p>Purchase orders</p> <p>Number of workers with PPE</p> <p>Distribution list</p>		
	<p>Dispose hazardous waste as soon as soon as they are longer needed.</p>	<p>Name of transporter</p> <p>Name of disposal site</p> <p>Records for disposal</p> <p>Quantity and type</p>		
	<p>Develop and implement Standard Operating Procedures (SOP) for managing spillage during disposal.</p>	<p>Copy of Standard Operating Procedure</p>		
	<p>Periodically monitor soil, ground, and surface water quality</p>	<p>Schedule of monitoring</p> <p>Certificate of analysis</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>		

		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.	ZATP-II SME PO	
		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	ZATP-II SME PO	
		TOTAL			200,000

Table 5 -2 provides key activities, risks, impacts and mitigation measures for managing non-hazardous waste which include solid waste, crop residues, construction waste, that may be generated under ZATP II. Hazardous waste is covered under the hazardous waste management plan.

Table 5 -2: Non-Hazardous Waste Management and Monitoring Plan

Activity/Source	Potential Risk and Impact	Proposed Mitigation Measures	Indicator	Responsibility	Budget (USD)
Design	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	ZATP-II SME PO	25,000
		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	ZATP-II SME PO	
		Use prefabricated products as much as possible to reduce onsite handling, reworking and offcuts.	Number of Prefabs	ZATP-II SME PO	
		Untreated timber should be specified in all applications where this is allowed to encourage future recycling.	Material Specifications	ZATP-II SME PO	

Material Selection and Cost estimates	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	ZATP-II SME PO	25,000
Procurement	Over procurement leading to generation of non-hazardous waste if not properly stored.	Only order the quantity of material that you need.	Purchase orders	ZATP-II	50,000
		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. Purchase wisely and use recyclable materials.	Warrants Receipts		

		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		
Handling	Occupational health and safety risk to operators.	Ensure all workers have the right PPE.	Number of workers with right Personal Protective Equipment (PPE). Distribution Register for PPE.	ZATP-II SME PO	40,000

	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	ZATP-II SME PO	
		Ensure adequate non-hazardous waste bins are in place	Number of bins for non-hazardous waste	ZATP-II SME PO	
		Segregate waste into non-hazardous and hazardous	Quantity of non-hazardous waste segregated.	ZATP-II SME PO	
		Cover non-hazardous waste with tarpaulins.	Surface area of non-hazardous waste covered.	ZATP-II SME PO	
	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	ZATP-II SME PO	
Storage	Improper storage of non-hazardous waste causing air, soil and water contamination.	Ensure adequate waste bins for storage of non-hazardous waste.	Number of bins for non-hazardous waste	ZATP-II SME PO	50,000

Occupational health and safety risks due to skin contact with hazardous materials. Long term pilling 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	ZATP-II SME PO
	Waste bins should be kept away from public view and be accessible whenever possible.	Distance of waste bins' location from public view	ZATP-II SME PO
	Ensure the waste bins are lockable to avoid scavengers from collecting waste.	Number of locks on waste bins	ZATP-II SME PO
	Fruits and vegetable scraps, eggshells, grass clippings and leaves and other farm residues can all be composted.	Number of compost sites	ZATP-II SME PO
	Recycle biodegradable waste through composting where possible.	Number of compost sites	ZATP-II SME PO

		Segregate non-hazardous waste from hazardous waste.	Quantity of non-hazardous and hazardous segregated	ZATP-II SME PO	
		Deliveries should be done just on time to avoid stock piling of non-hazardous materials.	Schedule of delivery	ZATP-II SME PO	
		Sensitize workers on managing non-hazardous waste.	Number of sensitisation meeting conducted. Attendance registers.	ZATP-II SME PO	
		Tracking of non-hazardous waste generation trends by type and amount, preferably by facility departments.	Monthly Reports	ZATP-II SME PO	
		Obtain licence from ZEMA for transport of non-hazardous waste	ZEMA Licence	ZATP-II SME PO	

Transport	Road traffic accidents if waste transportation vehicles not fully compliant with road traffic regulations	<p>Ensure all vehicles are fully compliant with road traffic and safety requirements.</p> <p>Ensure the drivers are competent to operate such vehicle.</p>	<p>Drivers Licence</p> <p>Competence Licence</p> <p>Road Tax</p> <p>Road Fitness Certificate</p>	ZATP II SME PO	40,000
	Spillage and dropping of non-hazardous waste whilst in transit to the dump site.	<p>Vehicles transporting waste should be covered.</p> <p>Containment arrangement and spill kits, to manage releases, in case of any accident.</p>	<p>Number of spill kits</p> <p>Emergency preparedness procedures and spills kit available</p>	ZATP-II SME PO	
	Smells and doors to road users whilst in transit.	<p>Ensure the vehicle transporting waste is fully enclosed.</p> <p>Avoid transporting non-hazardous waste with high moisture content</p>	<p>Enclosed Operation Vehicles.</p> <p>Percentage of Moisture content</p>	ZATP-II SME PO	
	Community health and safety risk to other road users.	<p>Conduct sensitisation meetings to transporters of non-hazardous waste.</p> <p>Conduct sensitisation meetings to nearby communities on risk of non-hazardous waste.</p>	<p>Number of sensitisations meetings conducted.</p> <p>Attendance register</p>	ZATP-II SME PO	

