

DETAILED DESIGN, CONSTRUCTION SUPERVISION AND QUALITY ASSURANCE OF SAFETY AND WATER REGULATION STRUCTURES IN THE MAIN CANAL 1 AND 2

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LIST OF ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CCJP	Catholic Commission for Justice and Peace
CoC	Code of Conduct
DAENR	Director of Agriculture, Environment and Natural Resources
DESC	District Environmental Sub-committee
DFO	District Forestry Officer
DO	Dissolved Oxygen
DODMA	Department of Disaster Management Affairs
EDO	Environmental District Officer
EMA	Environment Management Act
ESCOM	Electricity Supply Corporation of Malawi
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Safeguards Standards
FBOs	Faith Based Organisation
FGD	Focus Group Discussion
GBV	Gender Based Violence
GoM	Government of Malawi
GRCs	Grievance Redress Committees
GRM	Grievance Redress Mechanism
GVH	Group Village Headman
HIV	Human Immune Virus
HSE	Health, Safety and Environment
KII	Key Informant Interview
MoAIWD	Ministry of Agriculture Irrigation and Water Development
NGO	Non-Governmental Organisation
OHS	Occupational Health and Safety
PAP	Project Affected Persons
PH	Power of Hydrogen
PMC	Project Management Committee
PPE	Personal Protective Equipment
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
SVIP	Shire Valley Irrigation Project
SVTP	Shire Valley Transformation Program
SVTP-1	Shire Valley Transformation Phase 1
T/A	Traditional Authority

TDS	Total Dissolved Solids
VAC	Violence against Children
VDC	Village Development Committee

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Executive Summary

The ESIA Executive Summary should contain the following information: Overview of the project

In 2025, the Government of Malawi and the World Bank engaged in the Mid-Term Review (MTR) of the Shire Valley Transformation Program (SVTP). Among the key recommendations of the MTR were the following:

Construction of the emergency spillways to guard against overflowing inImplementation of the inline regulatory structures will not require new land acquisition, as the existing 30-metre buffer zone on either side of the canal centre-line provides adequate space for construction and future operational needs.

- the main canal owing to blockage and management of excess water;
- Construction of regulatory to ensure water level control: SVTP should construct long-crested weirs that are preferred structure in modern irrigation projects for simple, robust water level control. They help maintain the necessary constant water surface elevation to ensure consistent flow rates into upstream turnouts, which feed secondary canals

On the other hand, the development of the safety escape spillways at Siphon 3, Siphon 5, and Siphon 6 will require a total of 4 ha of land. Structures at siphones 3 and 5 will not trigger land compensations as the the preferred alignment option are within the confines of 60 m right of way already acquired and compensated for in respect of construction of MC1. Construction of the spillway at siphon 6 will, however, necessitate compensation for encroaching into customary land of 1.,4 Ha.

Design, Construction and Operation of the emergency spillways and construction of control structures in the existing canal will use various GoM regulations as well as World Bank Environmental and Social Safeguards Standards (ESS), AFDB Integrated Safeguards System, OFID Environmental, Social and Governance Policy to provide guidance on how to identify potential risks and impacts, and how to avoid, minimize, reduce or mitigate them. It will also make sure that appropriate preventative actions are incorporated into project design, construction, and provide guidance on operation implications.

Project Objective

The Program Development Objective of the SVTP is to increase agricultural productivity and commercialization for targeted households in the Shire Valley, while improving the sustainable management and utilization of natural resources. Construction of the intake structure and Main Canals 1 and 2 is ongoing under SVTP Phase The development of emergency spillways along the main canal's forms part of the overall risk management strategy to enhance the safety, resilience, and sustainability of the irrigation infrastructure.

ESMP Objective

This ESMP applies specifically to the construction and operation phases of the emergency spillways at Siphons 3, 5, and 6, and construction of control structures in the main canal, and provides measures to manage associated environmental and social risks.

The following are key objectives for preparing this Environmental and Social Management Plan (ESMP);

- ensure that all positive environmental and social impacts of the project are enhanced and adverse impacts are mitigated;

- ensure that all workers, community, and other involved parties in the project adhere to health and safety standards and are safe;
- ensure compliance with national legislation and World Bank Environmental and Social Standards (ESS);
- address concerns and issues of project environmental and social impacts and risks raised during stakeholder consultation process and those that will likely continue to arise during the project's lifetime; and
- serve as a monitoring tool for the implementation of environmental and social mitigation and management measures for the project.

Project Components and Main Activities

This project will have two components, namely, flow control structures and safety spillway structures

(i) Flow Control Structures

For water level control long-crested weirs are preferred structure in modern irrigation projects for simple, robust water level control. They help maintain the necessary constant water surface elevation to ensure consistent flow rates into upstream turnouts, which feed secondary canals. The flow control structures will be located at the following chainages in kilometres in Main Canal 1 (MC1): 10+035, 23+896, and 28+760 while Main Canal 2 (MC2) has the structures at 2+345, 4+620, 10+064, 14+097 and 16+160

Main Canal	ID	Control Structures	Location (km)	Safety Structures	Location (km)
MC 1	1	Long Crested Weir	10+035	Spillway - Siphon 3	3+340
	2	Long Crested Weir	23+896	Spillway - Siphon 5	8+960
	3	Long Crested Weir	28+760		
MC2	4	Oblique weir	2+345		
	5	Oblique weir	4+620		
	6	Oblique weir	10+064	Spillway - MC 2 at Lengwe	19+200
	7	Oblique weir	14+097		
	8	Oblique weir	16+160		

(ii) Safety Spillway structures

The proposed emergency spillways are located along the main canal of the Shire Valley Transformation Programme (SVTP) within the Lower Shire Valley in southern Malawi, specifically in Chikwawa District.

The spillways will be constructed at Siphons 3, 5, and 6. Siphons 3 and 5 are located within Traditional Authority (T/A) Kasisi, while Siphon 6 is located within Traditional Authority (T/A) Katunga. All sites are situated on the west (right) bank of the Shire River, in an area characterized by flat to gently sloping alluvial terrain. The rivers to be affected are Mwembezi River for siphon 3, Masakala River for siphon 5 and Mwanza River for siphon 5. The corresponding chainages for spillways for MC1 are 3+340 for Spillway at Siphon 3, and 8+960 for spillway at siphon 5. Regarding MC2, the spillways will be at 5+360 for siphon 6 and 19+200 at Mkombedzi wa Fodya at the northern border of Lengwe national Park

Project Activities

Phase 1: Planning and Appraisal - This phase establishes the project's foundation by defining its scope, objectives, institutional arrangements, expected outcomes, and budget. It includes preparing cost estimates. Feasibility studies are conducted to assess technical, economic, and environmental alternatives such as no-action, route alignment. Hydraulic modelling and engineering design are carried out to international standards, and the final design of control structures and emergency Spillways are completed. Approvals are secured from the financier and other regulatory boards, such as Malawi Environment Protection Authority (MEPA). Project timelines and milestones are established to guide implementation.

Phase 2: Recruitment and Contracting: Once appraisal and approvals are complete, the focus shifts to securing expertise and contractors. Tender documents, technical specifications, and evaluation criteria are prepared. Bids are advertised and proposals invited in line with AfDB procurement standards. Technical and financial proposals are reviewed, bidders are shortlisted, and contractors are selected based on capacity, experience, and cost-effectiveness. Contracts are finalized with clear timelines, payment schedules, performance guarantees, and safeguard compliance. Notices to proceed are issued, and contractors are prepared for mobilization. Communities and stakeholders are notified about contractor selection, project start dates, impacts, and mitigation measures to ensure transparency.

Phase 3: Mobilization and Site Preparatory Work: This phase ensures readiness for construction through logistics planning, equipment deployment, and staff onboarding. Necessary permits are secured and stakeholders engaged. Vegetation is cleared, surveys are conducted. Environmental safeguards and safety protocols are implemented. Stakeholder consultations are held with communities and local authorities. Project staff are oriented on occupational health and safety, environmental safeguards, and community relations.

Phase 4: Site Preparation: This phase involves clearing vegetation, debris, and obstacles in any at the construction site. Site camps, storage areas, workshops, and sanitation facilities are established. Conflicting utilities such as electric cables and drainage structures are relocated where feasible. Traffic safety measures, including signage, barriers, and detours, are installed. Dust suppression, noise control, and waste management systems are implemented. Trench lines are surveyed, marked, and fenced to prevent accidents and unauthorized access.

Phase 5: Construction and Installation: This phase delivers the actual infrastructure. Earth excavation on emergency spillway route are done, concrete demolition are done at designated points within the existing canal for control structures . steel fixing is done as designed, including concreting. Backfilling and compaction are done to restore ground stability, and excess soil is disposed of at designated sites. Community engagement continues throughout construction.

Phase 6: Decommissioning: Upon completion, all Temporary facilities and installations are removed, equipment is demobilized, and surplus materials are cleared. Access roads and facilities used during construction are rehabilitated. A thorough site cleanup is conducted, and all ancillary structures are removed. The area is reinstated in compliance with environmental and safety standards, leaving it in a well-maintained condition.

Phase 7: Operation: This phase is managed private operator who will be responsible for the Operation, Maintenance and Management of the Shire valley irrigation project. These new structures will be permanently integrated to the existing shire valley canal, and will greatly improve the functionality of the system by among others things, help in maintaining the required water head to be delivered to the farms, and also in times of emergency, the system should be overwhelmed but rather convey excess water safely into existing channels.

Brief description of the project site and the major environmental and social stakes/challenges

The ESIA report under consideration covers Phase 1 Area that extends from Kapichira to northern border of Lengwe National Park. The layout below show the project area and locations for safety and control structures in Phase 1 area.

The safety and regulatory structures will be situated as follows:

- Safety structure: at chainage 3+340 km of MC1 close to inlet of Siphon 3, 8+960 km of MC1 close to the inlet of Siphon 5; and 19+200 km of MC2 st Mkombedzi wa Fodya river at the northern border of Lengwe National Park; and
- Regulatory structures comprise long crested and oblique weirs. In MC1, there are long crested weirs (LCW) located at the following chainages: 10+035 km, 23+896 km, and 28+760 km. In MC2, on the other hand, there will be oblique weirs (OW) located at the following chainages: 2+345 km, 4+620 km, 10+064 km, 14+097 km, and 16+160 km

The assessment exercise took into consideration the following valued environment and social compounds (VECs) from both an environmental and social perspectives. Overall, the main canals 1 and 2 cover 51 km in Phase 1 area and run through important natural resource and socially rich areas.

For the first four kilometres of MC1, the canal runs through the Majete Wildlife Reserve, a pristine conservation area in Malawi that underwent enormous management restructuring in that it is now run by a concessionaire (African Parks) and has witnessed restocking. The project, thus, leaves a footprint in the park that must be considered in the mitigation measures.

Regulatory structures are not expected to have environmental and social impacts as they will be situated inside existing canal structures and not result in any additional land requirements. On the other hand emergency spillways may have alignments encroaching into existing farmlands and resulting in loss of use of land. Operation of the safety structures may also pose risks associated with flooding in existing receiving water bodies

The Shire river that provides water for the project supports a number of other schemes and livelihoods downstream of the Kapichira intake area. EGENCO abstracts water for the river to drive the turbines for power generation and downstream there is Illovo and several irrigation schemes that also abstract water from the river.

In the without-project context, several key Valued Environmental and Social Components (VECs) are expected to continue experiencing pressure due to existing competing trends ranging from agriculture, fisheries, power generation and conservation. Water resources represent the most critical VEC, as the current system relies heavily on surface water from the Shire.

Climate change and variability represent a cross-cutting challenge affecting multiple VECs. The area experiences highly seasonal rainfall, typically between November and April, with increasing unpredictability in rainfall patterns, including dry spells, droughts and intense storm events as witnessed in recent times from cyclones Anna and Fred. High evaporation rates further reduce water availability during the dry season. These conditions are expected to exacerbate water resource stress, reduce agricultural productivity, and increase vulnerability of local communities in the absence of adaptive interventions like irrigation.

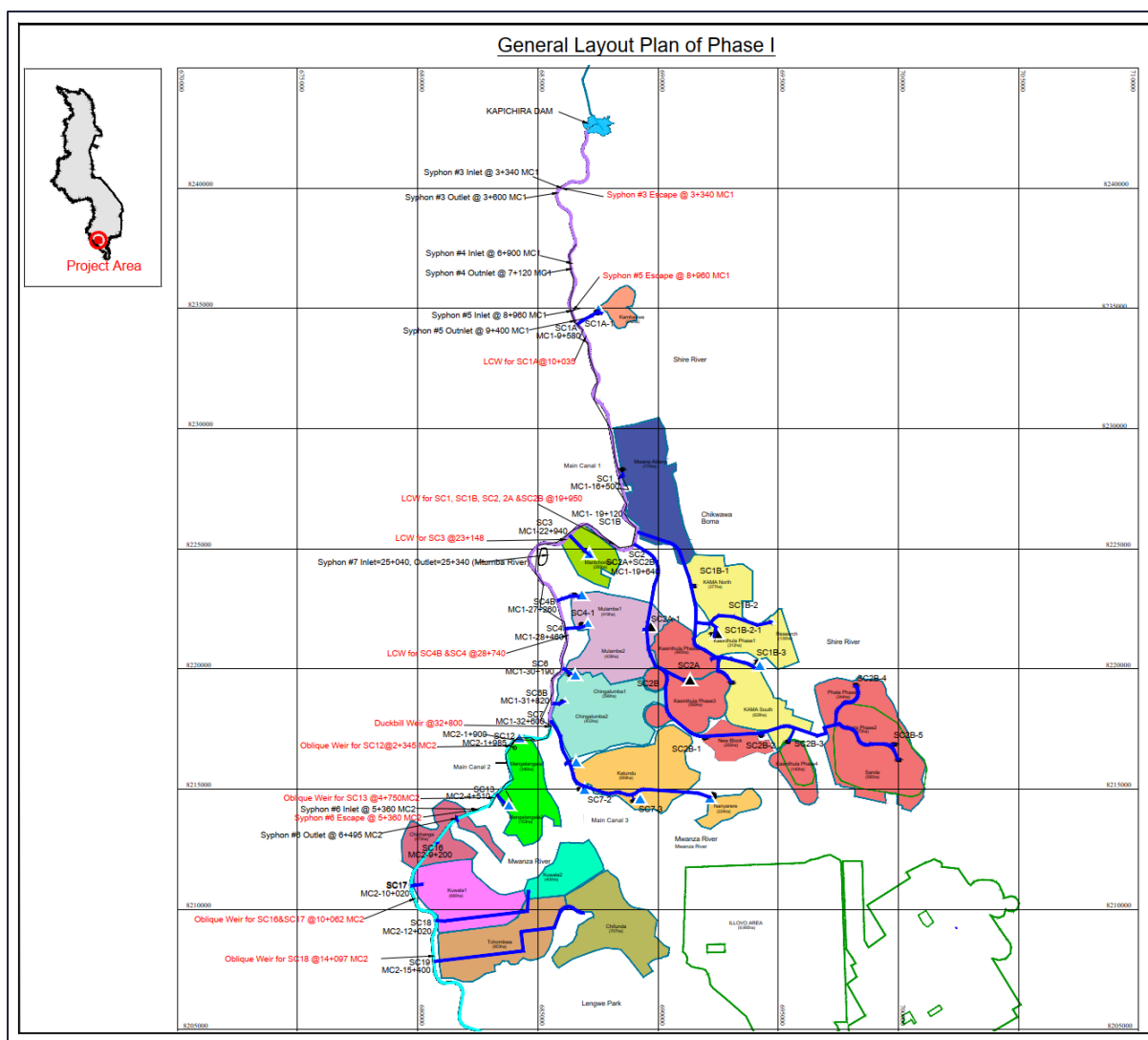


Figure 1: SVTP 1 Layout Showing Location of Safety & Regulatory Structures

Institutional and legal framework for implementation of the project

By nature, this Project is multi-sectoral and will involve a number of key government agencies and authorities and consultation and coordination mechanisms. The main implementing agency is the Ministry of Agriculture, Irrigation and Water Development (MoAIWD), and it coordinates overall implementation together with the Ministry of Finance, Economic Planning and Development (MoFEPD). Other agencies involved in the program are the Ministry of Natural Resources, Energy and Mining (MNREM); the Ministry of Lands and Housing (MLH); Ministry of Local Government and Rural Development (MLGRD); the Ministry of Transport and Public Works (MTPW); the Ministry of Tourism and Culture (MTC); Malawi Investment and Trade Center (MITC), EGENCO; the PPP Commission; the Southern Region Water Board (SRWB); and the National Water Resources Authority. The Malawi Environmental Protection Authority will play oversight on reviewing, approval and monitoring the implementation of the ESMP emanating from this ESIA.

The development partners, namely, the World bank, African Development bank and Opec Fund for International Development (OFID) will, from time to time, provide backstopping support in form of implementation support missions (ISM) and technical missions.

National legislation will be applied to ensure that national safeguards systems are applied effectively. Key among the pieces of legislation are the Environment Management Act (2017), National Parks and Wildlife Act (2019), Land acquisition Act (2018) and the labour laws.

The development of the ESIA recognises safeguards policies of the financing agencies. SVTP will apply African Development Bank's Integrated Safeguards System (ISS of 2023) and its Operational Safeguards (OS) in ensuring the adequacy with which the ESMP is implemented. The World bank's Environmental and Social Framework (2017) will be applied alongside its Environmental and Social Standards (ESS). The application of OFID's Environmental Social and Governance alongside the IFC's environmental social health and safety (ESHS) guidelines have been applied.

Enumeration (in bullets) of the major and moderate impacts

During the conduct of this ESIA, a number of both positive and negative impacts were identified and analysed. While positive impacts are deemed long term, the negative impacts are generally site specific and of shorter duration that can be managed within the confines of the project.

Positive Impacts

The positive impacts are also beneficial to the community as they enhance the importance of the project to the communities. Key ones are identified as follows:

- (i) Enhanced safety of operating the canals in water delivery: installation of safety structures will ensure that excess water in the event of storms, blockage at siphon inlets and when some irrigation blocks need less or no water is discharged safely to receiving rivers. This will ensure that loss to crops, livestock and human life is minimised;
- (ii) Ensure adequate water supply to irrigation blocks: the installation of regulatory structures will help in maintain the water head and pressure to optimal levels to ensure that adequate water reaches the farmlands;
- (iii) Creation of employment opportunities: incorporation of safety and regulatory structure triggers employment for both international and local personnel. During the construction stage, it is expected that at forty local staff will be hired by the contractor.

Negative Impacts

As is the case with construction projects, negative impacts arise as a result of movement machinery and site clearance. It is envisaged that the following will arise:

- (i) **Habitat degradation:** establishment of spillway alignment entails clearing the land with a right of way of 30 metres. In total about 4 ha will be required of which 0.48 ha is in Majete Wildlife Reserve, 1.6 ha at siphon 5 and 1.4 ha at siphon 6. In Majete, all the land falls within the right of way for MC1 and as such the construction of the spillway does not bring any additional footprint.
- (ii) **Loss of land and use of land:** the construction of spillways at siphons 5 and 6 occurs on customary land and will trigger compensation as required by the Malawi land Acquisition Act (2017), OS 2 and ESS2.
- (iii) **Water Resources Degradation:** earth movements and soil erosion may lead to degradation of water resources in Mwembezi, Masakale, Mwanza and mkombedzi wa Fodya rivers. Work scheduling and management of spoil areas are central to containment of the problem.
- (iv) **Poor Waste management:** this includes domestic, human and construction wastes. The projected waste volumes stand as follows:
 - a. Excavated spoil: 800 to 1,200 m³ (one time, with partial reuse on-site)
 - b. Construction debris: 2 to 5 m³ per month
 - c. Domestic solid waste: 12 to 40 kg per day
 - d. Vegetation waste: 50 to 100 m³ (during site clearing phase)
 - e. Concrete wastewater: 500 to 1,000 litres per day (during concrete works)
 - f. Used oil and lubricants: 20 to 50 litres per month
 - g. Domestic wastewater: 375 to 1,000 litres per day

Consultations

As part of information gathering and consensus building, stakeholder consultations were carried with the district environmental sub-committee (DESC), African Parks, traditional leaders and community representatives. The main issues that arose from the consultations were as follows:

- (i) **Social economic benefits:** employment opportunity stood out as a positive impact at all discussions and enhancement measures proposed in the consultation included engaging unskilled labour mostly from within the command area. In response, it was indicated that the issue was already highlighted in the ESMP for SVTP and the contractor will be monitored to ensure compliance with the recommendation;
- (ii) **Structural integrity of the canal infrastructure:** the DESC observed in some places the canal had developed cracks that required attention and the Engineer and SVTP need to ensure that the structural integrity of the existing main canal is maintained during construction of safety and regulatory structures. In response, the Engineer indicated that this was already addressed and included in the designs and a structural engineer was hired to ensure that structural integrity of the existing main canal is not affected.
- (iii) **Poor waste management:** During the DESC meeting, concerns were raised about potential risk of open defecation and generation of solid waste such as rubbles and concrete waste. The Engineer responded that the issue will be captured as

negative impact and that proposed mitigation would include installation of waste receptacles at construction site for ease of collection to designated disposal sites. Mobile toilets will be established and emptied regularly.

- (iv) **Risk of flooding due to discharge of water in the rainy season during operation phase:** the impact of flooding came out of the DESC meeting and in response it was communicated that the Operator will develop an Emergency Preparedness and Response Plan (ERP) that will be employed in communicating risks to communities and measures to take. Besides the capacity of recipient rivers to accommodate flood water was assessed and it has been agreed that retaining walls be installed to ensure the water does not affect access cross-drainages
- (v) **Risk of loss of trees during construction phase:** Owing to construction works, there will be loss of vegetation including trees and this will be included in the ESMP as mitigation action. Proposed measures include support to African Parks in post project reforestation and restoration activities.
- (vi) **Loss of cultural, archaeological, or paleontological resources:** Excavation works may lead to discovery and also loss and damage to carchaeological, paleontological and cultural heritage artifacts. In reply, it was indicated that this is an anticipated issue in the SVTP ESMP trhat led to the development of a Chance Find Procedure being deloped and adopted to guide the contractors in the case of discovery of cultural heritage artifacts. The procedure will be followed to guide the contractor.
- (vii) **Loss of land:** the construction of spillways especially chutes at siphones 5 and 6 will encroach into communal customary land. The alignment of the spillways will, to the extent possible, minimise loss of land and land use by the existing farm owner. Where this is not possible, an optimal alignment will be interrogated and compensation assessments done and paid before commencement of works.
- (viii) **Labour influx:** though of small scall, it is expected that there will be influx of workers from areas outside the command area and this may lead to social disruptions, spread of sexually transmitted diseases and HIV / AIDS. SVTP, in anticipation of this problem, developed a Labour Management Procedure to guide contractors in manageing matters related to labout influx. SVTP will further promote employment of local labour to curtail the influx from areas outside the project area.

Environmental and social management plan (ESMP):

The Environmental and Social Management Plan (ESMP) for the Construction of Safety and Regulatory Structures provides a structured framework for managing environmental, social, health, and safety (ESHS) risks throughout the project lifecycle. The ESMP translates the findings of the ESIA into specific, actionable mitigation and monitoring measures, aligned with the Government of Malawi legislation, African Development Bank Integrated Safeguards System (ISS, 2023), World Bank Environmental and Social Framework ESF, 2017) and the Opec Fund for International Development (OFID) Environmental Social and Governance Policy (2022).

This ESMP will be largely implemented during the construction phase, with continuation into the operational phase by the Operator for Emergency Response Plan (ERP), Environmental and Social management System (ESMP) and stakeholder engagement. It defines responsibilities across the Government of Malawi, Project Implementation Unit (PIU), contractors, supervising engineer, and regulatory authorities, and ensures that mitigation measures are integrated into engineering design, procurement processes, contractual obligations and Operational Maintenance and Management (OM&M) Manual.

Key ESMP Principles

Implementation of this ESMP is guided by the following principles:

- a) Avoidance and minimisation of environmental degradation
- b) Protection of water resources and ecosystems
- c) Safeguarding community and worker health and safety
- d) Promotion of stakeholder engagement and grievance redress
- e) Integration of climate resilience in the design, implementation and operation.

Measures to Support Implementation of the ESMP

To ensure measures stipulated in this ESMP are implemented and adhered to, SVTP undertakes to conduct the following actions:

- a) Incorporation of environmental and social requirements in Bills of Quantities (BoQs)
- b) Integrating binding E&S contractual clauses for contractors
- c) Routine monitoring and reporting to MEPA, AfDB, World Bank and OFID
- d) Allocation of dedicated budget for mitigation and monitoring

Enumeration of the risks/impacts management measures

The measures below will be applied to mitigate against the impacts that have been identified in the ESIA.

(a) *The specific measures*

These will be applied to address impacts related to land degradation and soil erosion, loss of vegetation, wildlife habitat degradation, dust and noise generation.. *addressing each impact (physical activities including programs like reforestation, biological offset; proposed system and management unit, management criteria, etc.)*

Environmental Measures

- **Avoid disruption of animal habitat:** Where possible, conduct animal rescue and rehabilitation activities in collaboration with African Park Majete, clear only areas where there are no physically verified animal habitats, and confine alignment of spillways to already cleared areas
- **Reduce loss of vegetation:** this will be attained by remove vegetation within demarcated areas only, avoiding, areas dominated with vegetation, confining alignment of spillways to already cleared areas, sensitizing workers and community members to protect flora during disposal of excavated soil;
- **Reduce pollution due to generation of waste including construction waste:** the following measures shall be applied: development and implementation of a comprehensive Waste Management Plan; properly disposing of hazardous and no-

hazardous waste in designated places; prohibiting discharge of untreated concrete washout water; servicing machinery and vehicle to avoid oil leakages and spills; worker training on good housekeeping and waste handling procedure.

- **Reduce risk of land degradation, soil erosion and sedimentation** by removing vegetation within demarcated areas only; compacting all loose soils to protect it from surface run off; protecting soil stockpiles from flowing to unclaimed land; and avoiding piling soil close to river banks.

Site restoration and rehabilitation: restoration and rehabilitation of worksites including campsites, dumpsites and borrow areas shall be carried out by: implementing site-specific closure and rehabilitation plans; revegetating temporarily disturbed areas with native plant species to control erosion and restore habitat; ensuring all surfaces are left in a clean, stable, and safe condition; reinstatement of excavated cut slopes; erosion control through sodding and geotextiles; and reuse of existing riprap material from spoil:

Social Measures

Social measures border on employment generation, food and income security, community health and safety, and resettlement action plan (RAP).

- **Employment generation** : local employment will be encouraged and hiring of women will be promoted in line with the country's laws. Skills transfer will be carried out from expatriates to local Malawians.
- **Food and income security:** installation of regulatory to ensure that sufficient water is available at sufficient head to adequately irrigate the farmlands. This will enhance food and income security at household and national levels.
- **Community health, safety and security:** In accomplishing the requirements of this provision, the contractor shall pay due regard to the Community Health Safety and safety Plan (CHSP) developed under SVTP. This will involve Traffic management plans, Site fencing, signage, and controlled access, Community awareness campaigns and implementation of ERP.
- **Resettlement action plan (RAP) and livelihood restoration plan (LRP):** as construction of spillways will encroach into farmlands especially at Siphon 6 and at Mkombedzi wa Fodya river, it is imperative that OS5 of ISS (2023), ES5 of ESF (2017) and Safeguard 5 of ESG Policy (2022) be applied. Government will assess land loss and compensate all affected persons in line with the policies and national laws. This will be carried out based on the SVTP RPF and updated RAP.

(b) Specific EOHS clauses: The contract shall ensure compliance with Environmental, Occupational Health and Safety (EOHS) requirements spelt in the ESF, ISS and ESG Policy as elaborated in the World Bank Group Environmental Health and Safety Guidelines.

- **Application of General Health, Hygiene and Safety (HHS) Rules:** It is mandatory for contractor's workers to put on Personal Protective Equipment (PPE), Provision of safe workers' shelters, drinking water and sanitation facilities, The contractor

shall conduct regular toolbox talks and safety inductions, emergency preparedness and incident reporting procedures;

- Prevention of HIV / AIDs and sexually transmitted diseases (STD). This involves development and implementation of implementation of HIV/AIDS and STI awareness programmes, collaboration with local health authorities and district council, counselling, and distribution of information materials and preventive kits.
- Fair Labour Conditions: facilitation of establishment of Workers' Committee, orientation on Code of Conduct, collective bargaining, prohibition of harassment, exploitation, unsafe interactions with communities, promotion of respect for local customs and traditions, and provisions for protection of minors and vulnerable groups.
- GBV / SEA / SH Prevention Mechanisms: that shall integrate zero tolerance policy for Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA), mandatory signing of Codes of Conduct by all workers, awareness training on GBV/SEA risks, linking to one-stop centre, and integration with Grievance Redress Mechanism (GRM) for confidential reporting
- Chance Finds Procedure: Upon discovering any material of natural heritage or historical importance, artifacts and paleontological finding, the contractor shall apply the chance find Procedure spelt out in the SVTP ESIA updated in 2023. Immediate actions shall include: suspension of works upon discovery of cultural artefacts, notification of relevant authorities such as Department of Arts and Museums, district council and traditional leaders; protection and preservation of discovered materials, and resumption of works only after clearance by the relevant authorities.

(c) Integration of EHS Clauses in Construction Contract: To ensure the clauses in the ESMP carry weight, the following action shall be carried out:

- Bills of Quantities (BoQ): ensure there are dedicated line items for actions stipulated in the ESMP such as erosion control, waste management, environmental protection, PPE, restoration works, training, Clearly indicate provisional sums to be approved by the Engineer, lumpsums and others
- Contractual Clauses: ESMP compliance as a binding contractual obligation, Non-compliance linked to penalties and withholding of payments and escalation in the Client and financing agencies' system for disqualification in future works;
- Changes in designs: engage Engineer and Client on any proposed changes to original design; determine if the changes require site specific ESMP and clearance from relevant authorities; seek no objection from financing agency on implementation of changes.
- Method Statements: Contractors required to submit site-specific environmental method statements prior to works that shall be approved by the Engineer
- Supervision and Reporting: Daily supervision by Contractor and Engineer, Oversight by PIU and Supervising Engineer, Monthly reporting to MEPA, AFDB, World Bank and OFID.

(d) Capacity building. This is a continuous process that should be carried out to ensure capacity prevail at levels, namely, PMT, Engineer and Contractor levels. The capacity building should be informed by a capacity needs assessment and training requirements that may emerge from time to time.

- Recruitment of safeguards personnel for the PMT, Engineer and Contractor;
- RAP implementation: conduct disclosures and verification of PAPs, financial literacy training, and conduct livelihood restoration actions
- Institutional capacity: Development and implementation of applicable safeguards instruments such as labour management plan, OHS plan, and waste management plan.
- Financial capacity: Allocation of financial and transport resources to safeguards team to enable them discharge their functions

Enumeration of Key ESMP Implementation Indicators to Monitor

This ESMP will be monitored using the following key indicator:

- (i) Project footprint in Majete Wildlife Reserve:** One of the key concerns raised by African Parks was that they did not want SAVTP to increase in the Park. This was duly considered during design where the adopted spillway alignment avoids further degradation in the park. This recommendation must be closely followed up during construction and any deviations must be agreed first with African parks and cleared by MEPA prior to implementation;
- (ii) Development and implementation of RAP:** given the potential loss of land construction outside the protected area that the construction of the spillway may trigger, a requisite RAP and LRP will be carried out and implemented prior to construction works;
- (iii) Emergence Response Plan (ERP):** Operation of spillways may in certain circumstances pose public risk as it may lead to flooding of recipient rivers and overflow the cross-drainages down stream hence affecting accessibility of Kapichira and Chikwawa. As agreed in the Aide Memoir of the World Bank and AFDB Missions of February 2026, the operator shall develop an ERP and risk communication plan that shall be employed to respond to emergencies.

Independent local empowered and accessible Grievance Redress Mechanism (GRM) at the project level

SVTP has a grievance redress mechanism (GRM) that was approved and is being applied in conflict resolution. SVTP will continue to use the GRM using existing channels, namely, grievance redress GRCs and CLC. GRM will be updated from time to time on need be basis.

Roles and responsibilities within the PIE (PIU), and institutional arrangement for an efficient implementation of the ESMP

The implementation of the ESMP will be overseen by a number of authorities and institutions as follows:

- (i) Malawi Environmental Protection Authority (MEPA): being responsible for issuance of approvals and clearances at national level, MEPA, will conduct quarterly and adhoc monitoring and supervision exercises to ensure compliance to the ESMP implementation;
- (ii) Ministry of Labour: the ministry will on quarterly and adhoc basis carry out OHS compliance monitoring. The Ministry will facilitate establishment and training of workers committee in line with the country's labour laws and ESF, ISS and ESG Policy;
- (iii) District Council will work with Ministry of lands and SVTP in ensuring formulation and implementation of RAP and LRP in line with the country's land laws, ESF, ISS and ESG Policy. The council will ensure that SVTP's GRM remains aligned to the council's GRM;
- (iv) Engineer: The Engineer shall ensure that they, in their establishment, have adequate E&S personnel to monitor and supervise E&S works on behalf of the Client as discharged by the Contractor;
- (v) PMT: The PMT will retain the existing E&S staffing levels to ensure adequate monitoring for compliance of the ESMP implementation. The PMT will coordinate the discharge of functions carried out by MEPA, ministry of Labour, the Chikwawa District Council, Engineer, and financing institutions. PMT will be responsible for addressing E&S issues raised by these authorities including key agreed actions; and
- (vi) The African Development Bank, World Bank and OPEC Fund for International Development will through adhoc technical and scheduled missions provide backstopping E&S support to the PMT to ensure adherence to the ESMP, ESF, ISS and ESG Policy.

Estimated overall budget (itemized matrix) for the implementation of all environmental and social measures (in local currency and U.S. dollars, by source of funds) including provisions for compensation (RAP) and audits.

Aspect	Impact	Mitigation Measures	Responsible Entity	Indicative Cost		Source of Funding	Contractual Integration Mechanism
				MMK	US\$		
Employment Opportunities	Increased local employment opportunities	Promote local employment; Ensure	Contractor			AFDB	In the BoQ
Improved knowledge and Skills transfer to local communities	Enhanced local skills development	Promote on job training to workers; Prioritize locals when employing skilled and unskilled labourers	Contractor			AFDB	In the BoQ
Loss of land and use of land	Land acquisition and resettlement	Develop and implement RAP	SVTP	558,000,000	300,000	GoM	To be paid independent of the BoQ
Loss of vegetation	Site clearing	Confine clearing to alignment of spillway	Contractor	6,000,000	3,226	AFDB	In the BoQ
Preservation of cultural heritage	Loss of cultural, archaeological, or paleontological resources	Comply with Chance Find Procedure developed as Part of SVTP 2 ESIA	Contractor Engineer	10,000,000	5,376	AFDB	In the BoQ
Disruption of animal habitats (terrestrial)	Increased habitat degradation in the park	Minimise project footprint in Majete Wildlife Reserve	Contractor	4,000,000	2,151	AFDB	In the BoQ

Aspect	Impact	Mitigation Measures	Responsible Entity	Indicative Cost		Source of Funding	Contractual Integration Mechanism
				MMK	US\$		
Air Pollution	Exposure to air pollution	Prevent workers' and community exposure to air pollution; Monitor air quality pollution	Contractor	400,000	215	AFDB	In the BoQ
Noise pollution	Animal disturbance due to noise from construction machinery	Minimize disturbance to wildlife Monitor noise levels to ensure compliance IFC ESH Guidelines	Contractor Engineer	600,000	321	AFDB	In the BoQ
Land degradation	Soil erosion and sedimentation	Minimize soil disturbance	Contractor Engineer	1,000,000	538	AFDB	In the BoQ
Poor waste management	Pollution due to generation of liquid waste including construction waste	Develop and implement Waste Management Plan; Institute approved waste management practices	Contractor Engineer	4,000,000	2,151	AFDB	In the BoQ
Poor solid waste management at construction site	Pollution due to solid waste including construction waste	Develop a Waste Management Plan; Institute good housekeeping and operating practices	Contractor	500,000	269	AFDB	In the BoQ
Poor compliance to OHS requirements	Increased occupational safety	Develop and implement Occupational Health	Engineer	1,100,000	591	AFDB	In the BoQ

Aspect	Impact	Mitigation Measures	Responsible Entity	Indicative Cost		Source of Funding	Contractual Integration Mechanism
				MMK	US\$		
	and health and hazards risks	and Safety (OHS) Plan; Conduct orientation of workers on working in protected areas; Develop emergency risk evacuation plan;					
Health Safety and Security communities	Increased risks to community health and safety	Familiarise construction workers with CHS Plan	Contractor, PMT, Engineer	2,200,000	1,283	AFDB	In the BoQ
Prevalence of HIV / AIDS and STIs	Risk of increased incidences of STIs including HIV and AIDS	Develop and implement HIV and AIDS Workplace Policy; Sensitize workers and local community members regularly about the dangers of contracting HIV and AIDS, and STIs;	Contractor	1,150,000	618	AFDB	In the BoQ
Loss of project infrastructure and materials	Increased risk of theft and crime	Conduct sensitizations of communities and workers; Deploy security personnel to guard the construction materials;	Contractor	2 000, 000	1,075	AFDB	In the BoQ

Aspect	Impact	Mitigation Measures	Responsible Entity	Indicative Cost		Source of Funding	Contractual Integration Mechanism
				MMK	US\$		
		Engage with Chikwawa police and community policing groups.					
GBV / SEA occurrence	Increased risk of Gender Based Violence and Sexual Exploitation and Abuse (GBV/SEA)	Development and implement a GBV/SH/SEA Prevention Plan. Review and implement the Code of Conduct (CoC) for workers;		2,000,000	1,075	AFDB	In the BoQ
Confined working areas	Risk of working in a confined space with limited working areas	Define safe access and exit points Maintain dry and stable surfaces to reduce slip and fall risks. Restrict access to canal edges to prevent accidental falls. Train workers on safe working procedures specific to confined canal environments.		1,200,000	645	AFDB	In the BoQ
Drowning and animal falls	Increased risk of animals falling into open channels	Barricade open trenches to avoid animal entry.		600,000	323	AFDB	In the BoQ

Aspect	Impact	Mitigation Measures	Responsible Entity	Indicative Cost		Source of Funding	Contractual Integration Mechanism
				MMK	US\$		
	leading to conflicts with communities	Cover channels to avoid falls. Conduct awareness of the risk of animals falling into open channels.					
Dust generation	Pollution emanating from dust generation	Spray water on loose soils and access roads. Provide all workers with respiratory personal protective equipment (PPE) such as dust masks.		2,000,000.00	1,075.00	AFDB	In the BoQ

Conclusion

The proposed emergency spillways and associated control structures constitute a critical safety enhancement to the existing SVTP irrigation infrastructure. With effective implementation of this ESMP under the supervision of consultants and full contractor compliance, the project is expected to be environmentally sound, socially acceptable, and compliant with national and international safeguard standards, while contributing to improved system resilience, reduced flood risk, and sustainable agricultural productivity in the Lower Shire Valley.

Recommendations

- This Environmental and Social Management Plan (ESMP) should be fully implemented and periodically reviewed to ensure effective avoidance, minimization, and mitigation of environmental and social risks throughout construction and operation phases.
- The design engineer, contractor, Project Implementation Unit (PIU) should ensure adequate budgeting, staffing, and capacity building for ESMP implementation, with particular emphasis on inclusion of women, biodiversity conservation (including protection of ecosystems), sustainable abstraction and management of water resources from the Shire River, erosion and soil management, occupational and community health and safety, gender-based violence (GBV) prevention, and inclusive stakeholder engagement supported by a functional grievance redress mechanism.
- The design engineer, contractor, Project Implementation Unit (PIU) should prioritize local employment opportunities and ensure the employment of women to constitute 40% of the total labor force.

1. Overview of the project

Agriculture is the mainstay of Malawi's economy, contributing approximately 30 percent of Gross Domestic Product, 85 percent of employment, and over 80 percent of export earnings. However, the sector is predominantly dependent on rain-fed agriculture, particularly among smallholder farmers who account for about three-quarters of national agricultural production. Agricultural systems are largely characterized by low-value, maize-based cropping, making the sector highly vulnerable to climate variability, weather shocks, and natural disasters, resulting in low productivity and recurring food insecurity.

In response to these challenges, and in line with Malawi 2063, the Government of Malawi (GoM) has prioritized the expansion of small-, medium-, and large-scale irrigation development as a strategic intervention to enhance agricultural productivity, income generation, and climate resilience. The Lower Shire Valley, located on the west (right) bank of the Shire River within Chikwawa and Nsanje Districts, has been identified as a priority area due to its fertile alluvial soils and reliable water supply from the Shire River.

To support irrigated agriculture development in the Lower Shire Valley, the Government of Malawi, with financial and technical support from the World Bank and the African Water Facility / African Development Bank, initiated the Shire Valley Irrigation Project (SVIP), now referred to as the Shire Valley Transformation Programme (SVTP). The programme is structured as a three-phase Series of Projects to be implemented over the period 2017 to 2031. Comprehensive technical, economic, environmental, and social studies were undertaken during project preparation, with particular focus on SVTP Phase 1, which is currently under implementation.

The Government of Malawi (GoM) is implementing the Shire Valley Transformation Programme (SVTP) to address low agricultural productivity, food insecurity, and vulnerability to climate change in the Lower Shire Valley. The programme focuses on the development of large-scale irrigation infrastructure to support a transition from rain-fed subsistence agriculture to climate-resilient and commercially viable irrigated agriculture.

As part of the irrigation infrastructure under SVTP Phase 1, main canals are being constructed to convey water from the Shire River to irrigated command areas. To ensure the structural safety and operational integrity of these canals, emergency spillways are being developed to safely discharge excess water during extreme rainfall events, operational failures, or other emergency conditions. These spillways are essential to prevent canal overtopping, infrastructure damage, flooding, and associated environmental and social risks.

In compliance with the Environmental Management Act (2017) of Malawi and the safeguard requirements of the World Bank and African Development Bank, this Environmental and Social Management Plan (ESMP) has been prepared to identify potential environmental and social risks and impacts associated with the construction of emergency spillways along the main canals, and to propose appropriate mitigation, monitoring, and institutional measures.

Phase I of the project is scheduled to commence in April 2026, following the end of the long-rains season in Malawi. Construction activities under this phase are expected to take approximately six months, although the actual duration will depend on the contractor's resource capacity and chosen work methodology. Phase II will involve completion of the remaining inline flow-control structures and the construction of the Siphon 6 escape spillway, with an estimated implementation period of 8–10 months, subject to similar contractor-related variables.

The total estimated construction cost for the Shire Valley Transformation Programme (SVTP) Main Canal structures is USD 15,245,186.44, comprising USD 8,253,573.26 for the three Priority Structures under Phase I and USD 6,991,613.18 for the remaining structures to be delivered in subsequent phases.

Implementation of the inline regulatory structures will not require new land acquisition, as the existing 30-metre buffer zone on either side of the canal centreline provides adequate space for construction and future operational needs. However, the development of the safety escape spillways at Siphon 3, Siphon 5, and Siphon 6 will require additional land to accommodate the spillway chutes. At Siphon 3, approximately 0.48 ha of additional land will be required, all of which falls within the established buffer zone and will require confirmation from African Parks. The escape spillway at Siphon 5 will require approximately 1.6 ha, also partially within the buffer zone, with final verification to be undertaken through field assessment. Further land requirements for Siphon 6 stand at 1.4 ha.

It is estimated that the project will employ approximately 40 to 50 workers during peak construction activities. The number of workers may vary depending on the phase of construction and the intensity of operations of whom 30% to 35% should be female workforce.

Project Objective

The Program Development Objective of the SVTP is to increase agricultural productivity and commercialization for targeted households in the Shire Valley, while improving the sustainable management and utilization of natural resources. Construction of the intake structure and Main Canals 1 and 2 is ongoing under SVTP Phase The development of emergency spillways along the main canal's forms part of the overall risk management strategy to enhance the safety, resilience, and sustainability of the irrigation infrastructure.

Design, Construction and Operation of the emergency spillways and construction of control structures in the existing canal will use various GoM regulations as well as World Bank Environmental and Social Safeguards Standards (ESS) to provide guidance on how to identify potential risks and impacts, and how to avoid, minimize, reduce or mitigate them. It will also make sure that appropriate preventative actions are incorporated into project design, construction, and provide guidance on operation implications.

ESMP Objective

This ESMP applies specifically to the construction and operation phases of the emergency spillways at Siphons 3, 5, and 6, and construction of control structures in the main canal, and provides measures to manage associated environmental and social risks.

The following are key objectives for preparing this Environmental and Social Management Plan (ESMP);

- ensure that all positive environmental and social impacts of the project are enhanced and adverse impacts are mitigated;
- ensure that all workers, community, and other involved parties in the project adhere to health and safety standards and are safe;
- ensure compliance with national legislation and World Bank Environmental and Social Standards (ESS);

- address concerns and issues of project environmental and social impacts and risks raised during stakeholder consultation process and those that will likely continue to arise during the project's lifetime; and
- serve as a monitoring tool for the implementation of environmental and social mitigation and management measures for the project.