	Occupational health and safety to operators	Ensure operators have the right Personal Protective Equipment (PPE). Sensitise operators on management of non-hazardous waste whilst in transit.	Number of workers with Personal Protective Equipment (PPE) Number of sensitisation meeting conducted.	ZATP II SME PO	
	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.	Number of sensitisation meeting conducted Attendance Register Emergency preparedness procedure	ZATP II SME PO	
	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.	Name and identification number of the material	ZATP II SME PO	
Quantity kilograms or Litres, number of containers).			ZATP-II SME PO		
Quantity and type, date dispatched,			ZATP-II SME PO		

			Date transported	ZATP-II SME PO	
			Date received, record of the	ZATP-II SME PO	
			Name of Transporter.	ZATP-II SME PO	
			Location of dumping facility	ZATP-II SME PO	
			ZEMA hazardous waste license	ZATP-II SME PO	
Disposal	Occupational health and safety risks to operators	Ensure all operators have the right Personal Protective Equipment (PPE).	Number of operators with PPE.	ZATP II SME PO	40,000
	Generation of smells and odours	Ensure that the dump site is located away from residential areas.	Distance of dump site from residential areas.	ZATP II SME PO	
		Ensure that the non-hazardous waste has very little moisture content to minimise odours and smells.	Percentage of moisture content	ZATP-II SME PO	

		Ensure that the dump site has facilities of capturing leachates to help eliminate odours.	Quantity of leachate collected	ZATP-II SME PO	
		Install mechanical units that draw air into the dump site.	Number of mechanical units for odour management	ZATP-II SME PO	
	Ground and surface water contamination	Conduct periodic water quality monitoring.	Certificate of analysis Number of tests conducted	ZATP II SME PO	
	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	ZATP II SME PO	
	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	ZATP II SME PO	

	Scavenging of non-hazardous waste	<p>Ensure the storage sites are secured and lockable where possible.</p> <p>Conduct sensitisation and raise awareness on risk of handing non-hazardous waste and recycling opportunities.</p>	<p>Notices of restrictions displayed.</p> <p>Number of sensitisations conducted.</p> <p>Attendance list.</p>	ZATP II SME PO	
	TOTAL				200,000

ANNEX 6: Nutrient and Fertilizer Management Plan (NFMP)

Activity	Risk and Mitigation	Mitigation	Responsibility	Budget
Procurement fertilizer.	Expired or substandard fertilizers affecting soil and water resources. Over procurement of fertilizer increasing leading to increased volumes of expired fertilizers	<ul style="list-style-type: none"> Conduct sensitization of beneficiaries to procure only ZEMA certified fertilizers from ZEMA licensed agro dealers. Keep a register of all fertilizers procured, recording when they were received, the amount used, the amount remaining in store, and their location. Know and understand each crop's fertilizer requirements and only apply what is required, when it is required, to minimize losses to the environment. Implement a suitable training program for personnel that are procuring and transporting fertilizers. 	ZATP-II SME PO	30,000
Transportation of fertilizer	Accidental release into the environment	<ul style="list-style-type: none"> Procure a spills kit A transporter to always move with the MSDS. Fertilizer to be transported by licensed transporters. Procure fertilizers from nearby sources to reduce the risks of transportation accidents. Inform ZEMA and RTSA in case of any potential spillage. Implement a suitable training program for personnel that are transporting fertilizers 	ZATP-II SME PO	10,000
Storage of fertilizers and organic nutrients	<ul style="list-style-type: none"> Inappropriate storage practices may cause air, soil and water pollution. Contact with the skin during Soil and water pollution Potential dermal and respiratory diseases Bioaccumulation of fertilizer leading to loss of soil fertility. ground and Surface Water Contamination 	<ul style="list-style-type: none"> Conduct a risk assessment on safety issues related to fertilizer storage including risk of explosion and related mitigation measures. Conduct a risk assessment for product quality focussing on product properties and understanding any harmful properties of the product, identify any exposure to people, property, and environment of the product, both abnormal and normal circumstances should be considered, prioritise risks for making corrective actions, design and implement controls, monitor progress and implement necessary corrective actions. Store fertilizers in their original packaging and in a dedicated location that can be locked and properly identified with signs, access to which is limited to authorized persons. Ensure that the Material Safety Data Sheet (MSDS) and inventories are available at fertilizer storage facilities and available to first responders when necessary. Only purchase and store minimal fertilizer requirements and use older 	ZATP-II SME PO	10,000

		<p>fertilizers first.</p> <ul style="list-style-type: none"> • Keep fertilizer stores separate from pesticides and machinery (e.g., fuels, ignition, or heat sources) • Stores should be set away from water sources, residential and built-up areas, as well as livestock and food storage areas. • Warehouses for must have appropriate ventilation, impermeable floor, and emergency showers and kits. • Manure should not be stored in paddocks because paddocks may become easily infected with parasites. • Manure storage be drained. • The storage area must be located away from any stream, wetland or floodplain. • The storage must have a slight slope for drainage to prevent any manure from being washed off-site to streams or nearby water sources. • The presence of trees around the facility will help to dissipate odours and keep them out of sight. • Implement a suitable training program for personnel that are handling, loading and, storing, fertilizers. 		
<p>Application of fertilizer and handling</p>	<p>In appropriate handling of fertilizer application of fertilizer and manure cause:</p>	<ul style="list-style-type: none"> • Through camp extension officers, train project beneficiaries on fertilizer and manure best management practices. • Build capacity among project beneficiaries in, understanding, and following product label directions for safe handling of fertilizers. • Well cured manure, free of pathogens to be used for application. • Develop standard operating procedures in local languages on handling application. • Ensure that all workers are trained in the use of appropriate management procedures for the storage, handling, and application of all types of fertilizers, including organic wastes. • Use trained personnel for critical operations such as, mixing, transfers, filling tanks, and application of fertilizers. • Ensure correct PPE such as gloves, overalls, eye protection, for each exposure route always be worn when handling fertilizer and manure. • Ensure that all workers are trained in and use of appropriate management 	<p>ZATP-II SME PO</p>	<p>20,000</p>

	<ul style="list-style-type: none"> • Inadequate management of empty packaging materials for fertilizer, causing air, soil and water contamination • Lack of information and awareness on washing containers for liquid fertilizers causing dermal diseases by splashing during washing of containers • Lack of appropriate facilities for the disposal of empty packaging and low level of public awareness of the health risks associated with handling fertilizers causing the following impacts: <ul style="list-style-type: none"> • Acute poisoning of fish and other aquatic organism. • Pollution of points (wells) and water bodies (ponds). Water contamination by runoff. • Eutrophication of nearby surface water bodies <p>Inappropriate application methods of fertilizers causing loss of soil fertility due to excessive application of fertilizer</p> <ul style="list-style-type: none"> • Lack of appropriate PPE when applying fertilizers leading skin diseases and allergies • Potential contamination of ground and surface water bodies. 	<p>procedures for the storage, handling, and application of all types of fertilizers, including management of empty packaging materials (empty fertilizer bags, bottles and containers).</p> <ul style="list-style-type: none"> • Use of country systems on the disposal of empty fertilizer packaging materials/containers. • Provide farm operators with training in nutrient and fertilizer management. following published principles and agricultural practice manuals • Conduct awareness and sensitization on the hazards of using empty containers from liquid fertilizer. • Provide farm operators with training in nutrient and fertilizer management following published principles and agricultural practice manuals. • Ensure that all workers are trained in and use appropriate management procedures for the storage, handling, and application of all types of fertilizers, including organic on • Select and maintain fertilizer application equipment to ensure desired application rates are used and over broadcasting of solid fertilizers as well as over spraying. • Time the application of crop nutrients to maximize uptake and minimize nutrient runoff. • Establish and respect setbacks from watercourses—including appropriate buffer zones, strips, or other “no-treatment” areas along water sources, rivers, streams, ponds, lakes, and ditches to act as a filter for potential nutrient runoff from the land. • Implement a suitable training program for personnel that are handling and applying fertilizers. 		
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ANNEX 7: Environmental and Social Guidelines for Civil Works Contractors

The guidelines include provisions for proper management of construction sites, safe storage of construction materials and safe disposal of wastes.

General Considerations

- The contractor shall follow the World Bank Group Environment, Health and Safety Guidelines which should become the basis for preparing the site-specific EHS Plan. For details please refer: www.ifc.org/EHSguidelines
- The contractor in all his activities ensure maximum protection of the environment and the socio-economic wellbeing of the people affected by the project, whether within or outside the physical boundaries of the project area.
- The contractor will not engage in Child Labour
- Before any construction works begin, the contractor shall ensure that the relevant environmental and land acquisition certificates of authorization for the works have been obtained from the relevant authorities.
- In general, the contractor should become familiar with the environmental and social screening process for this project. The contractor shall work in cooperation and in coordination with the Project Management Team and/or any other authority appointed to perform or to ensure that the social and environmental work is performed according to the provisions of the E&S documents.
- The contractor shall pay close attention to health and safety requirements for workers who must wear protective clothing if required. The artisan should also ensure the health and safety of the community adjoining any construction areas.
- The contractor shall always keep on site and make available to Environmental Inspectors or any authorized persons, copies of the ESMPs, CoCs, LMPs, GBV/SEA/SH Action Plan for the monitoring and evaluation of environmental and social impacts and the level or progress of their mitigation.
- The contractor shall ensure that construction materials such as sand, quarry stone, soils or any other construction materials are acquired from approved suppliers and that the production of these materials by the suppliers, or the contractor does not violate the environmental regulations or procedures.
- The movement and transportation of construction materials to and within the construction sites shall be done in a manner that generates minimum impacts on the environment and on the community, as required by the ESMP.
- Construction materials shall be stored in a manner to ensure that:
 - There is no obstruction of service roads, passages, driveways and footpaths.
 - Where it is unavoidable to obstruct any of the service paths, the contractor shall provide temporary or alternate by-passes without inconveniencing the flow of traffic or pedestrians.
 - There is no obstruction of drainage channels and natural water courses.
 - There is no contamination of surface water, ground water or the ground.