ESMP Methodology

This Environmental and Social Management Plan (ESMP) has been prepared to identify the potential environmental and social risks and impacts of the proposed Project activities and determine suitable mitigation measures to manage these risks and impacts. It maps out the Malawi 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 following activities were used to gather information for ESMP preparation:

Desktop Review

Desktop studies formed the initial stage of the ESMP preparation and focused on reviewing existing project information, regulatory requirements, and baseline data relevant to the construction of emergency safety spillways and control structures on existing canals. This process supported early identification of potential environmental, social, health, and safety risks and guided the scope of field assessments and mitigation measures.

The following key documents were reviewed during the desktop study phase:

- Detailed engineering design drawings for emergency safety spillways and control structures
- Existing Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plans (ESMPs) for the canal system
- Environment Management Act, 2017
- Environment Impact Assessment Guidelines, 1997
- Occupational Safety, Health and Welfare Act, 1997
- Water Resources Act, 2013
- National Irrigation Policy, 2016
- National Environmental Policy, 2004
- World Bank Environmental and Social Framework (ESF), 2017, including:
 - ✓ ESS1: Assessment and Management of Environmental and Social Risks and Impacts
 - ✓ ESS2: Labour and Working Conditions
 - ✓ ESS3: Resource Efficiency and Pollution Prevention and Management
 - ✓ ESS4: Community Health and Safety
 - ✓ ESS10: Stakeholder Engagement and Information Disclosure
- African Development Bank (AfDB) Integrated Safeguards System (ISS), 2013, including:
 - ✓ Operational Safeguard 1 (OS1): Environmental and Social Assessment
 - ✓ Operational Safeguard 2 (OS2): Involuntary Resettlement, Land Acquisition, Population Displacement and Compensation
 - ✓ Operational Safeguard 3 (OS3): Biodiversity, Renewable Resources and Ecosystem Services
 - ✓ Operational Safeguard 4 (OS4): Pollution Prevention and Control, Hazardous Materials and Resource Efficiency
- Contractor's Environmental, Social, Health and Safety (ESHS) management procedures
- Previous environmental and safety monitoring reports for the canal system
- Relevant maps, satellite imagery, and baseline environmental and social data for the project area

Field surveys to the project site.

Site investigations started with a reconnaissance survey which was done for familiarity with the environmental and social components of the project area. The investigations used transect walks, observations and interviews in an effort to clearly describe the baseline environment. A checklist was used to record the characteristics of the physical environment for the project site. Meetings, interviews and onsite interactions with the community members were used to substantiate the description of the baseline environment.

- the presence of vegetation including trees.
- fauna habitats
- other infrastructure (such as buildings and electric power lines).
- accessibility of the site;
- presence of water courses;
- other institutions and villages near the project area and

The Consultant also reviewed project documents which included: Environmental and Social Impact Assessment (ESIA), and the World Bank Environmental and Social Framework (ESF).

Interviews and consultations with key stakeholders.

Stakeholders were defined as persons and/or institutions and/or communities who:

- Are directly and/or indirectly affected by the Project.
- Have “interests” in the Project that determine them as stakeholders.
- Have the potential to influence the Project outcomes or operations.

In order to define a communication process with stakeholders, several stakeholder groups that may be interested and/or affected by the Project development and implementation were identified. Stakeholder identification considered the nature and location of the Project and the nature of potential impacts, as well as institutional, legal and managerial framework applicable to the Project.

Stakeholder mapping highlighted the level of interest and influence on the Project that each stakeholder bears. On this basis, stakeholders with high interest and influence on the Project were engaged to solicit information sufficient to arrive at a suitable scope of assessment.

Key stakeholder consultations were done at district, community and institution levels. The objectives of stakeholder consultations were to;

- i. Enable interested and affected parties to present their concerns and opinions regarding the proposed project to ensure credibility of the ESMP development process;
- ii. Gather specialized guidance and local knowledge to understand the baseline environmental and socio-economic conditions of the communities surrounding the project area to aid the preparation of the ESMP;
- iii. Manage expectations and misconceptions regarding the project;
- iv. Ensure compliance with national and international regulations;
- v. Ensure that the ESMP development process helps to consolidate efforts made by Government and the local authorities in order to establish lasting relationships with affected communities and other stakeholders and
- vi. Promote a sense of ownership for the Project.

During the development of this ESMP, SMEC conducted a stakeholders’ engagement exercise not only to solicit their views on the impending project, but also to determine all stakeholders that will

be directly or indirectly affected by the safety emergency spillways and water flow control structures to be constructed on the main canal on Siphons 3, 5 and 6 on Mwembezi, Masakala and Mwanza rivers in that order. In addition, the consultations were also meant to inform the community and district level stakeholders about these additional structures; to determine how the project will affect them and how best it can be implemented to minimize adverse environmental and social impacts. The stakeholder activities took place between 22nd January 2026 to 7th February 2026. A total of 125 people were consulted of which 67 were male and 58 female representing 54% and 46% respectively as depicted by the pie chart below.

At community level, affected parties included communities in the surrounding areas where the Project interventions will be undertaken. Specifically, the groups that would be affected include out of school youths, Area Development Committees (ADC), Village Development Committees (VDC), Natural Resources Management Committees, Community Based Organisation (CBOs), skilled and unskilled labourers.

At District level, the Project targeted the District Executive Committee (DEC), the District Environmental Sub-Committee (DESC) which is the DEC's focal point on issues of Environment. Other important Stakeholders at district level include District Hospitals and Non-Governmental Organizations (NGOs) in the district.

At national level stakeholders included Ministries of Agriculture and Water Development; Natural Resources Energy and Mining; Finance; Economic Planning and Development; Ministry of Lands and Housing; Contractors and Supervising Engineers; Environmental Affairs Department; Department of Parks and Wildlife and all other relevant ministries and departments

The information gathered from stakeholder consultations was carefully analyzed using professional judgement and experience from similar projects to identify and evaluate environmental and social impacts as well as possible enhancement / mitigation measures.

Impacts identification and formulation of mitigation measures

The project recognises that impacts and risks associated with the project activities are assessed and are well detailed in the design, construction and operation phases. The identified potential impacts and risks were drawn from site visits, environmental requirements from the client and the project Environmental and Social Impact Assessment and used to develop this ESMP.

This Plan includes both pro-active as well as reactive management measures and mitigation strategies to minimize all the identified potential impacts and risks. The plan outlines and stresses on mitigation measures that will be undertaken to ensure compliance with relevant government laws and regulations as well as World Bank ESS.

The project will use the following approaches to handle the positive and negative impacts, and risks resulting from the project.

- Enhancement
- Avoidance

-
- Minimization
 - Mitigation
 - Compensation

Structure of the ESMP Report

This Environmental and Social Management Plan (ESMP) is structured to provide a clear and systematic approach to the management of environmental and social risks associated with design, construction and operation of emergency spillways and construction of control structures in the existing main canal. The ESMP report comprises the following sections chronologically.

- (i) Executive summary
- (ii) Overview of the project
- (iii) Brief description of the project site and the major environmental and social stakes/
- (iv) Institutional and legal framework for implementation of the
- (v) Enumeration (in bullets) of the major and moderate impacts
- (vi) Consultations
- (vii) Environmental and social management plan (ESMP):
 - Enumeration (in bullets) of the risks/impacts management measures

2. Brief description of the project site and the major environmental and social stakes/challenges

Project location

The project area is located in southern Malawi within Chikwawa, along the western (right) bank of the Shire River in the Lower Shire Valley. The Main canal alignment extends approximately 150 km in length and a right of way of 60 metres. The actual canal varies from 12–22 m in width spanning over one of the most fertile area in the country, with high irrigation potential supported by a reliable water supply from the Shire River.

The area lies within the Shire River Basin, Malawi's second-largest water resources area, covering about 18,945 km² (approximately 16 percent of the national land area). The basin includes diverse topography, ranging from highlands above 1,000 m above mean sea level to low-lying floodplains below 200 m above mean sea level, including the Elephant and Ndinde Marshes at around 40 m above mean sea level.

The Lower Shire Valley forms a broad, low-altitude floodplain bounded by the Kirk Range mountains to the west and the Zomba Plateau and Shire Highlands to the east. It is characterized by fertile alluvial soils, extensive wetlands, and a warm climate, supporting large-scale sugarcane estates and smallholder agriculture. More than 70 percent of the valley lies in Chikwawa District, with the remainder in Nsanje District, and the area is bordered to the west by Mozambique.

The following Figures 2-1 present the geographical location of the project area and proposed project location at Traditional Authority Level.

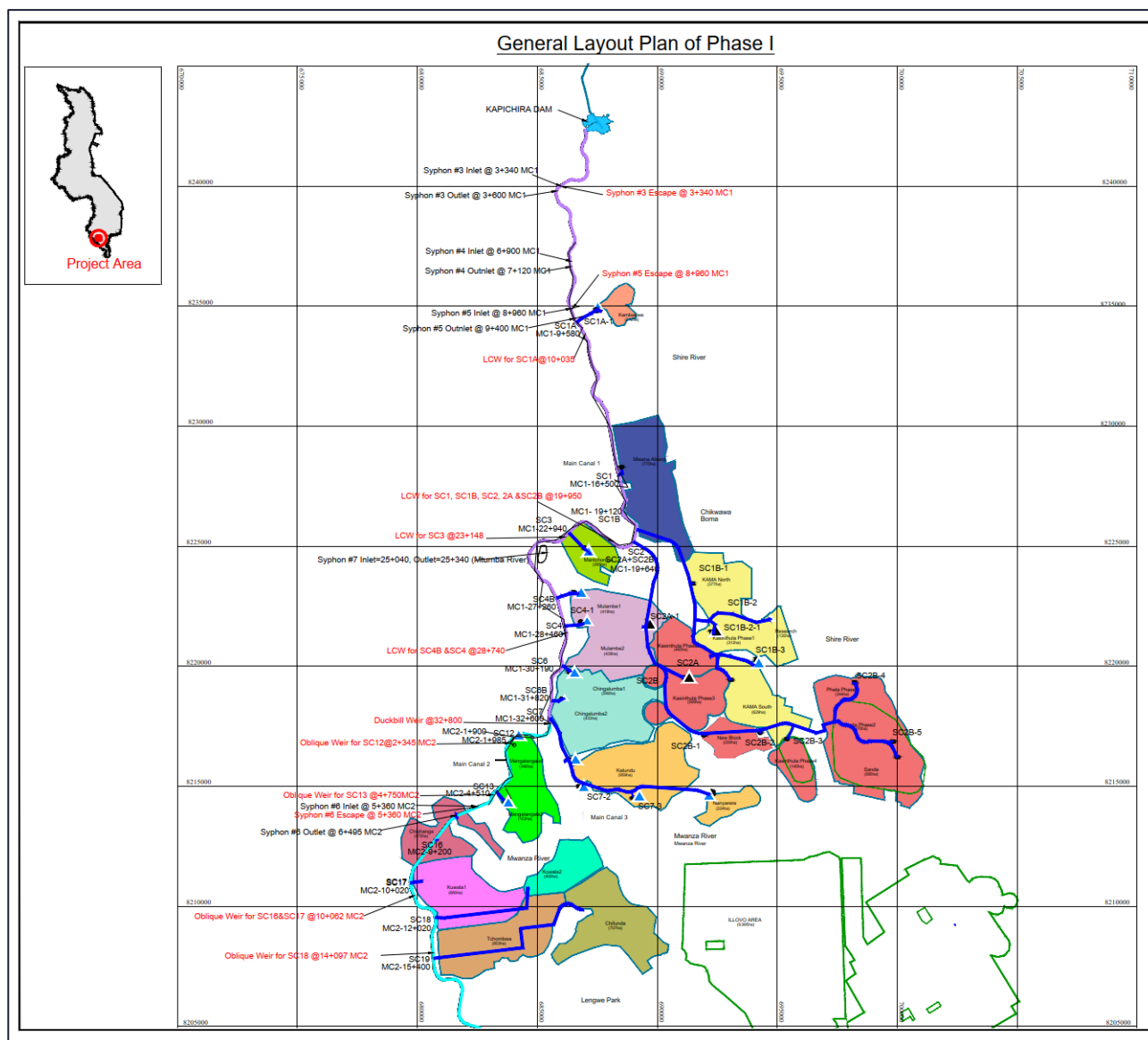


Figure 2-1 Shire Valley Project Area

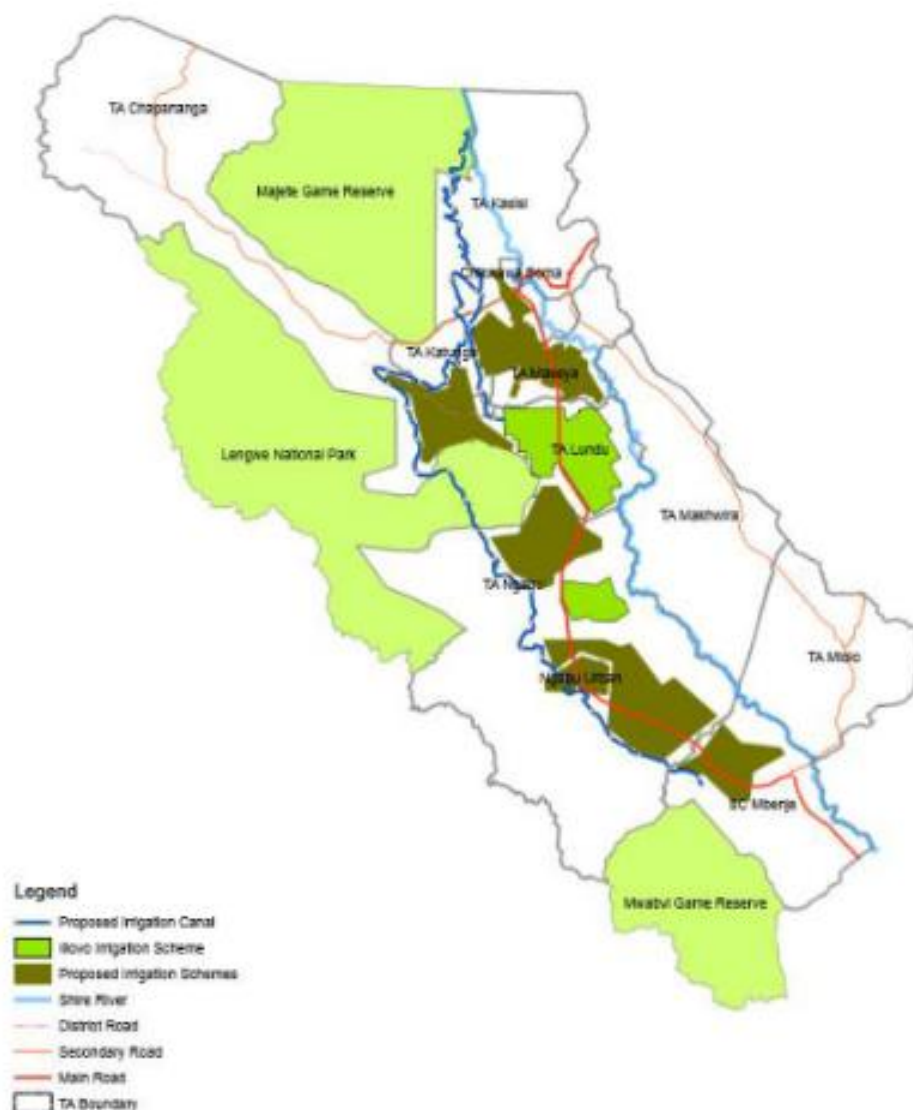


Figure 2-2: Map of project location at Traditional Authority Level

Project components

The project involves the construction of emergency spillways and construction of flow control structures in the already existing main canal under the Shire Valley Transformation Programme (SVTP). the main cnal is divided into 3 sections, MC1, MC2 and MC3. MC1 is 32 KM MC2 is 19 KM and MC3 is 10.5 km. however the focuses for this project is the construction of these safety and regulatory structures in MC1 and MC2 with a culmulative lentght of 49 km. Table 2.2 shows the location of these safety and control structures

Main Canal	ID	Control Structures	Location (km)	Safety Structures	Location (km)
MC 1	1	Long Crested Weir	10+035	Spillway - Siphon 3	3+340
	2	Long Crested Weir	23+896	Spillway - Siphon 5	8+960
	3	Long Crested Weir	28+760		
MC2	4	Oblique weir	2+345		
	5	Oblique weir	4+620		
	6	Oblique weir	10+064	Spillway - MC 2 at Lengwe	19+200
	7	Oblique weir	14+097		
	8	Oblique weir	16+160		

Figure 2.3: showing the location of structures along MC1 and MC2.

The emergency spillways are designed to safely discharge excess water during emergency conditions such as extreme rainfall events, sudden inflow surges, or operational failures, thereby preventing canal overtopping, structural failure, and downstream flooding. The proposed emergency spillways are located along the main canal of the Shire Valley Transformation Programme (SVTP) within the Lower Shire Valley in southern Malawi, specifically in Chikwawa District. The spillways will be constructed at Siphons 3, 5, and 6. Siphons 3 and 5 are located within Traditional Authority (T/A) Kasisi, while Siphon 6 is located within Traditional Authority (T/A) Katunga. All sites are situated on the west (right) bank of the Shire River, in an area characterized by flat to gently sloping alluvial terrain. The rivers to be affected are Mwembezi River for siphon 3, Masakala River for siphon 5 and Mwanza River for siphon 6.

Flow Control Structures

For water level control long-crested weirs are preferred structure in modern irrigation projects for simple, robust water level control. They help maintain the necessary constant water surface elevation to ensure consistent flow rates into upstream turnouts, which feed secondary canals.

The design considerations for the design of long-crested weirs focuses on maximizing the effective crest length within a limited channel width. Factors such as the weir's height, geometry of the weir and the approach velocity all influence the specific backwater profile, which can be analysed using methods like the standard step method in hydraulic modelling.

The overall effect of LCW is minimizing afflux, reduced head variation and upstream water level stability:

Minimizing Afflux: The primary hydraulic advantage of a long-crested weir (such as a duckbill or oblique weir) is its extended crest length relative to the channel width. This design allows the total flow to spread out over a longer distance.

Reduced Head Variation: For a given discharge, the increased crest length means a smaller head (water depth over the crest) is required to pass the flow compared to a shorter, standard weir. The

discharge over a weir is proportional to the head raised to the power of 1.5, ($Q \propto H^{1.5}$), so spreading the flow significantly reduces the necessary head.

Upstream Water Level Stability: Because the required change in head is small even for significant changes in flow rate, the upstream water level remains relatively constant. This minimal fluctuation is the defining feature of the backwater effect for these structures in large canals.

Safety Spillway structures

The proposed emergency spillways are located along the main canal of the Shire Valley Transformation Programme (SVTP) within the Lower Shire Valley in southern Malawi, specifically in Chikwawa District.

The spillways will be constructed at Siphons 3, 5, and 6. Siphons 3 and 5 are located within Traditional Authority (T/A) Kasisi, while Siphon 6 is located within Traditional Authority (T/A) Katunga. All sites are situated on the west (right) bank of the Shire River, in an area characterized by flat to gently sloping alluvial terrain. The rivers to be affected are Mwembezi River for siphon 3, Masakala River for siphon 6 and Mwanza River for siphon 5.

Project activities

The project activities will be implemented in six structured phases.

Phase 1: Planning and Appraisal - This phase establishes the project's foundation by defining its scope, objectives, institutional arrangements, expected outcomes, and budget. It includes preparing cost estimates. Feasibility studies are conducted to assess technical, economic, and environmental alternatives such as no-action, route alignment. Hydraulic modelling and engineering design are carried out to international standards, and the final design of control structures and emergency Spillways are completed. Approvals are secured from the financier and other regulatory boards, such as Malawi Environment Protection Authority (MEPA). Project timelines and milestones are established to guide implementation.

Phase 2: Recruitment and Contracting: Once appraisal and approvals are complete, the focus shifts to securing expertise and contractors. Tender documents, technical specifications, and evaluation criteria are prepared. Bids are advertised and proposals invited in line with AfDB procurement standards. Technical and financial proposals are reviewed, bidders are shortlisted, and contractors are selected based on capacity, experience, and cost-effectiveness. Contracts are finalized with clear timelines, payment schedules, performance guarantees, and safeguard compliance. Notices to proceed are issued, and contractors are prepared for mobilization. Communities and stakeholders are notified about contractor selection, project start dates, impacts, and mitigation measures to ensure transparency.

Phase 3: Mobilization and Site Preparatory Work: This phase ensures readiness for construction through logistics planning, equipment deployment, and staff onboarding. Necessary permits are secured and stakeholders engaged. Vegetation is cleared, surveys are conducted. Environmental

safeguards and safety protocols are implemented. Stakeholder consultations are held with communities and local authorities. Project staff are oriented on occupational health and safety, environmental safeguards, and community relations.

Phase 4: Site Preparation: This phase involves clearing vegetation, debris, and obstacles in any at the construction site. Site camps, storage areas, workshops, and sanitation facilities are established. Conflicting utilities such as electric cables and drainage structures are relocated where feasible. Traffic safety measures, including signage, barriers, and detours, are installed. Dust suppression, noise control, and waste management systems are implemented. Trench lines are surveyed, marked, and fenced to prevent accidents and unauthorized access.

Phase 5: Construction and Installation: This phase delivers the actual infrastructure. Earth excavation on emergency spillway route are done, concrete demolition are done at designated points within the existing canal for control structures . steel fixing is done as designed, including concreting. Backfilling and compaction are done to restore ground stability, and excess soil is disposed of at designated sites. Community engagement continues throughout construction.

Phase 6: Decommissioning: Upon completion, all Temporary facilities and installations are removed, equipment is demobilized, and surplus materials are cleared. Access roads and facilities used during construction are rehabilitated. A thorough site cleanup is conducted, and all ancillary structures are removed. The area is reinstated in compliance with environmental and safety standards, leaving it in a well-maintained condition.

Phase 7: Operation: This phase is managed private operator who will be responsible for the Operation, Mantainace and Management of the Shire valley irrigation project. These new structures will be permanently integrated to the existing shire valley canal, and will greatly improve the functionality of the system by among others things, help in maintaining the required water head to be delivered to the farms, and also in times of emergency, the system should be overwhelmed but rather convey excess water safely into existing channels.

Project Construction Materials and Their Sources

The proposed construction of emergency spillways and flow control structures along will require various construction materials to support civil works, structural stability, and erosion protection. The Contractor shall be responsible for procuring all materials from legally recognized and environmentally approved sources. Preference shall be given to locally available materials to minimize transportation impacts, reduce project costs, and support the local economy.

Cement shall be used for all concrete works, including foundations, aprons, headwalls, wing walls, and flow control structures. The material shall be procured from licensed suppliers and authorized distributors within Malawi.

(i) **Fine Aggregates (Sand)**
Sand shall be required for concrete production, mortar preparation, and plastering works. The

Contractor shall source sand from approved and licensed extraction sites. Extraction from unauthorized riverbanks or environmentally sensitive areas shall be strictly prohibited.

(ii) **Coarse Aggregates (Quarry Stone/Crushed Stone)**

Coarse aggregates shall be used in reinforced concrete works and structural foundations. These materials shall be obtained from licensed quarry operators to ensure quality and compliance with environmental regulations.

(iii) **Reinforcement Steel (Rebars)**

Steel reinforcement shall be used in structural concrete works for spillways and flow control structures to enhance strength and durability. The materials shall be procured from certified hardware suppliers and reputable manufacturers.

(iv) **Formwork Materials**

Timber, plywood, and related formwork materials shall be used for temporary support during concrete casting. The Contractor shall ensure that timber is sourced from legal and sustainable suppliers to minimize impacts on forest resources.

(v) **Bricks/Concrete Blocks**

Where required for minor structural works and protection features, bricks or concrete blocks shall be sourced from local producers within surrounding communities, provided they operate in compliance with local environmental and land use regulations.

(vi) **Water**

Water shall be required for concrete mixing, curing, and dust suppression. The Contractor shall obtain water from approved sources such as boreholes or designated water supply points, in consultation with local authorities and communities, to avoid conflict and over-extraction.

(vii) **Culvert Pipes and Metal Components**

Precast concrete pipes, sluice gate components, and other metal fittings shall be sourced from reputable suppliers and manufacturers within the country.

(viii) **Riprap/Rock Protection Materials**

Stones for erosion protection and slope stabilization shall be obtained from approved quarry sites or designated collection areas that comply with environmental requirements.

(ix) **Fuel and Lubricants**

Fuel and lubricants for construction equipment and vehicles shall be procured from licensed fuel stations. Proper storage and handling measures shall be implemented on-site to prevent spills and soil contamination.

All materials used for the proposed works shall comply with national construction standards and environmental regulations. The Contractor shall maintain records of material sources and ensure that procurement does not contribute to illegal resource extraction or environmental degradation.

Equipment and Machinery to be Used and Their Intended Use

The construction of emergency spillways and flow control structures will require the use of various equipment and machinery to support excavation, material transportation, concrete works, and site preparation. The Contractor shall mobilize appropriate machinery in good working condition to ensure efficient implementation of the works while minimizing environmental and safety risks.

Excavators

Excavators shall be used for site clearing, excavation of foundations, shaping of spillways, and removal of unsuitable materials. They will also be used for loading excavated material onto trucks for disposal or reuse.

Backhoe

Backhoe loaders shall be used for small to medium-scale excavation works, trenching, material handling, and site leveling in areas with limited access.

Loaders

Bulldozers

Bulldozers shall be used for clearing vegetation, stripping topsoil, leveling construction areas, and spreading excavated materials.

Graders

Graders shall be used for leveling and shaping access roads, construction platforms, and working surfaces to ensure safe movement of machinery and vehicles.

Tipper

Trucks/Dump

Trucks

Tipper trucks shall be used for transporting construction materials such as sand, quarry stone, cement, and aggregates to the site, as well as removing excavated spoil and waste materials to designated disposal areas.

Concrete

Mixers

Concrete mixers shall be used for mixing cement, sand, aggregates, and water to produce concrete required for foundations, aprons, headwalls, and other structural components.

Water

Bowsers

Water bowsers shall be used for transporting water for construction activities, including concrete mixing, curing, and dust suppression along access roads and working areas.

Compactors/Rollers

Compactors shall be used for compacting soil, backfilled materials, and construction platforms to achieve required stability and prevent settlement.

Cranes

or

Hoisting

Equipment

Where necessary, cranes or lifting equipment shall be used for positioning heavy materials such as culvert pipes, reinforcement steel cages, and metal flow control components.

Generators

Generators shall be used to supply power for construction activities, including operation of small tools and lighting.

Welding

Machines

Welding machines shall be used for fabrication and installation of reinforcement steel, metal gates, and other structural fittings associated with flow control mechanisms.

Hand

Tools

Hand tools such as shovels, pickaxes, wheelbarrows, hammers, and trowels shall be used to support manual works, including finishing, minor excavation, and formwork activities.

All equipment and machinery shall be operated by trained personnel. The Contractor shall ensure regular maintenance to minimize excessive noise, exhaust emissions, oil leakages, and safety risks. Appropriate measures shall be put in place to manage fuel storage, prevent spills, and reduce disturbance to nearby communities and the environment.

Estimated Quantities of Waste to be generated

The construction of emergency spillways and flow control structures is expected to generate both solid and liquid waste during site preparation, excavation, concrete works, machinery operation, and workforce activities. The quantities provided below are indicative estimates based on the scale and nature of civil works, typical construction practices, and the anticipated workforce size. Actual quantities may vary depending on site conditions and construction methods.

Solid Waste

(i) Excavated Material (Soil and Spoil)

Excavation for foundations, spillways, and flow control structures will generate surplus soil and debris. It is estimated that approximately 800 to 1,200 cubic metres (m³) of excavated material may be generated across all sites. A portion of this material will be reused for backfilling and leveling, while the remainder will be disposed of at approved sites.

(ii) Construction Debris

This includes broken concrete, stone offcuts, packaging materials, damaged formwork, and scrap metal. Estimated generation is approximately 2 to 5 m³ per month during peak construction, depending on the intensity of activities.

(iii) Domestic Solid Waste

Waste generated by workers, including food remains, plastic bottles, paper, and other refuse, is estimated at approximately 0.5 to 1 kg per worker per day. For an average workforce of 25 to 40 people, this translates to approximately 12 to 40 kg per day.

(iv) Vegetation Waste

Clearing of grasses and small shrubs along working areas may generate an estimated 50 to 100 m³ of organic waste, depending on the extent of site preparation required.

Liquid Waste

(i) **Wastewater from Concrete Works**
Concrete mixing and equipment washing will produce wastewater containing cement residues. Estimated generation is approximately 500 to 1,000 litres per day during active concrete works.

(ii) **Oily Waste and Used Lubricants**

Machinery maintenance may generate small quantities of waste oil and lubricants. Estimated generation is approximately 20 to 50 litres per month, depending on the number of machines and servicing frequency.

(iii) **Domestic Wastewater**

Wastewater from handwashing and sanitation by workers is estimated at approximately 15 to 25 litres per person per day. For a workforce of 25 to 40 workers, this translates to approximately 375 to 1,000 litres per day.

Summary of Estimated Waste Generation

- (i) Excavated spoil: 800 to 1,200 m³ (one time, with partial reuse on-site)
- (ii) Construction debris: 2 to 5 m³ per month
- (iii) Domestic solid waste: 12 to 40 kg per day
- (iv) Vegetation waste: 50 to 100 m³ (during site clearing phase)
- (v) Concrete wastewater: 500 to 1,000 litres per day (during concrete works)
- (vi) Used oil and lubricants: 20 to 50 litres per month
- (vii) Domestic wastewater: 375 to 1,000 litres per day

These estimates are intended to guide planning for waste handling, storage, reuse, and disposal measures within the ESMP. The Contractor shall implement appropriate waste management practices to minimize waste generation, promote reuse of excavated materials where feasible, and ensure safe disposal at designated and approved sites.

Estimated Workforce for the Project

The construction of the proposed emergency spillways and flow control structures on the existing canals will require a workforce comprising skilled, semi-skilled, and unskilled personnel to carry out civil works, machinery operation, supervision, and support services.

Total

Workforce

It is estimated that the project will employ approximately 40 to 50 workers during peak construction activities. The number of workers may vary depending on the phase of construction and the intensity of operations.

Expatriate Workers

To provide technical oversight, specialized engineering guidance, and equipment operation training, it is estimated that 3 to 5 expatriate personnel will be employed. These will include senior technical supervisors, specialized engineers, and machinery operators.

Local Employment Emphasis

The majority of the workforce, approximately 85 to 90%, will be recruited locally from nearby communities. This approach is aimed at enhancing local economic benefits, building local capacity, and ensuring community ownership of the project. Priority will be given to hiring skilled and semi-skilled personnel available within the region, including laborers, equipment operators, carpenters, masons, and support staff.

The project will actively promote gender inclusion by encouraging the recruitment of women for suitable roles such as administration, supervision, technical support, and unskilled labor. It is anticipated that at least 30 to 35% of the workforce will be female, in alignment with national gender equality guidelines and good international practice for labor inclusion.

Workforce Management Measures

- (i) Recruitment will prioritize locals while ensuring necessary skills for quality construction.
- (ii) Gender-sensitive facilities and practices will be provided on-site, including separate sanitation facilities and safe working conditions for women.
- (iii) Training and capacity-building sessions will be conducted to enhance skills of local laborers and promote occupational safety.

This approach ensures the project maximizes socio-economic benefits for the surrounding communities while maintaining technical efficiency and compliance with labor standards.

Source of Water and Energy for the Project

(i) Water Supply

Water required for construction activities, including concrete mixing, curing, dust suppression, and domestic use by workers, will be obtained from the following sources;

(ii) Surface Water

Construction water will primarily be abstracted from the Shire River where feasible. Abstraction will be undertaken in a controlled and regulated manner to ensure that there is no significant impact on downstream users, aquatic ecosystems, or riverbank stability. All necessary water abstraction permits will be obtained from the relevant regulatory authorities prior to commencement of use.

(iii) Groundwater Pumping and Storage in Tanks:

Groundwater will supplement surface water supply where necessary. Water will be abstracted through pumping from existing boreholes and stored in on-site water storage tanks for controlled use. Where

new boreholes are required, the Contractor will obtain the appropriate drilling and water abstraction permits before installation.

Pumped groundwater will be used mainly for domestic purposes and, where suitable, for construction activities. The Contractor shall ensure that groundwater abstraction does not negatively affect community water sources or lead to over extraction. Proper monitoring of abstraction volumes will be implemented.

Energy Supply

Energy required for construction activities will be sourced from the following.

(i) Fuel

Diesel will serve as the primary energy source for heavy construction machinery, generators, pumps, and transport vehicles. Fuel will be procured from licensed suppliers. On-site fuel storage areas will be properly bunded and secured to prevent spills, leakages, fire hazards, and soil or water contamination.

(ii) Grid Electricity (ESCOM)

Electricity will be sourced from the national grid through the Electricity Supply Corporation of Malawi (ESCOM) to power site offices and machinery. All necessary approvals and connection permits will be secured prior to installation and operation.

All water abstraction and energy use activities will comply with national legislation and regulatory requirements. The Contractor will obtain all relevant permits before utilizing surface water, groundwater, and grid electricity for project purposes and will implement resource efficiency measures throughout the construction period.

Worker's Welfare facilities

During the construction phase of the project, the contractor will provide and maintain adequate worker's welfare facilities to safeguard Occupational Health and Safety, promote worker wellbeing, and ensure compliance with national labour legislation and applicable environmental and social safeguards. The provision of these facilities will be proportional to the size of the workforce, the nature of construction activities, and the duration of the works, and will be implemented prior to commencement of construction and maintained throughout the construction period.

(i) Changing rooms and washrooms

These will be provided on site where construction activities require workers to wear personal protective equipment (PPE) or specialized work clothing. Changing rooms will be clean, well ventilated, adequately lit, and secure with lockable lockers for the safe storage of personal belongings and work attire. It shall be ensured that separate changing rooms are provided for both males and females.

(ii) Sanitary Facilities

Sanitary facilities will be installed at appropriate and accessible locations within the construction site. These will include adequate number of mobile toilets (in the ratio of 1:10) and hand washing facility fitted with a reliable supply of clean water, soap and hygienic drying material and a daily cleaning checklist will be maintained to monitor that toilets are always clean. Sanitary facilities will be

segregated by gender and will be regularly cleaned and maintained in a hygienic condition. It should be ensured that wastewater from these facilities is well managed in a manner that prevents pollution of soil, surface, and ground water resources.

(iii) Worker's Shelter and Rest areas

These should be established within or near the construction site to provide protection from adverse weather conditions such as rain, sun and wind. These shelters should be adequately sized, shaded, ventilated and equipped with seats to allow workers to rest during breaks. The provision of rest area will help minimize fatigue related accidents and improve overall site safety.

(iv) Potable drinking water

This should be made readily available at a strategic location across all construction sites. Drinking water must be safe for human consumption and stored in clearly marked (including local language) clean containers.

(v) Cooking areas

Such areas should be designated for workers where onsite meals are prepared. These areas should be hygienic, sheltered and clearly separated from active construction zones, fuel storage areas, sanitary facilities and the natural environment such as forest or bushy areas. Appropriate waste collection facilities should be provided to prevent littering.

(vi) First aid

Occupational health facilities will always be available during construction. This should include adequately stocked first aid kits and trained first aiders on site.

Policy and Legal Framework

The development of this ESMP involved the review of existing literature related to the project. The literature that was reviewed include the following: The Constitution of the Republic of Malawi (1995), Environment Management Act (2017); National Construction Industry Act (1996); Physical Planning Act (2016); Water Resources Act (2013); Water Works Act (1995); Public Health Act (1948); Occupational Safety, Health and Welfare Act (1997); Employment Act (2000); National Water Policy (2005); The National Gender Policy (2025–2030); National Environment Policy (2004); Malawi National Land Policy (2002); Malawi 2063; among other pieces of relevant legislation and policies. In addition, a review of other Environmental and Social Impact Assessment reports related to infrastructure development projects for irrigation were reviewed. These documents have been included in the reference section.

National policy and legal framework

The project shall comply with key legislative framework and policies guiding the design, construction and operation of this project as stipulated in the [Table 3-1](#) below.

The Malawi 2063

The Government of Malawi adopted the Malawi Vision 2063 as successor development agenda for the country replacing the Malawi Vision 2020. The agenda was arrived at in a consultative manner that involved participation of full representation of key actors in the country.

In its Enabler 7 (Environmental Sustainability), the government and people of Malawi aspire that “Malawi shall have a safe, clean, secure and sustainable environment.”

The agenda recognizes that challenges confronting environmental sustainability in Malawi are both externally and internally induced. These include: natural disasters and climate adversities; environmental degradation; weak institutional capacity and coordination exacerbated by political interference in regulation and enforcement; limited awareness of environmental best practices; data gaps and limited funding for environment sustainability initiatives. Poor Industrial waste management coupled with loss of forest cover have increased the destruction risks on flora and fauna and endangered species. Industrial activity associated with unregulated disposal of waste, discharge of untreated industry effluents, lack of proper waste treatment systems and leaking of toxic waste leads to modification of the ecosystem and related services.

Consequently, Malawi undertakes to harmonize policies and coordinate implementation efforts towards environmental sustainability, embrace ecosystem based approaches in managing the environment, embrace Green Economy measures and account for the full economic value of environmental resources.

The ESIA and PMP assignment describes potential and actual impacts to be generated by SVTP activities on issues in the Vision 2063 such as land degradation, deforestation, degradation and depletion of water resources, diversity loss, air pollution, and poverty and land tenure. The ESIA through ESMP will recommend site specific measures to mitigate the negative impacts and enhance the positive impacts.

3.1.2 Malawi Growth and Development Strategy II

The Malawi Growth and Development Strategy (MGDS II) of 2011 – 2016 is Malawi’s road map for the attainment of the MDGs that among many goals set out to halve the level of poverty by year 2015 and the need for ensuring environmental sustainability. The MGDS needs to be reviewed and aligned

to the new Sustainable Development Goals (SDGs) but in its present form, it is still relevant to the SVTP. Agricultural production and smallholder integration into commercial activities is seen as of the Malawian economy, while strategies to target high growth sectors are being developed. Commercialization of agriculture entails improving management and making land and water use decisions that lead to improvement quality, seasonality of production and attract good prices on the market. Commercialization fuels proper land and water management as it provides incentives for irrigated agriculture.

The MGDS II has six thematic areas: Sustainable Economic Growth; Social Development; Social Support and Disaster Risk Management; Infrastructure Development; Improved Governance and Cross Cutting Issues. Out of these six thematic areas, nine priority areas pivotal to the achievement of sustainable economic growth and wealth creation have been identified among which Agriculture and Food Security, Green Belt and Water Development and Natural Resources and Environmental Management are relevant to SVTP. Inclusion of these priority areas is a clear manifestation of government commitment to irrigation development that is sensitive to social and environmental impacts.

The ESIA and PMP assignment assesses how issues of fish resources, wildlife, sanitation, malaria and HIV management are impacted by the project and designs mitigation measures to address them. The ESIA and PMP also look at how smallholder farmers are integrated into commercial farming and **how this affects poverty reduction and proposes measures on how these can be enhanced.**

3.1.3 National Environmental Action Plan (1994)

The National Environmental Action Plan (NEAP) developed in 1994 and updated in 2004 provides a framework for integrating the environment into all socio-economic development activities of the country. The objectives of the NEAP are to: document and analyze all major environmental issues and measures to alleviate them; promote sustainable use of natural resources in Malawi; and develop an environmental protection and management plan. The NEAP identifies the following as key environmental issues to be addressed: soil erosion, deforestation, water resources degradation and depletion, threat to fish resources, threat to biodiversity, human habitat degradation, high population growth, air pollution and climatic change. Most of the issues identified are linked to agriculture and therefore any efforts to address the issues will involve and benefit the agriculture sector.

In order to protect the environment from further degradation; the NEAP outlines actions that need to be undertaken and to ensure adequate environmental protection. The actions relevant to the SVTP include:

- Discourage cultivation on marginal lands (steep slopes and river banks);
- Construct permanent physical conservation structures such as storm water drains, terraces and bunds;
- Promote crop rotation;
- Promote mixed and intercropping by smallholder farmers;
- Improve land productivity through sustainable land saving technologies;
- Intensify training of farmers in improved farming practices;
- Improve management of forest resources on customary land; and

Promote proper handling and use of agrochemicals.

3.1.4 National HIV/AIDS Policy, 2012

The national HIV/AIDS policy highlights that HIV/AIDS impact on the country is quite significant and affects a range of socio-economic activities be it in agriculture, fisheries, public sector, private sector, tourism, urban areas, rural areas among others. HIV/AIDS prevalence in the country varies from one region to the other and from rural to urban areas. The highest rate is in the Southern Region and the lowest in the Northern Region. Prevalence rate is high in urban areas as compared to the rural areas.

National HIV/AIDS Policy identifies migrant workers and women among highly vulnerable people to transmission of HIV/AIDS and other sexually transmitted diseases. An application of migrant workers is that some single male migrant workers would be at an increased likelihood of contracting HIV/AIDS. The reason is that some migrant workers may approach and indulge in casual sexual intercourse with infected local female partners in the surrounding local communities or some sex workers in the targeted irrigation schemes. In addition, increased disposal of income from migrant workers may enhance some workers to indulge in extra-marital affairs with either local girls or married women within the surrounding villages. These sexual activities would enhance the spread of HIV/AIDS among workers and local people. In order to minimize the risks, this ESIA and PMP study recommends various mitigation measures.

3.1.5 National Land Resources Management Policy and Strategy, 2000

The overall goal of this policy is to promote the efficient, diversified and sustainable use of land based resources both for agriculture and other uses in order to avoid sectoral land use conflicts and ensure sustainable socio-economic development. Some of the selected policy objectives are to promote integrated land conservation measures in all forms of agricultural practices, and to protect and preserve environmentally fragile areas such as steep slopes, stream banks, water sheds and dambos. The policy is not explicit on the issue of riverbank cultivation as it provides no guidance on the size of buffer zones along rivers and the recommended management practices of such zones.

This policy is quite relevant in the implementation of the proposed SVTP because a number of the activities fall within the framework of this policy such as integration with land conservation and the protection and preservation of environmentally fragile areas.

3.1.6 National Fisheries and Aquaculture Policy (2016)

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

SVTP I, through its sub-component 2.2 has been promoting fish farming to ensure both income and food security and Phase II intends to promote monitoring against invasive alien tiger fish in line with ESS 6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources). In SVTP II, efforts will be applied to ensure that ESS 2 (Labour and Working Conditions) is complied with as regards employment in project supported aquaculture activities.

3.1.7 National Climate Change Policy

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

3.1.8 Charcoal Strategy

The goal of the National Charcoal Strategy (NCS) is to provide a framework to address the linked problems of increased deforestation and increased demand for household cooking fuel, with defined and prioritized short-term, medium-term and long-term actions. Aligned with the Forestry Policy (2016), Forestry Act (1997), Energy Policy (2003), draft National Energy Policy (2016), Energy Act (2004), and the Climate Change Policy (2016), the NCS supports Government's objectives to arrest and reverse deforestation and forest degradation and to reduce energy overdependence on solid biomass fuels.

The strategy defines seven strategic pillars in order to realise its objective aspirations, namely: promote alternative household cooking fuels; promote adoption of fuel-efficient cookstove technologies; promote sustainable wood production; strengthen law enforcement; regulate sustainable charcoal production; enhance livelihoods; and information, awareness and behavior change communications

3.1.9 National Biodiversity Strategy and Action Plan (NABSAP) 2015-2025

The goal of the NABSAP is to enhance the management of biodiversity for economic growth and well-being of the present and future generations.

To realise the goal, the NABSAP will pursue the following strategic objectives: Improved capacity and knowledge on biodiversity issues; Increased mainstreaming of biodiversity management into sectoral and local development planning; Reduced direct pressures on biodiversity; Improved status of biodiversity by safeguarding ecosystems, species and genetic diversity; and Enhanced access and benefit sharing from biodiversity and ecosystem services

3.1.10 National Waste Management Strategy (2019-2023)

The National Waste Management Strategy (2019-2023) stipulates measures for the management of hazardous wastes and pesticides as elaborated in the Seventh Schedule of the Environment Management (Waste Management and Sanitation) Regulations development under the Environment Management Act of 2017.

The strategy defines pesticides are chemicals used to control pests. Pesticide waste consists of expired and contaminated pesticides as well as the used containers. Due to their toxicity, potential to pollute and threat to human health, pesticide wastes are extremely hazardous and the strategies proposes measures for transporting, treating and disposal of pesticides and pesticide wastes in an environmentally sound manner in accordance with the stipulations of the relevant laws. Invariably, some of these pesticides contain persistent organic pollutants (POPs) which can accumulate in the food chain if not well managed.