- There is no access by public or unauthorized persons, to materials and equipment storage areas.
- There is no access by staff, without appropriate protective clothing, to materials and equipment storage areas.
- Access by public or unauthorized persons, to hazardous, corrosive or poisonous substances including asbestos lagging, sludge, chemicals, solvents, oils or their receptacles such as boxes, drums, sacks and bags is prohibited.
- The contractor will ensure to have a fully function grievance redress mechanism in line with the ZATP-II Labour Management Plan (LMP).
- Access by staff, without the appropriate protective clothing, to hazardous, corrosive or poisonous substances including asbestos lagging, sludge, chemicals, solvents, oils or their receptacles such as boxes, drums, sacks and bags is prohibited.
- Construction waste includes but is not limited to combustion products, dust, metals, rubble, timber, water, wastewater and oil. Hence construction waste constitutes solid, liquid and gaseous waste and smoke.
- In performing his activities, the contractor shall use the best practical means for preventing emissions of noxious or offensive substances into the air, land and water. He shall make every effort to render any such emissions (if unavoidable) inoffensive and harmless to people and the environment. The means to be used for making the emissions harmless or for preventing the emissions shall be in accordance with the RAPs, or the ESMPs and with the approval of the relevant Local Authority or ZEMA.
- The contractor shall comply with the regulations for disposal of construction/demolition wastes, wastewater, combustion products, dust, metals, rubble and timber. Wastewater treatment and discharge will conform to the applicable regulations by the relevant guidelines.
- Asbestos wastes, PCBs and other hazardous wastes shall be treated and disposed of in conformity with the national regulations and World Bank Group standards where applicable, with the supervision of qualified personnel.
- The contractor shall protect the health and safety of workers by providing the necessary and approved protective clothing and by instituting procedures and practices that protect the workers from dangerous operations. The contractor shall be guided by and shall adhere to the relevant national Labour Regulations for the protection of workers. Appropriate information and awareness on HIV/AIDS and GBV including SEA/SH shall be conducted at each construction site.

ANNEX 8: GBV/SEA/SH Action Plan

	<i>Activity to Address SEA/SH risk</i>	<i>Steps to be taken</i>	<i>Timeline</i>	<i>Responsible</i>	<i>Monitoring (Who will monitor)</i>	<i>Output indicators</i>	<i>Estimated Budgets (USD \$)</i>
1	<i>Sensitize Project Stakeholders (Project Core Team, Implementing Partners including FIs, project beneficiaries) on the importance of addressing GBV/SEA/SH on the project, and the mechanisms that will be implemented</i>						
a)	Training of GRCs (District, PIU and Ministerial) on the GBV/SEA/SH Trainer of Trainers Curriculum	<ul style="list-style-type: none"> Review of ZATP developed GBV/SEA/SH ToT Curriculum to ensure it is adequate for national implementation. Conduct the GBV/SEA/SH training at district, PIU and ministerial levels. 	December 2024	Social Specialist	Project Manager and World Bank-Social Development Specialist	<ol style="list-style-type: none"> PIU GRC trained. Ministerial GRC trained. No and % of district GRCs trained. 	40,000
		<ul style="list-style-type: none"> Conduct trainings for community (organisational) GRCs 	Throughout project implementation	Social Specialist and E&S Personnel under TSP	Project Manager, Social Specialist and World Bank	Percentage of community GRCs trained	10,000
		<ul style="list-style-type: none"> Collaborate with the M&E department under Gender division to access GBV/SEA/SH referral pathway and GBV/SEA/SH Service provider directories 	December 2024	Social Specialist	Project Manager and World Bank-Social Development Specialist	Percentage of district directories made available to ZATP II from Gender Division	0
b)	Training on GBV/SEA/SH to include: <ol style="list-style-type: none"> Accountability and response 	<ul style="list-style-type: none"> Develop GBV/SEA/SH training PowerPoint and Briefing Notes for participants. 	Throughout implementation	Social Specialist	Project Manager and WB Social Development Specialist	<ol style="list-style-type: none"> Training content to aid sensitization of project actors is 	0

	<p>framework.</p> <p>b. Responsibilities and reporting.</p> <p>c. Grievance mechanism and referral pathways.</p> <p>d. Importance of confidentiality</p>	<ul style="list-style-type: none"> Schedule separate training sessions for various project stakeholders such as women, youths, PwDs. Train project actors (including TSP) with the PowerPoint training materials prepared. 				<p>available.</p> <p>2. Project workers have clarity on GBV/SEA/SH prohibitions on the project and are empowered to contribute to mitigation and reporting of cases.</p>	
c)	Continuous learning through annual refresher training.	<ul style="list-style-type: none"> Adapt and share training material to facilitate refresher training. Organize and conduct annual refresher training for all project stakeholders to enhance capacity for continuing GBV/SEA/SH mitigation, prevention, and response. 	Annually	ZATP II E&S Specialists GRC Focal Persons	ZATP II Project Manager ZATP II E&S Specialists	1. No. annual stakeholder meetings with GBV/SEA/SH management components.	0
2	<i>Conduct GBV/SEA/SH assessment on Implementing partners, project activities and project sites</i>						
a)	Conduct a GBV/SEA/SH risk assessment on project beneficiaries and project activities to inform risk mitigation strategies.	<ul style="list-style-type: none"> Ensure all beneficiaries including those under the FIs conduct E&S screening through the E&S forms on site. Assist to review and update project beneficiaries and implementing partners existing GBV/SEA/SH policies and procedures; 	Throughout project implementation	ZATP II E&S Specialists GRC Focal Persons TSP E&S Personnel	ZATP II Project Manager ZATP II Social Specialist	<p>1. % of beneficiaries including from FIs screened</p> <p>2. No. of beneficiaries and implementing partners supported on GBV/SEA/SH</p>	20,000

		<p>codes of conduct, and provide advice on mitigation and response measures to be considered on GBV/SEA/SH.</p> <ul style="list-style-type: none"> Assist contractors to integrate relevant mitigation measures in relevant E&S risk instruments including LMP, and ESMP. 				<p>management.</p> <p>3. No. of contractors supported in GBV/SEA/SH management.</p>	
4. Ensure GBV/SEA/SH- sensitive channels for reporting in GRM							
a)	GRM management of GBV/SEA/SH	<ul style="list-style-type: none"> Develop the GRM to ensure that it provides confidential channels for reporting cases, is survival centered, and has referral pathways linked with GBV service providers. 	December 2023	Social Specialist	ZATP II Project Manager and WB Social Development Specialist	Confidential and survival centered GM established for ZATP II project beneficiaries.	5,000
b)	Raise awareness on use of District and provincial Gender Officers	<ul style="list-style-type: none"> Ensure that all GRCs at all levels are aware that the Gender Division has District and/ or Provincial Gender Officers that they can use in management of GBV/SEA/SH cases. Ensure all GRCs can co-opt Gender Officer in their deliberation on and management of GBV/SEA/SH cases. 	Throughout the project implementation.	TSP E&S Personnel Social Specialist	ZATP II Project Manager, Social Specialist and WB Social Development Specialist.	No. of interactions GRCs have with Gender Officers annually	5,000

c)	Review GRM reports/logs for GBV/SEA/SH sensitivity	<ul style="list-style-type: none"> • Include review of GRC grievance log as actionable item on monitoring visits to ZATP II beneficiaries. • Review log to discuss GBV/SEA/SH cases, assess progress made to resolve cases and provide feedback that has not been done yet. • Request progress updates on GBV/SEA/SH during bi-weekly reports from GRC Focal Persons. • Ensure that cases recorded and referred are acted on and appropriate action taken (including disciplinary action) and reporting back. 	Throughout the project implementation.	Social Specialists GRC Focal Persons	ZATP II Specialists E&S	The system for recording, referring, and resolving GBV/SEA/SH cases are functional	0
5. Integrate GBV/SEA/SH risk management in beneficiary Environment and Social Management Plan (ESMP), Environmental Project Brief (EPB)							
a)	Incorporate GBV/SEA/SH risk in beneficiary EPBs and ESMPs	<ul style="list-style-type: none"> • Review ESMPs prepared by partners and ensure that measures considered are consistent with the project requirements. • Ensure that at least the following measures are considered, code of conduct for workers, training of workers in SEA/SH, workers Grievance M with specific SEA/SH channels. 	Throughout project implementation	E&S Specialists	E&S Specialists and WB E&S team	Grantees E&S instruments has clear procedures for mitigating and responding to GBV/SEA/SH	0

6. Inform project stakeholders about GBV/SEA/SH risks and mitigation procedures							
a)	Awareness raising to inform project stakeholders including project host communities and farmers on BV/SEA/SH risks and mitigation strategies.	<ul style="list-style-type: none"> Integrate GBV/SEA/SH awareness raising on related risks and mitigation procedures into stakeholder consultations and engagements. Conduct awareness raising outreach campaigns to publicize GBV/SEA/SH reporting channels and response procedures in project host communities and participating POs and agribusinesses. Design relevant communication, information and education materials including posters, community radio sensitizations, brochures and sticker on zero tolerance of GBV/SEA/SH to support sensitization exercise. 	Throughout project implementation	TSP E&S personnel. GRCs at all levels Entire PIU and implementing partners	Social Specialist	Project stakeholders have clarity on GBV/SEA/SH prohibitions on the project and are empowered to contribute to mitigation and reporting of cases.	20,000
8. Define and reinforce GBV/SEA/SH requirements in procurement processes and contracts							
a)	Incorporate GBV/SEA/SH Requirements and expectations in beneficiary and consultants' contracts	<ul style="list-style-type: none"> Ensure the adoption of specific GBV/SEA/SH Policies and procedures for all Project beneficiaries and consultants including CoC. 	Throughout the project implementation.	E&S and Procurement Specialists Procurement/ Contract Administrators	ZATP II Project Manager ZATP II E&S Specialists Procurement/ Contract Administrators	Beneficiaries and Consultants have the required guidance to meet GBV/SEA/SH requirements on the project.	0