Owing to the anticipated rise in pesticide use, SVTP will institute measures that reduce the risk associated with pesticide use, transportation, handling and disposal of associated wastes.

Legal Framework

3.2.1 The Constitution of the Republic of Malawi (1995)

A new Constitution of the Republic of Malawi was adopted in 1995. Section 13 (d) of the Constitution provides a broad framework for sustainable environmental management at various levels in Malawi. Among other issues, it calls for prudent management of the environment and accords future generations their full rights to the environment. The Constitution provides the fundamental principles that require the State to promote the welfare and development of the people by progressively adopting and implementing policies and legislation aimed at achieving gender equality, adequate nutrition, adequate health care and responsible management of the environment. Specifically for the environment, the constitution makes the following provisions:

- To manage the environment responsibly in order to:
 - Prevent degradation of the environment;
 - Provide healthy living and working environment for the people of Malawi;
 - Accord full recognition to the rights of future generations by means of environmental protection and sustainable development of natural resources; - Conserve and enhance the biodiversity of Malawi.

Section 13 (e) of the Constitution:

- To enhance the quality of life in rural communities and to recognize rural standards of living as a key indicator in the success of Government policies.

With respect to gender equality, the Constitution under Section 13 (e) gives the State the responsibility to achieve gender equality for women through:

- Full participation of women in all spheres of Malawian society on the basis of equality with men;
- The implementation of principles of non-discrimination and such other measures as may be required;
- The implementation of policies to address social issues such as domestic violence, security of the person, lack of maternity benefits, economic exploitation and rights to property.

In view of the environmental principles stipulated in the constitution, SVTP ensures that activities implemented under the project promotes environmental protection and sustainable socio-economic development of natural resources by effectively implementing environmental and social management as well as pest management plan in compliance with the government legislative requirements stipulated in acts, policies and approved guidelines applicable to environmental management.

The ESIA and PMP assignment also addresses gender inequality issues between men and women and measures to ensure that women are included in implementation of project both during construction and operation phases.

Environment Management Act, 2017

This Act has replaced the Environment Management Act of 1996. The new act provides for the creation of regulations on all aspects of environmental management, and creation of the Malawi Environmental Protection Agency (MEPA) in Part III of the Act.

The Act empowers the minister responsible for environment under Section 31 to categorise type and size of projects for which an ESIA is required as follows:

31.—(1) *The Minister may, on the recommendation of the Authority, specify, by notice published in the Gazette, the type and size of a project which shall not be implemented unless an Environmental and Social Impact Assessment is carried out.*

(2) *A person shall not undertake any project for which an Environmental and Social Impact Assessment is required without the written approval of the Authority, and except in accordance with any conditions imposed in that approval.*

(3) *Any other licensing authority shall not grant a permit or licence for the execution of a project referred to in subsection (1) unless an approval for the project is granted by the Authority, or the grant of the permit or licence is made conditional upon the approval of the Authority being granted.*

(4) *The Minister may, on the advice of the Authority, make regulations for the effective administration of Strategic Environmental Assessment, Environmental and Social Impact Assessment and Environmental Audit.*

The Act further provides for imposition of environmental protection orders in Section 72 in respect of actions that the MEPA may deem detrimental. The act defines penalties in sections 105 and 106 in respect of non compliance to the act.

Fines are provided for in outlines the EIA process to be followed in Malawi; and requires that all project developers in both the public and private sectors comply with the process. The Act under section 26 (3) further requires that no licensing authority issue any license for a project for which an EIA is required unless the Director of Environmental Affairs (DEA) has given consent to proceed; on the basis of a satisfactory EIA or non-requirement of an EIA. Non-compliance with the EIA requirements is an offence and attracts penalties.

Review of the ESIA for the SVTP has been conducted to ensure it is aligned to the new act so that it remains relevant at all times.

National Parks and Wildlife (Amendment) Act, 2017

The act was amended in 2017 to replace the National Parks and Wildlife Act of 1992 with an aim to curb the rising number of illegalities in the protected areas. All protected species are now referred to as endangered or listed in line with IUCN classification.

Part IV of the Act, provides for the conduct of environmental and social impact assessment (ESIA) for activities that may occur in protected areas. This may be initiated by any person with sufficient grounds that such actions may have an adverse effect on any wildlife species or community. SVTP's conduct an ESIA and ESMP for safety and Regulatory Structures fulfils the requirements of OS6, ESS 6 (Biodiversity Conservation and Sustainable Mangement of Living Natural Resources and ESG Policy.

Part XIII of the act, stipulates penalties and offences that include depositing any waste material in a protected are; introducing any plant into a protected area; lighting fires in a protected area; and poaching, among others.

Contractors and designers for SVTP will need to ensure their actions take into account the requirements of the Act.

Land Act (2016)

The Land Act (2010) is the principal legal framework on land administration and management and it replaces the Land Act (1965). A number of enabling acts were also enacted in 2016, namely, the Customary Land Act, the Land survey Act and the Physical Planning Act.

Section 17(1) of the act, defines procedure and purpose for which the Minister responsible for lands may acquire customary land. Section 17 (2) defines occupation of land for public utility for less than seven years as temporary and creates a requirement that such piece of land should revert to customary land status.

Section 17 (5) defines public utility as:

“For the purposes of this section “public utility” means a utility which is for the direct or indirect benefit of the community as a whole, or a part of the community within a traditional land management area”.

Section 18 of the act provides for compensation to individuals for loss, damage or disturbance that may arise as a result of land acquisition under Section 17 above.

SVTP II will build upon the successes of SVTP I in line with the Land Act 2016, World Bank ESF especially ESS 5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement), and Operational Safeguard 2 of the African Development Bank: Involuntary Resettlement: Land Acquisition, Population Displacement and Compensation and ESG Policy. The RAP for Safety and regulatory Structures will be aligned to the Act, ESS 5 and OS2.

Customary Land Act (2016)

The new Customary Land Act (CLA) proposes the creation and registration of customary estates based on current, legitimate, customary land occupation within Traditional Land Management Areas (TLMAs) and transforms these holdings into private land, capable of being transacted (with certain limitations) and encumbered. It envisages identification and formalization processes that incorporate international best-practice principles and lays the legal foundation for transparent and decentralized administration of these estates.

Arrangements for local governance of land rights envisage formal approval and dispute resolution roles for the Traditional Authorities (TAs), and for new institutions to be established at Group Village Level. These comprise of Customary Land Committees (CLCs), established in terms of section 5 of the CLA, which will have powers to make grants of customary estates. In addition, the current regional land registry will be decentralised to district level.

Each TLMA will also have a Customary Land Tribunal (CLT) with responsibilities for hearing appeals and resolving disputes as a forum of first instance, and to be chaired by the Traditional Authority. The establishment of these Group Village CLCs and TLMA CLTs is a conscious attempt to institute greater legitimacy in decisions regarding the application of customary norms to land management. Whilst formalizing the roles of the TAs in this regard, the CLA introduces a level of democratization; the CLCs will be chaired by the Group Village Headperson, ex officio, but an additional six members shall be elected by people in the TLMA, three of whom must be women.

Section 3 (3) of the act provides a solid legal platform for securing the current tenure rights of customary occupants within the SVTP area through transparent and locally-legitimate processes and institutions. The opportunity to undertake the systematic adjudication and formalisation of customary

land rights, in areas defined by the development plans of the irrigation infrastructure, along with the introduction of customary estates as a form of legal land-holding, available to individuals, groups and corporate entities, allows the SVTP to provide safeguards for current occupants and affected persons, as well as mechanisms for making land available to the intended beneficiaries.

Land Survey Act (2016)

In line with the 2002 Land Policy, the Land Survey Act (2016) was promulgated to enhance security of tenure of land by making provisions for adjudication and registration of land including customary land that hitherto was not the case.

The act recognizes efforts carried out under the Customary land Act (2016) by providing under section 46 (1) the marking of boundaries for Traditional Land management Areas (TLMA), a district or local government area, as follows:

46. —(1) The boundaries of any area declared as a Traditional Land Management Area, a district or a local government area shall be surveyed and registered in the Land Registry under the traditional authority or local government authority of the area.

Customary land registration and adjudication are further enhanced by Section 46 (2):

46. (2) Where a Traditional Land Management Area is registered, all the villages and the public land within the area shall be surveyed and registered.

The SVTP II will build on successes of Phase I, sub-component 2.1 (Land Consolidation) and in line with this act to consolidate customary land estates and adjudication and registration of the customary land currently held by villagers.

Physical Planning Act (2016)

The Act makes provision for physical planning and the orderly and progressive development of land in both urban and rural areas; to preserve and improve amenities thereof; for the grant of permission to develop land and for other powers of control over the use of land; for the establishment of the Physical Planning Council; for the establishment of the Physical Planners Board; for the registration and regulation of physical planners and for matters connected therewith and incidental thereto.

Sections 29 to 32 of the Act deal with the powers of the district councils to develop District Physical Development Plans, whereas Sections 33 to 35 deal with the powers of district councils to develop local physical development plans and local land use plans.

Part VIII of the Act, on the other hand, makes provision for acquisitions of land and equitable compensation in respect of people that lose land to pave way for national development.

In line with these legal provisions and with ESS 5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement), the SVTP will in Phase II continue with the development of the Nsanje District Physical Development Plan, Urban Structural Development for both Chikwawa and Nsanje and formulation of local land use plans. The RAP for Phase II will address provisions of Part VIII of the act and ESS 5.

Cultural Heritage Regulations

Cultural resources are nowadays protected in almost every country by national legislations and international conventions. This also applies to Malawi, which has provisions for the protection of cultural resources in its National Cultural Policy and its Monuments and Relics Act. The Project is also committed to undertake its activities in compliance with the World Bank Group's safeguard policies on cultural resources.

The Malawi Department of Antiquities (MDoA) was founded in 1967 by an Act of Parliament with the mandate to study, preserve, conserve and protect the country's cultural and national heritage. Its offices are located in Lilongwe, which also houses other divisions of the Department of Culture. The two most important legal frameworks are the Monuments and Relics Act of 1990 and the Malawi Cultural Policy (2014). The latter, which has been approved by President Peter Mutharika in 2015, provides guidelines for proper implementation processes on issues such as heritage protection.

Section 5.7.8, Objective 8 of the Policy is that cultural factors need to be taken into account in development projects, policies and programmes for the nation. Its first strategy asserts that, "development projects include a cultural heritage impact assessment".

The need for cultural heritage impact assessments are not mentioned in the Monuments and Relics Act of 1990 but it provides statutory protection against the threat of development on declared monuments, historical buildings, archaeological, paleontological, geological, anthropological, ethnological, and other heritage sites to enable their preservation.

Section 29. (1) of the Monuments and Relics Act reads, "A person in charge of any survey, excavation, exploration, construction or new development shall, at the earliest stages of planning for such activities, give notice to the Minister to enable, where necessary, rescue archaeology to be carried out in accordance with subsection (2)". Section 29 (2) mentions that Rescue archaeology of a monument or relic under subsection (1) shall be carried out by the Chief Antiquities Officer or any qualified person with an excavation permit issued by the Minister, and the cost of such work shall, unless the Minister otherwise directs, be borne by the person in charge of any survey, excavation, exploration, construction or other development.

The Monuments and Relics Act provides clear definitions of cultural resources in its tangible forms, comprising both movable and immovable physical cultural heritage of the following types:

- Places, buildings and structures of cultural significance;
- Places and objects to which oral traditions are attached or which are associated with living heritage such as ethnographic art and objects;
- Historical settlements, townscapes and sites of significance relating to the history of slavery;
- Landscapes and natural features of cultural significance;
- Geological sites of scientific or cultural importance;
- Archaeological and paleontological sites and objects;
- Graves and burial grounds.

The protection of intangible expressions of cultural heritage in contrast does not appear in the Monuments and Relics Act. Hence, no provisions are made for its protection in the context of development projects.

Water Resources Act (2013)

The Act provides for the management, conservation, use and control of water resources; for the acquisition and regulation of rights to use water. It creates the National Water Resources Authority (NWRA) to replace the National Water Resources Board and also creates Catchment Committees for different river basins such as the Shire River basin where SVTP irrigation activities will be implemented. It also sets appropriate standards and techniques for the investigation, use, control, protection, management and administration of water resources and regulates public and private

activities which may influence quality, quantity, distribution, use or management of water resources. It also sets out the coordination, allocation and delegation of responsibilities. It enforces use of water resources for domestic uses, livestock watering, irrigation and agriculture, industrial, commercial and mining, recreation, hydro-electric power generation, and other uses, in ways that minimize harmful effects to the environment, control pollution, and promote the safe storage, treatment, discharge and disposal of waste and effluents.

One of the key provisions of the Act relevant to SVTP is that it prohibits persons from cultivating or carrying out activities within the bed and banks of water courses and lakes and the adjacent land strips except as determined by the Authority created by the Act. It also enforces water rights (permits), water abstraction, water pollution control and building of dams. For SVTP a water abstraction right will have to be acquired from NWRA for the intake at Kapichira Dam.

This is a very important Act and the ESIA and PMP provide measures to ensure proper quality (pollution), quantity, distribution, use or management of water resources within the project sites. The ESIA and PMP assignment recommend measures for controlling cultivating or carrying out of activities within the beds and banks of watercourses and lakes as provided by the Act.

Pesticides Act (2000)

This Act provides for the control and management of the import, export, manufacture, distribution, storage, disposal and use of pesticides. The Act also establishes the Pesticides Control Board that enforces the provisions of the Act relating to pesticides and other incidental matters. It therefore protects the importation and use of expired products that can be hazardous to the environment and human health. This is relevant to the proposed SVTP as in pursuit of increased production use will be made of production enhancing technologies including use of pesticides and herbicides which if not properly regulated can harm the environment and human health thereby contravening with World Bank and African Development Bank's operational policies on safeguards. The PMP will include measures for ensuring proper and safe use and storage of agrochemicals and safe disposal of empty containers to avoid contamination of water resources and poisoning. This may include training of farmers on handling and safe use of agrochemicals, use of protective clothing, disposal, dangers of using expired products and public health. This must also target agro-dealers emphasizing on the need for approval from the Pesticide Control Board for clearing, importation and certification of chemicals.

Forestry Act (2016)

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

The Act is very relevant to the SVTP as trees and forests are important for sustenance of ecological integrity of watersheds. This ESIA and PMP assignment therefore advocates integration of irrigation activities with natural resources management activities such as land restoration, tree planting and riverbank protection.

Irrigation Act, 2001

The Act is central to SVTP since it provides for the sustainable development and management of irrigation, protection of the environment from irrigation related degradation, establishment of the National Irrigation Board, the Irrigation Fund and other matters related to irrigation development in Malawi.

It even mandates farmers to maintain irrigation canals, drains and other associated infrastructure in their holdings and prohibits people from engaging in practices which are destructive or potentially destructive to the catchment area of a river that provides water for irrigation. It goes further and prohibits livestock grazing, setting or causing to set fire on irrigation schemes or farms. Recognizing the destructive effects of fires, puts the responsibility for averting, fighting or extinguishing fire on irrigation schemes or farms in the hands of everybody. Although the Act is silent on the maintenance of buffer zones along riverbanks, it prohibits any actions that are destructive to the catchment. Issues of livestock, fire management, and catchment protection are very pertinent to SVTP and therefore this Act is very relevant.

Various experts engaged by the SVTP have proposed measures to control livestock grazing and bush fires, enhance riverbank protection, stabilize water dams, and properly construct water delivery and storage systems. This includes the stabilization of embankments and protection of water intake points..

Occupational Safety, Health and Welfare Act (1997)

The Act makes provisions for the regulation of conditions of employment in workplaces with regard to safety, health and welfare of employees. It also provides for the inspection of certain plant and machinery, the prevention and regulation of accidents occurring to persons employed or authorised to go into the workplace, and for some related matters. The Act requires registration of workplaces and defines duties and responsibilities of employers and employees with regards to health, safety and welfare and the notification, and investigation of accidents, dangerous occurrences and industrial diseases. In relation to SVTP, the Act is relevant as the construction of canals, drains and ancillary facilities will require labor and use of motorized machinery. In addition, use and application of agrochemicals require safe handling and safe disposal of empty chemical containers. All these pose great environmental, health and safety hazards if not managed properly.

The ESIA and PMP assignment will propose mitigation measures to reduce accidents at work place especially during the construction phase and measures to reduce the occurrence of water borne diseases.

Environment Waste Management and Sanitation Regs 2008

The Environment Management (Waste Management and Sanitation) Regulations were promulgated by the Minister under section 56 of the act:

56.—(1) The Minister shall, on recommendation of the Authority, by regulations, make provision for the management, transportation, treatment and recycling, and reduction of waste, safe disposal of waste, and for prohibiting littering of public places

The act further, in section 56 (2) empowers the responsible minister in collaboration with relevant with lead agencies to:

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- a. formulate such measures as are necessary to regulate the collection, storage, transportation, reduction and safe disposal of waste;
 - b. promulgate such rules or formulate criteria and standards for the classification and analysis of waste and shall determine the method or methods for safe disposal of waste;
 - c. control the handling, storage, transportation, classification, importation, exportation and destruction of waste;
 - d. control the reduction of waste; and
 - e. monitor any waste disposal site and direct the control of any such site if its continued use as a waste disposal site

Sections 57 and 58 deal with powers of licencing for wastes and transportation and exportation of wastes.

Environmental (Management of Chemicals and toxic substances) Regulations, 2008

The Environmental (Management of Chemicals and toxic substances) Regulations, 2008 are promulgated under section 117 of the Environment Management Act of 2017. The regulations are aimed at regulating importation and exportation of wastes, management and disposal including labelling.

Section 45 of the regulations adopts offenses and penalties as established under in Part XV of the Environment Management Act of 2017.

Workers Compensation Act 2000

The Workers' Compensation Act provides for compensation for injuries suffered or diseases contracted by workers in the course of their employment or for death resulting from such injuries or diseases; it provides for the establishment and administration of a Workers' Compensation Fund; and it provides for matters connected therewith or incidental thereto, key of which are the following:

- Eligibility for Compensation in Case of Injury other than the Contraction of a Scheduled Disease;
- Compensation for Injury Caused otherwise than by the Contraction of a Scheduled Disease;
- Calculation and Distribution of Compensation;
- Medical Aid;
- Compensation for Injury due to the Contraction of a Scheduled Disease;
- Procedure for Obtaining Compensation; and
- Administration 8. Workers' Compensation Fund

The Employment Act, 2000

The Employment Act establishes, reinforces, and regulates minimum standards of employment with the purpose of ensuring equity necessary for enhancing industrial peace, accelerate economic growth and social Justice and for matters connected therewith and incidental thereto. The Act covers:

- Administration;
- Employment of Young People;
- Contracts;
- Hours of Work, Weekly Rest and Leave

- Wages; and
- (iii) Discipline and Dismissal

The Labour Relations Act, 1996

The Labour relations act promotes sound labour relations through the protection and promotion of freedom of association, the encouragement of effective collective bargaining and the promotion of orderly and expeditious dispute settlement, conducive to social justice and economic development. The act covers the following:

- Freedom of Association;
 - Trade Unions and Employers' Organizations;
 - Collective bargaining and Organizational Rights;
 - Dispute Settlement;
 - Tripartite Labour Advisory Council; and
- (iv) Establishment of Industrial Relations Court

Fisheries Conservation and Management Act (1997)

The Act makes provisions for the conservation and management of fish resources in Malawi. Changing water flow in the Shire due to reduced flows could negatively affect fish spawning in the Elephant Marsh and biodiversity of the Shire River. Increased application of agrochemicals in the fields could adversely affect fish resources in the Lower Shire. The ESIA and PMP assignment proposes mitigation measures to reduce adverse impacts that could be generated by project activities especially flows reduction into the Elephant Marsh.

Table 3-1: Policy and Legal Framework

OPEC Fund for International Development (OFID) Environmental and Social Safeguards

The project acknowledges the potential for financing or partnerships with the OPEC Fund for International Development (OFID). Consequently, this ESMP is designed to align with the OPEC Fund's Environmental and Social Policy and its mandatory Environmental and Social Safeguards. These safeguards are integral to the Fund's commitment to sustainable development and ensure that projects are environmentally and socially sound.

OPEC Fund Environmental and Social Policy

The overarching objective of the OPEC Fund's policy is to avoid, minimize, or mitigate adverse environmental and social impacts and risks associated with its financed projects. The policy mandates a comprehensive due diligence process proportionate to the project's risks and requires borrowers/clients to manage these risks throughout the project lifecycle. This ESMP serves as a key instrument to fulfill these requirements for the proposed emergency spillways and control structures.

3.2 Environmental and Social Framework (ESF) of the World Bank

Development partners' Safeguards Policy Frameworks

Environmental and Social Framework (ESF) of the World Bank

The following sections present the World Bank Environmental and Social Framework (ESF) and the relevant Environmental and Social Standards (ESS) that are applicable to the project, to support the financing for Phase 2.

3.2.1 ESS1: Assessment and Management of Environmental and Social Risks and Impacts

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

Informed by ESS1 and relevant to this project is the inclusion of Environmental and Social Assessment (Annex 1), Environmental and Social Commitment Plan (Annex 2); and Management of Contractors (Annex 3).

3.2.1.2 ESS2: Labor and Working Conditions

ESS 2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions.

The standard deals with labour conditions and management of working relationships, protection of workforce including limitations on child labour, grievance redress between employers and workforce, occupational health and safety, OHS matters relating to contract and community workers, and primary supply workers.

5.4.2.3 ESS3: Resource Efficiency and Pollution Prevention and Management

ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life-cycle.

Of relevance to the project, the standard has exacting requirements that SVTP should address, namely, pollution prevention and management, resource efficiency, water management, hazardous waste management, management of air pollution, and management of pesticides.

5.4.2.4 ESS4: Community Health and Safety

The standard addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable.

This standard provides guidance to SVTP in the management of traffic and road safety, community exposure to health hazards, ecosystem services, management of hazardous materials, and emergency preparedness and response measures, among others.

Of particular importance to the project, the standard through Annex 1 (Safety of Dams) part B (Existing Dams and Dams Under Construction (DUC)), the following requirement are demanded of SVTP:

- i. The dam is designed and its construction is supervised by competent professionals;

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- ii. The reports and plans related to dam safety are prepared and implemented. These reports are:
- Plan for construction supervision and quality assurance;
 - Instrumentation plan;
 - Operation and maintenance (O&M) plan; and
 - Emergency preparedness and response plan.

3.2.1.5 ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

The standard advances avoidance of involuntary resettlement where possible. Where involuntary resettlement is unavoidable, it will be minimized and appropriate measures to mitigate adverse impacts on displaced persons (and on host communities receiving displaced persons) will be carefully planned and implemented.

Annex 1 to the standard (Involuntary Resettlement) provides guidelines for activities that involve land acquisition. SVTP has applied provisions of the annex with regard to preparation of Resettlement Framework (RF) and Process Framework (PF).

Part A of the standard will guide SVTP II in the preparation of Resettlement Action Plan (RAP), compensation and benefits for project affected persons, community engagement as guided by ESS 10, grievance mechanism, and displacement.

3.2.1.6 ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development and it recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. ESS6 also addresses sustainable management of primary production and harvesting of living natural resources, and recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples, whose access to, or use of, biodiversity or living natural resources may be affected by a project.

The standard affects SVTP owing to the proposed canal alignment in Lengwe National Park. Paragraphs 23, 24 and 25 that deal with activities in critical habitats have been fully applied.

3.2.1.7 ESS8: Cultural Heritage

This standard recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. ESS8 sets out measures designed to protect cultural heritage throughout the project.

The standard will largely deal with tangible heritage along the construction canal although an intangible heritage in form of Khulubvi Shrine is also covered under Component 4. In line with the standard, SVTP will continue to engage with community leaders and the Department of Antiquities to identify key resources and to ensure the preservation of cultural heritage.

In ensuring compliance to this standard, SVTP will apply the Guidance Note¹ for ESS8

3.2.1.8 ESS10: Stakeholder Engagement and Information Disclosure

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

¹ Source: World Bank (2018), Guidance Note for Borrowers, Environmental & Social Framework for IPF Operations, ESS8: Cultural Heritage

Owing to the areas where the safety regulatory structures will be sited, SVTP will carry out consultations with African Parks, EGENCO, Chikwawa District Council, National Water Resources Authority (NWRA), MEPA, SOCFEs, and traditional authorities.

3.2.2 AFDB Integrated Safeguards System (ISS)

The AFDB revised the safeguards policy resulting in the Updated Integrated safeguards System that is currently being applied. Applicable operational safeguards (OS) to this action are stipulated below:

3.2.2.1 OS1: Environmental and Social Assessment

Like ESS1 of the World Bank captioned above, the AFDB has developed Operational Safeguard 1 (OS1) that sets out the Bank's overarching requirements for borrowers or clients to identify, assess, and manage the potential environmental and social risks and impacts of a project, including climate change issues.

OS1 further captures need to assess issues of gender, vulnerability and disability by demanding the following:

- In assessing the potential impacts of Bank operations on affected communities, the borrower or client shall make use of adequate and qualified expertise to identify people and groups that may be directly, indirectly and/or disproportionately affected or marginalized by the project because of their recognized vulnerable status.
- Where groups are identified as vulnerable, the borrower or client shall implement appropriate differentiated measures so that unavoidable adverse impacts do not fall disproportionately on these vulnerable groups, and so that they are not disadvantaged in sharing development benefits and opportunities (such as roads, schools, healthcare facilities etc.).
- Emphasising the need to assess gender issues in the context of vulnerability. A gender assessment shall be made for every project and shall form the basis for project design and compensation plans that lead to enhanced gender balance.
- Finally, OS 1 states that groups that may be considered vulnerable may include social or cultural groups recognised as Indigenous Peoples. The Bank seeks to promote the safeguarding of Indigenous Peoples' lands, natural assets and other cultural heritage by its member countries and to provide special protection for projects that may involve their resettlement

OS1, further, states that the borrower or client shall be responsible for ensuring that the siting, design, construction and operation of projects should avoid significant damage to cultural heritage (both physical and intangible). Cultural heritage likely to be affected by the project shall be identified and qualified, and experienced experts shall assess the project's potential impacts on this cultural heritage. Regarding cultural heritage, OS1 stipulates that the project shall not remove any physical cultural heritage unless the following conditions are met:

- No technically or financially feasible alternatives to removal are available;
- The overall benefits of the project substantially outweigh the anticipated cultural heritage loss from removal;
- Any removal is conducted in accordance with relevant provisions of national and/or local laws, regulations, protected area management plans and national obligations under international laws;
- Any disturbance or removal is not done until appropriate consultation with local communities has been carried out, taking full account of traditions, beliefs and cultural norms;
- Any removal employs internationally accepted best available techniques.

5.4.3.25.4.1.2 OS2: Involuntary Resettlement: Land acquisition, Population Displacement and Compensation

This OS relates to Bank-financed projects that cause the involuntary resettlement of people by way of land acquisition, population displacement and compensation. It seeks to ensure that when people must be displaced they are treated fairly, equitably, and in a socially and culturally sensitive manner; that they receive compensation and resettlement assistance so that their standards of living, income-earning capacity, production levels and overall means of livelihood are improved; and that they share in the benefits of the project that involves their resettlement.

In line with the framework in the involuntary resettlement policy, this OS covers economic, social and cultural impacts associated with Bank-financed projects involving involuntary loss of land, involuntary loss of other assets, or restrictions on land use and on access to local natural resources that result in:

- Relocation or loss of shelter by the people residing in the project area of influence;
- Loss of assets (including loss of structures and assets of cultural, spiritual, and other social importance) or restriction of access to assets, including national parks and protected areas or natural resources; or
- Loss of income sources or means of livelihood as a result of the project, whether or not the people affected are required to move.

3.2.2.3 OS3: Biodiversity, Renewable Resources and Ecosystem Services.

OS 3 requires borrowers or clients to identify and implement measures to conserve and sustainably use natural habitats and their biodiversity, and observe, implement, and respond to requirements for the conservation and sustainable management of priority ecosystem services. Ecosystem services are treated under a separate heading (see “Ecosystem Services Assessment” below) in recognition of the fact that they are defined as the benefits that people, including businesses and development activities more generally, derive from ecosystems. Ecosystem services assessment uses a similar but distinct series of assessment steps that draw extensively on data gathering and consultation amongst potentially affected communities

The construction of the safety structure at siphon 3 in Majete Wildlife Reserve based on the recommendations of the Mid Term Review (MTR) and preliminary designs has potential to increase SVTP footprint in the park. As such, the action triggers OS3 of the Integrated Safeguard Systems of the African Development Bank in addition to Environmental and Social Standards 6 (ESS6) of the Environmental and Social Framework (ESF) of the World Bank.

SVTP will, in pursuit of the ISS and ESF, examine and adopt alignment options that at best avoid increase in project foot print in the park or minimise such impacts.

3.2.2.4 OS4: Pollution Prevention and Control, Greenhouse Gas Monitoring and Reporting, and Resource Efficiency

This operational safeguard sets out the main requirements for pollution prevention and control and resource efficiency and will be applied to onsite waste management, management and maintenance of greenhouse gas sinks.

3.2.2.5 OS5: International Labor Standards

OS 5 refers to a body of international labor standards derived principally from a set of International Labor Organisation (ILO) and UN Conventions. The OS focuses on requirements stemming from these international standards relating to human resource policies and procedures; working conditions and terms of employment; worker's organisations; non-discrimination and equal opportunity; retrenchment; grievance and redress mechanisms; child labor; forced labor; third party workers; and supply chain workers

Lessons from Phase 1 of SVTP regarding adherence to OHS standards have necessitated the hiring of more safeguards personnel in SVTP 2 including Health and Safety Specialists in line with OS5.

3.2.3 Opec Fund for International Development (OFID) Environmental, Social and Governance Policy

OFID developed and adopted an Environmental, Social and Governance Policy in August 2022 to guide OFID funded project implementation. Of relevance to SVTP, the Fund recognises and applies the World Bank Environmental and Social Framework (ESF), International Financial Corporation (IFC) Performance Standards and Environmental, Health and Safety Guidelines (ESHG), among others,

3.2.3.1 Safeguard 1: Environmental and Social Risks and Impacts.

This requires an assessment to identify risks and impacts that may emanate from the project actions. The development of this ESIA, based on site visits, stakeholder consultations, and a review of existing ESIAs, fulfill this requirement given SVTP is Category 1 project. The ESIA provides the framework for managing the identified risks during construction and operation of the safety and regulatory structures. Key tools employed in the delivery of this standard and applicable to SVTP, include:

a) Environmental and Social Impact Assessment (ESIA) Report

This is constituted in this report and gives an outline of policy guidance, risks and impacts associated with the action, option analysis, mitigation measures and risk management, environmental and social management plan (ESMP), environmental and social monitoring plan, institutional arrangements for the implementation of the and costs associated with the plan implementation.

Information deriving from this ESIA report will be used in updating the SVTP ESIA as agreed between the Government of Malawi, on one hand, and AFDB, World Bank and OFID, on the other

b) Resettlement Planning Framework (RPF) and Land Acquisition Resttlement Plan

SVTP has a Resettlement Policy Framework (RPF) and a Resettlement Action Plan (RAP) developed and being implemented in Phase 1 area. These documents will be updated to include risks and impacts associated with the construction of spillways. Regulatory structures will ne installed in the main canals and will not trigger any resettlement.

c) Biodiversity Action Plan (BAP)

Biodiversity conservation ensures sustaining life, supplying critical ecosystem services, and that impacts on natural resources and biodiversity are reviewed and necessary mitigation actions are applied.

A Biodiversity Action Plan exists for Majete Wildlife Reserve and its recommendations will be advanced during and after the construction of spillway 1 that will be within the confines of majete at siphon 3

d) Stakeholder Engagement Plan

The Fund's policy makes it mandatory to stakeholder engagement and community consultation carried out as part of the environmental and social assessment.

In respect of delivery of this requirement, SVTP undertakes to sue the existing Stakeholder Engagement Plan (SEP) and update it accordingly. Furthwer commitment is made to the inclusion of the stakeholder engagement and development of Operation and Maintenance (O&M) manual including Emergency Preparedness and Response Plan in the Environmental and Social Commitment Plan (ESCP).

e) Grievance Redress Mechanism

Implementation of a large project of SVTP's maginitude often triggers grievances from some quarters within the communities. SVTP will build on the existing GRM to attend to issues that may arise including workers' committees and customary land committees.

f) Chance Find Procedures for Protection of Cultural Heritage

In line OS1 of the African Development Bank², *a chance find procedure is a project-specific procedure that outlines what will happen if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation.*

This guides management and protection of cultural heritage and ensures that impacts on cultural heritage are avoided or mitigated against in the course of project implementation. In fulfillment of the requirement of the standard, the Chance Find Procedure that SVTP developed for Phase 1 (Annex 1) will be applied.

3.2.3.2 Safeguard 2: Fair Treatment to Labor

This safeguard promotes decent, safe and healthy working environments through free from any form of discrimination ensuring fair treatment and protecting vulnerable workers, women, people with disabilities, and occupational health and safety (OHS). The standard safeguards against forced and child labor

3.2.3.3 Safeguard 3: Pollution Prevention and Resource Efficiency

This requires measures to control pollution and manage resources efficiently. The ESMP's requirements for a Waste Management Plan, dust suppression, prohibition of untreated concrete washout, and proper maintenance of machinery to prevent oil leaks are direct responses to this safeguard.

² AFDB (2015), Integrated safeguard Systems Guidance Materials, Volume 2

3.2.4 National Planning Instruments

The Shire Valley Transformation Programme (SVTP), including the construction of these emergency spillways and control structures, is fundamentally aligned with Malawi's highest-level national development strategies. This ESMP serves as a tool to operationalize the environmental and social principles embedded in these key planning instruments.

3.2.4.1 Malawi 2063 (MW2063)

Malawi 2063 is the country's long-term development vision, succeeding the Malawi Growth and Development Strategy (MGDS). It aims to transform Malawi into a wealthy, self-reliant, industrialized upper-middle-income country by 2063. The vision is built on three key pillars: Agricultural Productivity and Commercialization, Industrialization, and Urbanization.

Relevance and Compliance: The SVTP is a flagship program directly contributing to the Agricultural Productivity and Commercialization pillar. By constructing safety and water regulation structures, the project ensures the long-term resilience and operational integrity of the irrigation scheme. This directly supports the vision's goal of moving from rain-fed subsistence farming to commercially viable, climate-resilient agriculture. Furthermore, by enhancing food security and creating employment (as noted in the ESMP's positive impacts), the project contributes to the foundational enablers of Sustainable Economic Development and Human Capital Development. The ESMP ensures that this development is achieved sustainably, protecting the natural resources (land, water, biodiversity) upon which this long-term vision depends.

3.2.4.2 National Adaptation Programme of Action (NAPA)

Malawi's NAPA, developed under the UNFCCC, identifies the country's most urgent and immediate adaptation needs to climate change. Key priority areas include improving agricultural resilience, enhancing water resource management, and strengthening disaster preparedness, particularly in flood-prone areas like the Lower Shire Valley.

Relevance and Compliance: The primary purpose of the emergency spillways is to manage increased and extreme water flows resulting from climate change-induced heavy rainfall events. This directly addresses the NAPA priority of improving resilience to climate-related disasters (floods). By preventing canal failure and safely conveying excess water, the project protects downstream communities and infrastructure, aligning with NAPA's goals for community safety and disaster risk reduction. The ESMP's operational-phase measures, such as community sensitization on flood risks and early warning systems, further reinforce compliance with NAPA's call for proactive adaptation strategies.

3.2.4.3 National Biodiversity Strategy and Action Plan (NBSAP)

The NBSAP is Malawi's primary framework for implementing the Convention on Biological Diversity (CBD). It outlines strategies for conserving biodiversity, sustainably using its components, and ensuring the fair and equitable sharing of benefits arising from genetic resources. The NBSAP identifies key threats to biodiversity, including habitat loss, pollution, and the spread of invasive species.

Relevance and Compliance: The project's location near Majete Wildlife Reserve and its interaction with riverine ecosystems engage the objectives of the NBSAP. The ESMP integrates specific measures to align with the NBSAP, including:

- a) Minimizing vegetation clearance, conducting pre-construction fauna surveys, and implementing animal rescue protocols to protect wildlife, directly addressing the goal of reducing habitat loss.
- b) Monitoring water quality in receiving rivers (Mwembezi, Masakala, Mwanza) to prevent pollution from construction and operation, safeguarding aquatic biodiversity as called for in the NBSAP.
- c) Implementing measures to prevent the spread of invasive species like *Prosopis juliflora* on disturbed soils, a key action point within the NBSAP.
- d) By stabilizing the irrigation system, the project supports sustainable agricultural intensification, reducing pressure on natural habitats from agricultural expansion.

International E&S Obligations as agreed between Malawi and International Organisations through treaties and conventions

The Republic of Malawi is a signatory to numerous international environmental and social conventions, treaties, and protocols. By ratifying these instruments, the Government of Malawi has committed to upholding specific principles and standards, which are subsequently domesticated through national legislation and policies. For the Shire Valley Transformation Programme (SVTP), these international obligations establish a framework of best practice that underpins and, in many cases, exceeds the requirements of national law. The following tables outline the key international and regional regulatory frameworks relevant to the project.

International Environmental and Social Regulatory Frameworks

No.	Convention, Protocol, Charter and Policy	Objective of the Global Regulatory Framework	Compliance for the SVTP
1	UN Framework Convention on Climate Change (UNFCCC) (1992)	The Convention aims to stabilize greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic interference with the climate system.	The project should integrate climate adaptation and mitigation measures. This includes enhancing natural regeneration of vegetation, applying sustainable construction principles to ensure infrastructure resilience, and controlling emissions from construction machinery and vehicles, aligning with the National Climate Change Policy.
2	Convention on Biological Diversity (CBD) (1993)	The Convention has three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits	The ESMP must ensure that project activities, particularly near Majete Wildlife Reserve and the Shire River, avoid the loss of natural habitats. Mitigation measures include pre-clearance fauna surveys, animal rescue protocols, restricting

		arising from genetic resources.	vegetation clearance, and implementing a Biodiversity Management Plan with buffer zones and revegetation using native species.
3	Convention on Wetlands of International Importance (RAMSAR) (1975)	The Convention aims to ensure the conservation and wise use of all wetlands through local and national actions and international cooperation, recognizing the fundamental ecological functions of wetlands.	While the project area may not be a designated RAMSAR site, its proximity to riverine and wetland ecosystems requires adherence to the "wise use" principle. The ESMP must include measures to protect water quality, maintain hydrological regimes, and prevent degradation of the Mwembezi, Masakala, and Mwanza rivers, which serve as vital wetland habitats.
4	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)	The overarching objective is to protect human health and the environment against the adverse effects of hazardous wastes by minimizing their generation and promoting environmentally sound management.	The project (Contractor) must develop a comprehensive Waste Management Plan that ensures all hazardous waste (e.g., oils, lubricants, contaminated materials) is stored, handled, and disposed of by licensed contractors, preventing soil and water contamination. This aligns with the Environment Management (Waste Management and Sanitation) Regulations.
5	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1973)	The Convention aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival.	Project activities must not harm or facilitate the trade of any listed species. The ESMP's pre-clearance surveys and animal rescue protocols must specifically address the protection of species like crocodiles, fish eagles, and monitor lizards, ensuring they are not harmed during construction and are relocated safely if necessary.
6	UN Declaration of Commitment on HIV/AIDS (2001)	The Declaration aims to secure a global commitment to enhancing coordination and intensification of national, regional, and international efforts to combat HIV/AIDS in a comprehensive manner.	The project, with its significant workforce, must implement a robust HIV/AIDS awareness and prevention program for workers and the surrounding community. This includes condom distribution, voluntary counseling and testing referrals, and a workplace policy that prohibits discrimination based on HIV status, in line with the HIV

			and AIDS (Prevention and Management) Act.
7	ILO Convention 182 on the Worst Forms of Child Labour (1999)	The convention calls for immediate action to prohibit and eliminate the worst forms of child labour, including slavery, trafficking, forced labour, and work that is likely to harm the health, safety, or morals of children.	The project must strictly prohibit the employment of any person under the age of 18. The Contractor must implement robust age-verification mechanisms during recruitment and conduct awareness sessions to prevent child labour, aligning with the Employment Act and the National Children's Policy.
8	ILO Convention 100 on Equal Remuneration (1951) & ILO Convention 111 on Discrimination (1958)	These conventions aim to ensure equal remuneration for men and women for work of equal value, and to promote equality of opportunity and treatment in respect of employment and occupation.	The project must ensure non-discrimination in hiring, pay, and working conditions. Recruitment strategies must actively promote equal opportunities for women, persons with disabilities, and other vulnerable groups, aligning with the Gender Equality Act and the Disability Act.
9	Convention on the Elimination of all forms of Discrimination against Women (CEDAW) (1979)	CEDAW places explicit obligations on states to protect women and girls from discrimination, sexual exploitation, and abuse.	The project's Code of Conduct must explicitly prohibit Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA). Confidential grievance mechanisms with clear referral pathways to support services must be established to protect women and girls in project-affected communities.
10	Convention on the Rights of the Child (UNCRC) (1989)	The Convention acknowledges children as individuals with rights, including non-discrimination, the best interest of the child, the right to life, survival, development, and participation.	The project must consider the specific needs of children in all its phases. This includes protecting them from physical dangers at construction sites, ensuring community engagement processes are child-sensitive, and mitigating project impacts that could negatively affect their health or well-being.
11	United Nations Global Compact	To encourage businesses worldwide to adopt sustainable and socially responsible policies in the areas of human rights, labour, environment, and anti-	The project's commitment to the ESMP, its focus on stakeholder engagement, its labour management procedures, and its environmental mitigation measures collectively demonstrate an alignment with the

		corruption, and to report on their implementation.	ten principles of the UN Global Compact.
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African Union (AU) Regulatory Frameworks

No.	Convention, Protocol, Charter and Policy	Objective of the Regional Regulatory Framework	Compliance for the SVTP
1	African Convention on the Conservation of Nature and Natural Resources (Revised, 2003)	The Convention requires states to adopt measures necessary to ensure conservation, utilization, and development of soil, water, flora, and faunal resources in accordance with scientific principles and with due regard to the best interests of the people.	The ESMP's integrated approach to managing soil erosion, protecting water resources in the Shire River, conserving biodiversity, and implementing catchment management enhancements directly responds to the Convention's call for holistic and sustainable natural resource management.
2	African Charter on Human and Peoples' Rights (1986)	The Charter recognizes the rights of peoples, including the right to a general satisfactory environment favourable to their development (Article 24).	The project's commitment to mitigating environmental and social impacts, ensuring community health and safety, and providing a grievance mechanism for affected people upholds the spirit of this Charter, ensuring that development does not come at the cost of the community's right to a healthy environment.
3	Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol) (2003)	The Protocol guarantees comprehensive rights to women, including the right to participate in political processes, social and political equality with men, and control of their reproductive health, and prohibits all forms of discrimination and harmful practices.	The project must ensure meaningful participation of women in stakeholder consultations, equitable access to project employment (targeting 30% for women), and a working environment free from sexual harassment, aligning with the Gender Equality Act and the broader objectives of the Maputo Protocol.
4	Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary	The Convention aims to prohibit the import of hazardous wastes into Africa and to manage wastes generated within Africa in an	The project's Waste Management Plan must ensure that all hazardous waste generated on-site is managed within Malawi by licensed

	Movement and Management of Hazardous Wastes within Africa (1991)	environmentally sound manner to protect human health and the environment.	contractors, preventing any illegal transboundary movement or improper disposal that could threaten the environment or human health.
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Southern African Development Community (SADC) Regulatory Frameworks

No.	Convention, Protocol, Charter and Policy	Objective of the Regional Regulatory Framework	Compliance for the SVTP
1	SADC Protocol on Forestry (2002)	The Protocol aims to promote the development, conservation, sustainable management, and utilization of all types of forest and trees, and to safeguard the interests of both present and future generations.	The ESMP's mandate to restrict vegetation clearance to demarcated areas, its commitment to enhancing natural regeneration, and its measures to prevent bush fires directly support the objectives of this Protocol by ensuring the sustainable management of trees and vegetation within the project area.
2	SADC Protocol on Fisheries (2001)	The Protocol aims to promote the sustainable use and protection of living aquatic resources and the aquatic environment, recognizing the role of fisheries in food security and poverty alleviation.	The project's design and execution must ensure it does not hamper fish production in the Shire River. The mandatory consultation with fisheries authorities, the requirement for periodic water quality monitoring, and measures to prevent water pollution are all critical for protecting aquatic life and complying with this Protocol and the national Fisheries Act.

International Standards (AfDB & World Bank)

Superimposed upon this national framework are the non-negotiable safeguard instruments of the World Bank and the African Development Bank (AfDB), which act as both a complement and a reinforcing mechanism. The World Bank's Environmental and Social Framework (ESF), with its ten Environmental and Social Standards (ESS), provides the overarching risk management structure. Critically, ESS6 (Biodiversity) mandates rigorous protections for ecosystems near sensitive areas like the Majete Game Reserve, requiring pre-construction fauna surveys and buffer zones, while ESS10 (Stakeholder Engagement) institutionalizes inclusive consultation and a functional Grievance Redress Mechanism (GRM). The African Development Bank's Integrated Safeguards System (ISS) operates in parallel, with its Operational Safeguards ensuring the ESMP addresses biodiversity, pollution (OS4), and labour conditions (OS5).