b)	Allocation of funds for GBV/SEA/SH related costs in procurement documents	<ul style="list-style-type: none"> Ensure that construction consultants, supervising consultants and project beneficiaries retain adequate budget estimates to support sensitization of workers on GBV/SEA/SH requirements and procedures. 	Throughout the project implementation.	E&S Procurement Specialists Procurement/ Contract Administrators	ZATP II Project Manager ZATP II E&S Specialists Procurement/ Contract Administrators	Adequate budget allocated for SEA/SH cases.	0
c)	Project Workers including consultant's sensitization on GBV/SEA/SH.	<ul style="list-style-type: none"> Develop PowerPoint training material GBV/SEA/SH requirement, procedures, and sanction regime. Apply PowerPoint training materials to train workers on regular basis. 	Throughout the project implementation.	Social Specialists Procurement/ Contract Administrators	Project Manager E&S Specialists Procurement/ Contract Administrators	Grantees' workers and consultants understand GBV/SEA/SH and what to do to prevent or report it, as well as what is expected when a case is reported	0
9. Separate toilet facilities for men and women and GBV/SEA/SH							
a)	Provide separate toilet facilities for men and women.	<ul style="list-style-type: none"> Screen and establish the existence of gender friendly sanitation facilities at all venues and sites identified for project activities with project workers and stakeholders. Provide mobile toilet facilities for community level venues and demonstration sites where separate toilet facilities for both men and 	Throughout the project implementation	ZATP II Project Manager ZATP II E&S Specialists	ZATP II Project Manager ZATP II E&S Specialists	Safe and separate toilet facilities for women and men at all project venues and sites.	1,000

		women cannot be found.					
10. Coordination, Monitoring, and Management							
a)	Institute reporting, accountability, and feedback mechanism	<ul style="list-style-type: none"> • Develop monitoring indicators on the functioning of GBV/SEA/SH prevention and response system. • Quarterly and bi-annual reports and feedback between beneficiaries and the PIU and the World Bank • Include discussions on GBV/SEA/SH compliance into Project Core Team meeting agenda. • Undertake regular progress monitoring of GBV/SEA/SH prevention and response activities on project sites and provide feedback to improve performance. 	Throughout the project implementation	Social Specialists	E&S Specialists Project Manager WB E&S team	Enhanced supervision and implementation of GBV/SEA/SH requirements and procedures	5,000
TOTAL BUDGET							105,000

ANNEX 9: ZATP II 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 comply 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 night time 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.

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.

DRIVER'S NAME:

SIGNATURE:	
DATE:	

ANNEX 10: Chance Finds Procedures

This procedure is included as a standard provision in the implementation of ZATP II 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 ZATP PIU 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: Environmental and Social Code of Practices

a. ESCOPs for Infrastructure Subprojects

General ESCOP for Infrastructure Subprojects

Issue	Environmental Prevention/Mitigation Measures	Responsible Party
1. Noise during construction	<ul style="list-style-type: none"> a) Plan activities in consultation with communities so that noisiest activities are undertaken during periods that will result in least disturbance. (Planning phase) 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) 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) 	
2. Soil erosion	<ul style="list-style-type: none"> a) Schedule construction during dry season. (Planning phase) b) Contour and minimize length and steepness of slopes. (Implementation phase) c) Use mulch, grasses or compacted soil to stabilize exposed areas. (Implementation phase) d) Cover with topsoil and re-vegetate (plant grass, fast-growing plants/bushes/trees) construction areas quickly once work is completed. (Post-Implementation phase) 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) 	
3. Air quality	<ul style="list-style-type: none"> a) Minimize dust from exposed work sites by applying water on the ground regularly during dry season. (Implementation phase) b) Avoid burn site clearance debris (trees, undergrowth) or construction waste materials. (Implementation phase) 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) d) Reduce the operation hours of generators /machines /equipment /vehicles. (Implementation phase) e) Control vehicle speed when driving through community areas is unavoidable so that dust dispersion from vehicle transport is minimized. (Implementation phase) 	
4. Water quality and availability	<ul style="list-style-type: none"> a) Activities should not affect the availability of water for drinking and hygienic purposes. (Implementation phase) 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) c) Avoid the use of wastewater pools particularly without impermeable liners. d) Provision of toilets with temporary septic tank. (Implementation phase) 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) f) Separate concrete works in waterways and keep concrete mixing separate from drainage leading to waterways. (Implementation phase) 	

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 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>	
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"> • Construction place: Are there any hazards that could be removed or should warn people about? • The people who will be taking part in construction: Do the participants have adequate skill and physical fitness to perform their works safely? • 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? • 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? <p>b) Mandate the use of personal protective equipment for workers as necessary (gloves, dust masks, hard hats, boots, 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"> • Do as much work as possible from the ground. • 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. • Only allow people with sufficient skills, knowledge and experience to perform the task. • Check that the place (e.g., a roof) where work at height is to be undertaken is safe. • Take precautions when working on or near fragile surfaces. 	

	<ul style="list-style-type: none"> • Clean up oil, grease, paint, and dirt immediately to prevent slipping; and • Provide fall protection measures e.g., safety harness, simple scaffolding/guard rail for works over 4 meters from ground. <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> <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 center 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, un-bonded asbestos, etc. (Implementation phase)</p> <p>d) No disturbance of cultural or historic sites. (Planning and implementation phases)</p>	

Specific ESCOPs for Infrastructure Subprojects

Subproject Type	Environmental Prevention/Mitigation Measures	Responsible Party
Buildings		
In general	<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>	