The World Bank and African Development Bank standards were also reviewed in relation to the requirements of this ESMP. The project shall comply with these standards starting from design, construction and operation phases as stipulated in table 3-2.

African Development Bank Safeguards Standards

Operational Safeguard 1: Environmental and Social Assessment

The ESMP report explicitly acknowledges the AfDB's financing role and the applicability of its safeguard standards. The project has been classified as requiring comprehensive environmental and social assessment, consistent with OS1 requirements. The methodology outlined in Section 1.4 of the ESMP—encompassing desktop review, field surveys, stakeholder consultations, and impact identification—directly responds to OS1's mandate for systematic risk identification and management throughout the project cycle.

The ESMP's detailed analysis of design, construction, and operational phase impacts at Siphons 3, 5, and 6 demonstrates site-specific assessment rigor. The institutional arrangements outlined in Section 8, assigning clear responsibilities to the Ministry of Agriculture, Supervising Engineer, Contractor, and Chikwawa District Council, establish the management framework OS1 requires for effective safeguard implementation.

Operational Safeguard 2: Involuntary Resettlement, Land Acquisition, Population Displacement and Compensation

Section 5.2.2 of the ESMP identifies "Loss of land" as a potential negative impact during construction, while Section 5.2.3 recognizes operation-phase risks of "loss of life, land and crops due to increased river flow rate." These impacts engage OS2 requirements, which mandate that involuntary resettlement and land acquisition be avoided or minimized, and where unavoidable, affected persons be meaningfully consulted and provided with compensation and rehabilitation assistance.

The ESMP commits to following land acquisition procedures and developing a Grievance Redress Mechanism (GRM) for handling complaints related to crop or land loss. The project benefits from the existing SVTP GRM framework, facilitated by CCJP, which provides an established channel for affected persons to lodge grievances. Notably, the project's physical footprint is limited to localized excavations within already disturbed canal corridors and previously acquired rights-of-way, minimizing new land take. For operational-phase flood risks, the ESMP proposes community awareness programs and catchment management enhancements—measures consistent with OS2's emphasis on mitigation where residual risks cannot be entirely eliminated.

Operational Safeguard 3: Biodiversity and Ecosystem Services

The project's proximity to Majete Wildlife Reserve—explicitly noted in the spillway option evaluation for Siphon 3 (Table 2-1)—engages OS3's stringent requirements for biodiversity conservation. The ESMP's biological baseline (Section 4.2) documents the presence of diverse fauna including crocodiles, monitor lizards, African fish eagles, and other species dependent on riverine and wetland habitats that may be affected by construction and operational discharges.

The selection of Alignment Option 3 for Siphon 3, specifically rejecting options that would encroach upon Majete Game Reserve, demonstrates avoidance—the highest-order mitigation measure prioritized by OS3. The ESMP further mandates pre-clearance fauna surveys, animal rescue protocols in collaboration with relevant authorities, and restrictions on vegetation clearance to demarcated areas only. The Biodiversity Management Plan referenced in Section 5.5.2.2 commits to buffer zones and

revegetation with native species. For aquatic ecosystems, the ESMP requires periodic water quality monitoring of receiving rivers (Mwembezi, Masakala, and Mwanza) to detect and address changes in pH, turbidity, dissolved oxygen, and temperature that could disrupt aquatic habitats—directly responsive to OS3's requirement to maintain ecosystem services.

Operational Safeguard 4: Pollution Prevention and Control, Hazardous Materials and Resource Efficiency

Construction activities will generate multiple pollution streams: liquid waste (hydrocarbons, concrete washout, sewage), solid waste (rubble, packaging, scrap), and air emissions (dust, vehicle exhaust). The ESMP identifies these as significant negative impacts requiring stringent management. OS4 requires adoption of pollution prevention and control measures consistent with international good practice.

The ESMP mandates development of a comprehensive Waste Management Plan with specific provisions for hazardous waste disposal via licensed contractors, prohibition of untreated concrete washwater discharge, and regular servicing of machinery to prevent oil leakages. Dust suppression through water spraying and minimization of exposed soil periods addresses air quality concerns. The design incorporates energy dissipation structures (Type III stilling basins) to control flow velocities and prevent downstream erosion—a structural pollution prevention measure. Section 5.5.2.2 requires spill kits and turbidity curtains for in-water works. These measures collectively satisfy OS4's requirements for systematic pollution prevention throughout the construction phase.

Operational Safeguard 5: Labour Conditions, Health and Safety

With a projected workforce of up to 70 percent local employment and specific targets for women's participation (30 percent), the project engages OS5's requirements for fair labour practices, non-discrimination, and worker protection. The ESMP identifies occupational health and safety hazards, confined space risks, and community safety concerns as priority management issues.

The ESMP requires contractors to develop and implement Occupational Health and Safety (OHS) Plans, conduct daily toolbox talks, undertake risk and hazard assessments, provide adequate Personal Protective Equipment (PPE), and maintain first aid facilities—all core OS5 requirements. The explicit prohibition of child labour, requirement for written employment contracts, and commitment to equal wages for equal work demonstrate alignment with OS5's labour protection standards.

Critically, the ESMP addresses OS5's expanded focus on Sexual Exploitation, Abuse and Harassment (SEA/SH). Section 5.5.2.2 mandates a Project Code of Conduct prohibiting GBV/SEA, regular awareness sessions, confidential reporting mechanisms, referral pathway mapping, and partnership with local NGOs for survivor support. These measures exceed minimum compliance and reflect the integrated approach OS5 demands for managing social risks associated with labour influx.

The Significance of the Policy and Legal Framework

1. The Constitution of Malawi (1995): The Constitution establishes the overarching principle that every project activity—from excavation to operation—must be evaluated for its potential to degrade the environment, harm biodiversity, or compromise the rights of future generations. For the ESMP, this means that all environmental and social measures must be designed to actively uphold this constitutional duty of care.
2. Environment Management Act (EMA), 2017 & Associated Regulations: The EMA legitimizes the ESMP, transforming it from a static document into a legally enforceable commitment to identify, assess, and mitigate impacts. Specifically, the Environment Management (Waste Management and Sanitation) Regulations (2008) dictate rigorous construction-phase protocols. For the ESMP, this requires a certified waste management system that ensures all waste—from rubble to concrete wash-water—is separated, handled, and disposed of by licensed contractors to prevent soil and water pollution.
3. Water Resources Act (2013): Given the project's direct interaction with river flows, this Act mandates the protection of the Mwembezi, Masakala, and Mwanza rivers. For the ESMP, this justifies and requires a robust, periodic water quality-monitoring program to safeguard downstream communities and aquatic life.
4. Forestry Act (1997) & National Climate Change Policy (2012): These frameworks intersect to demand ecological stewardship. For the ESMP, this translates into a positive duty to protect indigenous vegetation, enhance natural regeneration, and implement sustainable site management practices that bolster resilience to climate change.
5. Public Health Act (1948) & Occupational Safety, Health and Welfare Act (1997): These Acts mandate a safe and hygienic environment for workers and the community. For the ESMP, this means the implementation of site-specific safety measures, including barricades, separate sanitary facilities, a comprehensive Occupational Health and Safety (OHS) plan, and the mandatory provision of Personal Protective Equipment (PPE).
6. Employment Act (2000): This Act guarantees fair labor practices. For the ESMP, this compels the project to act as a model employer by prohibiting child labor, ensuring formal contracts, and providing fair wages and safe conditions for all workers.
7. Gender Equality Act (2013) & Disability Act (2012): These acts require non-discriminatory and inclusive employment. For the ESMP, this requires proactive outreach to recruit women and capable persons with disabilities, fostering a work environment of dignity and respect.
8. HIV and AIDS (Prevention and Management) Act (2012) & National Children's Policy: In a context of labor influx, these frameworks demand social safeguards. For the ESMP, this means implementing targeted HIV/AIDS awareness campaigns and establishing stringent measures to prevent child labor and protect children from site hazards.
9. Decentralization Policy (1998): This policy mandates local participation. For the ESMP, this requires continuous and meaningful consultation with the Chikwawa District Council and Village Development Committees (VDCs) to ensure local ownership.
10. Irrigation Act (2001): This Act is the cornerstone legislation for the SVTP, mandating the sustainable development and protection of irrigation schemes. For the ESMP, this translates into a binding duty to implement proposed expert measures, such as stabilizing water dams, controlling livestock grazing, preventing bush fires, and protecting river catchment areas. It

compels the project to adhere to provisions that prevent the failure of irrigation farming and requires active management of scheme infrastructure by farmers, directly linking project sustainability with environmental stewardship.

11. National Irrigation Development Policy and Strategy (2011): As the primary guiding policy for the sector, this framework integrates environmental compliance into the core of irrigation development. For the PMP, its provisions are not merely advisory but are operational requirements. This means all irrigation designs must comply with the EIA Guidelines for Irrigation and Drainage Projects (2002), and the project must actively monitor and mitigate against site-specific impacts like salinity, soil erosion, and human health risks. The policy demands the integration of irrigation activities with natural resource management, a principle that the ESMP must embed into its day-to-day operations.
12. Fisheries Conservation and Management Act (1998): This Act safeguards Malawi's aquatic resources and establishes controls over activities that could impact them. For the SVTP, which interacts directly with the Shire River, this Act requires mandatory consultation with fisheries authorities. For the ESMP, this means that all civil works—particularly the stabilization of embankments and construction of water intake points—must be designed and executed in a way that does not hamper fish production or degrade aquatic habitats, ensuring the project's infrastructure is compatible with riverine ecosystem health.

4. Discription of the Project Environment

4.1 Physical environment

4.1.1 Location

The proposed Phase I project area is situated within the Maganga locality in Chikwawa District, Southern Malawi, specifically in the vicinity of the Zua Safari Lodge. Geographically, the core project area is centered around coordinates 15.92393° South and 34.75833° East, positioning it within the Lower Shire Valley. Relative to the broader district, the site is located in the western-central part of Chikwawa, lying just south of the Majete Wildlife Reserve boundary.

The terrain within the project perimeter is characterized by flat to gently undulating topography, consistent with the district's low-lying elevation of 50–100 metres above sea level. The site lies within the extensive floodplains associated with the Shire River system, which is the dominant hydrological feature of the region and dictates the flood-prone nature of the area. Significant topographical features within proximity include the Kapachira Falls, located approximately 3 kilometres north of the Zua Safari Lodge, which mark a notable change in the Shire River's gradient. The Kapichira Hydroelectric Power Station is situated approximately 2.5 kilometres north of the lodge, representing a major man-made feature on the landscape that utilises the falls for power generation. The immediate vicinity also includes tourism-related infrastructure such as the Ng'ona Lodge, located approximately 1.25 kilometres north, and the Zua Safari Lodge campsite, indicating the area's established use for wildlife-based tourism.

The project involves the construction of emergency spillways at Siphons 3, 5, and 6.

- **Siphons 3 and 5** are located within the area of Traditional Authority (T/A) Kasisi.
- **Siphon 6** is located within the area of Traditional Authority (T/A) Katunga.

All sites are situated on the west (right) bank of the Shire River within the Lower Shire Valley. The spillways are designed to discharge excess water from the main canal into the Mwembezi River (Siphon 3), Mwanza River (Siphon 5), and Masakala River (Siphon 6). The location of these works is within an area already disturbed by the construction of the main canal, but the specific sites have their own localized characteristics. For example, Siphon 3 is in proximity to the Majete Wildlife Reserve, a factor that critically influenced the design option selection to avoid park encroachment. The location of Siphon 6, discharging directly into the Mwanza River, will affect the river's hydrology and ecology at that specific point.

Topography

The project sites are situated within the Lower Shire Valley, a broad, low-altitude floodplain. The local topography at the spillway locations is characterized by flat to gently undulating terrain, consistent with the alluvial plain. However, the broader context is important:

- The Shire River flows through the center of this valley. From Kapichira to Chikwawa, it is incised in a gorge, but south of Chikwawa, it meanders through a very flat plain with gentle slopes.

- This flat topography means the project area is highly prone to seasonal flooding and waterlogging, a critical consideration for the design and operation of the spillways, which are intended to manage excess water.
- The flat terrain also influences the extent of potential flooding downstream during an emergency release, as water can spread over a wide area.

Climate

Temperature: The Lower Shire Valley experiences a hot semi-arid to sub-tropical climate. Mean annual temperatures range between 25°C and 35°C. The hottest period is the dry season (September to October), when temperatures frequently exceed 38°C. This extreme heat poses a significant occupational health and safety risk for workers during the construction phase, necessitating measures like provision of shade, plenty of drinking water, and adjusted working hours.

Rainfall and Weather Patterns: The area has a distinct rainy season from November to April and a dry season from May to October. Average annual rainfall is between 500mm and 900mm. The rainfall is often erratic and characterized by intense storms, which can lead to flash floods in the local rivers (Mwembezi, Mwanza, Masakala). These flash floods are a key reason for the construction of the emergency spillways themselves, as they can cause sudden inflow surges into the main canal. The hydrology of the receiving rivers is therefore highly variable, with periods of zero flow to rapid, high-volume floods.

Geology and Soils

Geology: The project area is underlain by unconsolidated alluvial deposits from the Shire River system, which form the most significant aquifer. Geological structures, such as the Mwanza Fault, are important as they create pathways for the upwelling of saline groundwater. This natural phenomenon contributes to the brackish to saline conditions found in groundwater and soils, particularly near the Shire River and Elephant Marsh. It also explains the presence of the culturally significant hot spring at Mawira.

Soils: The dominant soils are deep alluvial and clayey soils (Vertisols and Fluvisols). These soils are generally fertile but have poor drainage characteristics. During construction, excavations and soil stockpiling will expose these soils. Their clayey nature makes them highly susceptible to waterlogging, erosion, and compaction if not properly managed. The risk of soil erosion and sedimentation of local rivers during construction is therefore a significant concern. For the proposed control structures within the main canal, the existing soil conditions will influence the stability of excavations.

Air Quality

Ambient air quality in Chikwawa District is generally good due to the absence of major industrial activity. Localized air pollution does occur from sources such as biomass burning, agricultural activities, and vehicular movement on unpaved roads. During the construction phase of this project, air quality will be a key issue. Dust emissions are expected from site clearing, excavation, soil stockpiles, and vehicle movement on access roads. This will be a temporary but potentially significant

impact on local communities and, particularly, on the tourism experience in the nearby Majete Wildlife Reserve.

Noise Environment

The current noise environment is typical of a rural area, with low ambient noise levels. Elevated noise is primarily associated with occasional agricultural machinery, transport along the M1 road, and localized events. Construction activities for the spillways and control structures will introduce significant, temporary noise from earthmoving equipment, compactors, concrete mixers, and increased truck traffic. This noise will be most pronounced at the work sites. Its impact will be particularly significant for the Majete Wildlife Reserve (near Siphon 3), where it can disturb wildlife and detract from the visitor experience.

Natural Hazards

Chikwawa District is highly exposed to climate-related hazards. The most relevant to this project are:

- **Flooding:** The flat terrain and intense rainfall make the area prone to both riverine and flash flooding. This is the very hazard the spillways are designed to manage, but it also poses risks during construction (e.g., flooding of worksites) and operation (e.g., downstream flooding from spillway discharge).
- **Extreme Heat:** During peak summer season, temperatures in the ecological zone of the project are extremely high, consequentially posing a direct health risk to workers.
- **Droughts:** Prolonged dry spells are also common, which influences the baseline flow conditions in the rivers that will receive water from the spillways.

Biological Environment

Flora

The vegetation within the immediate project footprint at Siphons 3, 5, and 6 is predominantly a mix of disturbed vegetation and agricultural land, as the area has been modified by the main canal construction. However, the sites are adjacent to or near different ecological zones, which is a key consideration for impact assessment.

Siphon 3 (Mwembezi River): This site is located near the boundary of the Majete Wildlife Reserve. While the project design avoids the reserve itself, the downstream discharge point and surrounding area feature riverine vegetation. This includes species such as *Acacia tortilis*, *Kigelia africana* (Sausage tree), and *Hyphaene coriacea* (Ilala palm), which play a role in bank stabilization and provide habitat. The potential for emergency water releases to impact this riverine vegetation is a concern.

No.	Species name	English name	IUCN categorisation
1	<i>Acacia tortilis</i>	Umbrella Thorn Acacia	Least Concern (LC)
2	<i>Kigelia africana</i>	Sausage tree	Least Concern (LC)
3	<i>Hyphaene coriacea</i>	Ilala Palm	Least Concern

All the species identified are classified as being least as it globally occurs abundantly and is not of conservation concern

Siphon 5 (Masakala River) and Siphon 6 (Mwanza River): These sites are in a more agricultural landscape. The riverbanks may support remnant riverine thicket species like *Breonadia microcephala* and *Lonchocarpus capassa* (Rain tree). The main impact here would be from localized vegetation clearance for construction.

No.	Species name	English name	IUCN categorisation
1	<i>Breonadia microcephala</i>		Least Concern
2	<i>Lonchocarpus capassa</i>	Rain tree	Least concern

Invasive Species: Disturbed areas in the entire region are prone to colonization by invasive species like *Prosopis juliflora* also called *Prosopis juliflora*, listed by IUCN as being of least concern. Construction activities that create bare soil could inadvertently promote the spread of such species, requiring a specific management focus.

Fauna

The project's impact on fauna is closely linked to its location.

Siphon 3 (Proximity to Majete Wildlife Reserve): This is the most sensitive location. The reserve is home to a diverse and abundant wildlife population, including large mammals as shown in Table below:

No.	Species name	English name	IUCN categorisation
1	African Elephant	<i>Loxodonta africana</i>	Threatened and population is on the decline
	Buffalo	<i>Syncerus caffer</i>	Near threatened and showing declining population
	Lion	<i>Lion Panthera</i>	Vulnerable (VU), decreasing population and largely depleted (LD) in most areas
	Leopard	<i>Panthera pardus</i>	Vulnerable with declining population at global scale

and numerous antelope species (sable, nyala, impala). During construction, noise, vibration, and human activity could disturb wildlife, potentially scaring them away from the area near the reserve boundary. During operation, the open water in the spillway channel could attract animals, creating a risk of drowning or entrapment.

- (i) **Reptiles and Amphibians:** All three rivers support reptile and amphibian populations, including crocodiles (*Crocodylus niloticus*) and monitor lizards (*Varanus niloticus*), both of least concern). Construction activities that degrade riverbanks or alter water quality in the receiving rivers could negatively impact their habitats.
- (vi) **Birds:** The riverine and wetland habitats along the Mwembezi, Mwanza, and Masakala rivers support a variety of bird species, including the African fish eagle (*Haliaeetus vocifer*), kingfishers (*Alcedo atthis*), and herons (*Ardea purpurea*). All the three birds species indicated are of least concern although they could be affected by disturbance and habitat alteration that may affect feeding and nesting activities.

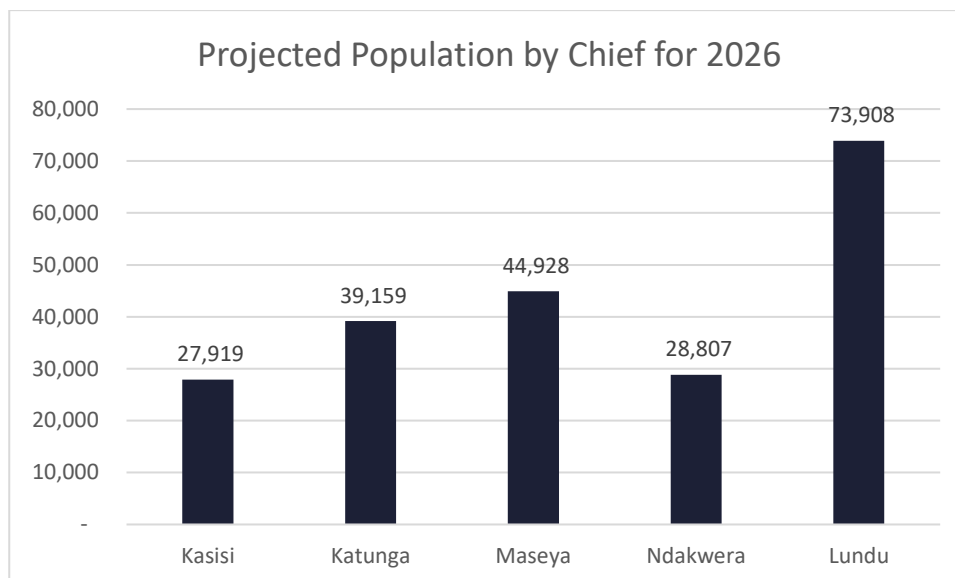
Aquatic Fauna: The Mwanza and Shire River systems are part of the Lower Zambezi fish fauna, supporting species like the African catfish (*Clarias gariepinus*) and various tilapia. A key concern is the potential for the spillway discharge to alter water quality or create a passage for the predatory Tiger fish (*Hydrocynus vittatus*), though this risk is primarily managed at the main intake. The two fish species are of least concern as they occur abundantly globally.

Social Environment

Demography

Chikwawa District's total population was 564,684, of which 276,890 were males and 287,794 were females, according to the 2018 Population and Housing Census. The average annual population growth rate for the district is estimated at 2.5%. Based on the indicated population growth rate and all being constant, in 2026, the projected population for the district is expected to be 671,232 with 329,135 males and 342,097 females.

However, the safety and water regulation structures fall within the following Phase 1 areas of the Traditional Authorities in Chikwawa: Kasisi, Katunga, Maseya, Ndakwera and Paramount Chief Lundu



The majority of the household heads are male (71%) and the members are dominated by Senas (57%) and Mang'anjas (29%). Most of the heads (74%) are in monogamous marriages, only those fewer female heads are married (38%). Christianity as the commonest religion (96%). In terms of education level of household heads, over half (56%) never went beyond junior primary, with female members (60%) being worse-off.

Almost all households (96%) had at least a child, and each household had an average of 2.6 children, with male headed households having more (2.7) than female headed households (2.4). Further, 87 percent of the children were in school and averaging 1.8 children per household. Most of the children were not orphans, 92 percent have at least one living parent. Female headed households hosted more orphans than male headed households

In terms of house and toilet ownership, almost all households (92%) own the houses they are residing in, which are mostly permanent (71%). Furthermore, close to three quarters (73%) of the households have roofed pit latrines as their type of toilet. Boreholes (92%), torch (75), and firewood (92%) are respectively the main source of water, lighting, and cooking fuel. In all these characteristics, there are no differences between female and male headed households.

Education

Education levels are generally very low, particularly among girls. This has been largely attributed to the high cost of education, distance to schools, and laziness. Winter cropping was also identified as a factor contributing to increased pupil absenteeism. School dropout among girls due to pregnancy is common in schools located near sugar plantations and estates, where men with disposable income are reported to entice girls. According to NSO data of 2018, Chikwawa district has low literacy rate of 58% and it is reported that around 81% of the population have no educational qualification where as 10% have primary school qualifications. Those with Junior Certificate, MSCE and tertiary qualification are at 6%, 2% and 1 % in that order. Net enrolment rates in primary schools in Chikwawa are higher for girls (84%) than boys that stand at 83%. In secondary schools, however, enrolment rates are higher for boys (14%) than girls (7%). Dropout rates in Chikwawa are higher at secondary school level (4%) compared to primary schools (1%). For the project affected areas, the occurrence is the same with very low education level among the population. This is attributed to high cost of education, distance to schools and

Health

Health services in the district are available to the population through health posts, dispensaries, health centres, and hospitals. These services are provided by the government, Christian Health Association of Malawi (CHAM), private companies, NGOs, and individual practitioners. While health facilities are spread across the district, some areas remain underserved. The range of services offered includes outpatient and inpatient care, nutrition rehabilitation, antenatal and postnatal care, ambulatory services, referrals, laundry, pharmacy, mortuary services, eye care, dental therapy, X-ray, orthopaedics, psychiatry, theatre services, maternal and child health, family planning, laboratory services, Information, Education, and Communication (IEC), voluntary HIV counselling and testing, skin clinics, and various preventive health services. Chikwawa District has a total of 27 health posts, 131 village clinics, and 4 dispensaries. In addition, the district is served by 13 health centres and 3 hospitals: Chikwawa District Hospital, Ngabu Rural Hospital, and Montfort Hospital. Records from the central hospital indicate that the main causes of morbidity and commonly reported illnesses in the area include malaria, skin conditions, acute respiratory infections, and diarrhoea. Findings from a survey conducted in the district further confirmed that malaria is the most prevalent disease. Over 90% of respondents during the SVTP survey reported using government-owned health facilities, but more than 80% said it takes them over an hour to get to the nearest health facility. The image below from the SVIP household survey of 2018 shows most common diseases in households

TOP MOST REPORTED DISEASES IN CHIKWAWA			
Data element	2013/2014	2014/2015	2015/2016
<i>Malaria</i>	148,122	171,543	131,626
<i>Other skin conditions</i>	31,522	38,391	36,741
<i>Common injuries and wounds</i>	18,508	20,620	21,008
<i>Eye infection</i>	10,265	15,011	16,774
<i>Oral conditions</i>	9,231	8,973	11,240
<i>Case treated as STI - new</i>	8,317	8,844	12,183
<i>Dysentery</i>	2,982	4,061	3,926
<i>Ear infection</i>	5,210	3,897	4,710
<i>Schistosomiasis - new</i>	2,265	1,852	2,290

Figure 0-1: Most common diseases in household (Source: SVTP ESIA 2023)

Chikwawa has not been spared of Covid 19 pandemic and as of 15 April 2026 there were 902 confirmed cases and 28 confirmed deaths. At the same time, 851 recovery cases were reported and 23 active patients were ascertained.

The district's HIV incidence rate (15-49 years) is at 0.13%, higher than the national average of 0.11% and HIV prevalence is 8% which is amongst the highest in the country, against the national prevalence

of 6.7% (15-49 years). (*National AIDS Commission, 2024*). The HIV prevalence in Chikwawa is higher for women (8.4%) than men (6.5%). This is in line with most reports that HIV prevalence is high in females than males. Women are at risk of contracting HIV due to cultural, society and economic barriers. This is the case in the district because Economic barriers increase women's risk of contracting HIV/AIDS by limiting their financial independence and decision-making power. Poverty, unemployment, and low incomes can push women into transactional or survival sex, while economic dependence on men reduces their ability to negotiate safer sex practices. Limited access to education and livelihood opportunities further increases vulnerability, and unequal property and inheritance rights can leave women economically insecure. In addition, the costs of accessing health services and involvement in informal or exploitative work environments reduce access to HIV prevention, testing, and treatment, collectively heightening women's exposure to HIV infection. Workers that are migrating to the district looking for employment either in the sugar plantations or the project pose a risk of the disease which is a biggest threat to development activities as the pandemic depletes household capital, and labour force, increases orphans and vulnerability, changes behaviours in decision making, and diverts man hours from developmental issues to attending to both the sick, and funerals. While Chikwawa District benefits from numerous infrastructure development projects, such developments can pose risks to human capital by increasing behaviors that contribute to the spread of HIV. As such, Chikwawa District Council is taking a proactive leadership role in integrating HIV services into various sites where construction and development projects are underway. This initiative aims to enhance the accessibility and uptake of HIV services. The team is raising awareness among construction workers about available HIV prevention methods to curb the spread of new infections in the district. During these sessions, HIV self-test kits and condoms are distributed, and linkage to treatment and care services at hospitals is facilitated. The implementation of HIV and AIDS activities in the district is guided by the 2011–2016 National HIV and AIDS Policy, the 2015–2020 Malawi National Strategic Plan for HIV and AIDS, and the 2011–2016 Malawi Health Sector Strategic Plan. The primary goal of the policy and strategic plan is to direct the HIV response by targeting the main drivers of the epidemic, addressing emerging national and global issues, and achieving Zero new infections, Zero AIDS-related deaths, and Zero discrimination.

From the year 2024, Liverpool Welcome Trust undertook a baseline epidemiological survey for malaria and schistosomiasis in primary schools in Chikwawa District with a rationale to establish contemporary epidemiological data on malaria and schistosomiasis among school-going children in Chikwawa District before future environmental changes associated with the Shire Valley Transformation Programme occurred. Across 21 schools the overall prevalence was 9.7% for malaria, 1.9% for intestinal schistosomiasis, and 35.0% for egg-patent urogenital schistosomiasis. The prevalence of co-infection of malaria with urogenital schistosomiasis was 5.5% In a third of the schools, the prevalence of malaria and urogenital schistosomiasis was above national averages of 10.5% and 40-50%, respectively, with two schools having maxima of 36.8% and 84.5%, respectively.

Set against a background of ongoing control, the study revealed an alarming burden of malaria and schistosomiasis in Chikwawa District. These findings call for an immediate mitigating response that significantly bolsters current control interventions to better safeguard public health.

Agriculture

Agricultural production in the project area is mainly subsistence-based. The primary crops grown include maize, sorghum, rice, cotton, millet, pigeon peas, and sweet potatoes, often supplemented with beans, fruits, and vegetables. Minor crops include sesame, cow peas, cassava, and groundnuts. Cotton remains the main cash crop, but farmers are gradually losing interest due to poor market incentives and a lack of production inputs. Meanwhile, outgrower sugarcane schemes are beginning to develop in the district, with Kasinthula and Phata being the main schemes so far. These programs provide significant economic benefits to local communities, as sugarcane has a ready market at the Illovo Sugar Factory, contributing to an increase in household per capita income. For the communities affected by this project, they are largely agro-based/agriculturally dependent/crop production economies. Most of the population in Maganga, Njeleza and Bwalo fish in the Shire River either for household use or for business. Community members near or around Majete Game Reserve are also allowed to place bee hives inside Majete and harvest honey. The agricultural activities that are carried out along Masakala and Mwanza rivers are dependent on irrigation and residual moisture along the river banks as these rivers carry water mostly during the rainy season and they are mostly dry during the dry season.

Religion

According to the 2018 Population and Housing Census, the majority of the people (83 percent) in Malawi are Christians; Muslim comprise 13%, others 1.9% and those that do not have any religious affiliation are 2.5%. In Chikwawa district and the project impact area, the survey revealed that Christianity (Protestant and Catholics) is the main religion, with approximately 93% of the total people surveyed. Moslems are at below 2% and the rest belong to other types of religion.

Table 0-13: Population of Malwai by Denomination, Region, and District, 2018.

Population of Malawi by Denomination, Region, and District, 2018											
Area	Denomination										
	Total	Catholic	CCAP	Seventh Day Adventist / Baptist/ Apostolic	Anglican	Pentecostal	Other Christian Denominations	Islam	Traditional	Other Denomination	No Religion
Chikwawa	564,684	64,775	19,282	99,456	6,208	121,180	178,942	9,451	2,131	44,841	18,418

Source: Malawi Population and Housing Census, 2018

Economic Activities/Livelihood

Chikwawa District exhibits a wide range of poverty levels and household incomes. According to recent data from the project impact area, it revealed that the main source of income or livelihood is crop production (97% of households), followed by livestock production (55%). Only 7% of households rely on salaries, while 37% earn a living through piece work. Average income levels in Chikwawa indicate that most households struggle to meet their basic needs. According to the Fourth Integrated Household Survey, about 72%, 56%, and 59.4% of households experience inadequacies in food, housing, and healthcare, respectively. These figures are higher than the national averages of 63.8% for food, 55.6% for housing, and 54.8% for healthcare, indicating that income levels in the

district are generally lower. Only 4.9% of households earn enough to build savings, while 31.7% of households rely on borrowing because their income is insufficient. (*Chikwawa District Council SEP;2022*). Agricultural production in the district is mainly subsistence-based. The primary crops grown include maize, sorghum, rice, cotton, millet, pigeon peas, and sweet potatoes, often supplemented with beans, fruits, and vegetables. Minor crops include sesame, cow peas, cassava, and groundnuts. Cotton remains the main cash crop, but farmers are gradually losing interest due to poor market incentives and a lack of production inputs. Meanwhile, outgrower sugarcane schemes are beginning to develop in the district, with Kasinthula and Phata being the main schemes so far. These programs provide significant economic benefits to local communities, as sugarcane has a ready market at the Illovo Sugar Factory, contributing to an increase in household per capita income. For the communities affected by this project, they are largely agro-based/agriculturally dependent/crop production economies. Maize is the main food crop grown in these areas, with sweet potatoes (In terms of production, sweet potatoes have the highest production as well as yield if compared to other crops.) being a second choice and sorghum being an alternative too. Other economic activities include; fishing, livestock production and charcoal making. Most of the population in Maganga, Njeleza and Bwalo fish in the Shire River either for household use or for business. Majete game reserve is an area of tourist attraction in the area of Traditional Authority Kasisi and it has also employed community members from Maganga, Bwalo and Njeleza areas. Community members are also allowed to place bee hives in Majete and harvest honey. For some of the population in Traditional Authority Katunga Area-Twoboy and Nkanyoza and the other surrounding areas, is employed by Illovo Sugar Company. River sand from Mwanza River is also sold as a business by some of the local community especially at Bereu Trading Centre which is along the M1 road. In summary, the main livelihood activities within and around the project site include; Crop farming (maize, rice, sugarcane, cotton, legumes), Livestock rearing (cattle, goats, poultry), fishing and small-scale fish trading along riverine areas, casual labour, including agricultural and construction work, small-scale trading and vending. Agriculture is highly dependent on seasonal rainfall and irrigation water availability, making communities vulnerable to climate variability, floods, and droughts. The project is expected to influence local livelihoods through improved irrigation, but may also cause temporary disruptions during construction.

Transport

People in rural communities generally have to travel long distances, most often on foot, to access social services. Chikwawa District faces many of the same challenges experienced by district councils across Malawi. Road infrastructure consists mainly of earth and gravel roads, which become difficult to access during the rainy season. Project activities may temporarily affect movement of people, livestock, and farm produce. Movement within these areas is mainly by walking or bicycle, with motor vehicles only occasionally passing through the villages. The road network in Chikwawa is generally poor, largely due to the commonness of black cotton soils. During the wet season, many roads become slippery and severely eroded, with several bridges washed away or damaged, limiting access to different parts of the district. As a result, communities experience reduced access to essential services and amenities, including health centres, schools, and markets. The district relies predominantly on road transport, with vehicles, motorcycles, and bicycles being the main modes of movement. Water transport using boats and canoes is also important, particularly along the Shire River, where canoes help connect communities across the river. Air transport is rarely used, except by Illovo Sugar Company for monitoring farm activities. The road network is mostly comprised of gravel roads with the Chikwawa-Majete road-T416, along the area of Traditional Authority Kasisi-(Maganga, Bwalo and Njeleza villages) and the D384 and T423 roads leading to Twoboy and Nkanyoza along the area of Traditional Authority Katunga. Based on community observations, good-quality water is found in Nchalo and Jombo. In contrast, borehole water in most other areas was observed to be salty. Despite this condition, some community members seem not to be concerned

about the salty taste of the water during discussions while others complained about the quality of the water. From Supuni village to Twoboy village (Siphon 6), the access road running adjacent to the canal is being used by both motorists and pedestrians alike. Local community using the road and crossing Mwanza River to the other side. There will be need for temporary access route on this area/rerouting the road during the construction of the spillway as there will be a buffer zone/perimeter for the construction works.

Telecommunication

According to Chikwawa District SEP from 2022, the district is served by major communication providers, including Airtel, TNM, and MTL, with most services wireless through transmitter towers, while MTL also uses underground and overhead cables. Airtel has 17 towers (20 km radius each), TNM has 15 (10 km radius), and MTL has 10, though coverage gaps exist in areas such as Tomali, Nyasa, the east bank, and Chapananga. Providers share transmitter usage, but TNM faces access challenges due to poor road conditions, especially in the wet season, while MTL struggles with cable vandalism, limiting its coverage. MTL serves 1,237 telephone and 21 internet customers in the district. However, the most recent data is not available yet. Network connection problems are experienced the farther distance is from the M1 road. So as for the project area, there is coverage of mobile network from both Airtel and Telekom Networks but the major issue is that the network signal is very weak especially when moving away from the M1 road.

Security

When it comes to security the Malawi Police Service is the primary provider of security in Chikwawa District, operating a network of facilities across the area. The district has one main Police Station at the District Headquarters, two Police Posts located in Nchalo and Ngabu, and eight Police Units in Chapananga, Gola, Changoima, and Chapasuka (T/A Chapananga); Goma, Thendo, and Mkumaniza (T/A Ngabu); Makhwira (T/A Makhwira); and Mbewe Headquarters in Paramount Chief Lundu. Additionally, there is one Police Mobile Unit camp at Mitole within the District Headquarters. The Malawi Police Service has introduced a community policing approach, encouraging residents to actively participate in maintaining security in their areas. In Chikwawa, this initiative has been implemented across all eleven Traditional Authorities (T/As) through Community Policing Forums, 79 Group Village Headman (G.V.H.) Crime Prevention Panels, and 593 Village Headman (V.H.) Crime Prevention Committees. Elected forum members were trained in community policing principles and tasked with establishing and training similar structures at the G.V.H. and V.H. levels. The programme aims to reduce crime and enhance overall security within the district. The district also has five (5) magistrate courts located in different Traditional Authorities and 1 prison based at the boma. The key issues found under security are that Chikwawa's prison system faces several challenges, including insufficient monthly funding, a shortage of staff and staff housing, lack of vehicles—particularly a lorry for transporting fuelwood—and food shortages for inmates. Similarly, the Malawi Police Service in Chikwawa contends with inadequate funding, limited staff housing, a shortage of personnel, and insufficient vehicles, motorcycles, and bicycles. The district spans approximately 4,755 sq km but has only a few police vehicles, stationed at various strategic points including Chikwawa Boma, Nchalo, and Ngabu, which limits timely response to incidents in remote areas. Additional vehicles, motorcycles, and bicycles across all formations could improve service delivery. Immigration services also face challenges, as porous borders and limited staffing make it difficult to monitor and control the movement of people into the district. It should be noted that the communities around/near the safety/water regulation structures access security services through these same system and institutions.

Waste Management

According to Chikwawa Social Economic Profile of 2022, in the district, the areas most affected by waste and sanitation challenges include cattle ranches, markets, institutions, commercial buildings, factories, and hospitals. There is limited effort to educate the community on proper waste management, and the council has not fully implemented effective measures to ensure safe waste disposal with minimal impact on surrounding communities. For example, although the council employs sweepers to maintain cleanliness in the markets, the proper disposal of collected waste continues to be a major challenge. In the district, waste generated from residential, industrial, commercial, institutional, construction, agricultural, and biomedical sources includes solid and liquid materials such as food waste, plastics, metals, hazardous substances, industrial effluent, and medical waste. Waste collection is largely manual, with most households practicing open dumping and burning due to the absence of proper waste collection vehicles and a landfill, while incineration is mainly used in hospitals and at the district office. Wastewater management is inadequate, with untreated effluent often discharged onto open ground, posing risks to water sources such as the Shire River, and most boreholes lacking proper drainage systems. Sanitation facilities remain below recommended standards, with the majority of households relying on traditional pit latrines and limited access to improved systems, contributing to sanitation-related diseases such as cholera, malaria, schistosomiasis, and other infections linked to poor environmental hygiene. And as for the project area, the issues are not any different, pit latrines are heavily relied on, most households practice open dumping and burning and most boreholes lack proper drainage systems. There will be need for management of waste from the construction sites, despite the areas being away from settlements. These include steel materials, concrete, wood, plastics, rubber, wires, dirt and glass.

Sanitation

Across the project area, households go to great efforts making water safe. It was learned in the SVTP II ESIA 2023 survey that households employ a number of sanitary methods, both traditional and modern in keeping the water free from germs. The methods include: boiling, chlorination/waterguard, filtering and covering the water containers. However, the most common methods employed in both phase areas was covering the container. In phase 1 42% of the people cover their container while 24% chlorinate their water with waterguard and 26% employ other methods. The proportions were virtually similar in Phase 2 (COWI, 2016). Covering water only allows to protect water from dust and insects. The SVTP Baseline Study revealed that 74 percent and 70 percent of male and female headed households had toilet facilities in the project impact area. Water sources in the project area include boreholes, shallow wells, rivers, and canals. Sanitation facilities are mainly traditional pit latrines. Poor drainage and stagnant water near boreholes in some of the communities increase the risk of water contamination and disease transmission.

Energy

According to the 2018 Census District Report for Chikwawa, 6.6% used electricity, 6.9% used solar power, 50.4% used batteries, 1.2% used paraffin, 4.7% used candles, 9.4% used firewood, 0.8% used gas/straw, and 19.9% used other sources as their source of lighting (NSO, 2028). Other data from 2022 indicates that the main challenge with power supply in Chikwawa is its dependence on a single 132kV transmission line, which leaves the district and neighboring Nsanje without electricity whenever the line is damaged. Additional issues include equipment encroachment and vandalism, poorly treated wooden poles vulnerable to termite damage, the use of unqualified electrical contractors, and substandard wiring materials. Power generation is also heavily reliant on hydroelectricity from Kapichira on the Shire River, making supply vulnerable to fluctuations in river flow. Furthermore, the district's heavy reliance on fuelwood and charcoal for cooking is depleting

forestry resources faster than they can regenerate, a situation exacerbated by high population growth. Despite these challenges, Chikwawa's hot and sunny climate presents opportunities for solar energy generation. However, most of the energy produced at the Mandirade Solar Charge Centre is underutilized due to limited community access, and the high upfront cost of solar systems—approximately K1.0 million for a 150-watt panel with battery, inverter, charge controller, and wiring—makes solar energy largely unaffordable for rural households. At Twoboy and Nkanyoza-near Siphon 6, most of the households use candles, lanterns and solar for lighting at as most households are not connected to the national electricity grid. However, as per the SVTP RAP report, 2023(for both Chikwawa and Nsanje districts), a survey conducted found that 66.71% of the households affected by the project used electricity, charcoal, firewood, candles and paraffin, while 34.29% used solar power as their source of lighting. This indicates a significant shift towards solar lighting in the project area. In Njeleza, Bwalo, and Maganga, there is a mix of households—some are connected to the national grid and use electricity, while others rely on candles, lanterns, or solar power for lighting.

Water Supply

The Integrated Household Survey (IHS) 4 highlights the importance of access to safe drinking water, noting that it is a key target under the Sustainable Development Goals (SDGs) and an indicator in MGDS III. A household is considered to have access to safe drinking water if the source is piped into the dwelling, piped into the yard or plot, a communal standpipe, a protected well in the yard or plot, a protected public well, a borehole (rural areas only), a tanker truck or bowser, or bottled water. The survey reports that in the Southern Region, 88.2% of households have access to an improved water source, with 66.6% of these households using a borehole. In Chikwawa District, 86.5% of households have access to an improved water source, of which 73.9% use a borehole, while 10.2% rely on an unprotected water source. Communities within the project area heavily rely on boreholes, public tap, protected wells and perennial rivers to draw for domestic purposes. However, households predominantly use borehole water as indicated in SVTP Baseline Report of 2020. Despite the high level of access to protected water sources, Chikwawa District faces challenges in maintaining these facilities. Most improved water sources are funded by donors, and when projects end, communities often struggle to keep them operational. Investment in the water sector remains low, resulting in many improved community water points being non-functional. In addition to the limited number of investors, the lack of community-based management of existing water points has further contributed to the growing number of non-functioning water sources. For Masakala river-siphon 5 and Mwanza River-Siphon 6, the primary pattern is community irrigation farming and farming along the river banks, more especially downstream at Masakala river there are small community gardens near the river during the rainy season. For household use, women collect water from boreholes or wells, manage and decide on household water usage. As indicated by the communities, there are no specific times (apart from early mornings and evenings) when water is collected as women collect water as required by the household usage needs. There are not much differences in men's vs women's access to irrigation water quotas or usage as committees manage the water for irrigation and for community gardens, dependence is on residual moisture on the river banks as both Masakala and Mwanza River banks are seasonal and carry water only during the rainy season. Watering of fields/crops is done very early in the morning or late afternoon. Community access in these areas is not limited to irrigation alone but also for domestic consumption e.g. for washing and bathing. Some of the population, including smallholder farmers keep livestock (cattle, goats, poultry, pigs), and access to irrigation water indirectly improves livestock watering options because animals drink from shallow points along the river and river banks. Downstream at Masakala and Mwanza rivers the population has access to clean potable water e.g. at Njeleza-siphon 5 and Tomali-siphon 6. Fishing is done mostly along the Shire River for both Masakala and Mwanza Rivers downstream settlements. During the

rainy season however, some community members fish on Mwanza River as it carries a lot of water during this period.

Land Use and Tenure

For more details on land tenure this report refers to the Resettlement Policy Framework Document. In Malawi, land is divided into four major categories: customary, government, public and private. The Land Act of 1965 and the National Land Policy of 2002 recognizes these categories of land. Land within the project site is predominantly held under customary tenure, managed by Traditional Authorities and village leadership. Land use is mainly agricultural, with portions allocated for irrigation infrastructure, access routes, and communal use. Temporary or permanent land take may be required for canal widening, spillway construction, and spoil disposal, which may affect crops and access to land. Any land acquisition or restriction of access must be managed in line with World Bank's ESS-5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement). The Resettlement Policy Framework (RPF) states that landholders within the customary land sector are diverse, and the rights they have to the land vary according to their membership category within the village. Most of the land in these areas is customary-about two thirds as per BRL Baseline Report of 2016, and private with a higher percentage being customary land. Land holding size for majority of communities in the project area ranges from 0.1 ha to 1 ha. About 43.2% of the smallholder farmers interviewed in the project area have 0.1ha or less of land for both settlement and cultivation. About 29 % of the farmers have 0.1 to 0.5 ha whilst 17.8 % of the farmers have land sizes more than 0.5 ha (COWI, 2016). Apart from settlements, most of the land is mostly used for irrigated and rainfed agriculture, livestock grazing and fishing more especially along the river banks like Mwanza, Shire and Mwembezi. Instances of charcoal burning activity can also be found along the Masakala river bank. Crops cultivated include maize, sweet potatoes, millet and sorghum mostly for subsistence use. Mwambezi, Masakala and Mwanza rivers are seasonal and only carry water during the rainy season. As such, seasonal gardening, livestock grazing are done along the river banks.

No known physical cultural heritage sites have been identified within the immediate project footprint; however, chance finds of graves or cultural artefacts may occur during excavation works. Such occurrences must be managed in line with World Bank ESS8 (Cultural Heritage).

Communities within and around the project site have a strong interest in project activities due to their direct interaction with land, water, and infrastructure. Effective stakeholder engagement is essential to ensure community acceptance and reduce conflict.

In summary, for the spillways and safety structures the proposed project is located in a rural setting within Chikwawa District, characterized by scattered villages and a strong dependence on agriculture.

- **Communities and Livelihoods:** The project is situated within the jurisdiction of T/A Kasisi and T/A Katunga. Communities in these areas are largely dependent on subsistence and small-scale commercial agriculture (maize, sorghum, cotton) along the valley floor, as well as livestock rearing (cattle, goats). Fishing in the Shire River and its tributaries is also a key livelihood and food source for some households. The proposed spillways will discharge into the Mwembezi, Mwanza, and Masakala rivers, which are used by local communities for domestic purposes (washing, bathing), watering livestock, and fishing.
- **Vulnerability:** These communities are highly vulnerable to climate variability, including both floods and droughts, which directly impact their food security and livelihoods.
- **Settlement and Infrastructure:** Settlements are scattered, with some households located in proximity to the riverbanks and the existing canal alignment. The construction sites are in

relatively sparsely populated areas, but access roads and the work sites themselves may temporarily affect movement and create safety hazards. No physical cultural heritage sites are known within the immediate footprints, but the area is rich in archaeological sites (e.g., Iron Age pottery), making "chance find" procedures essential during any excavation.

- **Land Tenure:** Land is predominantly held under customary tenure. While the project footprint is within the already established canal right-of-way, any temporary or permanent use of additional land for access roads, stockpiles, or worker camps would require engagement with traditional leaders and potentially trigger land acquisition protocols.

Cultural Heritage

Cultural resources are nowadays protected in almost every country by national legislation and international conventions. This also applies to Malawi, which has provisions for the protection of cultural resources in its National Cultural Policy and its Monuments and Relics Act. The Project is also committed to undertaking its activities in compliance with the World Bank Group's safeguard policies on cultural resources.

The Shire Valley region has significant cultural heritage, including sacred sites, archaeological sites, and locations submitted for UNESCO World Heritage status. Within the entire project area sacred sites such as Mbewe ya Mitengo, Chifunda Lundu, Mawira, and Mangalangala hold cultural and spiritual importance, while archaeological sites contain artifacts like pottery sherds, stone tools, and iron slag, indicating historical occupation since the Early Iron Age.

Development projects, such as this one, may impact cultural heritage sites, including sacred sites, archaeological locations, and graveyards.

Mitigation measures included creating a Cultural Heritage Management Plan (CHMP), implementing chance find procedures, conducting artifact collection and analysis, salvage excavations, and archaeological monitoring during construction. The CHMP complied with international standards, such as the World Bank's Operational Policy 4.11 and IFC's Performance Standard 8 and involved institutions like the Malawi Department of Antiquities (MDoA) and trained professionals. Challenges in preserving cultural heritage included the vast size of the area, seasonal constraints, and limited historical data. Preserving cultural heritage requires careful planning, consultation with local communities, and integration into development projects.

And according to BRL's baseline ESIA report, another site of cultural importance within the Project's study area is a Baobab tree within the Majete Wildlife Reserve where David Livingstone, the famous Scottish missionary, put up a camp when he visited the area. The grave of Thornton, one of the members of Livingstone's expedition, is located at Maganga village, few kilometres from Majete. The grave, also situated under a baobab tree, is a gazetted monument (Chikwawa 301: Vol. VI.No.3) but is situated outside of the Project's study area. Livingstone's Baobab tree in the Majete Wildlife Reserve, in contrast, might become part of another

tentative list submission, which runs under the title of Malawi Slave Routes and Dr. David Livingstone Trail. Indeed, from the submission list it is not clear whether this specific area of Livingstone's journey falls within the trail that has been submitted for World Heritage status. It should also be mentioned that the MDoA covered this area during the first phase of their cultural heritage impact assessment, but no mention is made on that tree. The picture below is that of Thornton, in Maganga village.



As much as there are no sites in the immediate areas where the siphons and spillways will be constructed, the Contractor shall undertake checks for objects of archaeological or cultural heritage interest during the works (and particularly during excavation works) and implement the Chance Finds Procedure included in the specification.

The construction contractor must avoid construction-related impacts to known cultural resources such as graveyard, churches, etc. Chance Finds Procedure shall be implemented in line with the Environmental and Social Safeguards requirements of the World Bank Environmental and Social Framework (ESS8 – Cultural Heritage) and the African Development Bank Integrated Safeguards System (Operational Safeguard 1). In the event that archaeological materials, cultural artefacts, sacred sites, fossils, or human remains are encountered during project activities, all works in the vicinity shall immediately cease, the site shall be secured to prevent disturbance, and the Supervising Engineer

and Project Environmental and Social Safeguards Specialists shall be notified without delay. The relevant national authority, including the Department of Antiquities, shall be informed to undertake assessment and provide written guidance on appropriate management measures, which may include documentation, preservation, salvage excavation, or relocation. Works shall only resume upon formal clearance from the competent authority. The Contractor shall document the incident, maintain records within ESMP monitoring reports, and ensure that all workers are trained on the procedure prior to commencement of works. Non-compliance shall constitute a breach of contractual and safeguard obligations.

5. Project Alternatives

The project's design phase considered the analysis of alternatives to ensure that the best among all possible options is selected. The analysis entailed identifying alternative forms of development and considering the environmental and social implications of these alternatives to demonstrate that the proposed scheme is environmentally preferable. The process involved consultation with community and various stakeholders where different suggestions and solutions were proposed for construction of safety and water control structures.

5.1 No-Project Scenario

The project aims to ensure the continued functionality, safety, and reliability of the SVTP Main Canal so that it effectively supports irrigation demands and strengthens agricultural productivity across the designated farmlands in Chikwawa District. Specifically, the additional infrastructure (long-crested weirs and safety escape spillways) is intended to enhance flow regulation across multiple offtakes, prevent loss of life and facilitate emergency response. In contrast, the no-project alternative implies that the project will not proceed, maintaining the status main canal as merely conveyance canal.

Under the no-project scenario, the Main Canals 1 and 2 would remain unchanged, with no safety and water control structures. Consequently, In its current configuration, the SVTP Main Canal is expected to face significant operational challenges once commissioned. Key issues include:

- (vii) Inconsistent hydraulic head at offtakes, constraining reliable delivery to command areas.
- (viii) Reduced flow-regulation efficiency, as the canal currently functions primarily as a conveyance system rather than a fully integrated distribution network.
- (ix) Elevated overtopping risk due to progressive siltation at siphon inlets, which can induce backwater effects and emergency conditions.
- (x) Lack of alternative diversion channels to re-direct flow in times of emergency maintenance works or reduced water demand at farm level.

From a conservative environmental perspective, the no-project option may seem preferable as it avoids interference with existing environmental conditions. However, its drawbacks on canal functionality and general agricultural production make it an unviable option. Therefore, while considering environmental concerns, it's essential to prioritize economic and social development objectives as well.

5.2 Flow Control Structures Alternatives

Despite high initial construction costs, being prone to settling sediments and trapping floating debris, long-crested weirs are preferred structure in modern irrigation projects for robust water level management and infrastructure efficiency. They can maintain a relatively constant upstream water surface elevation (within 5–10 cm) despite significant variations in canal flow, which is crucial for

efficient delivery to farm turnouts. On the other hand, straight (sharp crested and broad crested) weirs, much as they are **simple and economical construction, and are excellent at maintaining a stable upstream water level for irrigation off-takes, they have high head loss and energy dissipation requirements, offer low control over flow rates compared to other structures**

5.3 Safety Spillways Alternatives

For safety (spillway) structures

(xi) Escape Spillway for siphon 3 (ESC-3)

For ESC 3, three options investigated for their technical, economic and environmental viability as presented in Table and option 3 was evaluated as the most feasible and design advanced on the same

Table Spillway 3 options

Option	Description/location	Justification
Alignment option 1	technically viable and looks cost-effective option for the escape structure, primarily due to its favourable topography, shorter conveyance length, and reduced requirements for hydraulic and structural works.	The proposed alignment crosses Majete Park and areas designated as protected under park management and environmental conservation regulation thus rejected
Alignment option 2	The required excavation back-slope on the left side of the spillway chute would extend into the park's fenced boundary. Additionally, the available corridor width is insufficient to provide an acceptable horizontal curve geometry	. This constraint forces a sharp and acute bend along the chute, which could adversely increase flow turbulence and potentially compromise hydraulic performance and operational safety thus rejected
Alignment option 3	Located off the park, it offers significant advantages, including the ability to accommodate an adequate horizontal curve and the assurance that the excavation limits of the chute's batter slopes will not encroach upon the park boundary or interfere with the existing siphon structure.	identified as the most feasible and technically suitable route and design advance for this alternative

Escape Spillway for siphon 5 (ESC-5)

Two alternative locations were identified and evaluated for the proposed escape structure at Siphon 5 as per **Error! Reference source not found.** Table 22 below and alternative 1 was found to be most favourable and design advance on the same.

Table 012: Spillway for siphon 5 option evaluation

Option	Description/location	Justification
Alignment option 1	Its located just before the Sand trap basin at chainage 8+880.	allows for integration with the existing wasteway gate drainage infrastructure, which has already been constructed, thereby enhancing constructability and overall system integration thus design advanced on the same
Alignment option 2	Located approximately 350 m upstream of the siphon 5 sand trap basin, near chainage 8+500.	This location would cause interference of the proposed escape spillway with two existing drainage culverts, the presence of high fill material along the left canal embankment, challenge to re align the canal side road, the absence of geotechnical investigation information along the proposed chute alignment, and potential environmental concerns. thus rejected

Escape structure of siphon 6 (ESC-6)

Siphon 6 conveys the canal across the Mwanza River, which has a large contributing drainage area and a wide natural channel. The river has adequate capacity to receive emergency releases from the canal; therefore, the safety spillway provided at the siphon inlet discharges directly into the river channel. Due to site constraints and hydraulic conditions, no other practicable spillway locations or configurations were identified for detailed evaluation.

The safety spillway is located in the downstream reach of the trapezoidal canal section, immediately upstream of the sand trap basin. This location was selected to avoid adverse effects on the stability of the siphon inlet and associated structures and to minimize demolition or alteration of existing works. At the time of this study, the canal reach at the spillway proposed location had not been constructed yet, permitting incorporation of the safety structure without disruption to completed construction

The safety and water control structures will be constructed in concrete so that they integrate well into the existing canal which is also constructed in concrete. Further since these are in direct contact with flowing water, structural stability is a must, and concrete will provide the desired strength and durability to achieve the stability.

5 Identification and Analysis of Impacts

Approach and Methodology

This Environmental and Social Management Plan (ESMP) outlines environmental and social impacts, mitigation and institutional measures to be undertaken during project design, construction and operation phases to avoid, reduce, minimise or eliminate adverse environmental and social impacts. The ESMP further designates responsibilities and schedules of tasks.

Approach and Methodology

The analysis of potential environmental and social impacts followed a structured, risk-based approach. This process involved a detailed examination of each identified impact based on its probability, magnitude, duration, and resulting significance.

Probability of Occurrence

This refers to the likelihood of an impact occurring, assessed before any mitigation is applied. The following criteria are used:

- **Possible:** The impact may occur but is not probable.
- **Probable:** The impact is very likely to occur.
- **Definite:** The impact is unavoidable.

Magnitude

Magnitude is a measure of the general degree, extensiveness, or scale of an impact. It is scored at three levels:

- Local Level
- Regional Level
- National Level

Duration

This refers to the period over which an impact may occur.

- **Short term:** Less than 5 years.
- **Medium term:** Between 5 and 10 years.
- **Long term:** Over 10 years.

Significance

Significance is a measure of the overall importance of an impact, determined by combining the above factors. The primary tool for determining significance is a risk matrix, where the **likelihood** of an impact occurring is matched with the **consequence (severity)** of the impact. The presence and vulnerability of sensitive receptors are considered when assessing potential severity, adopting a precautionary approach.

All risks classified as **medium or higher** are considered significant. These require detailed assessment (including quantification where appropriate) and the identification of specific mitigation measures to reduce the impact to an acceptable level. The contractor when developing their Construction Environmental Management Plan (CEMP) will also adopt this matrix approach.

Risk Matrix - Likelihood and Consequence

RISK RATING		LOW 0 TO 3 ACCEPTABLE OKAY TO PROCEED	MEDIUM 3 TO 6 UNDISIRABLE TAKE MITIGATION EFFORTS (good site practice	HIGH 7 TO 10 UNACCEPTABLE Clearly identified mitigation will be required in ESMP	EXTREME 10 TO 12 INTORELABLE Place event on Hold	
		CONSEQUENCE / SEVERITY OF IMPACT				
		IN SIGNIFICANT / MINOR Easily handled with the normal course of operations with no additional costs	MODERATE Immediate time / resource reallocation will be necessary with a moderate estimated cost	MAJOR Environmental conditions disrupted but can be reversed Potential for serious injury / fatality Significant disruption to community Require significant resources to rectify	CRITICAL Catastrophic environmental damage. Fines likely Potential for multiple fatalities Significant irreversible disruption to community Significant resources needed to rectify	
		>>>>>>>>>>Environmental // Safety / Social Impact increasing in severity >>>>>>>>>>				
RISK / LIKELIHOOD OF IMPACT	IMPROBABLE Environmental / Safety / Social impact is unlikely to occur (<20%)	<<<<<<likelihood of impact increasing <<<<<<	LOW 1	MEDIUM 4	MEDIUM 6	HIGH 10
	POSSIBLE Environmental / Safety / Social impact is likely to occur (20% to 90%)		LOW 2	MEDIUM 5	HIGH 8	EXTREME 11
	PROBALE		MEDIUM 3	HIGH 7	HIGH 9	EXTREME 13

RISK RATING		LOW 0 TO 3 ACCEPTABLE OKAY TO PROCEED	MEDIUM 3 TO 6 UNDISIRABLE TAKE MITIGATION EFFORTS (good site practice	HIGH 7 TO 10 UNACCEPTABLE Clearly identified mitigation will be required in ESMP	EXTREME 10 TO 12 INTORELABLE Place event on Hold
	Environmental / Safety / Social impact almost certain to occur (>90%)				

The intensity of the colour will represent the severity of the impacts as presented in the table below.

Table 0-1: Severity of Impacts

Negative	Significance	Positive
	Negligible	
	Low	
	Moderate	
	High	

Summary of impacts and their scoring based on probability, duration, magnitude and significance

Table 0-2: Impact Scoring Matrix with Significance Levels

Environmental and Social Impacts	Probability of Occurrence	Duration of Impact	Magnitude of Impact	Scoring	Significance of Impact
COMPONENT A- EMERGENCY SPILLWAYS AND FLOW STRUCTURES					
Planning and Design Phase					
Positive Impacts					
Creation of employment	Definite	Short term	Mostly local level	Medium (5x2=10)	Significant
Skills transfer to local communities	Definite	Long term	Local level	High (5x3=15)	Significant
Negative Impacts					
Creation of new fish pathways especially for the Tiger Fish	Definite	Long term	Local level	High (5x3=15)	Significant
Retention of water at the stilling basin creating a breeding ground for mosquitoes	Definite	Long term	Local level	High (5x3=15)	Significant
Construction Phase					
Positive Impacts					
Creation of employment	Definite	Short term	Mostly local level	Medium (5x2=10)	Significant
Improved knowledge and skill transfer	Definite	Long term	Local level	High (5x3=15)	Significant
Negative impacts					
Loss of Land	Possible	Long term	Local level	Medium (3x3=9)	Significant
Loss of Vegetation	Probable	Long term	Local level	High (4x3=12)	Significant
Unexpected discovery of cultural,	Probable	Short term	Local and National level	Extreme (4x5=20)	Significant

archaeological, or paleontological resources.					
Disruption of animal habitat (Terrestrial)	Probable	Long term	Local level	High (4x3=12)	Significant
Increased dust emissions	Possible	Short term	Local level	Medium (3x3=9)	Significant
Increased risk of noise and vibration	Possible	Short term	Local level	Medium (3x3=9)	Significant
Increased risk of soil erosion and sedimentation	Possible	Short term	Local level	Medium (3x3=9)	Significant
Pollution due to generation of liquid waste including construction waste	Possible	Short term	Local level	Medium (3x3=9)	Significant
Pollution due to generation of solid waste including construction waste	Probable	Short term	Local level	High (4x3=12)	Significant
Increased Occupational safety and health hazard risks	Possible	Short term	Local level	Medium (3x3=9)	Significant
Increased risks to community health and safety	Possible	Short term	Local level	Medium (3x3=9)	Significant
Risk of increased incidences of STIs including HIV and AIDS	Possible	Long term	Local and National level	Extreme (3x5=15)	Significant
Increased risk of theft and crime	Possible	Long-term	Local level	Medium (3x3=9)	Significant
Increased risk of Gender Based Violence and Sexual	Possible	Short term	Local level	Medium (3x3=9)	Significant

Exploitation and Abuse (GBV/SEA)					
Risk of working in confined space with limited working area	Possible	Short term	Local level	Medium (3x3=9)	Significant
Increased risk of animals falling into open channels leading to conflicts with the community	Possible	Short term	Local level	Medium (3x3=9)	Significant
DEMobilISATION PHASE					
Positive Impacts					
Site restoration and rehabilitation	Definite	Long term	Local level	High (5x3=15)	Significant
Negative Impacts					
Social and Economic Impacts from Workforce Layoffs	Definite	Short term	Local level	High (5x3=15)	Significant
Pollution and Waste from Demobilisation	Probable	Short term	Local level	High (4x3=12)	Significant
OPERATION PHASE					
Positive Impacts					
Enhanced Regional Water and Food Security	Definite	Long term	Regional level	Extreme (5x4=20)	Significant
Creation of Long-Term, Skilled Employment	Definite	Long term	Local level	High (5x3=15)	Significant
Opportunities for Managed Aquifer Recharge and Base flow Stabilization	Definite	Long term	Regional level	Extreme (5x4=20)	Significant
Improved Flood Control and Community Safety	Definite	Long term	Regional level	Extreme (5x4=20)	Significant

Negative Impacts					
Increased risk of drowning and loss of life	Possible	Long term	Local level	Medium (3x3=9)	Significant
Changes in river water properties resulting in habitat disruption and loss	Possible	Long term	Local level	Medium (3x3=9)	Significant
Altered river flow regimes and sediment transport patterns	Possible	Long term	Local level	Medium (3x3=9)	Significant
Increased risk of animals falling into open channels leading to conflicts with communities	Possible	Long term	Local level	Medium (3x3=9)	Significant
Ecological threat if Tiger Fish spread to Upper Shire	Possible	Long term	National level	Medium (3x3=9)	Significant
Blockage of drainpipes installed at the end sill invert of the stilling basin	Definite	Long term	National level	Medium (3x3=9)	Significant

From ~~Table 0-2~~ **Table 5-2** above, the probability of occurrence for most of the positive impacts is definite and duration is long-term with significance ranging from high to moderate. All the Negative impacts that are anticipated from the implementation are mitigatable and their duration is generally short term with some having long term duration.

5.1 Impacts triggered by Emergency Spillways and Flow Control Structures.

5.1.1 Planning and Design Phase

5.1.1.1 Positive Impacts

i. Creation of employment

- **Cause:** The design phase of the project will provide employment to consultants and engineering professionals.
- **Enhancement measures:**
 - Give preference to well qualified local technocrats with provable relevant work experience
 - Prioritise locals when employing skilled and unskilled labourers during construction phase.
 - Women will be employed and will consist 40% of the workforce. This target will be a **contractual obligation** for contractors and service providers, with reporting requirements. Women will be given roles such as Flag persons / site marshals, store clerks and record keepers, environmental and social monitors, canteen and catering services, Tree planting, landscaping, site rehabilitation, PPE attendants and cleaners

ii. Skills transfer to local communities

- **Cause:** Collaboration with international and national consultants during the design phase can facilitate skills transfer to local professionals.
- **Enhancement measures:**
 - Ensure that the project design team includes local professionals for mentorship and capacity building.
 - Ensure the inclusion and employment of 40% of women

5.1.1.2 Negative Impacts

i. Creation of new fish pathways especially for the Tiger Fish

- **Cause:** The blockage at siphon 3 inlet would create a rise in the water level in the tiger Fish chamber allowing for the tiger fish to jump upstream to the main canal. This would be a major ecological concern since it could allow the carnivorous *tiger fish* (*Hydrocynus spp.*) to migrate to **Kapichira Dam and upstream to Lake Malawi,**
- **Mitigation measures:**
 - **Adequately designing the lateral overflow structure** to dewater the main canal in the event of a siphon blockage lowering the water level significantly thus preventing Tiger Fish from swimming upstream. This coupled with the existing fish barrier upstream of the proposed lateral overflow structure will prevent the tiger fish from jumping upstream.

ii. Retention of water at the stilling basin creating a breeding ground for mosquitoes.

- **Causes:** Due to the lowered apron level relative to the natural ground surface, the stilling basin is expected to retain pockets of water during periods of low or no flow. This unintentional impoundment can result in stagnant water, which is a known breeding habitat for mosquitoes. Given the high temperatures and humid conditions typical of the Chikwawa area, the likelihood of mosquito proliferation becomes a valid environmental and public health concern.

- **Mitigation:**

- The design to allow for dedicated dewatering features specifically, drainpipes at the end sill invert of the stilling basin enabling efficient gravity-draining of any standing water that may accumulate once flow subsides.

5.1.2 Construction Phase

5.1.2.1 Positive Impacts

i. Creation of employment

- **Cause:** During construction phase, the project will employ people as skilled and unskilled workers both from local community and expatriates.
- **Enhancement measures:**
 - Engage 70% of the labour force from surrounding communities.
 - Provide good working conditions and wages to labourers.
 - Employment of women to constitute 40 percent of the labour force.

ii. Improved knowledge and skills transfer to local community

- **Cause:** The construction phase will provide employment opportunities to local workers who will get on-the-job training leading to skills transfer from expatriate workers.
- **Enhancement measures:**
 - Engage at least 80% of the labour force from the surrounding communities.
 - Employment of women to consist of 40-60% of the workforce. This target will be a **contractual obligation** for contractors and service providers, with reporting requirements
 - Promote on job training to workers.
 - Prioritise locals when employing skilled and unskilled labourers.

5.1.2.2 Negative Impacts

i. Loss of land

Cause: The construction phase will lead to loss of land during clearing, excavation and working area for machinery /vehicle movement. Implementation of the inline regulatory structures will not require new land acquisition, as the existing 30-metre buffer zone on either side of the canal centreline provides adequate space for construction and future operational needs. However, the development of the safety escape spillways at Siphon 3, Siphon 5, and Siphon 6 will require additional land to accommodate the spillway chutes. At Siphon 3, approximately 12.285 ha of additional land will be required, part of which falls within the established buffer zone and will require confirmation from African Parks. The escape spillway at Siphon 5 will require approximately 12.076 ha, also partially within the buffer zone, with final verification to be undertaken through field assessment.

Mitigation measures:

- Customary Land Committees will be responsible for handling complaints in terms of crops or land loss. The utilization of the existing Customary Land Committees (CLCs) will be; to support verification of customary land rights, boundary confirmation, and protection of legitimate landholders. Grievance Redress Committees (GRCs) shall function as the primary community-level mechanism for receiving and resolving project-related complaints, particularly those related to land acquisition and compensation. The project will strengthen the capacity of both structures through training and coordination to ensure compliance with ESS5 and ESS10 while avoiding duplication of community institutions.

-
- Conduct community awareness and sensitization for surrounding communities.
 - Follow land acquisition procedures should there be any associated land issues.

ii. **Loss of vegetation**

- **Cause:** The construction of spillways and related structures may require vegetation clearing, which can lead to habitat loss, soil erosion, and disruption of local biodiversity. The alignments for the Siphon 3 and Siphon 5 escape spillways traverse areas with light vegetation and forest cover bordering Majete Game reserve, requiring clearing for construction. The vegetation to be cleared will include indigenous trees, grass, shrubs and climbers.
- **Mitigation measures:**
 - The design has minimized the excavation footprint by optimizing chute invert levels and adopting suitable temporary and permanent cut slopes.
 - conservative excavation approach to be applied to ensure construction safety
 - The proposed works rare maintained within the previously established 15–30 m buffer zone from the spillway centreline for siphon 3, consistent with earlier canal design and land allocation practice thus ensuring that planned excavation footprints do not encroach the Majete Park Fence.
 - Remove vegetation within demarcated areas only.
 - avoid areas dominated with vegetation.
 - Sensitize workers and community members to protect flora during disposal of excavated soil.
 - The contractor to set rules and use available regulation on biodiversity protection.

iii. **Unexpected discovery of cultural, archaeological, or paleontological resources**

- **Cause:** Excavation works during construction phase can lead to the discovery of rare artefacts, burial sites, or other cultural, archaeological, or paleontological resources.
- **Mitigation measures:**
 - Develop and implement Chance Find Procedures, which should be communicated to all workers during induction.
 - Halt all works the archaeological treasure and inform the relevant authorities (e.g., Department of Antiquities) for assessment and direction before works can resume.

iv. **Disruption of animal habitats (terrestrial)**

- **Cause:** The clearing of vegetation and excavations for the channels will lead to loss of habitats for terrestrial animals by destroying nests, holes, and mounds.
- **Mitigation measures:**
 - Where possible, conduct animal rescue and rehabilitation activities in collaboration with relevant authorities.
 - Clear only areas where there are no physically verified animal habitats.

v. **Increased dust emissions**

- **Cause:** During the construction phase, dust emissions are expected to arise from the clearing of the construction areas, excavations and stockpiles of loose soil and from vehicles carrying construction materials for the project.
- **Mitigation measures:**
 - Periodically spray water on loose soils and access roads.
 - Minimize the amount of time that loose soil remains exposed to strong wind and run-off.
 - Provide all workers with respiratory personal protective equipment (PPE) such as dust masks.

vi. **Increase risk of noise and vibration**

- **Cause:** Proximity of construction activities for the spillway to Majete Wildlife Reserve will expose wildlife to elevated noise levels from blasting, machinery, vehicles, and personnel, potentially disrupting their natural behavior, movement, and feeding patterns. For the flow control structures, the main sources of noise would include poorly maintained machinery, heavy construction equipment such as excavators, compactors, trucks, and generators as well as excavations and blasting.
- **Mitigation measures:**
 - Maintain a communication channel with Majete Wildlife Reserve management to coordinate actions if animals approach the site.
 - Implement a noise management plan that includes using well-maintained, low-noise equipment, fitting vehicles with silencers, and limiting unnecessary idling.
 - Conduct environmental awareness sessions for all workers on the sensitivity of the nearby reserve and the importance of minimizing disturbance
 - All construction equipment and vehicles will be well maintained and fitted with functional silencers and mufflers.
 - Simultaneous operation of multiple high-noise equipment will be avoided where practicable.
 - Workers exposed to high noise levels will be provided with appropriate PPE such as earplugs or earmuffs.
 - Noise levels will be monitored periodically, and corrective actions will be implemented where acceptable limits are exceeded.
 - Nearby communities will be informed in advance of particularly noisy construction activities.

vii. **Increased risk of soil erosion and sedimentation**

- **Cause:** Vegetation clearing for construction area and wayleaves will leave the soil bare making it vulnerable to surface runoff and raindrop impact. Excavated soil stockpiles that will be loose and prone to surface runoff and raindrop impact thus causing gully erosion.
- **Mitigation measures:**
 - Remove vegetation within demarcated areas only.
 - Compact all loose soils to protect it from surface run off.
 - Protect soil stockpiles from flowing to unclaimed land.

viii. **Pollution due to generation of liquid waste including construction waste**

- **Cause:** Construction activities will generate liquid waste (sewage, concrete washout, accidental fuel/oil spills) and solid waste (excavated material, rubble, cement bags, scrap metal, general refuse), posing a risk of soil and water contamination if not managed correctly.
- **Mitigation measures:**
 - Develop and implement a comprehensive Waste Management Plan covering segregation, storage, and disposal at licensed facilities.
 - Prohibit discharge of untreated washout water and implement a spill prevention and response protocol for hydrocarbons.
 - Conduct worker training on good housekeeping and waste handling procedures.

ix. **Pollution due to generation of solid waste including construction waste**

- **Cause:** During the construction phase of the project there will be generation of solid waste which needs to be properly disposed. In addition, construction activities will generate construction waste that may include unused cement mortar, rubble, plastics, etc. All this waste needs to be properly handled and disposed of. Other solid waste will be generated from different sources such as land clearing, excavation of top and sub soils, and pieces of metals, wood and food leftovers and pills.
- **Mitigation measures:**
 - Develop a Waste Management Plan.
 - Properly dispose of hazardous waste in designated places.
 - Prohibit littering around the construction sites.
 - Sensitization on solid waste management and specific final disposal site.
 - Institute good housekeeping and operating practices.

x. **Increased occupational safety and health hazards risks.**

- **Cause:** Construction work inherently presents numerous hazards, including working at height, in excavations, with heavy machinery, extreme heat, manual handling, exposure to dust and noise as well as attacks by animals especially around the proposed spillway.
- **Mitigation measures:**
 - Develop and implement Occupational Health and Safety (OHS) Plan.
 - Conduct Occupational Health and Safety and first aid training
 - Conduct orientation of workers on working in protected areas
 - Develop emergency risk evacuation plan.
 - Conduct risk and hazard assessment for risk operations.
 - Conduct daily toolbox talks on risk analysis, identification and application of appropriate mitigation measures.
 - Maintain a well-stocked first aid kit at the project area.
 - Provide all workers with appropriate and adequate PPE. Implement a Safe Work Permit system for all high-risk activities (e.g., deep excavations, lifting operations, confined space entry).
 - Provide all workers with task-appropriate Personal Protective Equipment (PPE) free of charge and strictly enforce its use.
 - Ensure first-aid kits are fully stocked and accessible, with enough trained first-aiders on site during all working hours.

-
- xi. **Increased risks to community health and safety**
- **Cause:** Deep excavations will be a safety hazard to community members, children in particular. The spillways channels will be left open and dry most times thus making it a death trap to community members.
 - **Mitigation measures:**
 - Sensitize the communities including children about the potential injury risks associated with the project.
 - Restrict access to/barricade with a weather resistant polythene tape all construction sites.
 - Minimise depth of the trench during design phase.
- xii. **Risk of increased incidences of STIs including HIV and AIDS**
- **Cause:** During construction phase, there is likely to be an influx of people in the project areas with some located in the communities. These will be having sexual relationships with community members increasing chances of spreading STIs.
 - **Mitigation measures:**
 - Develop and implement HIV and AIDS Workplace Policy.
 - Regularly sensitize workers and local community members about the dangers of contracting HIV and AIDS, and STIs.
 - Mobilize and put (male & female) condoms in strategic places (e.g., in toilets, urinal rooms) where workers can easily and privately access them.
- xiii. **Increased risk of theft and crime**
- **Cause:** During the construction phase, various quantities of construction materials such as cement, steel bars, iron sheets, planks, timber, cement blocks, sand, paint, and quarry stones will be transported from various sources to the project sites. These materials have potential to be stolen by both workers and some community members. In addition, some of the construction materials already fixed to the project sites might be vandalized in order to be sold for income.
 - **Mitigation measures:**
 - Conduct sensitizations of communities and workers.
 - Deploy security personnel to guard the construction materials.
 - Ensure all workers sign and adhere to code of conduct.
- xiv. **Increased risk of Gender Based Violence and Sexual Exploitation and Abuse (GBV/SEA)**
- **Cause:** Increased economic activities, labour influx in the project areas may indirectly subject some women to GBV. Victims of GBV working under the project will have to use Grievance Redress Mechanism for the project to report such cases. Cases of GBV that are criminal in nature have to be reported to the nearest Police Station. Some individuals may exploit power imbalances, for example, by asking for sex in exchange for employment. Victims of SEA will be required to report such incidences.
 - **Mitigation measures:**

- Sensitize workers and communities about the consequences of GBV/SH/SEA.
- Review the Code of Conduct (CoC) for workers and each worker must sign it showing acknowledgement of fully understanding the CoC.
- Contractor to report immediately any incidences of GBV/SH/SEA to the relevant authority.
- CCJP and Chikwawa Police Victim Support Unit Department to provide psycho-social support to all the survivors of GBV/SH/SEA
- Create partnership with CCJP to report to the relevant authorities any incidences of GBV/SEA/SH for appropriate action.
- Conduct mapping of referral pathways in the area and help link them with survivors.
- The project shall utilise the existing Grievance Redress Committees (GRCs) as the primary community-level mechanism for receiving and resolving project-related complaints, including land acquisition, compensation, labour issues, and community health and safety concerns. Gender Champions shall work alongside GRCs to promote women's participation, monitor compliance with gender inclusion targets, support GBV prevention and referral pathways, and safeguard the interests of vulnerable groups. Together, these structures will strengthen transparency, accountability, and equitable benefit sharing under the project.

xv. Risk of working in confined space with limited working area

- **Causes:** Risks will arise from construction within canal sections with limited working space. Restricted movement and limited escape routes within the canals will increase the likelihood of slips, trips, and falls. The presence of multiple workers and tools within confined canal sections will further increase the risk of injuries. Wet or uneven canal surfaces will also contribute to unsafe working conditions.
- **Mitigation Measures**
 - Work within canal sections will be properly planned to limit the number of workers operating in confined areas at any given time.
 - Safe access and exit points, such as ladders will be provided and maintained at all canal sections.
 - Canal floors and working surfaces will be kept as dry and stable as practicable to reduce slip and fall risks.
 - Barricades and warning signs will be installed around canal edges to prevent accidental falls.
 - Workers will be trained on safe working procedures specific to confined canal environments.
 - Appropriate PPE, including safety helmets, gloves, safety boots, and reflective vests, will be provided and used at all times.
 - Continuous supervision will be maintained during canal works to ensure compliance with safety procedures.

xvi. Increased risk of animals falling into open channels leading to conflicts with communities

- **Cause:** Deep points of the open channels increase the risk of animals falling into them, leading to conflicts with communities. Animals such as goats and cattle are commonly fed on free range systems and not fully controlled by herders.

- **Mitigation measures**
 - Barricading open trenches to avoid animal entry.
 - Put warning signs for deep excavations.
 - Community awareness of the risk of animals falling into open channels.

5.1.3 Demobilisation Phase

5.1.3.1 Positive Impacts

i. Site Restoration and Rehabilitation

- **Cause:** Upon completion of construction, the demobilisation phase involves the removal of temporary structures, plant, and waste, and the rehabilitation of disturbed areas.
- **Enhancement measures:**
 - Implement a site-specific closure and rehabilitation plan.
 - Revegetate temporarily disturbed areas with native plant species to control erosion and restore habitat.
 - Ensure all surfaces are left in a clean, stable, and safe condition.
 - **Reinstatement of Excavated Cut Slopes:** Cut slopes created during spillway excavations will be reinstated to the required finished levels using suitable material sourced from existing spoil. This will help stabilize the terrain and restore the natural landform as far as practicable
 - **Erosion Control Through Sodding and Geotextiles:** Permanent cut slopes will be protected using sodding and geotextile reinforcement, where feasible. These measures will reduce surface erosion and support the re-establishment of vegetation across disturbed areas
 - **Reuse of Existing Riprap Material from Spoil:** Available riprap material suitable for discharge channels will be sourced from already existing spoil areas within the Main canal. As an example, there is available good quality riprap material at the proposed Siphon 6 escape spillway which can be reused Riprap material suitable for lining discharge channels will be sourced from existing spoil sites along the Main Canal.

5.1.3.2 Negative Impacts

i. Social and Economic Impacts from Workforce Layoffs

- **Cause:** The conclusion of construction will result in the layoff of a significant number of local and migrant workers, leading to a sudden loss of income for individuals and the local economy, which can create social tension.
- **Mitigation measures:**
 - Provide workers with sufficient notice of project completion and contract termination dates, in line with the Employment Act (2000).
 - Support workers by providing guidance on re-employment or linkages to other local employers or upcoming projects.
 - Offer financial management advice to workers to help them manage the transition period.

ii. Pollution and Waste from Demobilisation

- **Cause:** The dismantling of site camps, workshops, and the removal of equipment can generate significant amounts of solid and hazardous waste (e.g., scrap metal, used oil, contaminated soil, demolition rubble). If not managed properly, this can lead to pollution.
- **Mitigation measures:**
 - Implement the Waste Management Plan during demobilisation to ensure all waste is segregated, collected, and disposed of at licensed facilities.
 - Ensure all hazardous materials and wastes are handled and disposed of by licensed contractors.
 - Conduct a final environmental inspection of all demobilized sites (e.g., construction camps, storage yards) to confirm they are free of pollution and have been properly rehabilitated.

5.1.4 Operation Phase

5.1.4.1 Positive Impacts and Enhancement Measures During the Operation Phase

While the primary purpose of the project is to provide a positive benefit (e.g., water security, flood control), the operation phase itself can generate additional positive impacts. These should be proactively enhanced.

i. Enhanced Regional Water and Food Security

- **Cause:** The primary function of the scheme is to regulate and provide a more reliable water supply for irrigation and potentially other uses (e.g., livestock, domestic). This directly contributes to increased agricultural productivity and food security for the region.
- **Enhancement Measures:**
 - Partner with agricultural extension services to provide training to local farmers on efficient water use, climate-smart agriculture, and high-value crop selection to maximize the benefits of the reliable water supply.
 - Support the formation and capacity building of Water User Associations (WUAs) to ensure equitable, transparent, and sustainable management and distribution of water resources among all beneficiaries.

ii. Creation of Long-Term, Skilled Employment

- **Cause:** The operation and maintenance (O&M) of the spillways and flow control structures will require a permanent, skilled workforce for tasks such as monitoring, routine maintenance, vegetation control, and security.
- **Enhancement Measures:**
 - Prioritize the recruitment of qualified personnel from local communities for O&M positions.
 - Provide comprehensive and ongoing technical training to local O&M staff to ensure the long-term sustainability of the infrastructure and foster a highly skilled local workforce.

iii. Opportunities for Managed Aquifer Recharge and Baseflow Stabilization

- **Cause:** The controlled release of water, particularly from the spillways, could be strategically managed to enhance groundwater recharge in downstream areas and stabilize dry-season river flows, benefiting both ecosystems and downstream water users.
- **Enhancement Measures:**
 - Develop a detailed operational plan that investigates and, where feasible, schedules water releases to mimic natural flow patterns, support downstream ecosystems, and contribute to groundwater recharge, in consultation with environmental and water resource experts.
 - Implement a hydrological monitoring program downstream to measure the actual impacts of operations on river flows and groundwater levels, allowing for adaptive management of release schedules to maximize environmental benefits.

iv. **Improved Flood Control and Community Safety**

- **Cause:** The primary purpose of the spillways is to safely convey excess water, thereby protecting the main canal infrastructure. This inherent function also provides a significant benefit by reducing the risk of uncontrolled, catastrophic failure that could cause far greater damage to downstream communities.
- **Enhancement Measures:**
 - Integrate the operation of the spillways into a broader, catchment-wide flood management strategy developed in collaboration with disaster management agencies.
 - Invest in a robust and community-trusted early warning system linked to the operation of the spillways, empowering communities to take proactive measures to protect life and property during high-flow events.

5.1.4.2 Negative Impacts

i. **Increased risk of drowning**

- **Cause:** During emergency canal water release, water flow in the spillways and receiving rivers will increase the risk of drowning thus loss of life.
- **Mitigation measures:**
 - Put warning signs at the structure.
 - Sensitize communities on possible water release from the canal through the spillways into the rivers.

ii. **Changes in river water properties resulting in habitat destruction and loss**

- **Cause:** Water released from the spillway may have different physical and chemical properties (e.g., temperature, pH, dissolved oxygen, turbidity) compared to the receiving river. A sudden influx of this water can shock aquatic life, disrupt behavior, and degrade habitat quality for fish and invertebrates
- **Mitigation measures:**
 - Establish a pre-operation baseline of water quality in the receiving rivers.
 - Implement a long-term water quality monitoring program at strategic points downstream to be activated during and after any emergency release, allowing for impact assessment and adaptive management.

- Conduct community awareness campaigns to discourage waste disposal and other activities that could further pollute the river system.

iii. **Altered river flow regime and sediment transport pattern**

- **Cause:** High-velocity water releases from spillways can significantly alter the natural flow regime and sediment transport dynamics of receiving rivers. This can lead to scouring of the riverbed downstream, erosion of banks, and changes in sediment deposition patterns, fundamentally altering river morphology and aquatic habitats. Changes in the sediment deposition can result in siphon blockages. Increased sediment loads may increase river turbidity and reduce light penetration thus affecting the aquatic plants. Reduced sediments downstream can result in loss of floodplain fertility.
- **Mitigation measures:**
 - Ensure the design of spillway outlets includes energy dissipation structures (e.g., stilling basins) to reduce the velocity and erosive power of released water.
 - Develop a monitoring protocol to assess changes in river channel morphology, bank stability, and sediment distribution following any major water discharge event to inform future operational procedures.

iv. **Increased risk of animals falling into open channels leading to conflicts with communities**

- **Cause:** Open channels, particularly deeper sections, pose a significant trap for domestic and wild animals. Livestock (goats, cattle) falling into channels can result in injury or death, leading to economic loss for communities and potential conflict with the project authority. It also poses a risk to wildlife from the nearby reserve.
- **Mitigation measures**
 - Where safety and design permit, consider measures to facilitate animal escape, such as gently sloping ramps at intervals along the channel.
 - Install physical barriers (e.g., fencing) along sections of the channel with high risk of animal entry.
 - Place clear warning signs at regular intervals to alert herders and community members of the hazard.
 - Conduct ongoing community sensitization, engage with local leaders and herders to raise awareness about the risks of open channels and promote safe animal herding practices.

v. **Ecological threat if Tiger Fish Spread to Upper Shire**

- **Cause:** *Tiger fish* are piscivorous and highly aggressive predators, who can primarily feed on other fish. Their spread into new aquatic systems could have serious consequences as they could predate heavily on endemic and other native fish species. Such invasions are likely to result in major losses in native fish diversity like the case of Nile Perch in Lake Victoria.
- **Mitigation measures:**
 - The designed lateral overflow structure and the existing fish barrier **Fish barriers will prevent tiger fish from jumping upstream.**
 - Long Term monitoring and maintenance to ensure canal and barrier infrastructure functions as intended during design stage.

vi. Blockage of drainpipes installed at the end sill invert of the stilling basin

- **Causes:** The drainpipes can become blocked by sediment, debris, or aquatic vegetation during operation phase. These drainpipes are installed to mitigate for stagnation of water at the stilling basin.
- **Mitigation:**

Regular inspection and cleaning of the drainpipes will form part of the routine operation and maintenance (O&M) procedures for the Main Canal structures

5.1.5 Cumulative Impacts

Cumulative impacts refer to environmental or social effects that may result from the combined influence of multiple activities occurring within a particular area over time. The impacts may arise when the effects of a project contribute to the aggregated impacts with those from the other project.

SVTP has interface with other projects in the Shire valley, notably, the Mpatamanga Hydropower Project, the Emergency Power Restoration Project, Agriculture Commercialisation Program.