Subproject Type	Environmental Prevention/Mitigation Measures	Responsible Party
Shelters, community centers, schools, kindergartens.	<ul style="list-style-type: none"> a) Design of schools, community centres, markets should follow relevant requirements on life and fire safety required by National Building Codes and relevant guidelines from the concerned Ministries. (Planning phase) 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) 	
Roads, Bridges and Jetties		
Roads connecting villages, between villages and townships.	<p>General Considerations:</p> <ul style="list-style-type: none"> a) Control placement of all construction waste (including earth cuts) to approved disposal sites (at >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 spend oil as fuel. (Implementation phase) 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) 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) d) Avoid road construction in unstable soils, steep slopes and nearby river banks. Additional measures (see the section below) need to be applied should there be no alternatives for road alignments. (Planning phase) 	
	<p>Protect slopes from erosion and landslides by the following measures (Implementation phase):</p> <ul style="list-style-type: none"> 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 runoff. Locally available species possessing the properties of good growth, dense ground cover and deep root shall be used for stabilisation. 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. c) For steep slopes, a stepped embankment (terracing) is needed for greater stability. 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. e) Rocks (riprap) can be used in addition to protect the slope. f) Prevent uncontrolled water discharge from the road surface by sufficiently large drainage ditches and to drain water away from the down slope. 	
Bridges (less than 20	<p>Erosion protection (Planning and implementation phases):</p> <ul style="list-style-type: none"> a) The main method of slope and erosion protection is the construction of gabions (gravity walls that support jetties bankment or slopes which 	

Subproject Type	Environmental Prevention/Mitigation Measures	Responsible Party
meters) and Jetties	<p>have a potential to slip) and ordinary stone pitching.</p> <ul style="list-style-type: none"> • 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. • The filling of the gabions should be from strong and competent rock which is laid very closely packed to maximize the weight. • Bracing wire should be used to prevent the gabion bulging out. The bracing wire should be placed at each third of the gabion height. • The gabions should be firmly anchored into the ground by founding the gabions below the expected scour depth level. • 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. <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>	
Water Supply		
Shallow Groundwater Wells	<p>a) Site wells so that appropriate zone of sanitary protection can be established. (Planning phase)</p> <p>b) Equip with slab around the well for easy drainage, a crossbeam and a pulley to support the use of only one rope and bucket for collecting water. One rope and bucket is more hygienic for the well and water. (Implementation phase)</p> <p>c) Install steel steps/rungs (inside wall of a deep well) for maintenance and in case of emergency. (Implementation phase)</p> <p>d) 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>e) 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>f) 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>	
Spring	<p>a) Every spring capture should be equipped with a filter and a sand trap. Add a wall between the inflow and the outlet pipe to create chamber for settling out sand; build the wall with a notch (lowered section) for controlled flow. Sand must be cleaned out periodically (operation and maintenance). (Implementation and post-implementation phases)</p> <p>b) Collection basin for spring capture needs to have a perforated PVC pipe (holes diameter 2mm) to be used as a screen for the water intake. Alternatively, a short pipe with wire mesh (screen) around the open end should be provided. (Implementation phase)</p> <p>c) Collection basin needs to have a fence to protect the spring from public access and risk of contamination; and a roof/cover over the spring to prevent leaves or other debris from entering the basin. (Implementation phase)</p>	
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, solid debris and leaves from entering the storage tank. (Implementation phase)</p>	

Subproject Type	Environmental Prevention/Mitigation Measures	Responsible Party
	<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>	
Installation / Rehabilitation of pipelines	<p>Preventing contamination at water sources:</p> <p>a) Build a structure with roof over the water source to prevent leaves or other debris from entering into the basin. (Implementation phase)</p> <p>b) A fence is needed to protect the water sources (springs particularly) from public access and risk of contamination. (Implementation phase)</p> <p>c) The sand/gravel filter traps sediment before the spring flow enters the collection chamber and has to be changed during periodical maintenance. (Implementation and post-implementation phases)</p> <p>Pipe Laying:</p> <p>a) PVC water transmission and distribution piping need to be buried underground (coverage 50cm minimum) to prevent pipe against external damage (e.g. passing vehicles, solar UV radiation, etc.). Exposing PVC pipe to UV radiation causes the plasticiser in the PVC pipe to evaporate causing loss of integrity and brittleness. (Implementation phase)</p> <p>b) Pipe shall be laid in a straight line, over a constantly falling slope. (Implementation phase)</p> <p>c) When conditions do not allow piping to be buried (i.e. pipe is used above ground), then metal pipe must be used, and supported/braced as excessive movement may lead to leaks and breaks. (Implementation phase)</p> <p>d) Outlet pipes and fittings from water storage/basin shall not be PVC pipe due to exposure to solar UV/sunlight. Metal piping and fittings are preferred. (Implementation phase)</p> <p>e) When the distribution pipes are laying via forest area, the following considerations are needed (Planning and implementation phases):</p> <ul style="list-style-type: none"> • The route must be considered with minimum effects of changing the existing situations of the forest as well as the least habitats area of the animals. • Setbacks distances from important natural features (e.g. mineral licks, wildlife features such as nest, leks, dens, staging areas, lambing areas, calving areas) to conserve wildlife values should be kept, if necessary. 	
Electrification		
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>	
Access to Sanitation		
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</p>	