- (i) Land acquisition: SVTP has acquired land permanently in respect of development of irrigation infrastructure and water supply facilities. This has occurred in Majete Wildlife reserve and communal customary areas. The key areas of impact border on encroachment in Majete Wildlife Reserve and water demand management. SVTP, EGENCO and African have promulgated a memorandum of understanding (MoU) to guide operations in Majete including water rationing between SVTP and EGENCO
- (ii) Competing water use: there are competing water demands from EGENCO and downstream water users like small scale irrigation schemes. The SVTP ESIA established that an environmental flow of 17 cubic metres per second from Kapichira suffices ecological and downstream utilisation.

5.1.6 Enumeration of some key ESMP implementation indicators to monitor

This ESMP will be monitored using the following key indicator:

- (iv) **Project footprint in Majete Wildlife Reserve:** One of the key concerns raised by African Parks was that they did not want SAVTP to increase in the Park. This was duly considered during design where the adopted spillway alignment avoids further degradation in the park. This recommendation must be closely followed up during construction and any deviations must be agreed first with African parks and cleared by MEPA prior to implementation;
- (v) **Development and implementation of RAP:** given the potential loss of land construction outside the protected area that the construction of the spillway may trigger, a requisite RAP and LRP will be carried out and implemented prior to construction works;
- (vi) **Emergence Response Plan (ERP):** Operation of spillways may in certain circumstances pose public risk as it may lead to flooding of recipient rivers and overflow the cross-drainages down stream hence affecting accessibility of Kapichira and Chikwawa. As agreed in the Aide Memoir of the World Bank and AFDB Missions of February 2026, the operator shall develop an ERP and risk communication plan that shall be employed to respond to emergencies.

5.1.7 Independent local empowered and accessible Grievance Redress Mechanism (GRM) at the project level

SVTP has a grievance redress mechanism (GRM) that was approved and is being applied in conflict resolution. SVTP will continue to use the GRM using existing channels, namely, grievance redress GRCs and CLC. GRM will be updated from time to time on need be basis.

5.1.8 Roles and responsibilities within the PIE (PIU), and institutional arrangement for an efficient implementation of the ESMP (temporary committee or permanent institutions with their specific missions);

The implementation of the ESMP will be overseen by a number of authorities and institutions as follows:

- (vii) Malawi Environmental Protection Authority (MEPA): being responsible for issuance of approvals and clearances at national level, MEPA, will conduct quarterly and adhoc monitoring and supervision exercises to ensure compliance to the ESMP implementation;
- (viii) Ministry of Labour: the ministry will on quarterly and adhoc basis carry out OHS compliance monitoring. The Ministry will facilitate establishment and training of workers committee in line with the country's labour laws and ESF, ISS and ESG Policy;
- (ix) District Council will work with Ministry of lands and SVTP in ensuring formulation and implementation of RAP and LRP in line with the country's land laws, ESF, ISS and ESG Policy. The council will ensure that SVTP's GRM remains aligned to the council's GRM;
- (x) Engineer: The Engineer shall ensure that they, in their establishment, have adequate E&S personnel to monitor and supervise E&S works on behalf of the Client as discharged by the Contractor;
- (xi) PMT: The PMT will retain the existing E&S staffing levels to ensure adequate monitoring for compliance of the ESMP implementation. The PMT will coordinate the discharge of functions carried out by MEPA, ministry of Labour, the Chikwawa District Council, Engineer, and financing institutions. PMT will be responsible for addressing E&S issues raised by these authorities including key agreed actions; and
- (xii) The African Development Bank, World Bank and OPEC Fund for International Development will through adhoc technical and scheduled missions provide backstopping E&S support to the PMT to ensure adherence to the ESMP, ESF, ISS and ESG Policy.

Table 6.1 below summarises an environmental and social management plan for the project.

6. Environmental and Social Management Plan

Table 0-1: Environmental and Social Management Plan

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
Planning and Design Phase						
Positive Impacts						
1	Creation of employment	- Give preference to well qualified local technocrats with provable relevant work experience - Prioritise locals when employing skilled and unskilled labourers during construction phase. - Women will be employed and will consist 40% of the workforce. This target will be a contractual obligation for contractors and service providers, with reporting requirements. Women will be given roles such as Flag persons / site marshals, store clerks and record keepers, environmental and social monitors, canteen and catering services, Tree planting, landscaping,	Client / Design Consultant	Planning and Design Phase	TBD ³	

³ TBD..To Be Determined

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		site rehabilitation, PPE attendants and cleaners				
2	Skills transfer to local communities	- Ensure that the project design team includes local professionals for mentorship and capacity building. - Ensure the inclusion and employment of 40% of women	Client Design Consultant /	Planning and Design Phase	TBD	
Negative Impacts						
1	Creation of new fish pathways especially for the Tiger Fish	Adequately designing the lateral overflow structure to dewater the main canal in the event of a siphon blockage lowering the water level significantly thus preventing Tiger Fish from swimming upstream. This coupled with the existing fish barrier upstream of the proposed lateral	Client Design Consultant /	Design Phase	In the BOQ	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		overflow structure will prevent the tiger fish from jumping upstream.				
2.	Retention of water at the stilling basin creating a breeding ground for mosquitoes	The design to allow for dedicated dewatering features specifically, drainpipes at the end sill invert of the stilling basin enabling efficient gravity-draining of any standing water that may accumulate once flow subsides.	Client / Design Consultant	Design Phase	In the BOQ	
Construction Phase						
Positive Impacts						
1	Creation of employment	- Engage 70% of the labour force from surrounding communities - Provide good working conditions and wages to labourers. - Employment of women to constitute 40% percent of the labour force.	Contractor	Construction Phase	TBD ⁴	

⁴ TBD..To Be Determined

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
2	Improved knowledge and Skills transfer to local communities	- Engage at least 80% of the labour force from the surrounding communities. - Make it an obligation to employ women and they should constitute 40% of the total workforce - Promote on job training to workers. - Prioritize locals when employing skilled and unskilled labourers.	Contractor	Construction Phase	TBD	
Negative Impacts						
1	Loss of land	Customary Land Committees will be responsible for handling complaints in terms of crops or land loss. The utilization of the existing Customary Land Committees (CLCs) will be; to support verification of customary land rights, boundary confirmation, and protection of legitimate landholders. Grievance Redress Committees (GRCs) shall function as the primary community-level mechanism for receiving and resolving project-related complaints, particularly those related to land	Chikwawa District Council Client	Construction Phase	TBD	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		acquisition and compensation. The project will strengthen the capacity of both structures through training and coordination to ensure compliance with ESS5 and ESS10 while avoiding duplication of community institutions. • Conduct community awareness and sensitization for surrounding communities. • Follow land acquisition procedures should there be any associated land issues.				
2	Loss of vegetation	• Remove vegetation within demarcated areas only. • Where applicable, avoid areas dominated with vegetation. • Sensitize workers and community members to protect flora during disposal of excavated soil • The contractor to set rules and use available regulation on biodiversity protection.	Contractor Consulting Engineer Client	Construction phase	6 000 000	3,226

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
3	Unexpected discovery of cultural, archaeological, or paleontological resources	Follow regulated chance find procedures	Contractor Consulting Engineer Client	Construction phase	10 000 000	5,376
4	Disruption of animal habitats (terrestrial)	- Where possible, conduct animal rescue and rehabilitation activities in collaboration with relevant authorities. - Clear only areas where there are no physically verified animal habitats.	Contractor Client	Construction phase	4 000 000	2,151
5	Increased dust emissions	- Periodically spray water on loose soils and access roads. - Minimize the amount of time that loose soil remains exposed to strong wind and run-off. - Provide all workers with respiratory personal protective equipment (PPE) such as dust masks.	Contractor	Construction phase	500 000	
6	Animal disturbance due to noise from construction machinery	- Engage with Majete Wildlife Reserve to manage animals that move close to the site. - Minimize noise from machinery and vehicles through servicing.	African Parks-Majete	Construction phase	3 000 000	1,630

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		Sensitise all employees on animal availability and noise.	Consulting Engineer			
7	Increased risk of soil erosion and sedimentation	- Remove vegetation within demarcated areas only. - Compact all loose soils to protect it from surface run off. - Protect soil stockpiles from flowing to unclaimed land. - Avoid piling soil close to river banks.	Contractor	Construction phase	1000 000	538
8	Pollution due to generation of liquid waste including construction waste	- Develop and implement a comprehensive Waste Management Plan. - Properly dispose of hazardous and no-hazardous waste in designated places. - Prohibit discharge of untreated concrete washout water. - Service machinery and vehicle to avoid oil leakages and spills. - Conduct worker training on good housekeeping and waste handling procedure	Contractor Consulting Engineer	Construction phase	4 000 000	2,151

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
9	Pollution due to generation of solid waste including construction waste	• Develop a Waste Management Plan. • Properly dispose of hazardous waste in designated places. • Prohibit littering around the construction sites. • Sensitization on solid waste management and specific final disposal site. • Institute good housekeeping and operating practices	Contractor Consulting Engineer	Construction phase	2 000 000	1,075
10	Increased occupational safety and health and hazards risks	• Develop and implement Occupational Health and Safety (OHS) Plan. • Conduct Occupational Health and Safety and first aid training • Conduct orientation of workers on working in protected areas • Develop emergency risk evacuation plan. • Conduct risk and hazard assessment for risk operations. • Conduct daily toolbox talks on risk analysis, identification and	Contractor Consulting	Construction phase	7 000 000	3,763

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		application of appropriate mitigation measures. • Maintain a well-stocked first aid kit at the project area. • Provide all workers with appropriate and adequate PPE. • Ensure First Aid kits are fully stocked and accessible with enough trained first aiders				
11	Increased risks to community health and safety	• Sensitize the communities including children about the potential injury risks associated with the project. • Restrict access to/barricade all construction sites. • Where possible, depth of the trench should be minimized during design phase. • Limit construction vehicles speed to 20km/hr within the work areas.	Contractor Client Consulting Engineer	Construction phase	5,000 000	2,688
12	Risk of increased incidences of STIs including HIV and AIDS	• Develop and implement HIV and AIDS Workplace Policy. • Employ unskilled labour from the local community. • Regularly sensitize workers and local community members about the	Contractor Client	Construction phase	8 000 000	4,301

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		dangers of contracting HIV and AIDS, and STIs. • Employ workers from the local community to minimize promiscuity. • Mobilize and put (male & female) condoms in strategic places (e.g., in toilets, urinal rooms) where workers can easily and privately access them. • Allow infected workers to access Anti-Retroviral Treatment from recommended health facilities.	Consulting Engineer Chikwawa District Council			
13	Increased risk of theft and crime	• Conduct sensitizations of communities and workers. • Deploy security personnel to guard the construction materials. • Ensure all workers sign and adhere to code of conduct. • Engage with Chikwawa police and community policing groups.	Contractor Client	Construction phase	4 500 000	2,419
14	Increased risk of Gender Based Violence and Sexual	• Sensitize workers and communities about the consequences of GBV/SH/SEA. • Review the Code of Conduct (CoC) for workers and each worker must	Contractor Client	Construction Phase	7 500 000	4,032

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
	Exploitation and Abuse (GBV/SEA)	sign it showing acknowledgement of fully understanding the CoC. - Contractor to report immediately any incidences of GBV/SH/SEA to the relevant authority. - CCJP and Chikwawa Police Victim Support Unit Department to provide psycho-social support to all the survivors of GBV/SH/SEA - Create partnership with CCJP to report to the relevant authorities any incidences of GBV/SEA/SH for appropriate action. - Conduct mapping of referral pathways in the area and help link them with survivors. - The project shall utilise the existing Grievance Redress Committees (GRCs) as the primary community-level mechanism for receiving and resolving project-related complaints, including land acquisition, compensation, labour issues, and community health and safety concerns. Gender Champions shall	Consulting Engineer CCJP			

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		work alongside GRCs to promote women's participation, monitor compliance with gender inclusion targets, support GBV prevention and referral pathways, and safeguard the interests of vulnerable groups. Together, these structures will strengthen transparency, accountability, and equitable benefit sharing under the project.				
15	Risk of working in confined space with limited working area	• Work within canal sections will be properly planned to limit the number of workers operating in confined areas at any given time.	Client	Construction Phase	TBD	
		• Safe access and exit points, such as ladders will be provided and maintained at all canal sections.	Client	Construction Phase	TBD	
		• Canal floors and working surfaces will be kept as dry and stable as practicable to reduce slip and fall risks.	Client	Construction Phase	TBD	
		• Barricades and warning signs will be installed around canal edges to prevent accidental falls.	Client		TBD	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		- Workers will be trained on safe working procedures specific to confined canal environments. - Appropriate PPE, including safety helmets, gloves, safety boots, and reflective vests, will be provided and used at all times. - Continuous supervision will be maintained during canal works to ensure compliance with safety procedures. .	Client Client	Construction Phase Construction Phase Construction Phase	TBD TBD	
16	Increased risk of animals falling into open channels leading to conflicts with communities	- Barricading open trenches to avoid animal entry - Putting warning signs for deep excavations - Community awareness of the risk of animals falling into open channels	Contractor Consulting Engineer	Construction Phase	1 000 000	538
Demobilisation Phase						
Positive Impacts						

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
1	Site Restoration and Rehabilitation	- Implement a site-specific closure and rehabilitation plan - Revegetate temporarily disturbed areas with native plant species to control erosion and restore habitat - Ensure all surfaces are left in a clean, stable, and safe condition. - Reinstatement of Excavated Cut Slopes: - Erosion Control Through Sodding and Geotextiles: - Reuse of Existing Riprap Material from Spoil:	Contractor Contractor	Demobilisation Phase Demobilisation Phase	TBD TBD	
Negative Impacts						
1	Social and Economic Impacts from Workforce Layoffs	- Provide workers with sufficient notice of project completion and contract termination dates, in line with the Employment Act (2000). - Support workers by providing guidance on re-employment or linkages to other local employers or upcoming projects.	Contractor Contractor / Client Contractor / Client Contractor	Demobilisation Phase Demobilisation Phase Demobilisation Phase Demobilisation Phase	TBD TBD TBD	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		Offer financial management advice to workers to help them manage the transition period				
2	Pollution and Waste from Demobilisation	- Implement the Waste Management Plan during demobilisation to ensure all waste is segregated, collected, and disposed of at licensed facilities. - Ensure all hazardous materials and wastes are handled and disposed of by licensed contractors - Conduct a final environmental inspection of all demobilized sites (e.g., construction camps, storage yards) to confirm they are free of pollution and have been properly rehabilitated	Contractor / Consulting Engineer / Client Contractor	Demobilisation Phase Demobilisation Phase	TBD TBD	
Operation Phase						
Positive Impacts						

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
1	Enhanced Regional Water and Food Security	- Partner with agricultural extension services to provide training to local farmers on efficient water use, climate-smart agriculture, and high-value crop selection - Support the formation and capacity building of Water User Associations (WUAs) to ensure equitable and sustainable water management.	Client / Ministry of Agriculture Client	Operation phase Operation Phase	TBD TBD	
2	Creation of Long-Term, Skilled Employment	- Prioritize the recruitment of qualified personnel from local communities for Operation & Maintenance (O&M) positions. - Provide comprehensive and ongoing technical training to local O&M staff.	Client Client	Operation Phase Operation Phase	TBD TBD	
3	Opportunities for Managed Aquifer Recharge and Baseflow Stabilization	Develop a detailed operational plan that investigates and, where feasible, schedules water releases to mimic natural flow patterns and support downstream ecosystems.	Client	Operation Phase	TBD	
		Implement a hydrological monitoring program downstream to measure the actual impacts of	Client	Operation Phase	TBD	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		operations on river flows and groundwater levels				
4	Improved Flood Control and Community Safety	- Integrate the operation of the spillways into a broader, catchment-wide flood management strategy. - Invest in a robust and community-trusted early warning system linked to the operation of the spillways.	Client / Disaster Management Agencies Client / Disaster Management Agencies	Operation Phase Operation Phase	TBD TBD	
Operation Phase						
Negative						
1	Increased risk of drowning	- Put warning signs at the structure - Sensitise communities on possible water release from the canal through the spillways into the rivers.	Contractor Client	Operation phase	2 000 000	1,075
2	Changes in river water properties resulting in habitat disruption and loss	- Plan for a periodic water quality monitoring in the immediate downstream - Conduct community awareness on avoidance of canal water pollution through waste disposal.	Client	Operation phase	4 000 000	2,151

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		Establish a pre operation baseline of water quality in the receiving rivers				
3	Altered river flow regimes and sediment transport patterns	- Ensure the design of spillway outlets includes energy dissipation structures (e.g., stilling basins) to reduce the velocity and erosive power of released water. - Develop a monitoring protocol to assess changes in river channel morphology, bank stability, and sediment distribution following any major water discharge event to inform future operational procedures.	Client	Operation phase	500 000	269
4	Increased risk of animals falling into open channels leading to conflicts with communities	- Barricading open trenches to avoid animal entry - Install safety measures that facilitates animal escape such as gently sloping ramps at intervals along the channel - Install physical barriers - Put warning signs for deep excavations	Contractor Client	Operation phase	2 500 000	1,344

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Responsibility of Implementation of measures	Timeframe	Cost of Implementation (MK)	Cost of Implementation (US\$)
		Community awareness on the risk of animals falling into open channels.				
5	Ecological threat if Tiger Fish spread to Upper Shire	- The designed lateral overflow stricture and the existing fish barrier Fish barriers will prevent tiger fish from jumping upstream. - Long Term monitoring and maintenance to ensure canal and barrier infrastructure functions as intended during design stage.	Design Team Client	Design Phase Operation phase	1000000	538
6	Blockage of drainpipes installed at the end sill invert of the stilling basin	Regular inspection and cleaning of the drainpipes will form part of the routine operation and maintenance (O&M) procedures for the Main Canal structures	Client	Operation phase	4 000 000	2,151

7. Environmental and Social Monitoring Plan

Environmental and social monitoring is required during pre-construction, construction and operation phase of the proposed project. Environmental and social monitoring plan plays an important role in achieving environmental study objectives, realization of proposed mitigation measures and ensure project sustainability.

Monitoring involves the continuous or periodic review of project activities to determine actual implementation and effectiveness of recommended mitigation measures. Consequently, trends in environmental degradation or improvement can be established. Its purpose is to establish benchmarks so that the nature and magnitude of anticipated environmental and social impacts can be continually assessed. The objectives of environmental and social monitoring for the proposed project are:

- (i) To check on whether the proposed mitigation measures have actually been implemented
- (ii) To provide actual nature and extent of key impacts and the effectiveness of mitigation and benefit enhancement measures, and modify existing or create new mitigation measures to ensure actual impacts and risks are properly mitigated
- (iii) To help decision making in environmental, health and safety, and social management monitoring, including resolution of non-compliances, unplanned events, and building upon lessons learned to have more effective and efficient environmental and social management
- (iv) To create institutional coordination mechanism between the proponent, relevant district and sector office and the other partners involved in the environment monitoring activities. The environmental and social monitoring plan for the proposed project.

Table 7.1 comprehensively outlines how the monitoring plan will be implemented, and the cost attached to it.

Table 8-1: Environmental and Social Monitoring Plan

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of	Monitoring Frequency	Monitoring Institutions	Cost of implementation (MK)	of	Cost of Implementation (US\$)
Planning and Design Phase										
Positive Impacts										
1,	Creation of employment	- Give preference to well qualified local technocrats with provable relevant work experience - Prioritise locals when employing skilled and unskilled labourers during construction phase. - Women will be employed and will consist 40% of the workforce. This target will be a contractual obligation for contractors and service providers, with reporting requirements.	- Number of local personnel (disaggregated by skill level and gender) included in the pre-construction technical teams. - Inclusion of 40% female workforce target in all tender documents and contracts	Design contracts, Tender documents, Pre-construction progress reports		Once (during procurement and design)	Chikwawa District Council / Client	620 000		333

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple n (US
		Women will be given roles such as Flag persons / site marshals, store clerks and record keepers, environmental and social monitors, canteen and catering services, Tree planting, landscaping, site rehabilitation, PPE attendants and cleaners (xii)						
2	Skills transfer to local communities	- Ensure that the project design team includes local professionals for mentorship and capacity building. - Ensure the inclusion and employment of 40% of women	Number of local artisans and women employed and trained	Monthly progress reports	Quarterly	Consulting Engineer	620 000	333

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US)
Negative Impacts								
1	Creation of new fish pathways especially for the Tiger Fish	Adequately designing the lateral overflow structure to dewater the main canal in the event of a siphon blockage lowering the water level significantly thus preventing Tiger Fish from swimming upstream. This coupled with the existing fish barrier upstream of the proposed lateral overflow structure will prevent the tiger fish from jumping upstream.	Presence of properly installed lateral overflow structure	Photographic record of installed barrier Maintenance logs and inspection checklists Approved design report	Once	Client	No Additional Cost	333
2	Retention of water at the stilling basin creating a breeding ground for mosquitoes	The design to allow for dedicated dewatering features specifically, drainpipes at the end sill invert of the stilling basin enabling efficient	Presence of properly installed drainpipes	Photographic record of installed drainpipe	Once	Client	No additional Cost	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US\$)
		gravity-draining of any standing water that may accumulate once flow subsides.		Maintenance logs and inspection checklists Approved Design Report				
Construction Phase								
Positive Impacts								
1	Creation of employment	- Give preference to well qualified local technocrats with provable relevant work experience - Prioritise locals when employing skilled and unskilled labourers during construction phase. - Women will be employed and will consist 40% of the workforce.	Number of people employed segregated by age and gender	Monthly progress reports	Quarterly	Chikwawa District Labour Office	620 000	333

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple n (US
2	Improved knowledge and skills transfer to local communities	- Engage at least 80% of the labour force from the surrounding communities. - Employ women and they should constitute 40% of the total labour force - Promote on job training to workers. - Priotise locals when employing skilled and unskilled labourers.	Number of local artisans and women employed and trained	Monthly progress reports	Quarterly	Chikwawa District Council Consulting Engineer	620 000	333
Negative Impacts								
1	Loss of land	Customary Land Committees will be responsible for handling complaints in terms of crops or land loss. The utilization of the existing Customary Land Committees (CLCs) will be; to support verification of customary land rights,	- Number of land loss grievances handled - Number of community awareness meetings conducted	Monthly progress reports	Quarterly	Chikwawa District Council Consulting Engineer	620 000	333

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US)
		boundary confirmation, and protection of legitimate landholders. Grievance Redress Committees (GRCs) shall function as the primary community-level mechanism for receiving and resolving project-related complaints, particularly those related to land acquisition and compensation. The project will strengthen the capacity of both structures through training and coordination to ensure compliance with ESS5 and ESS10 while avoiding duplication of community institutions. • Conduct community awareness and						

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US\$)
		sensitization for surrounding communities. Follow land acquisition procedures should there be any associated land issues.						
2.	Loss of vegetation	- Remove vegetation within demarcated areas only. - Where applicable, avoid areas dominated with vegetation. - Sensitize workers and community members to protect flora during disposal of excavated soil - The contractor to set rules and use available regulation on biodiversity protection.	- Number of trees cut and cleared. - Number of sensitisation meetings conducted with workers.	Weekly and monthly reports	Weekly Monthly	Chikwawa District Council Consulting Engineer Client MEPA	2 600 000	1,390
3	Unexpected discovery of cultural,		Number of chance find procedures implemented	Chance find procedure records	Ongoing	Contractor	10 000 000	5,370

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US\$)
	archaeological, or paleontological resources	Follow regulated chance find procedures				Consulting Engineer Chikwawa District Council Client		
4	Disruption of animal habitats (terrestrial)	- Where possible, conduct animal rescue and rehabilitation activities in collaboration with relevant authorities. - Clear only areas where there are no physically verified animal habitats.	Number of nests and other habitats removed.	Monthly reports	Monthly	Consulting Engineer	320 000	172
5	Increased dust emissions	- Periodically spray water on loose soils and access roads. - Minimize the amount of time that loose soil remains exposed to	- Number of dust suppression trips per day - Number of dust masks distributed	Monthly reports	Monthly	Contractor Consulting Engineer	400 000	215

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US)
		strong wind and run-off. • Provide all workers with respiratory personal protective equipment (PPE) such as dust masks.						
6	Animal disturbance due to noise from construction machinery	• Engage Majete Wildlife Reserve to manage animals that move close to the site. • Minimize noise from machinery and vehicles through servicing. • Sensitise all employees on animal availability and noise. • All construction equipment and vehicles will be well maintained and fitted with functional silencers and mufflers. • Simultaneous operation of multiple high-noise equipment	• Number of engagement sensitisation meetings conducted • Number of noise PPE distributed • Equipment and Vehicle maintenance records •	Monthly reports	Monthly	Contractor Consulting Engineer	600 000	321

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple n (US
		will be avoided where practicable. - Workers exposed to high noise levels will be provided with appropriate PPE such as earplugs or earmuffs. - Noise levels will be monitored periodically, and corrective actions will be implemented where acceptable limits are exceeded. - Nearby communities will be informed in advance of particularly noisy construction activities.						
7	Increased risk of soil erosion and sedimentation	- Remove vegetation within demarcated areas only. - Compact all loose soils to protect it from surface run off.	Areas where vegetation is removed	Daily checks	Daily	Contractor	400 000	215

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple n (US
		- Protect soil stockpiles from flowing to unclaimed land. - Avoid piling loose soil close to riverbanks.				Consulting Engineer		
8	Pollution due to generation of liquid waste including construction waste	- Develop a Waste Management Plan. - Properly dispose of hazardous and non-hazardous waste in designated places. - Prohibit discharge of untreated concrete washout water. - Service machinery and vehicle to avoid oil leakages and spills.	- Number of waste disposal sites identified and used. - Number of machinery and vehicles with service cards.	Monthly reports	Monthly	Contractor Consulting Engineer	500 000	269
9	Pollution due to solid waste including construction waste	- Develop a Waste Management Plan. - Properly dispose of hazardous waste in designated places. - Prohibit littering around the construction sites.	- Number of waste bins available on site - Number of awareness meetings conducted.	Site inspections Monthly report	Weekly Monthly	Contractor Consulting Engineer	500 000	269

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US)
		- Sensitization on solid waste management and specific final disposal site. - Institute good housekeeping and operating practices						
10	Increased occupational safety and health and hazards risks	- Develop and implement Occupational Health and Safety (OHS) Plan. - Conduct Occupational Health and Safety and first aid training - Conduct orientation of workers on working in protected areas - Develop emergency risk evacuation plan. - Conduct risk and hazard assessment for risk operations. - Conduct daily toolbox talks on risk analysis, identification and	- Number of toolbox talks conducted - Number of workers with full appropriate PPE - Number of TRAs completed	Site inspections Monthly report	Monthly	Contractor Consulting Engineer Ministry of Labour	1 100 000	591

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US\$)
		application of appropriate mitigation measures. • Maintain a well-stocked first aid kit at the project area. • Provide all workers with appropriate and adequate PPE.						
11	Increased risks to community health and safety	• Sensitize the communities including children about the potential injury risks associated with the project. • Restrict access to/barricade all construction sites. • depth of the trench should be minimised during design phase.	• Number of sensitisation meetings conducted • Availability and correct use of barricades on site.	Site inspections Monthly reports	Monthly	Contractor Client Consulting Engineer	2 200 000	1,283
12	Risk of increased incidences of STIs including HIV and AIDS	• Develop and implement HIV and AIDS Workplace Policy.	• Number of sensitisation meetings conducted	Monthly reports	Monthly	Contractor	1 150 000	618

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US)
		- Regularly sensitize workers and local community members about the dangers of contracting HIV and AIDS, and STIs. - Mobilize and put (male & female) condoms in strategic places (e.g., in toilets, urinal rooms) where workers can easily and privately access them.	Number of condoms distributed			Client Consulting Engineer Chikwawa District Council		
13	Increased risk of theft and crime	- Conduct sensitizations of communities and workers. - Deploy security personnel to guard the construction materials. - Ensure all workers sign and adhere to code of conduct. - Engage with Chikwawa police and community policing groups.	- Number of sensitisation and engagement meetings conducted - Number of theft and crime incidents recorded	Monthly reports GRC/GRM meetings	Monthly	Contractor Client Consulting Engineer	2 000 000	1,075

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple
14	Increased risk of Gender Based Violence and Sexual Exploitation and Abuse (GBV/SEA)	- Sensitize workers and communities about the consequences of GBV/SH/SEA. - Review the Code of Conduct (CoC) for workers and each worker must sign it showing acknowledgement of fully understanding the CoC. - Contractor to report immediately any incidences of GBV/SH/SEA to the relevant authority. - CCJP and Chikwawa Police Victim Support Unit Department to provide psycho-social support to all the survivors of GBV/SH/SEA - Create partnership with CCJP to report to the	- Number of sensitisation meetings conducted - Number of workers who have signed code of conduct	Monthly reports	Monthly	Contractor Client Consulting Engineer	1 200 000	645

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US)
		relevant authorities any incidences of GBV/SEA/SH for appropriate action. • Conduct mapping of referral pathways in the area and help link them with survivors. • The project shall utilise the existing Grievance Redress Committees (GRCs) as the primary community-level mechanism for receiving and resolving project-related complaints, including land acquisition, compensation, labour issues, and community health and safety concerns. Gender Champions shall work alongside GRCs to promote women's participation, monitor compliance with						

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple n (US
		gender inclusion targets, support GBV prevention and referral pathways, and safeguard the interests of vulnerable groups. Together, these structures will strengthen transparency, accountability, and equitable benefit sharing under the project.						
15	Risk of working in a confined space with limited working areas	- Work within canal sections will be properly planned to limit the number of workers operating in confined areas at any given time. - Safe access and exit points, such as ladders will be provided and maintained at all canal sections.	Number of TRAs and Confined space permits completed	Monthly reports Site inspections	Weekly Monthly	Consulting engineer Client	600 000	323

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple
		- Canal floors and working surfaces will be kept as dry and stable as practicable to reduce slip and fall risks. - Barricades and warning signs will be installed around canal edges to prevent accidental falls. - Workers will be trained on safe working procedures specific to confined canal environments. - Appropriate PPE, including safety helmets, gloves, safety boots, and reflective vests, will be provided and used at all times. - Continuous supervision will be maintained during canal works to ensure compliance with safety procedures.						

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple n (US
		•						
16	Increased risk of animals falling into open channels leading to conflicts with communities	• Barricading open trenches to avoid animal entry. • Put warning signs for deep excavations. • Community awareness of the risk of animals falling into open channels.	• Number of warning signs in place • Number of awareness meetings conducted	Incident reports	Periodically	Client	200 000	108
Operation Phase								
Positive Impacts								
1	Enhanced Regional Water and Food Security	• Partner with agricultural extension services to provide training to local farmers on efficient water use, climate-smart agriculture, and high-value crop selection	No. of trainings conducted No. of WUAs engaged through	Trainings records	Periodically	Client	N/A	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple n (US
		Support the formation and capacity building of Water User Associations (WUAs) to ensure equitable and sustainable water management.	capacity building initiatives	Records of capacity building initiatives				
2	Creation of Long-Term, Skilled Employment	- Prioritize the recruitment of qualified personnel from local communities for Operation & Maintenance (O&M) positions. - Provide comprehensive and ongoing technical training to local O&M staff.	No. and qualifications of personnel recruited from local communities No. of technical trainings	Records of personnels Training records	Periodically	Client	N/A	
3	Opportunities for Managed Aquifer Recharge and Baseflow Stabilization	Develop a detailed operational plan that investigates and, where feasible, schedules water releases to mimic	Percentage compliance with environmental flow requirements (%)	- Environmental flow compliance reports - Monthly abstraction vs release reports	Periodically	WRA Client	TBD	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means of verification	Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	Cost of Implementation (US\$)
		natural flow patterns and downstream ecosystems.	Frequency of ecological flushing flows implemented per year	Regulatory compliance audits (e.g., Water Resources Authority)				
		Implement a hydrological monitoring program downstream to measure the actual impacts of operations on river flows and groundwater levels	Hydrological monitoring program	River discharge (Flowrate) Changes in water levels downstream	Daily and monthly	Client	TBD	
4	Improved Flood Control and Community Safety	- Integrate the operation of the spillways into a broader, catchment-wide flood management strategy. - Invest in a robust and community-trusted early warning system linked to the operation of the spillways.	Existence of an approved Catchment Flood Management Plan Number of downstream flood incidents linked to	Approved Flood Management Plan document Existence of operational Early Warning System Average warning lead time before release (minutes/hours)	Monthly	Client	TBD	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple n (US
			spillway operation					
Negative Impacts								
1	Increased risk of drowning	- Put warning signs at the structure - Sensitise communities on possible water release from the canal through the spillways into the rivers.	- Number of warning signs placed - Number of sensitisation meetings conducted	Monthly reports	Monthly	Contractor Client Consulting Engineer	700 000	376
2	Changes in river water properties resulting in habitat disruption and loss	- pre-operation baseline of water quality in the receiving rivers - Plan for a periodic water quality monitoring in the immediate downstream - Conduct community awareness on avoidance of canal water pollution through waste disposal.	Number of community awareness meetings conducted	Monthly reports	Monthly	Client	200 000	108

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple
3	Altered river flow regime and sediment transport patterns	- Ensure the design of spillway outlets includes energy dissipation structures (e.g., stilling basins) to reduce the velocity and erosive power of released water. - Develop a monitoring protocol to assess changes in river channel morphology, bank stability, and sediment distribution following any major water discharge event to inform future operational procedures.	- Incorporation of energy dissipation structures in final approved engineering designs - Compliance of constructed spillway outlets with approved design specifications - Evidence of reduced scour and erosion immediately downstream of spillway outlets - Changes in channel width, depth, or alignment recorded	Approved detailed engineering drawings and design reports Construction supervision reports and completion certificates Periodic erosion/scour reports Incident/event discharge records	Periodically	Client	200 000	108

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Implementation (US)
4	Increased risk of animals falling into open channels leading to conflicts with communities	- Barricading open trenches to avoid animal entry - Put warning signs for deep excavations - Community awareness on the risk of animals falling into open channels.	- Number of warning signs in place - Number of awareness meetings conducted	Incident reports	Periodically	Client	200 000	108
5	Ecological threat if Tiger Fish spread to Upper Shire	- The designed lateral overflow structure and the existing fish barrier Fish barriers will prevent tiger fish from jumping upstream. - Long Term monitoring and maintenance to ensure canal and barrier infrastructure functions as	- Monitoring reports and inspection records - Presence of properly installed lateral overflow structure	✓ Engineering inspection records and completion certificates ✓ Approved O&M Plan ✓ Maintenance work orders and repair logs ✓ Annual infrastructure performance audits ✓ Financial records showing allocated and	Periodically	Client	No additional Cost	

Item No.	Environmental and Social Impact	Mitigation/Enhancement Measures	Monitoring Indicator	Means verification	of Monitoring Frequency	Monitoring Institutions	Cost implementation (MK)	of Cost Imple n (US
		intended during design stage.		utilized maintenance funds				
6	Blockage of drainpipes installed at the end sill invert of the stilling basin	Regular inspection and cleaning of the drainpipes will form part of the routine operation and maintenance (O&M) procedures for the Main Canal structures	- Approved O&M procedure incorporating drainpipe inspection and cleaning schedule - Frequency of inspections conducted - No. of blockages identified and cleared - Reduction in reported incidences of water stagnation	✓ Approved O&M Manual ✓ Inspection checklist and signed field inspection reports ✓ Work orders and completion certificates for repair ✓ Incident/maintenance tracking register	Monthly/Quarterly	Client	No additional Cost	0

8. Institutional Arrangements and Responsibilities

The ESMP should be implemented to address all activities that have been identified to have potentially significant impacts on the environment and social during project construction and operation. The implementation of the project environment and social components will be overseen by different institutional arrangements.

Table 9.1: Institutional Arrangements and Responsibilities

Responsible Party	(xiii) Roles and Responsibilities
Ministry of Agriculture, Irrigation and Water Development	• Custodian of the project • Provide support, oversight, and quality control to field staff working on environmental and social risk management. • Planning and implementation of ESMP. • Ensuring that the social and environmental protection and mitigation measures in the ESMP are incorporated in the site-specific Environmental and Social Action Plans. • Supervise and monitor the progress of contractors' activities. • Provide guidance to construction teams in conducting subsequent monitoring and reporting and in undertaking corrective options. • Responsible for modifications to the ESMP when unforeseen changes are observed during implementation. • Ensure the submission of periodic environmental and social management and monitoring reports to the World Bank. • Promote improved social and environmental performance through the effective use of management systems. • External communications with other implementing partners, government ministries and agencies, and non-government organisations on matters of mutual interest related to environmental management under the project development.
Supervising Engineer (SE)	• Development of a monitoring tool or checklist based on the ESMP and guided by the project's physical layout. • Develop a monitoring program for the works, targeting specific project working sites, material sites, sensitive environments, social areas, etc. • Prepare monthly site meetings to involve the Contractor, Client and Stakeholders. • Monthly reports in addition to continuous communications to the Contractor, Client, Authorities and Stakeholders as situations require. • The Consulting Engineer will convene monthly meetings for progress reporting by the Contractor and the supervision team.
Malawi Environmental Protection Authority (MEPA)	• Conduct quarterly monitoring and supervision of SVTP to ensure compliance to ESF, ISS, ESG Policy, ESMP, C-ESMP and OHS Plans; • Review and approve bi-annual E&S reports
Ministry of Labour	• Conduct quarterly monitoring and supervision of SVTP to ensure compliance to ESF, ISS, ESG Policy, ESMP, C-ESMP and OHS Plans; • Review and approve bi-annual E&S reports

Responsible Party	(xiii) Roles and Responsibilities
Contractor	• Customise the project ESMP and generate a Construction Environmental and Social Management Plan (C-EASMP) as a tool to guide the implementation and monitoring of indicators. File a copy with the supervising Engineer. • Procure necessary equipment for environment measurements or engage some appropriate expert personnel for the activity in specific environment quality aspects, including air quality, noise, water, and soil quality, • Monthly reporting throughout the project period.
Chikwawa District Council	• While the district council structures especially DESC has been involved in the ESMP preparation, major responsibility in monitoring the implementation of the project and ensuring quality works lies with the implementation of critical activities requires involvement of the relevant officers from Chikwawa District council e.g., the Environment, labour, social welfare and public works, Physical planning officers.
World Bank, AFDB and Opec Fund	• Provide backstopping support to PMT on ESF, ISS and ESD Policy implementation; • Build capacity of PMT E&S staff for SVTP for better delivery of E&S instruments including biodiversity off-sets

9. Stakeholder Engagement and Grievance Redress Mechanism

Stakeholder engagements

During the development of this ESMP, SMEC conducted a stakeholders' engagement exercise not only to solicit their views on the impending project, but also to determine all stakeholders that will be directly or indirectly affected by the safety emergency spillways and water flow control structures to be constructed on the main canal on Siphons 3, 5 and 6 on Mwembezi, Masakala and Mwanza rivers in that order. In addition, the consultations were also meant to inform the community and district level stakeholders about these additional structures; to determine how the project will affect them and how best it can be implemented to minimize adverse environmental and social impacts. A total of 125 people were consulted of which 67 were male and 58 female representing 54% and 46% respectively as depicted by the pie chart below.

Figure 10-1: Gender representation of stakeholders

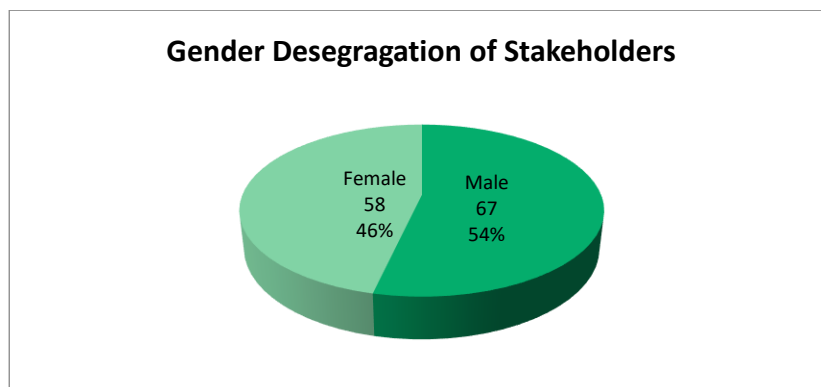


Table 10-1: Detailed breakdown of the stakeholders consulted by category, location and gender

Stakeholder	Participants			Location	Date
	Total	Male	Female		
African Parks–Majete Wildlife Reserve	5	5	0	Majete Wildlife Reserve offices	22/01/2026
District Environmental Sub Committee (DESC)	15	10	5	Chikwawa District Council	06/02/2026
Traditional Leaders	3	2	1	GVH Njereza	04/02/2026
Traditional Leaders	3	2	1	GVH Thuboy	04/02/2026
Farmers	15	10	5	GVH Njereza	05/02/2026
Farmers	22	16	6	GVH Nkanyoza	07/02/2026
Community Members	52	19	33	GVH Njereza	05/02/2026
Community Members	13	6	7	GVH Thuboy	05/02/2026

Specifically, stakeholder engagement was carried out in order to:

- Collect baseline social and community information specific to the project site.
- Identify socioeconomic issues that need to be addressed during its implementation.
- Capture expectations from stakeholders and elicit suggestions on ways to avoid or minimize adverse effects of the project.
- Ensure that all appropriate measures are included in the ESMP.
- Ascertain compliance of the project to statutory regulation.
- To determine approximate number of PAPs involved
- To identify stakeholders, build and maintain a constructive relationship with project-affected parties.
- To ensure that stakeholders' views are taken into account in the project design and construction to improve environmental and social performance.
- To promote and provide means for effective and inclusive engagement with project-affected parties on issues that could potentially affect them.
- To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.
- Acquaint the stakeholders of potential hazards and mitigation measures associated with the construction and operation of the structures.

To provide project-affected and interested parties with accessible and inclusive means to raise issues and grievances. Consultations were through key informant interviews, focus group discussions and community meetings. Respectively each consultative meeting began with briefing the stakeholders at the different levels about the project information with regards to the proposed construction of the safety and water flow control structures. Afterwards, stakeholders were asked to provide their views regarding the potential positive and negative impacts of the project to the community socioeconomics and environment. Appendix 4 presents registers of stakeholders involved in the discussions

Community engagement in project setting is consistent with ESS10 of the World Bank, which recognizes the importance of open and transparent engagement between the borrower and project stakeholders as an essential element of good international practice.

Figure 10-2: Stakeholders engagement



District Environment Sub-Committee (DESC)



Traditional Leaders Consultation



Community engagement at GVH Njereza, Thuboy & Mkanyoza



African Parks Majete Wildlife Reserve

The stakeholders raised the following issues as stipulated in the table below;

Table 10-2 : Summary of issues discussed, and comments raised by stakeholders and how was addressed

Stakeholder	Meeting Place	Date of Meeting	Objective of the meeting	Issues discussed	Inputs/ Comments made	How the issue was/has been addressed
Chikwawa DESC members	Chikwawa District Council Chamber	6 th February 2026	To brief the DESC members about the project and to solicit their inputs on the different impacts and how the impacts can be managed	Nature/ components of the project	The DESC team mentioned that structural integrity of the existing main canal should be observed during construction of flow control structures.	This was already addressed and included in the designs and a structural engineer has been hired to ensure that structural integrity of the existing main canal is not affected.
				Socio-economic benefits the project will bring	The project will create job opportunities to the surrounding communities	This has been included as a positive impact of creation of temporary jobs during the construction works
					Upon employing members from nearby communities, they will tap skills from the experienced contractors and being able to take those skills to their communities even after the project	This has been consolidated into the impact of transfer of skills during construction stage
				Environmental negative impacts the project will bring	The DESC members pointed out the; • Risk of open defecation • Risk of generation solid waste such as rubbles and concrete waste. • Risk of flooding due to discharge of water in the rainy season during operation phase. • Risk of loss of trees during construction phase. • Unexpected discovery of cultural, archaeological, or paleontological resources	• Provision of toilets to construction sites as depicted in the ESMP • This has been consolidated as negative impacts of construction phase. • This has been consolidated as negative impacts of operation phase. • This has been consolidated as negative impacts of construction phase. • This has been consolidated as negative impacts of construction phase.

Stakeholder	Meeting Place	Date of Meeting	Objective of the meeting	Issues discussed	Inputs/ Comments made	How the issue was/has been addressed
				Socio-economic negative impacts the project will bring	The construction works may bring occupational safety risks to workers during construction phase.	This has been included as a negative impact of occupational health and safety risks during the construction works
				Any other concerns/issues	The Council should be fully engaged in the monitoring of the project including making sure issues of accountability are addressed	Other council officers have been included as responsible persons/agencies in ESMMP monitoring
Traditional Leaders (GVHs Njereza, Thuboy, Petulo, Nkanyoza, Lumbe) (VHs Thuboy, Supriano, Njereza II, Sekera II) and Community members (xiv) (xv)	GVH headquarters (xvi) Siphone 6 (xvii)	4 th -5 th and 7 th February 2026	To brief the Traditional Leaders about the project and to solicit their inputs on the different impacts and how the impacts can be managed	Socio-economic positive impacts the project will bring	The communities should be prioritised for unskilled labour opportunities during construction phase	This has been included as a positive impact during the construction and operation phases of the project.
				Socio-economic negative impacts the project will bring	- The project will bring migrant workers who can disrupt marriages leading to divorces and discordant couples. - The project will bring loss of cultivable land to people cultivating along targeted rivers.	- This has been included as a negative impact during construction phase. - This has been included as a negative impact during construction phase. (xviii)
				Environmental negative impacts the project will bring	Increased risk of flooding of rivers in the rainy season into cultivable wetlands during operation phase.	- This has been included as a negative impact during operation phase - Prior community awareness and sensitization should be made before any planned water discharge during operation phase.

Stakeholder	Meeting Place	Date of Meeting	Objective of the meeting	Issues discussed	Inputs/ Comments made	How the issue was/has been addressed
				Other issues raised during the stakeholders consultation meetings	Community members asked for action that will be taken by the project in case of land and crops loss during operation phase as a result of flooding.	Thorough assessment will be made by the responsible authorities and appropriate compensations will follow.

Gender and social inclusion

The SVTP programme promotes gender and social inclusion throughout its implementation to ensure the inclusion of the disadvantaged and the vulnerable. In the same vein, the design and construction of the secondary structures will take into consideration matters related to gender and social inclusion. Views of women and other vulnerable groups on the Project will be taken into account in order to have a holistic picture of potential risks and impacts the Project may pose and come up with effective mitigation measures considering that men and women view things differently.

The project will ensure that inequalities between men and women are addressed and all unintended effects on gender dynamics for example, domestic violence are prevented. The program will plan on different levels of education and look into culturally appropriate consultations, representation of different perspectives across social economic, caste, ethnic and religious lines. SMEC will thus ensure that there is representation and participation of women and other vulnerable groups including people living with disabilities, people living with HIV and AIDS different religious groups, marital status, the youth and children in all community consultations meetings.

Venues for meetings will be accessible to vulnerable groups and information will be provided in a language that is easy to understand. This work shall be done in collaboration with other NGOs working in the area, particularly those working with vulnerable groups such as women and adolescent girls. All data collected will be disaggregated by gender for effective decision making. Hence, for each meeting, the number of men and women, youth and children will be recorded.

To ensure that views of different categories of people are captured, special focus group discussions (FGDs) will be held for men only, women only, people with disabilities as well as people living with HIV/AIDS. Special attention will also be paid to FGDs for the elderly and youth; disaggregating them into male and female.

The project has a grievance redress mechanism facilitated by CCJP which has been appointed by the project as the service provider for dealing with project grievances. In this case the same arrangement will prevail as such, the community will be informed that if they have a grievance they should lodge it using existing channels. SMEC in collaboration with the Contractor and CCJP will orient the communities on the project GRM processes.

9.1 Grievance Redress Mechanism

The project has a grievance redress mechanism (GRM) that is linked to the district GRM system. The mechanism operates through structures at Group village Head, Traditional Authority, District and national levels and they include Group Redress Committees (GRC), and customary land committees (CLCs). These GRM and its structures have delivered effectively in respect of resolving the various grievances and in this view SVTP will sustain them for this project.

Owing to the magnitude of the program, SVTP entered into a service provision agreement with the Catholic Commission on Justice and Peace (CCJP) of Diocese of Chikwawa. The implementation of SVTP's GBV and SEA/SH Strategy is, as such, facilitated by CCJP.

In line with ESF, ISS, ESG Policy and the country's labour laws the contractor's workers will form an workers' committee through which all labour related disputes will be resolved between the

employees and employer. This promotes collective bargaining, peaceful resolution of labour issues, workers’ protection and fair labour practices.

9.2 Institutional Capacities & Strengthening Plan

To successfully implement this ESIA, it is essential that relevant stakeholders have adequate and appropriate capacity. To achieve this capacity of relevant stakeholders needs to be built. Training will be organized by the PMT who should engage competent government personnel/consultants. The goal of the training for the PMT staff, employees of key stakeholders and Contractor Personnel is to help them in understanding:

- (i) The mitigation measures in the ESMP and how it can be implemented during the course of work
- (ii) To allow for the understanding of occupational health and safety rules, at the construction site
- (iii) Understand the GRM processes and procedures
- (iv) To understand the roles and responsibilities of all stakeholders involved.
- (v) To help in dealing with emergency situations and incidents
- (vi) To understand the manner of dealing with any grievances that may arise, such as enquiries, questions, etc
- (vii) Importance of sensitizing the concerned communities

In addition, participants will be trained on how to respond effectively to emergencies and incidents, as well as how to manage grievances such as community enquiries or complaints. The training will emphasize the importance of sensitizing affected communities to project activities, risks, and benefits. This capacity- building plan is designed to address identified training gaps and ensure that safeguards are implemented effectively throughout the project cycle.

This capacity-building plan is designed to address the identified training gaps highlighted in Table

Table 310: Capacity Building Plan

Capacity Need	Target Participants	Duration	Facilitator	Project Phase	Unit Cost (\$)	No. of Sessions	Total Cost (\$)
AfDB's Integrated Safeguard Systems	Contractors, Supervising Engineer, Environmental & Safety Officers, relevant MDAs	½ day		Pre-construction	250	10	2,500
Impact Identification & Mitigation Processes	PIU staff, Contractors, Supervisors	½ day	Environmental & Social Safeguards Specialist	Pre-construction & Construction	250	13	3,250
ESMP Monitoring & Evaluation	PIU, Supervisors, AfDB reps	½ day	Environmental & Social Safeguards Specialist	Pre-construction & Construction	250	13	3,250
Occupational Health & Safety / Community Health & Safety	Contractors, Workers	½ day each	Environmental & Social Safeguards Specialist	Construction	250	20	5,000
Hazards in Construction	Contractors, Workers, Supervisors	½ day	Engineering Consultant	Pre-construction & Construction	250	19	4,750
Public Health & Waste Management	PIU, Contractors, Community reps	½ day	Environmental & Social Safeguards Specialist	Construction	250	15	3,750
Communicable Disease Awareness & Prevention	Workers, Community reps	½ day	Environmental & Social Safeguards Specialist	Construction	250	15	3,750

Capacity Need	Target Participants	Duration	Facilitator	Project Phase	Unit Cost (\$)	No. of Sessions	Total Cost (\$)
Community & Stakeholder Engagement	Stakeholders along the corridor	½ day	Environmental & Social Safeguards Specialist	Pre-construction & Construction	250	15	3,750
GBV/SEA/SH & Child Labor Prevention, GRM, Code of Conduct	Contractors, Workers, PIU, Community reps, MDAs	½ day	Environmental & Social Safeguards Specialist	Pre-construction & Construction	250	24	6,000
Emergency Preparedness & Incident Response	PIU, Contractors, Supervisors	½ day	Environmental & Social Safeguards Specialist	Construction & Operation	250	26	6,500
International Training – Project Management & E&S Safeguard Certification Training	PIU staff, Contractors, Supervisors	5 days	International Project Management Institute (PMP/PRINCE2 trainers)	Construction & Operation	1,400	5	7,000
Grand Total	—	—	—	—	—	—	\$49,500

9.3. Sustainability Assessment

The objective of this chapter is to evaluate the long-term sustainability of the project across technical, financial, environmental, and social dimensions. This assessment ensures alignment with the **AfDB ISS (2023)**, World Bank ESF (2017), OFID's ESG and national development goals, verifying that the project avoids short-sighted decisions that could threaten future generations.

9.4 Technical and Operational Sustainability

Design Resilience: The project design utilizes good international industry practices to ensure infrastructure longevity.

Operation, Management and Maintenance: The Government of Malawi facilitated the establishment of the Special Purpose Vehicle called **Shire Valley Holdings Limited** to run post-construction activities of the project. To ensure post-completion success, the project includes a Public Private Partnership (PPP) arrangement where a private entity with necessary skills and capacity will be engaged to operate, manage and maintain the main irrigation infrastructure including the safety and water control structures. During the process the operator will be training attached government staff and local staff in operation, management and maintenance (OMM).

Monitoring: Long-term technical performance will be tracked via the Environmental and Social Management Plan (ESMP).

9.5 Financial and Economic Sustainability

Cost Recovery: The project operation and maintenance hinges on revenue that will come from the sale of water to offtakers to be done through efficient billing system as outlined in the Irrigation Water Purchase Agreements (IWPs).

Budgetary Commitment: The Government of Malawi has made available funds for the implementation of environmental and social (E&S) safeguards. Further the national budget has permanent budget lines for the Environment Affairs Department and the Malawi Environmental Protection Authority which are for the E&S safeguards risk management.

Economic Co-benefits: The project scales growth in sectors like agriculture and trade creating a self-reinforcing economic ecosystem.

Environmental Sustainability and Resource Efficiency: Consistent with Operational Safeguard 3, ESS3 and Standard 4.1 of ESG Policy, the project prioritizes:

- (i) **Resource Use Efficiency:** Optimizing the use of water, energy, and raw materials to minimize waste.
- (ii) **Clean Energy Integration:** The alignment of Main Canals 1 and 2 is a fully diversion/gravity fed system with no pumping.
- (iii) **Pollution Prevention:** Adoption of cleaner technologies and a site-specific Waste Management Plan.

Pollution Prevention: Adoption of cleaner technologies and a site-specific Waste Management Plan.

9.6 Climate Change Resilience and Adaptation

Under the AfDB Climate Safeguards System, the project has been screened for climate risks as follows:

- (i) **Adaptation Measures:** Infrastructure including the safety and water control structures, has been designed to withstand extreme weather events (e.g., floods or droughts) identified in the climate baseline.
- (ii) **Mitigation:** The project contributes to global greenhouse gas emission reductions through for example, lowering of pumping energy (the project is a diversion type of water abstraction).

9.7 Social Sustainability and Inclusion

Social sustainability and inclusion have been integrated based on the following

- (i) **Public Participation:** Continuous engagement with local communities ensures ownership and reduces the risk of social conflict.
- (ii) **Social Equity:** Ensuring benefits reach vulnerable groups and promoting gender-based violence (GBV) prevention through project-specific GBV policy.
- (iii) **Grievance Redress Mechanism (GRM):** A functional GRM is in place to address community concerns throughout the project lifecycle. Workers' committees are an integral structure in the grievance redress related to labour and employment matters.

9.8 Institutional Sustainability

SVTP has instituted measures at institutional level to ensure the activities related to infrastructural functionality, collaborative mechanisms with relevant partners such as EGENCO and African Parks and farm cooperative mobilisation.

- (i) **Policy Alignment:** The project aligns with the host country's environmental laws and the AfDB Environmental and Social Assessment Procedures (ESAP), ISS, World Bank's ESF and ESG Policy. The project is also aligned with key strategic like the MW 2063 and MIP I.
- (ii) **Handover Plan:** Clear roles and responsibilities are defined for the transition from the construction contractor to the Shire Valley Holdings Limited, which is the permanent ~~operating~~ management agency.
- (iii) Establishment of farm level functional structures. SVTP has mobilised farmers into cooperatives based on amalgamated family farm areas. Capacity building has, in conjunction with the Ministry of Trade, been delivered.

9.9 Conclusion and Recommendations

This Environmental and Social Management Plan (ESMP) has been prepared to guide the effective management of environmental and social risks and impacts associated with the implementation of the proposed project in Chikwawa District. The assessment considered the physical, biological, and social environments, as well as the nature and scale of proposed construction and operational activities.

The ESMP concludes that the project will generate overall positive benefits, particularly through improved irrigation infrastructure, enhanced agricultural productivity, employment creation, and strengthened climate resilience for local communities. However, the project may also result in

temporary and localized adverse environmental and social impacts, including vegetation clearance, soil erosion, disturbance to fauna, dust and noise generation, occupational and community safety risks, and temporary disruptions to livelihoods and access.

With the effective implementation of the mitigation and management measures outlined in this ESMP, the identified impacts can be avoided, minimized, or managed to acceptable levels in accordance with national environmental legislation, the World Bank Environmental and Social Framework (ESF), and applicable Environmental and Social Standards (ESSs).

9.10 Conclusions

This Environmental and Social Management Plan (ESMP) has been prepared to provide a comprehensive framework for the management of environmental and social risks and impacts associated with the proposed project in Chikwawa District under the Shire Valley Transformation Program. The assessment has examined the baseline physical, biological, and socio-economic conditions within the project area, together with the anticipated construction and operational activities, in order to identify potential risks and define appropriate mitigation and monitoring measures.

The assessment concludes that the project is expected to deliver significant long-term positive benefits, including improved irrigation infrastructure, increased agricultural productivity, employment creation, inclusion of women and enhanced climate resilience for local communities. Nonetheless, temporary and localized adverse impacts may occur, such as vegetation clearance, soil erosion, disturbance to fauna, dust and noise emissions, occupational and community health and safety risks, and short-term disruptions to livelihoods and access. With the diligent implementation of the mitigation, monitoring, and institutional measures outlined in this ESMP, these impacts can be effectively avoided, minimized, or managed to acceptable levels in compliance with national environmental legislation and the ADB ISS, (through effective implementation of mitigation measures, stakeholder engagement, and monitoring, the project is expected to deliver substantial socio-economic benefits while minimizing environmental and social risks) World Bank Environmental and Social Framework (ESF) and applicable Environmental and Social Standards (ESS), AFDB ISS and ESG Policy of OFID. Overall, the project is considered environmentally and socially viable, provided that the commitments set out in this ESMP are fully implemented and monitored throughout the project lifecycle.

9.11 Recommendations

This Environmental and Social Management Plan (ESMP) shall be fully implemented and periodically reviewed to ensure effective avoidance, minimisation, and mitigation of environmental and social risks throughout construction and operation phases. The design engineer, contractor, Project Implementation Unit (PIU) shall ensure adequate budgeting, staffing, and capacity building for ESMP implementation, with particular emphasis on inclusion of women, biodiversity conservation (including protection of ecosystems), sustainable abstraction and management of water resources from the Shire River, erosion and soil management, occupational and community health and safety, gender-based violence (GBV) prevention, and inclusive stakeholder engagement supported by a functional grievance redress mechanism. Prioritize local employment opportunities where feasible. Ensure the employment of women to constitute 40% of the total labor force

Implementation of the ESMP shall maintain full compliance with the World Bank Environmental and Social Framework (ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8, and ESS10), the African Development Bank Integrated Safeguards System (OS1–OS5), OFID's ESG Policy and the projects Environmental and Social Commitment Plan (ESCP). Routine monitoring, performance reporting,

and periodic independent audits shall be undertaken to verify compliance and ensure adaptive management where necessary, thereby promoting environmental sustainability, social equity, and long-term project viability.

The following are recommended;

1. **Ensure full Implementation of the ESMP by the Contractor** by ensuring compliance with mitigation, monitoring, and reporting requirements outlined in the ESMP. This includes daily site inspections, weekly environmental and social monitoring, and monthly reporting to the PMT by both the Supervising Engineer and Contractor.
2. **Strengthen Engineer's and Contractor's Environmental and Social Capacity:** The Contractor shall prepare a detailed Contractor ESMP (C-ESMP) aligned with the ESIA and ESMP. Dedicated environmental, social, and OHS personnel should be assigned to the project. The Contractor shall update the C-ESMP every six months to integrate all changes to the project design and emerging issues.
3. **Develop and enhance Traffic and Community Safety Measures** Given the canal alignment along community and farmland areas, a traffic management plan, pedestrian safety plan, and community protection plan shall be developed and prioritized by the Contractor as an integral measure in the implementation of Community Health and Safety Plan (CHSP) developed by SVTP. Adequate signage, barriers, lighting, and controlled access should be maintained at all times.
4. **Maintain Effective Stakeholder Engagement:** Continuous communication with affected communities, local authorities, EGENCO, African Parks and vulnerable groups remains essential. The Grievance Redress Mechanism (GRM) should remain active, accessible, and responsive throughout construction and shall be updated annually.

10 References

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11 Appendices

Appendix 1: Field visits pictures



Siphon 3 & 5: Transect walks & observations



Siphon 3: Downstream Majete road (T416) culvert washing clothes



Siphon 3: Downstream woman



Siphon 6: Mwanza river upstream reconnaissance survey



Siphon 6: Mwanza river downstream reconnaissance survey

Appendix 2: Filed data collection checklist

PROJECT SITE PHYSICAL AND SOCIOECONOMIC FEATURES CHECKLIST

PROJECT SITE PHYSICAL AND SOCIOECONOMIC FEATURES CHECKLIST

PREPARATION OF ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN FOR THE PROPOSED CONSTRUCTION OF EMERGENCY SPILLWAYS AT SIPHON, 3, 5 & 6 AND FLOWM CONTROL STRUCTURES

BIOPHYSICAL AND SOCIOECONOMIC FEATURES CHECKLIST

1. Introduction

This checklist has been designed to help record the existing characteristics of the biophysical and socioeconomic features through observations and interviews. The information will be used in the “Description of the Biophysical and Socio-economic Environment” section of the Environmental and Social Management Plan report.

2. Instructions

- i) Complete the checklist in the company of a representative of the local authorities or community leader.
- ii) Complete the checklist through transect walks, observations, consultations with the local representatives.
- iii) Take clear pictures at a high angle for the key features.
- iv) Provide coordinates of the site

3. Identification

Identification number (day/month/initials/checklist of the day): __/__/__/__			
Name of Research Assistant:			
District:	TA:	Village(s)	GPS Coordinates
Name of areas observed:			
Name of local representative 1:		Cell:	
Designation:			

4. Checklist

PART A: PHYSICAL ENVIRONMENT

Sn	Component	What are the characteristics of the physical environmental component? (In and around the community)	Addition notes
1.	General land form (hilly, valley, plateau, bay, island etc.)		
2.	Geology		
a)	Types or rocks		
b)	Ground conditions		
3.	Soils		
a)	Type (clay, loam, sand and silt)		
b)	Structure (how soil particles are held together)		
c)	Evidence of pollution or degradation		
4.	Ground Hydrology		
a)	Depth of wells, or boreholes		
b)	Characteristic of water/ water taste		
c)	Water availability		
5.	Surface hydrology		
a)	Rivers/ lake		
b)	Quantities/availability of water		
c)	Flows or levels		
d)	Pollution		
6.	Air quality (smells, particles in the air, dust, etc.)		

7.	Additional question <i>Does the area have a history of earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, severe winds, droughts?</i>
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PART B: BIOLOGICAL ENVIRONMENT

Sn	Feature/Organism	Are the given features/organisms present in and/or around the area? If yes find the names and estimated population. What are the characteristics of the features/organisms?	Addition notes
8.	Flora		
9.	Fauna		
10.	Rare or endangered species		
11.	Important terrestrial ecosystems		
12.	Important coastal/marine ecosystems		
13.	Sensitive habitats including national parks and reserves		
14.	Species of commercial importance		

PART C: SOCIOECONOMIC ENVIRONMENT

Sn	Feature	Are the given features present in and/or around the area? If yes, what are the characteristics? What is the distance to the site for the proposed Emergency spill way?	Addition notes
15.	Houses and settlements		
16.	Gardens and farms		

<i>Sn</i>	<i>Feature</i>	<i>Are the given features present in and/or around the area? If yes, what are the characteristics? What is the distance to the site for the proposed Emergency spill way?</i>	<i>Addition notes</i>
17.	Household or community forests (Names and QTY)		
18.	Markets		
19.	Shops		
20.	Healthy centres (Names and QTY)		
21.	Schools (Names and QTY)		
22.	Recreation places e.g. bars		
23.	Public open space		
24.	Solid waste management infrastructure (Bins, Pits, Landfill etc.) (Names and QTY)		

PART D: ADDITIONAL INFORMATION

25.	In your assessment, which component(s) of the biophysical or socioeconomic environment are likely to be affected by the project? 1 2
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COMMUNITY FGD CONSULTATION TOOL

FGD		
The project is at preliminary stage and the purpose of this research is to gather information on surrounding communities in the project's area of influence. The results of the research will inform the next planning phases of the project with the aim of ensuring that all stakeholders and communities of the project areas are consulted. Your community falls in the project's area of influence and has been selected to participate in this research. The information that you will give us will be confidential and will not be used anywhere apart from for the purposes of this research. We sincerely appreciate the time that you are taking for this research. Do you have any questions on this survey or the project before I start?		
Section A: General Information		Responses
1	Date and time of meeting	
2	Name of facilitators (inc. note taker)	
3	Name of District	
4	Name of location/sub-location	
5	Number of participants	
6	Describe the demographics / composition of the group (<u>age range, ethnicity and any vulnerabilities</u>)	
7	Number of female headed households in the group?	
Section B: The Project		
1	Have you heard of the project before? How/when/where Do you feel that you understand the project?	

2	What is your view of the project? How do you think the project could positively and negatively impact on people in the community?	
3	How do you think the project could positively and negatively impact on people in the community?	
4	How do you think the project could minimize or avoid negative impacts on people and the community?	
5	Do you have any questions/comments regarding the project?	

Section C: Role of Women

1	What roles do women/ men play in the community? Please consider this in terms of the home and livelihoods. How many hours a day do women work? what time do they start and finish their daily activities?	
2	Do you think that men and women have equal opportunities in the community, workplace and education?	

3	What resources do women/ men mainly have control of? (eg land, assets, equipment) Please explain response	
4	Do women/ men feel safe in the community? Are there any particular crimes that are common to women/ men in the community? Have you experienced any conflicts in the community? Explain responses	
5	Are there any challenges that women/ men face in the community? Are there any specific challenges that female headed households face?	
6	How do people receive information about local issues and developments, news etc in the community?	
7	Do women/ men rely on each other for support? What type of support? (e.g. childcare, someone to talk to, income generation etc).	
8	Are the roles of women and men changing? How?	

Section D: Institutions / Community Development

1	How are women represented in the community (e.g., is there a female head/ leader who champions their interest)? Do women contribute in decision making within the community? Are women represented at important meetings? If not: Why? Do men discuss decisions with you?	
2	Do the women/ men belong to an association (e.g. women's group, water management committee, village development committee, farmers association, market association etc.). What are the percentages of women? If so, what is the major purpose of the association (s) and what activities take place? How often do association members meet? Is it registered?	
3	Do you have any women's/ men's traditional/cultural groups? What are they called? What are the purposes of these groups?	

4	Are any women empowerment Non-Governmental Organisations working here? If yes – which ones and what do they do? How successful have they been?	
5	What are the top three community development priorities/ needs (number 1 being the top priority)? Please provide a reason for each.	1. 2. 3.
6	What recreational activities do women/ men partake in? Where?	
Section E: Economy/Income Generation		
1	From which economic activity do women/men get the majority of income? What are other important sources?	
2	Do women tend to contribute more or less than men to household income? Why?	
3	What could women/ men do to have better economic opportunities in this area?	

4	Do you have access to a bank/credit/savings account? If so, is it your own personal account or a joint account? Do women have money at their disposal? What do they spend it on most frequently?	
5	Describe your quality of life in the community? What do you like about your life here? Is there anything that you would like to see change to enable a better quality of life?	
Section F: Land Use		
1	What mainland-based activities do women/ men undertake? .	
2	What are the main crops that you grow? What % are for household consumption and What % do you sell? If you sell crops, where do you sell them?	% household consumption % for sale
3	Have there been changes in harvesting seasons over the last 5 years? What is the reason for these changes?	

4	Do you sell your labour or hire labour? If so, who to, where from, for how long? Do you participate in any labour sharing groups in the community?	
5	Have you experienced any conflicts in the community in relation to land? Who was involved? What was the issue? How was it resolved? Are conflicts frequent? (explain response)	
6	<u>If a fishing community/coastal region</u> - Are women involved in fishing, fish processing or trading of fish? What role do women play in fishing related activities?	

Section G: Education, Literacy and Training

1	How would you describe accessibility and quality of education for children in your community? How far away are schools (km)? what are the names and types of schools used by your community?	
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2	What level of education do females/ males generally complete up to? Explain responses. What issues prevent girls/ boys from continuing in education? Has anyone in the community completed vocational training or university? What subjects? (explore issues of girl child work/labour verses education.	
3	What % of women/ men in the community read and/or write?	

Section H: Health

1	How and where do you access healthcare services? Do the services meet your needs?	
2	What are the top 3 health problems that women and men face in the area? Please explain the reason for each of the health issues Are there any particular times of the year where these issues are most challenging?	1. 2. 3.
3	Are there any environmental issues that affect health in the community (e.g.	

	water quality, sanitary conditions etc) Please explain	
4	Do you have access to family planning services for contraception and pre-post natal services? Please explain	
5	If someone in the household is ill, how do you usually treat him/her? How do you treat sick elderly, children, men and women? Are there any disabled people in the community that require special care?	
6	Do you use traditional medicines and if so do you fetch these locally or buy them? How reliable are they?	

Section I: Access to Water

1	Where do you get your water for drinking, cooking, bathing and for livestock?		Description of water source	Walking distance from dwelling (KM)	Collection method (if applicable)	Description of quality/colour/taste/smell
		Drinking:				
		Cooking:				
		Washing dishes:				
		Bathing:				
		Livestock:				
		Irrigation:				

2	Who in the household is responsible for water collection?	
3	Is drinking water treated? If so, how?	
4	If the community has a borehole, when was it installed? Who installed it? How deep it is?	
5	Does the water run out, run low or change in quality? Please explain the water source and reason for the change in water levels?	
6	Who is responsible for managing boreholes or other water sources in the community? How well does this work?	

Section J: Sanitation and Hygiene

1	What type of toilets do households have? (eg community or private/household, ventilated pit latrine, un-ventilated pit latrine, hole in the ground, no latrine/use the bush etc)	
2	Describe the quality and	

	cleanliness of the toilet facilities?				
Hygiene & Waste					
3	How do women and girls manage menstruation? What do they commonly use? Where do they dispose of wastes?				
4	Where/how do you wash your hands? Do you use soap?				
5	What type of waste is produced? How / where do people dispose of their waste? (burn, dump, put in the river or sea, other - specify)	1Type	2Organic	3Agricultural	4Plastics
		5Disposal method	6	7	8
6	Is there a public waste disposal site in or close to your village?				
Section K: Access to Power					
109	What energy source do you use? Where are each of these sources these located (eg grid connection from the house, firewood, charcoal, kerosene, gas, solar etc?)	Type	Source of energy/power	Location	
		Lighting:			
		Keeping warm:			
		Cooking:			
		Heating water:			
		Charging mobile phones:			
		Cooling food:			

110	Do you face any problems of access to energy/ power? Please explain?		
Section M: Cultural and Socioeconomic heritage			
1	What are the sacred/ historical or religious sites in the area? Are these accessible to women? Where are they located?		
2	What are the main festivals or rituals undertaken in the community by women? Give details		
3	What are the Significant existing social facilities and services (such as roads, transportation, health (including the impact of HIV and AIDS and Covid-19), education, economic activities, water supply and sanitation) in the area?		
Section N: Fauna Assessment			
1	Determine fauna species which occurs in the ecosystem		
2	What are their significant roles in the ecosystem	Fauna specie	Significant roles
3	What are negative impact of the project to the fauna and their mitigation measures	Negative impact	Mitigation measures
Section O: Flora Assessment			
4	What are the flora species in the ecosystem		
5	What are the Importance of flora(vegetation) in the ecosystem and to the community	Flora species	Importance to the ecosystem
6	What would be the Negative impact of the project to the ecosystem and their mitigation measures	Negative impact	Mitigation measure

Section P: Insert photos here

Please take some pictures of the meeting with a description below each photo:

Appendix 3: Minutes of Stakeholder Consultation meetings

MINUTES OF THE DISTRICT ENVIRONMENT SUB-COMMITTEE (DESC) MEETING

Project Name: Proposed Construction of Emergency Spillways and Flow Control Structures

Date 6th February 2026

Venue: Chikwawa District Council Chamber

Objective of the Meeting

To brief the District Environment Sub-Committee (DESC) on the proposed construction of Emergency Spillways and Flow Control Structures and obtain technical inputs on anticipated environmental and social impacts and mitigation measures.

Key Participants

(Attendance register attached as Annex 3)

Proceedings of the Meeting

The Consultant presented the project rationale, scope of works, and potential environmental and social impacts during construction and operation phases. The floor was opened for technical comments.

Issues Raised by Officers and Responses

1. Structural Integrity of Existing Main Canal

Comment by Mrs. Thandiwe Ngalande (Housing Officer):

She emphasized that the construction of emergency spillways and flow control structures must not compromise the structural integrity of the existing main canal infrastructure, noting the importance of maintaining structural safety standards.

Response:

The design has incorporated structural safeguards, and a qualified Structural Engineer has been engaged to ensure that construction activities do not affect the integrity of the existing canal.

2. Solid Waste Management and Open Defecation

Comment by Mr. Levious Mafuta (Environment District Officer):

He highlighted the risk of environmental pollution arising from:

- Improper disposal of construction waste such as rubble and concrete debris.
- Risk of open defecation at construction sites if sanitation facilities are not provided.

Response:

-
- Solid waste management measures have been included in the ESMP.
 - Provision of adequate sanitary facilities for workers is included as a mandatory mitigation measure.

3. Risk of Flooding During Operation

Comment by Mrs. Charity Machika (Disaster Risk Management Officer):

She pointed out the potential risk of flooding during the rainy season, especially if emergency spillways discharge excess water into surrounding areas. She emphasized the need for proper flow regulation and community preparedness.

Response:

Flood risk during operation has been included in the ESMP. Operational controls and monitoring measures have been incorporated to manage discharge volumes safely.

4. Loss of Trees and Vegetation

Comment by Mr. Hector Nkawihe (Principal Forestry Officer):

He raised concerns regarding potential loss of trees and natural vegetation during site preparation and construction. He recommended that any trees removed should be compensated through replanting initiatives.

Response:

Vegetation loss has been included as a construction-phase impact in the ESMP. Restoration measures, including tree replanting and vegetation rehabilitation, have been incorporated.

5. Chance Discovery of Cultural Resources

Comment by Mr. Levious Mafuta (Environment District Officer):

He advised that there should be procedures in place to manage any unexpected discovery of cultural, archaeological, or paleontological resources during excavation works.

Response:

A Chance Find Procedure has been incorporated into the ESMP to guide contractors on the steps to follow in case such materials are discovered.

6. Occupational Health and Safety Risks

Comment by Mr. Levious Mafuta (Environment District Officer):

He noted that construction activities may expose workers to occupational health and safety risks and emphasized strict adherence to safety regulations.

Response:

OHS risks have been included in the ESMP with mitigation measures such as provision of PPE, safety induction training, supervision, and compliance with national labour laws.

7. Employment and Skills Transfer

General	Comment	from	DESC	Members:
The project is expected to create employment opportunities for local communities and facilitate skills transfer.				

Response:

Employment creation and skills transfer have been consolidated as positive socio-economic impacts in the ESMP.

8. Institutional Monitoring and Accountability

Comment	by	Mr. Levious Mafuta	(Environment District Officer):
He recommended that the District Council should be fully engaged in monitoring the project to ensure environmental compliance and accountability.			

Response:

Relevant Council officers have been incorporated into the Environmental and Social Monitoring Plan as responsible monitoring authorities.

Conclusion

The District Environment Sub-Committee expressed support for the proposed construction of emergency spillways and flow control structures, subject to effective implementation of the mitigation and monitoring measures outlined in the ESMP. The meeting was formally closed after all technical issues were addressed.

MINUTES OF STAKEHOLDER CONSULTATION MEETING

Traditional Leaders and Community Members

Project Name: Proposed Construction of Emergency Spillways and Flow Control Structures

Dates: 4th–5th and 7th February 2026

Venue: GVH Headquarters Siphones 3 and 5

Objective of the Meeting

To inform Traditional Leaders and community members about the proposed construction of Emergency Spillways and Flow Control Structures and to obtain their views on anticipated environmental and socio-economic impacts as well as proposed mitigation measures.

Participants

Traditional Leaders and Community Members (As attached in Annex 3)

Proceedings of the Meeting

The Consultant (SMEC) presented the background, objectives, and scope of the proposed project, including key components of the emergency spillways and flow control structures. The anticipated environmental and socio-economic impacts during construction and operation phases were explained. Participants were invited to raise concerns and provide recommendations.

Issues Raised and Responses

1. Local Employment Opportunities

Issue**Raised:**

Participants emphasized that surrounding communities should be prioritized for unskilled labour opportunities during the construction phase to ensure that local people benefit directly from the project.

Response:

The ESMP includes a commitment to prioritize local communities for unskilled labour opportunities during the construction and operation phases where feasible.

2. Labour Influx and Social Disruption**Issue****Raised:**

Participants expressed concern that the influx of migrant workers may:

- Disrupt marriages
- Increase cases of divorce
- Lead to social conflicts within the community

Response:

Labour influx has been identified in the ESMP as a potential social risk during the construction phase. Mitigation measures include enforcement of a Workers' Code of Conduct, community sensitization, and collaboration with Traditional Authorities.

3. Loss of Cultivable Land**Issue****Raised:**

Community members cultivating along the targeted river sections expressed concern about potential loss of cultivable land during construction works.

Response:

Potential land and crop loss has been included as a construction-phase impact. In cases of verified loss, assessments will be conducted by relevant authorities and appropriate compensation will be provided in accordance with applicable laws and project safeguards frameworks.

4. Risk of Flooding During Operation Phase**Issue****Raised:**

Participants raised concerns that emergency spillways may increase the risk of flooding of wetlands and cultivable gardens during the rainy season.

Response:

Flood risk during operation has been included in the ESMP with operational control and monitoring measures to regulate discharge and minimize downstream impacts.

5. Prior Sensitization Before Water Discharge**Issue****Raised:**

Participants recommended that communities should be informed and sensitized prior to any planned discharge of excess water during the operation phase

Response:

The ESMP includes provisions for advance community notification and awareness prior to any planned water discharge.

6. Compensation in Case of Land and Crop Damage**Issue****Raised:**

Participants requested clarification on actions to be taken in case of land or crop loss resulting from flooding during the operation phase.

Response:

In the event of verified damage, responsible authorities will conduct assessments and appropriate compensation will be provided in line with national legislation and applicable project frameworks.

Conclusion

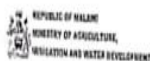
Traditional Leaders and community members expressed general support for the proposed project, subject to:

- Prioritization of local employment
- Effective flood management
- Fair compensation mechanisms
- Continuous engagement with Traditional Authorities

The meeting was formally closed after all concerns were addressed.

Appendix 4: Stakeholders Engagement registers

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ATTENDANCE SHEET
SVTP - WEEKLY TECHNICAL MEETING

MEETING NO. _____

S.NO	NAME	POSITION	ORGANIZATION	PHONE NO	SIGN
1	HECTOR NKAWIHE	PFO	FORESTRY	0885884402	
2	WESTON JULIUS	WTRN-LABOUR	LABOUR	0999955356	
3	Kamile Magambo	DRD	CC-DC	0888318585	
4	Charity Mochua	BRMO	CC-DC	0882580713	
5	Shirishah Mlenga	EMD	CK-Land	0995259616	
6	Gezale Chikwa	ACOD	CK-Govt. Dev	0999079094	
7	Thandane Ngalande	HO	CK-DC	088591931	
8	Ellen Kasenge	DE	CK-DC	0998970568	
9	Lukis Ngarano	M&EO	CK-DC	088555548	
10	Achim Dickson	SLRG	CK-DC	0999604724	
11	Lejeus Mafuta	EDD	CK-DC	0995388922	
12	Andrew Mpesi	ABO	CK-DC	092142453	
13	James Bilali	ASWO	CK-DC	0986781443	
14	Isaac Banda	AST M&E	CK-DC	0886831849	
15	Sydney Chikwa	AEDO	CK-DC	0982114503	

DRAFT ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
DETAILED DESIGN, CONSTRUCTION SUPERVISION AND QUALITY
ASSURANCE OF SAFETY AND WATER REGULATION STRUCTURES IN
THE MAIN CANAL 1 AND 2
Prepared for Ministry of Agriculture, Malawi

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MEETING NO. _____

S.NO	NAME	POSITION	ORGANIZATION	PHONE NO	SIGN
1	Dave Luciano	community member	Kanyoza	0996635304	me
2	Sam Joseph	Community member	Kanyoza	0999801697	Samuel
3	Wysin Kasuzeni	Community member	Kanyoza	0990888112	Wysin
4	Damyano Kasuzeni	Community member	Kanyoza	0997843824	Karamama
5	Amasi paret	community member	Kanyoza	0991143667	Amasi
6	Haladi John	Community member	Kanyoza	0995110246	John
7	Jonas Kattetho	G.V.H NKanyoza	NKanyoza	0981612323	Kattetho
8	Yohan Samirano	Community	NKanyoza	=	YB
9	Clement Mwanungu	G.V.H NKanyoza	NKanyoza	0998138664	Clement
10	Charles Mwandira	" "	" "	-	Mwandira
11	Thames Simbi	G.V.H NKanyoza	NKanyoza	0985378541	Simbi
12	Mavuto Mwapoto	G.V.H NKanyoza	NKanyoza	0981601070	Mavuto
13	Faliness Juma	G.V.H NKanyoza	NKanyoza	-	Faliness
14	Allness Allness chisamba	G.V.H NKanyoza	"		Allness
15	Ellenys Tembo	G.V.H NKanyoza	"		Ellenys
16	Maretia Damisoni	Mukha	NKanyoza	-	M. Damisoni
17	Moses Chitambuka	Farmer	NKanyoza	0994744150	Moses

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DATE: 05/02/26

ATTENDANCE SHEET

COMMUNITY ENGAGEMENT AT NJEREZA (GVH)

S.NO	NAME	POSITION	ORGANISATION	PHONE NO	SIGN
1	CHAROSI KACHINGA	GVH	NJEREZA	0995672990	GA
2	Joseph Kachira	Lead farmer	NJEREZA	0997772841	James
3	MACKSON ZANDOSI	V.H.	SEKORA 1	0888666401	MT
4	MELA CHIKWANI	V.H.	NJEREZA 2	0996208051	MT
5	W. SOBERT	Mulimi	"	0987770641	MT
6	LOSI MUTHUZI	Mulimi	"	-	MT
7	ANISHA BONDASIP	Mulimi	"	-	MT
8	ELIZA ENOSI	Mulimi	"	-	MT
9	ESITELA KAMINGA	Mulimi	"	-	MT
10	ABENA SEVENI	Mulimi	"	-	MT
11	MALINDA GELESANI	"	"	-	MT
12	LORINA CHIKWANI	"	"	-	MT
13	LINDA CHABVALA	"	"	-	MT
14	KAFIREI KAMUSOKOTA	"	"	-	MT
15	FIRYALA JOSEPH	"	"	0986750855	MT
16	SILVIA BANAKANYO	"	"	-	MT
17	JALIN DAISSA	"	"	-	MT
18	JOSAPHY BILIMZANANI	"	"	0999155452	James
19	WESLEY GEORGE	Mulimi	Bwalo	0987000238	MT
20	WYSON MKOSA	"	Bwalo	0985427198	MT
21	JOEL MACKSON	Mulimi	NJEREZA	0997955008	James
22	MARGRET JOSEPH	Mulimi	NJEREZA	097424505	MT

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DATE: 05/02/26

ATTENDANCE SHEET

COMMUNITY ENGAGEMENT AT GVT THUBOY

S.NO	NAME	POSITION	ORGANISATION	PHONE NO	SIGN
1	Malita fulayitor	Community member	Sipiliyano	0995903382	M. Tula
2	maliya patriphi	//	Sipiliyano	0981947311	M. P
3	Melina maliko	//	The boy	//	M. mma
4	melina Chingaphooya	//	Sipiliyano	//	the
5	teleza Pitasoni	//	Sipiliyano	//	1. p. m
6	telesita wistedi	V.H	mafelo	//	for
7	Thokozani chuma	community member	mafelo		ro
8	Temisen maphoto	Mulimani	Two boy	0995212132	Tem
9	wa Sani wu Sita	Mulimani	Two boy		wa
10	Joseph wadi	Mulimani	Two boy	087493734	wadi
11	Joseph maphoto	Mulimani	Two boy	0981669019	Joseph
12	maGabo piramini	Mulimani	Two boy	0995327272	maGabo
13	ENOCK White	Community member	Two boy		ENOCK

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Appendix 5: List of Consultants Involved in the preparation of the ESMP Report

The Environmental and Social Management Plan (ESMP) was prepared by a multidisciplinary team of qualified professionals with expertise in environmental management, social safeguards, gender-based violence prevention, and occupational health, and safety.

No.	Name	Position in ESMP	Area of Expertise	Qualifications & Certifications	Years of Experience
1	Mayeso Chintengo	Environmental Specialist	Environmental Management & Safeguards	BSc Environmental Science Post grad. Cert: GIS and Remote Sensing Auditor: ISO 14001:2015, ISO 45001:2018, ISO 9001:2015	11 Years
2	Edwin Msewa	Social & GBV Expert	Social Safeguards & GBV Prevention	MA Development Studies MA Development Studies BED	28 Years
3	Bright Phiri	Environmental specialist	Environmental safeguards	Master of Environmental Law and Policy Bachelor of Science Degree in Environmental Science and Technology Postgraduate Certificate in Environmental Arbitrations Global Safety Leadership training ISO 14001:2015 Certificate in Environmental Impact Assessment	24 Years
4	Patrick Mbundungu	Social Safeguards	Social Safeguards	BSc. Social Sciences	11 Years
5	Kondwani Chipeta	Occupational Health & Safety Specialist	Construction Health & Safety	BSc Environmental Management Dip. Environmental Management.	6 Years

6	Jailos Ghambi	ESHS Inspector	ESHS Compliance & Monitoring	BSc Public Health Dip. Occupational Health and Safety Management System.	9 Years
7	Robert Kacheche	ESHS Inspector	ESHS Compliance & Monitoring	BSc Environmental Studies; ESF Certified (World Bank)	5 Years
8	Mercy Omollo	Team coordination and internal reviews	Environmental and Social Safeguards	BSc Env, Sc.	16 years

Appendix 6: Chance Find Procedure

Chance Finds Procedure and Salvage Excavation

In line OS1 of the African Development Bank¹¹, a chance find procedure is a project-specific procedure that outlines what will happen if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation. The procedure includes record keeping and expert verification procedures, chain of custody instructions for movable finds, cultural heritage awareness raising sessions for the construction workforce, and clear criteria for potential temporary work stoppages that could be required for rapid resolution of issues related to the finds. It is important that this procedure outlines the roles and responsibilities and the response times required from both project staff, and any relevant heritage authority, as well as any agreed consultation procedures.

In line with OS1, the project shall not remove any physical cultural heritage unless the following conditions are met:

- (i) No technically or financially feasible alternatives to removal are available.
- (ii) The overall benefits of the project substantially outweigh the anticipated cultural heritage loss from removal.
- (iii) Any removal is conducted in accordance with relevant provisions of national and/or local laws, regulations, protected area management plans and national obligations under international laws
- (iv) Any disturbance or removal is not done until appropriate consultation with local communities has been carried out, taking full account of traditions, beliefs and cultural norms.
- (v) Any removal employs internationally accepted best available techniques.

Considering the considerable volume of soil that will be excavated, the Project will apply a chance finds procedure, to set out what is to be done when cultural heritage objects are unexpectedly uncovered during works, especially during the absence of an archaeological monitoring team.

In pursuit of OS1, SVTP will ensure that the following procedures are followed:

- (i) Work should be stopped in the vicinity of the finding (very often work can be continued at another part of the project to avoid costly delays) 11 AFDB (2015), Integrated safeguard Systems Guidance Materials, Volume 2 265 | P a g e
- (ii) Notify the Supervising Engineer or his/her designee. The finding should be treated as a cultural heritage incident and reported.
- (iii) Notify the Malawi Department of Antiquities in the case of any archaeological or palaeontological finds
- (iv) Use heritage experts and relevant community members to assess the significance of the discovery, and report it as required by law.
- (v) Seek advice from the Supervising Engineer on the right way to manage the discovery. The Supervising Engineer, will provide the advice following consultation with the relevant community groups and/or relevant archaeologists.

(vi) Resume work if permitted and agreed by the Supervising Engineer, following clearance of the Department of Antiquities.