Subproject Type	Environmental Prevention/Mitigation Measures	Responsible Party
	<p>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>	
Wastewater Systems		
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>	
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>	

b. ESCOPs for Livelihood Support Subprojects

ESCOPs for Livelihood Support Subprojects

Risk/Concern	Environmental Prevention/Mitigation Measures	Responsible Party
General		
To minimize water pollution	<p>a) Avoid any activity causing excessive erosion and turbidity. (Planning phase)</p> <p>b) Keep waste and hazardous materials away from surface water bodies, drinking water sources and do not dispose of waste in creeks or rivers. (Implementation phase)</p> <p>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)</p> <p>d) Avoid contamination of drinking water source (e.g., well) from inflow of waste materials and pollutants. -(Implementation phase)</p> <p>e) Avoid-large-scale animal farming and aquaculture activities in water catchment area. (Planning and implementation phases)</p>	
To minimize air pollution	<p>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)</p> <p>b) Reduce dust generation through application of water where practical. (Implementation phase)</p> <p>c) Limit idling of vehicles, machineries equipment. (Implementation phase)</p>	
To minimize noise disturbance	<p>a) Repair and maintain machineries for safe and quiet operation. (Implementation phase)</p> <p>b) Avoid emission of continuous/noisy sounds during working. (Implementation phase)</p>	

To minimize soil pollution	<ul style="list-style-type: none"> a) Store petrol / diesel on impermeable floor (e.g., compacted clay, concrete floor) and surrounded by an embankment or berm. (Implementation phase) b) Storage for hazardous materials including petroleum should be above ground and isolated. (Implementation phase) 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) d) Do not dispose hazardous wastes anywhere except in areas designated by pollution control agencies. (Implementation phase) 	
To minimize impact from non-agricultural waste generation	<ul style="list-style-type: none"> a) Collect waste systematically, store and dispose at appropriately designated dump sites, far away from households. (Implementation phase) b) Reuse and recycle appropriate and viable materials. (Implementation phase) c) Segregate hazardous and non-hazardous wastes. (Implementation phase) 	
To minimize emergency risks	<ul style="list-style-type: none"> a) Build appropriately designed infrastructure safe from natural hazards. (Planning and implementation phases) 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) 	
To secure the safety	<ul style="list-style-type: none"> a) Proper use and management of hazardous materials and waste. (Implementation phase) b) Awareness of dangers on working area, occupation, health and safety equipment through signage where applicable. (Implementation phase) c) Lock storage of fuels, paints, and chemicals. (Implementation phase) 	
Agriculture Support to Farmers		
	<ul style="list-style-type: none"> a) Use sustainable agricultural practices / approaches / technologies. (e.g., Agroforestry Practices, Polycultures and Crop rotation, Integrated Pest Management (encouraging the predators of crop-eating pest insects such as birds and bats), etc.) (Planning and implementation phases) 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) c) Induce conservation and efficient use of water. (Planning and implementation phases) d) Reduce misuse of agrochemicals, contributing to a reduction of toxic substances in soil and water. (Planning and implementation phases) e) Reduce usage of pesticides and promote integrated pest management approaches recommended by DOA. (Planning and implementation phases) f) Reduce, recycle and reuse the agricultural waste (natural, animal, plant waste). (Implementation phase) 	

c. ESCOPs for Delivery of Food and Non-food Items

ESCOPs for Delivery of Food and Non-food Items

Risk/Concern	Environmental Prevention/Mitigation Measures	Responsible Party
Food Safety	<ul style="list-style-type: none"> - Conduct due diligence during the procurement process and the vendor selection that the food commodities to be received will be delivered in good condition and quality control is performed during intake. (Planning phase) - For storage, select storage facilities and locations based on surveying the relevant characteristics, considering factors such as quality of construction, state of repairs, road access, and sustainability. Regularly inspect these warehouse storage facilities for perimeter fencing, cleanliness, ventilation, lighting and fire prevention. (Implementation phase) 	

	<ul style="list-style-type: none"> - Assess the effects of moisture, humidity and temperature in food storage warehouses and for transportation and take appropriate mitigation and management measures to ensure that food quality and safety are not impacted by these factors. Regularly monitor warehouse storage facilities for temperature, moisture and humidity given the particular inventory of food items stored and regularly inspect warehouses for food quality. Similar minimum measures for food safety should be included in the contracts of transportation services providers and inspected regularly. (Implementation phase) - For pest management, for each warehouse, conduct a site-specific pest (insect and rodent) assessment, prepare a pest control plan, procure and utilize relevant insect and rodent control equipment, as well as procure and apply relevant pest management measures. Regular food storage warehouse inspections should include inspection of the implementation of the pest control regime. (Implementation phase) 	
Solid waste management	<ul style="list-style-type: none"> - Procure food aid commodities with an aim to minimize packaging; minimize the potential for unmanaged waste; and minimize the type of packaging materials that may have adverse impacts on the environment, and on community health and safety, to the extent technically and financially feasible. (Planning phase) - During transportation, storage and distribution processes, collect all solid waste generated, establish a short term covered storage area on site, and store all solid waste, including food packaging, at these storage area sites. Upon completion of distribution in communities and with relevant frequency in storage warehouses, remove waste from the storage area sites and dispose of waste in relevant off-site facilities designated by local township authorities. (Implementation phase) - For possible solid waste generated after distribution (food packaging that will be discarded later), raise community awareness on where and how to dispose of such packaging, in designated covered storage areas in communities or in IDP camps. (Implementation and post-implementation phases) 	