Annex 7: Labour Management Procedure



GOVERNMENT OF MALAWI

MINISTRY OF AGRICULTURE

SHIRE VALLEY TRANSFORMATION PROGRAMME II (SVTP-2)

LABOUR MANAGEMENT PROCEDURES

March 2022

List of Acronyms/Abbreviations

AIDS	Acquire Immuno-Deficiency Syndrome
CBO	Community-Based Organizations
CGRMC	Community Grievance Redress Management Committee
CIG	Common Interest Groups
CMC	Catchment Management Committee
CoC	Code of Conduct
CSA	Climate Smart Agriculture
DC	District Councils
DCCMS	Department of Climate Change and Meteorological Services
DGRMC	District Grievance Redress Management Committee
DNPW	Department of National Parks and Wildlife
DoF	Department of Forestry
DoS	Department of Surveys
DWR	Department of Water Resources
EAD	Environmental Affairs Department
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
GRM	Grievance Redress Mechanism
GVB	Gender Based Violence
HIV	Human Immuno-Deficiency Virus
ICT	Information Communication Technology
IFC	International Finance Institution
ILO	International Labour Organization
LMP	Labour Management Procedure
MEPA	Malawi Environmental Protection Agency
PMTGRCIWD	Ministry of Agriculture, Irrigation and Water Development
NLGFC	National Local Government Finance Committee
PAD	Project Appraisal Document
PAP	Project Affected Person
PDO	Project Development Objective
PMP	Pesticide Management Plan
PMSU	Project Management Support Unit
PMTGMRC	Project Management Team Grievances Redress Mechanism Committee
PPDA	Public Procurement and Disposal of Assets Authority
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
SoP	Series of Projects
SOCFE	Smallholder Owner Farm Enterprises
TT	Multi-Sectoral Technical Team
UAV	Unmanned Aerial Vehicle
US\$	United States Dollar
VAC	Violence Against Children

VLAP
WGRMC

Village Level Action Plan
Workers Grievance Redress Management Committee

EXECUTIVE SUMMARY

Background

These Labour Management Procedures (LMP) have been prepared for the implementation of the Phase 2 of the Shire Valley Transformation Project (SVTP) to be implemented by Government of Malawi, through the Ministry of Agriculture. The SVTP 2 will be implemented with financial support from the International Development Association (IDA) of the World Bank. The main objective of LMP is to ensure that all labour issues including occupation, health and safety issues are managed properly during the implementation of the project.

The specific project development objectives for SVTP-2 are to provide access to gravity-fed irrigation services, provide secure land tenure for smallholder farmers, lay the foundation for increased agriculture productivity and commercialization in areas developed for irrigation under SVTP-1, and improve natural resources productivity. This project development objective will contribute to the overarching development objective for the entire Shire Valley Transformation Program (SVTP) which is to increase agricultural productivity and commercialization for targeted households in the Shire Valley and to improve the sustainable management and utilization of natural resources.

In SVTP 1 the project had labour management procedures which guided the implementation of the labour management issues. The project worked in collaboration with the Chikwawa District Assembly through the District Labour Office. Through this collaboration the project facilitated formation of the Workers Committee, through which workers channel their grievances for redress. The District Labour Office also facilitated recruitment of workers for the contractor and worked closely with the contractor in providing guidance and facilitating resolution of grievances. The project also hired a GBV Service provider to provide guidance on GBV issues and also to handle any GBV related cases. SVTP 1 has provided the project with a lot of lessons which will be useful in the implementation of SVTP 2. Such lessons include timely enforcement of the signing of Code of Conduct, timely formation of workers committees to address employees grievances, continuous sensitization regarding GBV issues and workers rights and constant monitoring of management's commitment to workers right and welfare.

Objective of the Labour Management Procedures.

The implementation of the SVTP 2 is expected to utilize expatriates, government, private and community human resources which are available at national, district and community levels. The Malawi Government recognizes that sound worker-management relationships, fair treatment of workers, promotion of gender equality and protection from gender-based violence (GBV) and provision of safe and healthy working conditions enhances development benefits of a project. It is for this reason that these labour management procedures have been developed for the SVTP 2.

The objectives of the labour management procedures are to:

- To promote safety and health at work;
- To promote the fair treatment, non-discrimination and equal opportunity of project workers;

-
- To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate’
 - To prevent the use of all forms of forced labour and child labour;
 - To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law; and
 - To provide project workers with accessible means to raise workplace concerns.

Types of Workers for SVTP 2

It is expected that the project will engage different categories of workers. These will include: Direct Workers, Contracted workers, Community Workers, Migrant workers and Primary Supply Workers.

Workers Grievance Redress Mechanism.

The SVTP 2 will facilitate formation of Workers Grievance Redress Mechanism (WGRM) to ensure that workers have the ability and opportunity to lodge complaints or concerns, without cost, and with the assurance of a timely and satisfactory resolution of issues. All workers under the project will be informed of the WGRM and the procedures that will be involved. All Contractors, Consulting Engineers including Consultants will be informed about a requirement to have a well laid out WGRM within their systems.

Code of Conduct

All Contractors shall implement a code of conduct contained in the SPDs and will be followed by the contractors and infrastructure operator who may be engaged under the SVTP 2. The code of conduct will commit them to create and maintain an environment which prevents occupational health and safety (OHS) and social risks. The code of conduct aims at preventing and/ or mitigating environmental, OHS and social risks within the context of the project. The social risks that may arise include but not limited to Gender Based Violence (GBV); Sexual Exploitation and Abuse (SEA); Violence Against Children (VAC); HIV/AIDS infection and prevention and Occupational Health and Safety.

Conclusion

These Labour Management Procedures will identify the main labor requirements and risks associated with the project and help the project to determine the resources necessary to address project labour issues. The LMP is a living document, which is initiated early in project preparation, and is reviewed and updated throughout development and implementation of the project. The LMP was prepared as a ‘stand-alone document’ and is a requirement under ESS 2 of the World Bank environmental and social framework (ESF).

1.0 OVERVIEW OF THE SHIRE VALLEY TRANSFORMATION PROGRAMME PHASE TWO.

The Government of Malawi with support from the World Bank, African Development Bank (including Nigeria Trust Fund and TAAT), OPEC Fund for International Development (OFID), and the Global Environmental Facility (GEF) is implementing the Shire Valley Transformation Programme (SVTP). The Programme Development Objective (PDO) for the SVTP is to provide access to gravity-fed irrigation services, provide secure land tenure for smallholder farmers, lay the foundation for increased agriculture productivity and commercialization in areas developed for irrigation under SVTP-1, and improve natural resources productivity.

The SVTP is a 14-year program (2018-2031) which will be implemented in three sequential but partially overlapping phases. The Program targets the development of 43,370 ha abstracting water from the Shire River at Kapichira and conveying it by gravity to the irrigable area (in Chikwawa and Nsanje districts) mainly through canals. It is structured around three coordinated pillars: i. Providing reliable, professionally managed and sustainably financed irrigation service to irrigators in a phased construction of the scheme and providing multiple services including water supply; ii. Support farmer organization within a comprehensive land use plan; supporting land tenure strengthening and consolidation; as well as natural resources management; and iii. Establishment of smallholder owned commercial farm enterprises transitioning into commercial agriculture from subsistence farming and integrating them into commercial value chains. There are three Phases to the SVTP: i. Phase I (SVTP-I) initiates the process on all pillars, with a major focus on irrigation service provision to the SVIP-I area, land tenure, farmer organization and natural resource management; ii. SVTP-II shifts investment focus to agricultural investment, private sector and value chain support, as well as investments in bulk infrastructure for the SVIP-II area; iii. SVTP-III is the scale-up phase of investments to the SVIP-II area.

(x) The proposed SVTP-2 will support the program with an IDA credit of around US\$175 million. Discussions on provision of co-financing have started with several Development Partners. The project requires accelerated processing leading to Board approval around April 2022, with implementation to take place from about September 1, 2022 to June 30, 2028. The proposed focus of SVTP-2 will continue to be on infrastructure development, land tenure, and natural resources management, but development of agricultural modernization and commercialization will play an increasingly important role, including private sector and value chain support. The proposed PDO of SVTP-2 will be to provide access to gravity-fed irrigation services on the eastern side of the can and pump fed irrigation on the western side of the canal, secure land tenure for smallholder farmers, and increase agriculture productivity and commercialization in areas developed for irrigation under SVTP-1. The components will be similar to SVTP-1, and will include: (i) Component 1 - Irrigation Service Provision; (ii) Component 2 - Land Governance and Land Consolidation; (iii) Component 3 - Agriculture Development and Commercialization; Component 4 – Strengthening Landscape and Natural Resources Management in the Lower Shire; and (v) Component 5 - Project management, coordination, and communication.

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1.1 Component 1 – Irrigation Infrastructure Development and Service Provision

SVTP-1 is developing the intake and 52 km of the main canal from Kapichira Reservoir to Lengwe National Park (referred to as Phase I of the development) and a few secondary canals that will either serve agricultural blocks that will be newly developed or connect

existing irrigation estates/schemes with the main canal. The development is led by the Department of Irrigation (DoI). SVTP-2 will continue the development of secondary canals in the Phase I area so that all 14 consolidated pieces of land that have been identified with a total area of over 10,000 ha will be under full cultivation by the end of SVTP-2. Draft designs of secondary canals in the Phase I project area are under preparation. All final designs and tender documents will be completed at the latest by mid-2022, so that construction of secondary canals that cannot be financed under SVTP-1 can commence immediately after effectiveness of SVTP-2.

(xii)

(xiii) **SVTP-2 will finance the construction of the remaining 70 km of main canal, starting at the northern boundary of Lengwe National Park to the Bangula area in Nsanje District, and a number of secondary canals.** This section of the main canal will eventually supply water to about 21,000 ha (including some 17,500 ha of new irrigation) in the Phase II project area, which comprises the agricultural blocks south of Lengwe National Park. The development will be led by DoI, but consultants have been hired under SVTP-1 to prepare the detailed designs and tender documents for the 70 km main canal section. The full design will be completed before the end of 2022 but designs of part of the canal system will be completed well before that. The first 14 km of this section of the main canal will pass through Lengwe National Park, bisecting ‘Old Lengwe’ from ‘New Lengwe’ and the design and approach to construction will need careful consideration to ensure that the canal will not hamper the restoration of the park to favorable conservation status and will minimize impacts to critical habitat. It is proposed that because of the construction of the canal in a sensitive nature area a separate contract will be awarded for the construction of the canal in Lengwe. The proposed project will also finance the construction of a number of secondary canals in the Phase II project area, the number depending on the available funds for development of agriculture blocks and secondary canals, as well as drainage and flood protection works and service and access roads. SVTP-2 will finance required consulting services for remaining detailed design services, e.g. secondary canals in the Phase 2 project area, and construction supervision and quality assurance. Development of the electricity grid with a dedicated line along the main canal will be considered in close cooperation with ESCOM. The component will also finance the implementation of special safeguards measures as described in the Environmental and Social Impacts Assessment (ESIA) and Environmental and Social Management Plan (ESMP), especially related to canal construction through Lengwe National Park. Adequate office accommodation for DoI and the Special Purpose Vehicle that will own the irrigation and drainage infrastructure will be constructed in Lilongwe.

(xiv)

(xv) **The main and secondary irrigation system, drains, and roads will be operated and maintained by a private operator.** The Public Private Partnership Commission (PPPC) is leading the recruitment process of the operator, which is currently ongoing under SVTP-1, with support of IFC as transaction advisor to the PPPC. A shortlist of qualified operators has been prepared and the Request for Proposals (RfP) is expected to be issued around the end of September 2021, with the aim of having the operator selected by mid-2022. A lot of attention is paid to ensure the viability of scheme operation and maintenance (O&M) which requires sufficient funds to come in from the water users. It is expected that from the start of operation sufficient O&M funds will be contributed by the existing estates/schemes, including from Illovo, a private sugar company that irrigates over 10,000 ha in the Shire Valley, that is expected to be an anchor water user. In August 2021, Illovo informed the PPPC in writing that Illovo supports the objectives of the Shire Valley Transformation Program and has accepted the

negotiated annual tariff charge, based on Illovo's normal usage patterns. As a next step a Term Sheet Agreement will be developed that confirms the common understanding, which will then be developed into an irrigation water purchase agreement (IWPA). Contractual arrangements will be discussed upfront and agreed with future irrigators as well, also to be confirmed through irrigation water purchase agreements (IWPA). SVTP-2 may finance part of the private operator's O&M costs of the irrigation scheme during the first few years of operation until such time that enough existing irrigation areas and new agricultural blocks contribute to the O&M expenses. Under SVTP-2 the performance of the private operator, including the performance standards, will be carefully monitored by the PPPC and DoI, and as needed, mutually agreed changes may be made to ensure the long-term viable and sustainable operation of the scheme.

1.2 Component 2 – Land Governance and Land Consolidation

(xvi) **All farmed agricultural land under customary tenure within the project area will be demarcated and formally registered using a gender sensitive approach.** Most agricultural land in Malawi farmed by smallholders is held under customary systems, either patrilineal, matrilineal or mixed, governed by traditional authorities (male or female). The chieftaincy hierarchy starts from the village chief, to the Group Village Headman (GVH) and traditional chief. The Traditional Land Management Authority (TLMA). Land administration institutions will only be established in GVHs and TLMAs gazetted by the Ministry of Local government. As already indicated, the obligation that women constitute at least 50% of the members of the Customary Land Committee was met in SVTP I. Recruitment of staff, communication, and training programs is also gender sensitive and is . monitored. SVTP I results (CY 2020 and 2021) estimates that 70 percent of the land parcels are registered in the name of women (sole or co-owner), while 50 percent of the project staff involved in community land administration is female. SVTP II will complete any outstanding demarcation and registration work started under SVTP I, and also complete on demand issuance of consolidation customary estate. SVTP II will also continue to support the functioning and renewal of CLC and land tribunals and will consolidate the land dispute monitoring system set up under SVTP I.

(xvii)

(xviii) **District land registries will keep the record of all registered land parcels and shares in consolidated customary estate, and register follow up transactions or updates.** All land records (or "customary estate") and cadastral maps produced under SVTP I and completed under SVTP II will be kept and maintained in an electronic format at the district land registry. The land registry will also keep the cadastral map and record of all individual⁵ "shares" (equivalent to the size of the land parcel(s) contributed by a member to the consolidated customary estate). Land records and shares can be printed upon request. An individual customary estate as well as a share in a consolidate customary estate are transferable (e.g., inheritance, lease, mortgage) and after five years also sold. The two district land registry for the SVTP project area (Chikwawa and Nsanje) will be established under SVTP I and use the Land Information Management System developed by MoL with support from AGCOM (P158434). The sustainability of the District land registry and the land clerks is related to progress with the devolution process and transfer of this responsibility to the Ministry of local government, which will become responsible for budget and staffing. SVTP II will consolidate the two District Land Registries in collaboration with MoL and MoLGov; train and mentor land registrars, land clerks and other staff engaged in land record maintenance and transactions, and support to land institutions (land tribunals, CLC); support information and communication campaigns on

⁵ Ownership of an "individual" share is equal to the rights recorded for each parcel (single or jointly owned)

formalizing land transactions and keeping information on land records and land shares updated. SVTP II will consolidate and institutionalize monitoring and accountability systems to track emerging land markets – including for shares in consolidated customary estates and based on gender disaggregated administrative and management data, which were started under SVTP I. SVTP II will also continue and consolidate (quick) surveys to assess land holders' awareness of rights and procedures; assess knowledge and accessibility and affordability of land administration services, options for using e-governance; assess sustainability (including financial). The project will also institutionalize gender sensitive capacity building of district staff (land clerks, district and registrars and land institutions. SVTP II will assist MoL and MoLGov to draw lessons for national level rolling out of customary land registration.

(xix)

(xx) **SVTP-2 will complete any outstanding land use planning, support monitoring and updating land use management in response to the changes resulting from the operationalization of the irrigation scheme.** SVTP I will complete the Nsanje District Physical Development Plan, urbanization plans for both districts and all group village land use plans in the phase 2 area. The new irrigation scheme will become operational in 2023, which will change the environmental conditions, bring about land use changes with new opportunities and also risks. SVTP 2 will assist the districts and the villages to assess changes, update their land use plans if needed and monitor compliance.

(xxi)

(xxii) the Phase II project area.

(xxiii) 1.3 Component 3 – Agriculture Development and Commercialization **This component will support implementation of activities that leads to improved productivity, diversified production, cropping intensity, competitiveness, market access and agro-processing for smallholder farmers.** It will build on the success implementation of STVP-1 which mainly focused on developing the irrigation infrastructure and testing the models that will be adopted under the second phase of the project. SVTP-2 will also finance farmer mobilization and training, technical assistance to build farmer capacity to run and manage the irrigated blocks and associated activities, form productive alliances to improve market access, setting up of SOCFE management, acquisition of equipment, and matching grants. The component will also draw lessons from the Agriculture Commercialization Project (AGCOM) on how to establish coherent Productive Alliances (PAs) while linking farmers to off-takers. Specifically, the following subcomponents will be financed by the project.

(xxiv) **SVTP-2 will, through MoA and PMT, continue adopting the current farmer driven approach around the Smallholder Owned Commercial Farm Enterprises (SOCFE) and models.** The farmer mobilization process will represent the commencement of activities in the identified project areas. A multi-disciplinary team from various implementing agencies at the Chikwawa District Council and the Project team will carry out intensive sensitization campaigns to inform the communities of the project activities, their roles and prepare a consolidated action plan for the initial activities to be implemented and their timelines. These activities are key to successful project implementation. The component will promote and enable effective collaboration among smallholders to consolidate their land into customary estates, coordinate production, and sell their produce collectively as cooperatives. Under the proposed Component 3, the project will finance the commercialization of agriculture in the developed areas through establishment of 25 new SOCFEs located on the new 17,000 ha of irrigation

command area. In addition, the project will also continue to support 14 SOCFEs identified under SVTP-1 to make them fully operational.

(xxv)

(xxvi) It will also promote productive diversification through promotion of cultivation of various crops other than sugarcane, which is prominent in the area. SOCFEs will also be encouraged to develop fishponds, pasture, vegetable gardens, and sustainable woodlots for charcoal production on land in the blocks not suitable for irrigation and also as long as these have been assessed to be both technically and financially viable. It is unlikely that sugarcane production will be part of the cropping pattern under SVTP II as the only possible off-taker, ILLOVO has signaled that it has no capacity for additional sugarcane processing.

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(xxviii) **Technical Assistance and Farmer Capacity Building:** This sub-component will finance the recruitment of a firm to provide technical assistance (TA) to SOCFEs on the development of desired possible development pathways⁶, farm investments and farm operations. The TA will facilitate the establishment of SOCFEs; provide intensive training, mentoring and guidance to the SOCFEs; and subsequently assist them to recruit farm managers and key staff; and facilitate the formation of productive alliances between SOCFEs and partners, value chain players and investors. The TA will also be responsible for the identification of commercial partners to provide technical advice, training and mentoring on the essentials of farm business management such as agronomy and crop husbandry and value chain development services to enable SOCFEs to function as viable and profitable commercial farms. Further, the TA will help the SOCFEs in farm investment planning which will include, i) selection of enterprises to venture and its associated husbandry; ii) irrigation methods to be employed; iii) farm equipment; iv) farm management and staffing; v) financing for equipment and production costs; and vi) identification and contact with possible markets.

(xxix)

(xxx) The STVP-2 will further finance the recruitment of Services Providers (SPs) that will appoint professional management and associated farm specialist staff that will be working with the SOCFEs on daily basis to kick start implementation of commercial agricultural operations. The country has over the years gained considerable lessons from implementation of similar projects like the Agriculture Commercialization Project (AGCOM) and Irrigation, Rural Livelihoods Development Project (IRLADP). It has been learnt that considerable time and effort is needed in the social formation process of developing clusters of farmers into enterprises. In addition, the process of having clusters develop well thought-through business plans takes time and considerable support. Further, continued viable operation of newly formed enterprises needs considerable support, including training and ongoing mentoring, especially in management and facilitating market linkages. The SPs will thus be crucial to support the SOCFEs with the identification of a pathway of their choice, determination of the choice of value chains, to a large extent based on the identification of off-takers, and sensitization of the SOCFEs on matching grant requirements. In addition, SPs will have to advise the SOCFEs on the investment cost implications of different water application methods; the O&M cost implications of different water application methods; and the crops that be grown under different water application methods, and the degree of flexibility or otherwise for crop choice with different methods. The STVP-2 will recruit SPs at the start of the second phase to have ample time to support the farmers through mentorship.

⁶ There are currently 4 pathways that were identified under STVP-1 and adopted by STVP-2. These include: i) Agri-business Managers; ii) Smallholder Agri-business; iii) Leased Farms; and iv) Joint-Venture (JV) Enterprise.

(xxxi)

1. **Establishment of viable Productive Alliance (PA).** The Ministry of Agriculture has gained considerable experience in implementing projects with productive alliances under the AGCOM supported by the World Bank. Introduction of the viable productive alliances under STVP-2 will help to address several constraints related to market failures and inefficiencies experienced by many farmers along the value chain. The market failures are mainly caused by inadequate integration of actors, information asymmetries and coordination failures amongst stakeholders. The introduction of PAs has to some extent proven to increase productivity, incomes, and commercial viability apart from prospects of creating employment in rural economies. Under the STVP-2, support will be provided for the establishment of the PAs as soon as planning for production from SOCFEs is initiated. They would consist of entities operating within identified value chains and each PA could include one or more SOCFEs, financial institutions, suppliers of farm inputs and services (services to include Government research and extension), and crucially, off-takers of farm produce. These voluntary organizations will operate on the principle of mutually beneficial partnerships. They will initially be formed and mentored by the SDSPs and the ACTA. All SOCFEs will receive training and capacity building to enhance their skills. The training will include basic accounting and financial management, governance, business plan management, procurement, leadership training for those elected to the management committees, and health and safety management and resource efficiency on farm. It is envisaged that the training will assist SOCFEs to manage their businesses and improve marketing skills that enables them to enter effective PA to sustain their operations. According to ILO, the agricultural sector presents key challenges for safety and health of farmers and communities. Measures to safeguard community health, for example through providing the community health centres to identify and prepare for an increase in the number of waterborne diseases will be included within SVTP-2. This will be done in conjunction with measures to ensure the training, PPE and processes for the safe transport, storage, use and disposal of farm chemicals will be incorporated into farm management processes, in accordance with the principles established in the Pest Management Plan.

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(xxxiv) The project will also provide capital investment support to enable capital investments in the SOCFEs based on their on-farm irrigation and development designs and business plans. An estimated 80 percent of the available funds under the component will finance block development investments in irrigation and drainage, land leveling, and commercial farm development. This will include irrigation systems (including surface, sprinkler, center pivot, drip, or microjet as per informed decision by the SOCFEs), farm equipment (fixed and moveable), initial production and management support at SOCFE level, and basic infrastructure. In continuation from SVTP-1, matching grants will be made available to lower the investment costs to be paid by SOCFEs, while private finance leveraged in value chain development is expected to be available as well. As the number of agricultural blocks to be developed is expected to increase considerably under SVTP-2, the component will put a lot of emphasis on ensuring that any matching grant is made available in a timely manner. All farms would receive investment as a grant to provide access to irrigation water. They would receive a 90 percent grant for land development, with the balance to be provided by the SOCFEs through “in-kind contribution (labor and/or materials)”. On the other hand, investments in farm assets (including warehouses and agro-processing equipment), overhead and production costs will follow a formal matching grant procedure.

(xxxv)

(xxxvi) **Investment Assessment Panel (IAP).** The project will also finance the recruitment an expert team of independent evaluators to assess business plans prepared by SOCFEs. The IAP would consist of a commercial financier, at least two private agribusiness representatives, an irrigation agronomist, and a project representative (Project's Agribusiness Specialist or an alternate). The IAP will be responsible for evaluating the business proposals which will be the basis on which the project grants will be awarded. The IAP will evaluate and select PA business plans for funding based on technical and feasibility in line with terms and conditions that will be detailed in the Project Implementation Manual (PIM). SVTP-2 will continue to explore ways of linking SOCFEs with commercial banks and other potential financiers, including Development Partners. Loans or grants to SOCFEs will have to be matched with engagement of SOCFEs with viable value chain businesses for their products. Thus, a three-party arrangement of commercial banks, off-takers, and SOCFEs should be the model from the outset, supported through productive alliances. Detailed and transparent communication between these three parties and providers of the required capital investment would be an important feature of such arrangements.

(xxxvii) **During SVTP program development, an Agricultural Development Planning Strategy was prepared in 2015 that identified possible value chains.** SVTP-2, mostly through departments in MoA and the Ministry of Trade (MoT), will support additional studies, including regular market studies and road shows to identify additional prospective off-takers and where possible enter pre-contractual arrangements on specific value chains. Possible crops that have been researched and tested in the valley that have an import-substitution or export potential include cotton, sorghum (for beer production), beans, soya beans, bananas, vegetables, sugar cane for ethanol (if a viable off-taker becomes available), and fruit trees such as mangoes or citrus. IFC is expected to play a role to facilitate interaction with potential off-takers and encourage investments. The SOCFEs owners and managers will also need to be equipped with the necessary skills and knowledge to make production and management adjustments in the light of evolving market conditions. The crops chosen will have to be technically and financially viable, fit into the developed irrigation application method, and have an appropriate position in a crop rotation to avoid depletion of soils and unsustainable farm practices.

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1.4 Component 4 –Strengthening Landscape and Natural Resources Management in The Lower Shire

(xxxix) The Lower Shire Valley includes ecological regions, protected areas, and biodiversity hotspots which are important for the communities and sustainable development of the region. Critical watersheds are becoming degraded, leading to reduced water availability, deteriorating water quality, and increased vulnerability to droughts and floods. Experience from SVTP-1 has demonstrated the importance of strengthening the management of the natural resources for achieving the long-term vision of transforming the valley.

(xl)

(xli) SVTP-1 is supporting the strengthening of management of the protected areas, forest reserves, as well as the Elephant Marshes. A key lesson from SVTP-1 is to limit the number of diverse activities to ensure appropriate effort in planning and coordination of good practices. For SVTP-2 the proposed focus will be on promoting the sustainable management and financing of these same areas in the Lower Shire. Proposed activities include strengthening of the management of protected areas (Lengwe, Mwabvi), the Elephant Marshes, and forest reserves, and strengthening of solid waste and pollution management in the Lower Shire.

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(xliii) Despite the investments made during SVTP-1, there is an infrastructure deficit in the protected areas and forest reserves to ensure effective surveillance, monitoring, and enforcement. In addition, investments in eco-tourism facilities are needed to attract an increase in traffic in tourism visits to the parks. Proposed infrastructure to be supported under SVTP-2 includes development of park trails/roads, ranger camps, eco-tourism facilities, fences, water holes, and utilities. Accompanying these proposed investments will be critical community livelihoods interventions in the areas around the protected areas. An important effort to be supported by SVTP-2 is the promotion of sustainable financing for the protected areas by sourcing and engaging with suitable partners for co-investment in the areas through facilitating the establishment of a Public Private Partnerships. SVTP-2 will also support strengthening of the management of the Elephant Marshes that provides a unique habitat sanctuary to birds and flora through the implementation of the Community Conservation Area management plan. This may further include promotion of Ecosystem Based Fisheries Management, Integrated Agriculture Aquaculture, and post-harvest fish technologies. Forests provide a range of environmental services, such as greenhouse gas (GHG) mitigation, watershed regulation, climate regulation, soil and water conservation, biodiversity support, and nutrient cycling. The landscape in the Lower Shire has experienced significant degradation from deforestation. To shift towards ensuring sustainable financing of the management of the forest reserves, proposed activities will promote private sector engagement and investment in the sustainable management of the resources through two proposed mechanisms: (i) performance based grants (PBG); and (ii) carbon credits.

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(xlv) Long existing constraints in the pollution and solid waste management sector have recently received additional scrutiny as environmental pollution increases with rapid urbanization, accompanied by adverse impacts of unregulated waste dumping and burning, as well as the additional challenges of hazardous waste disposal, including that associated with COVID-19. There is a need for support in facilitating implementation of a green growth strategy to decouple the expected industrialization and urbanization processes from the historically correlated environmental degradation. As the Lower Shire transforms and the generation of waste increases, there is a necessity to prepare the services for the communities and private enterprises to manage pollution and comply with environmental regulations.

1.5 Component 5 – Project Management, Coordination, and Communication

(xlvi) SVTP-2 will continue to provide funds for the PMT to provide day-to-day management and coordination, monitoring and evaluation, communication, and management of the Grievance Redress Mechanism. The PMT is fully staffed with qualified and competent specialists. It also has an external GBV service provider responsible for implementation of GBV mitigation measures.

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2.0 RATIONALE AND OBJECTIVES OF THE LABOUR MANAGEMENT PROCEDURES

The implementation of the Shire Valley Transformation Programme is expected to utilize expatriates, government, private and community human resources which are available at national, district and community levels. The Malawi Government recognizes that sound worker-management relationships, fair treatment of workers, promotion of gender equality and protection from Gender-Based violence/Sexual Exploitation Abuse and Sexual Harassment (GBV/SEA/SH) and provision of safe and healthy working conditions enhances development benefits of a project. It is for this reason that these labour management procedures have been developed for the SVTP. The objectives of the labour management procedures are to:

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- Outline the project's approach to meeting national requirements regarding labor, as well as the objectives of the WB's ESF, specifically ESS2. To promote safety and health at work;
- To promote the fair treatment, non-discrimination and equal opportunity of project workers;
- To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate'
- To prevent the use of all forms of forced labour and child labour;
- To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law;
- To provide project workers with accessible means to raise workplace concerns.
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3.0 TYPE OF WORKERS

It is expected that the project will engage more than 500 workers in different categories, as defined by ESS2 (direct, contracted, primary supply, and community workers)

3.1 Direct workers:

Direct workers would likely include Project Management Team (PMT) and Technical Team members from different Government Department such as Department of Irrigation, Department of Water Resources, Forestry Department, Department of National Parks and Wildlife, Ministry of Trade and Industry, Department of Land Resources and Conservation.

Direct workers will also include independent consultants, who are specialized in certain disciplines which include but not limited to Financial Management Specialist, Assistant Financial Management Specialist, Procurement Specialist, Assistant Procurement Specialist, Social Safeguard Specialist, Environmental Safeguard Specialist, Monitoring and Evaluation Specialist

3.2 Contracted Workers:

Contracted workers will be hired for design and civil works, and for Construction and Supervision activities. The sub-contractors' workforces will also be considered to be contracted workers. Key personnel for contracted workers will be skilled workers i.e. those with specialized skills. However skilled workers will require support of community workers to

perform certain tasks such as cleaning and secretarial services or manual labour both during construction and operation phases of the project.x

3.3 Community Workers

The contractor working in project area will be required to recruit local workers for all the unskilled work requirements. All the workers to be recruited shall not be under the age of 18 and shall be paid the minimum wage rate as established by the national labour laws.

3.4 Migrant workers:

It is expected that the project will require a combination of local workers from nearby villages, workers from other parts of Malawi, and workers from other countries. The “internal migrants” would be workers who already have experience working on infrastructure projects and water projects in different parts of the country. Foreign “migrant” workers are likely to be management and technical staff. The number of migrant workers would depend on decisions made by contractors. As required by the proposed activities to be implemented in the components presented in Section 1 of this procedure. Workers from within the project locality and from other districts will be recruited through the District Labour Office to ensure that due diligence is done by professionals in recruitment.

3.5 Primary Workers

A primary supply worker is **a worker employed or engaged by a primary supplier**, providing goods and materials to the project, over whom a primary supplier exercises control for the work, working conditions, and treatment of the person. It can only be anticipated that Phase II of the project will have such employees as it cannot be stated precisely at this point. In the event that the project has such workers, they shall be treated as the other workers in the sense that they shall be required observe all necessary regulations are requirements i.e. signing of Code of Conduct.

As has been the case in SVTP I it is obvious that the project will employ direct workers, contract workers, migrant workers and community workers. It is however not possible to precisely provide estimates of the numbers in each component at this point.

The project will also work with civil servants who will not be directly employed on the project. These are civil servants from the various relevant government departments such as from Ministry of Land Housing and Urban Development, Ministry of gender and Social Development, Ministry of Labour, Ministry of Agriculture, Ministry of Parks and Wild life and Ministry of Culture.

4.0 ASSESSMENT OF KEY POTENTIAL LABOUR RISKS

4.1 Project activities

Significant use of labour is mostly expected to arise from the construction of the main canal and the ancillary structures, like the night reservoirs, secondary canals, maintenance roads , canal and irrigation system operation, agricultural production etc. Project workers will be involved in a number of activities that include trenching, excavations land clearing, lifting of heavy materials such as rocks, development of the electricity grid, development of park trails/roads, ranger camps, eco-tourism facilities and cultural sites, fences, water holes, and utilities, information and community sensitization campaigns, design consultant services, TA and capacity building, etc.

These activities may pose occupational safety and health risks to workers.

The health and safety risks to which people working on these projects will be assessed and mitigation measures will be put in place.

4.2 Key Labour Risks

During consultations held with communities including representatives from Ministry of Labour, a number of labour related risks that are anticipated during the implementation of the SVTP 2 were identified. These included;

- Occupation, Safety and Health risks during construction;
- Risk of communicable diseases;
- Contractor's noncompliance with local labour laws and regulations;
- Influx of migrant workers;
- Gender Based Violence/Sexual Exploitation and Abuse /Sexual Harassment GBV/SEA);
- Child labour;
- Occupation Safety and Health Risk of physical or chemical injuries during operation stage
- Operational phase OHS risks.
- Security and crime related risks,
- risks related to worker accommodation, sanitation arrangements and transport, primary suppliers, and forced labor.

The project will address these risks by undertaking site specific risk and hazard assessments and incorporating mitigation measures for the identified risks into the project specific environmental, social, health and safety management plans. Table 1 presents a brief summary of some of the possible mitigation measures for the potential identified risks; a full and complete set will be defined as part of the specific risk and hazard assessments and will be required as part of project worker contracts. The Environmental and Social safeguards team shall be responsible for conducting monthly OHS/risk/hazards assessments.

Table 1: Possible mitigation measures for the potential risks

<i>Potential Risks</i>	<i>Mitigation measures</i>
<i>Occupation, Safety and Health Risks during construction</i>	• Provide appropriate PPE to workers; • Train workers regularly on occupational safety and health risks prevention; • Enforce the use of PPE by workers; • Put appropriate warning signs in areas with high risk of • Include EHS measures in design and civil works contracts • Contractors to prepare and implement an approved Occupational Health and Safety Plan and LMP. • Develop and sign a C-ESMP. • • safety; and • Facilitate the formation of Occupational safety, Health Welfare Committee at each construction site. • Risk assessments prior to any construction activity
<i>Risk of communicable diseases-Spread of HIV/AIDS, Covid 19, Cholera and Malaria to workforce and Local Community</i>	• Sensitize workers and surrounding communities on different communicable diseases including Sexually Transmitted Diseases and ways of preventing them; • Encourage workers and communities to go for voluntary screening/ medical check-up/testing; • Provide Information, Education and Communication materials on different communicable diseases including Sexually transmitted diseases; • Adhere to ESF/Safeguards Interim Note: COVID-19 Considerations in Construction/Civil Works Projects. •
<i>Contractor's noncompliance with local labour laws and regulations-Lack of protection for workers</i>	• Contractors will sign Code of Conduct before commencement of construction works, which contains among other issues, labour related laws and regulations; • Ensure civil works contracts describe the minimum standards for any worker accommodation and worker transport to be provided by the contractor. • Develop a WGRM and DGRMC. • • Sensitize workers on labour related issues and regulations to ensure that the contractor is compliant.

Potential Risks	Mitigation measures
<i>Increased risk of influx of migrant workers- Competition over local resources</i>	- Engage much of nonskilled labour force from surrounding communities to minimize the risk of migrant workers and associated negative impacts. In situations that the required skills are found within the surrounding communities these should be given priority; - Develop a Labour Influx Management Plan.
<i>Gender Based Violence-Suppression of women rights</i>	- Sensitize surrounding communities on dangers and prevention of Gender Based Violence - Provide equal employment opportunities to men, women, youth and the disabled - Prepare, adopt and implement worker's code of conduct
<i>Child labor-Disturbance of child's education, health and safety</i>	- Sensitize surrounding communities on issues of child labour; - Employ people that are aged 18 and above; - Prepare and adopt a child labor policy
<i>Risk of contracting HIV/AIDS-Risk extended to both workforce and local Community</i>	- Sensitize workers and surrounding communities on HIV and AIDS; - Provide free condoms to workers; - Provide Information, Education and Communication materials on HIV and AIDS to workers
<i>Sexual Exploitation and Abuse-Both for workforce and local communities particular under aged girls</i>	- Prepare and implement GBV/SEA, SH Action plan - Carry out community sensitization - Develop emergency response measures. - Use the GBV Services Provider recruited for SVTP 1. - Women and girl's social and economic empowerment - Prepare, adopt and implement worker code of conduct
<i>Discrimination and exclusion of vulnerable groups; Labor disputes and conditions of employment. Security and crime related risks Risks related to worker accommodation, sanitation arrangements and transport, primary suppliers, and forced labor.</i>	- Development of WGRM - Development of deliberate policy for gender equality - Establishment of WGRMC - Development of LMP - WGRM, DGRMC and WGRMC will have multiple channels to initiate complaints including GBV-related complaints, COCs will be signed by all contractor and consultant staff. - Hire patrol and law enforcement. - Development of deliberate policies to promote proper sanitation, proper transportation of staff and mitigating against staff abuse or forced labour.

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Mitigation measures shall also be developed as specified by World Bank regulations. Such shall be in: Cross-cutting environmental, health and safety issues potentially applicable to all sectors Environmental Air emissions and ambient air quality; wastewater and water quality; hazardous materials management; waste; noise Occupational Health and Safety (OHS) Facility design and operation; training; hazards – physical, chemical, biological, radiological; PPE Community Health and Safety Water quality and availability; life and fire safety; traffic safety; transportation of hazardous materials; emergency preparedness Construction and Decommissioning Environment; OHS, community health and safety

5.0 BRIEF OVERVIEW OF LABOUR LEGISLATION

5.1 Occupational Safety, Health and Welfare Act (1997)

The Act regulates work conditions with respect to safety, health, and welfare of workers. The Act also places a duty of care on contractors throughout the project and similarly, the workers have a duty to take reasonable care for their own safety and health. In line with provisions of this Act, the Contractors working under SVTP 2 will have to ensure that there is adequate protection for all the workers. Section 13(1) places a duty on every employer to ensure the safety, health and welfare of all employees at work;

Section 13(1) of the Act places a duty on every employer to ensure the safety, health and welfare of all employees at work. The Construction activities under the SVTP 2 will require all workers to be provided with Personal Protective Equipment (PPE). The Contractors under the project will be required to ensure that there is adequate protection for the workers as required by the Act by providing them with appropriate protective clothing and equipment. Some of the protective clothing during construction shall include boots, helmets, gloves, overalls and goggles.

Another Section applicable to this project is Section 27(1) which is on Sanitary Conveniences. According to the Section, all the contractors working under the project shall ensure that workers are provided with sufficient and suitable sanitary conveniences which shall be kept clean. Where both sexes are engaged, the contractor shall ensure that both sexes are provided with separate accommodation with distinct approach for persons of each sex.

Further, Section 33(1) of the Act stipulates that an occupier of a work place shall provide and maintain a first aid box of the prescribed standard and is readily accessible. The first Aid box shall be placed under the charge of a qualified person who shall be readily available at all times during working hours.

5.2 Employment (Amendment) Act (2010)

The Employment (Amendment) Act (2010) amends some sections of Employment Act of 2000 which makes provision for establishment, reinforcement and regulating minimum standards of employment with the purpose of ensuring equity necessary for enhancing industrial peace, accelerated economic growth and social justice and for matters connected therewith and incidental thereto.

The Employment (Amendment) Act (2010) amends Section 35 of employment Act by deleting subsection (1) and substituting therefor the following new subsection (1) : on the termination of contract as a result of redundancy or retrenchment, or due to economic difficulties, or technical, structural or operational requirements of the employer, or on unfair dismissal of an employee by the employer, and not in any circumstances, an employee shall be entitled to be paid by the employer, at the time of termination, a severance allowance to be calculated in accordance with Part 1 of the First Schedule

Section 5 (1) of the Act is on anti-discrimination states that no person shall discriminate against any employee or prospective employee on the grounds of race, colour, sex, language, religion, political or other opinion, nationality, ethnic or social origin, disability, property, birth, marital or other status or family responsibilities in respect of recruitment, training, promotion, terms and conditions of employment, termination of employment or other matters arising out of the employment relationship.

Section 22 (1) of the Act states that no person between the age of fourteen and eighteen years shall work or be employed in any occupation or activity that is likely to be harmful to the health, safety, education, morals or development of such a person; or prejudicial to his attendance at school or any other vocational or training program. In line with this Act, the contractor working under the SVTP 2 will have to ensure that there is no discrimination of any form when it comes to employment. In addition, the contractor will ensure that only people who are aged 18 years and above are employed.

5.3 Workers Compensation Act (2000)

The Workers and Compensation Act of 2000 provides for compensation for injuries suffered or diseases contracted by workers in the course of their employment or for death resulting from such injuries or diseases; provides for the establishment and administration of a Workers' Compensation Fund; and provides for matters connected therewith or incidental thereto. Part II of the Act is on eligibility for compensation in case of injury other than the contraction of a scheduled disease. Section 4 (1) states that if an injury, other than the contraction of a scheduled disease, arising out of and in the course of his employment is caused to a worker, his employer shall, subject to this Act, be liable to pay compensation in accordance with this Act.

The implication of this Act is that all the contractors under SVTP 2 will ensure that all workers that will be subjected to injury or illness arising out of and in the course of discharging duties will be liable to compensation. All the workers under the project will have to be sensitized on the provisions of the Workers Compensation Act because some incidences are not reported because of ignorance.

5.4 The Labour Relations Act, 1996

The Labour relations Act promotes sound labour relations through the protection and promotion of freedom of association, encourages effective collective bargaining and promotes orderly and expeditious dispute settlement, conducive to social justice and economic development.

The Act, specifically Part II, gives employees freedom of association which shall include the freedom to establish and join organizations of his or her own choosing. Further, Part V of the Act is on Dispute Settlement. Section 42 of the Act defines “dispute” as any dispute or difference between an employer or employers’ organization and employees or a trade union, as to the employment or non-employment, or the terms of employment, or the conditions of labour or the work done, of any person, or generally regarding the social or economic interests of employees. The Act further presents ways and channels of resolving disputes.

5.5 International Labour Organization (ILO) and United Nations (UN) Conventions

Malawi is a signatory to International Labor Organization (ILO) and United Nations (UN) Conventions. Such being the case most of the provisions in the ILO Conventions are incorporated in Malawi’s labor related legislation. Additionally, ESS2 is in part informed by several International Labour Organization (ILO) and United Nations (UN) Conventions. These include:

- ILO Convention 87 on Freedom of Association and Protection of the Right to Organize;
- ILO Convention 98 on the Right to Organize and Collective Bargaining;
- ILO Convention 29 on Forced Labor
- ILO Convention 105 on the Abolition of Forced Labor;
- ILO Convention 138 on Minimum Age (of Employment)

- ILO Convention 182 on the Worst Forms of Child Labor;
- ILO Convention 100 on Equal Remuneration
- ILO Convention 111 on Discrimination (Employment and Occupation).

5.6 ESS2: Labour and Working Conditions

This Environmental and Social Standards (ESS) provides the World Bank's requirements on occupation health and safety for all projects. The ESSs also require the application of relevant World Bank Group's Environmental, Health and Safety Guidelines on the project.

The ESS2 introduces labor management procedures including OHS; emphasizes on non-discrimination and equal opportunity; provides for the treatment of direct, contracted, community, and primary supply workers, and government civil servants. It also provides for a grievance mechanism for all project workers. Table 2 highlights how these provisions in the ESS2 are applicable to Malawi's labour related legislation.

5.7 Comparison between ESS2 and Labour related pieces of legislation;

Table 2 below present's comparison between Environmental and Social Standard No.2 (ESS2) and labour related pieces of legislation. ESS2 provides specific requirements on occupation health and safety. It introduces labor management procedures. It emphasizes non-discrimination and equal opportunity. ESS2 includes provisions on the treatment of direct, contracted, community, and primary supply workers, and government civil servants. ESS2 recognizes workers' organizations. It requires a grievance mechanism for all project workers.

The EHS Guidelines contain the performance levels and measures that are normally acceptable to the World Bank Group, and that are generally considered to be achievable in new facilities at reasonable costs by existing technology. The World Bank Group requires borrowers/clients to apply the relevant levels or measures of the EHS Guidelines. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects will be required to achieve whichever is more stringent.

1. Environmental

1.1	Air	Emissions	and	Ambient	Air	Quality
1.3	Wastewater	and	Ambient	Water	Quality	
1.4		Water			Conservation	
1.5		Hazardous		Materials	Management	
1.6		Waste			Management	
1.7	Noise					

2. Occupational Health and Safety

2.1	General	Facility	Design	and	Operation	
2.2		Communication		and	Training	
2.3		Physical			Hazards	
2.4		Chemical			Hazards	
2.5		Biological			Hazards	
2.6		Radiological			Hazards	
2.7	Personal	Protective		Equipment	(PPE)	
2.8	Special		Hazard		Environments	
2.9	Monitoring					

3. Community Health and Safety

3.1	Water	Quality	and	Availability
3.2	Structural	Safety	of	Infrastructure
3.3	Life	and	Fire	(L&FS)
3.4		Traffic		Safety
3.5	Transport	of	Hazardous	Materials
3.6		Disease		Prevention
3.7	Emergency Preparedness and Response			

4. Construction and Decommissioning

4.1				Environment
4.2	Occupational	Health	and	Safety
4.3	Community Health and Safety			

Table 2: Comparison between ESS2 and Labour Related Legislation

ESS2	Malawi Legislation
1 Fundamental employee rights, non-discrimination	This is provided for under Part II of the Labour Relations Act (1996)
2 Contractual arrangements, terms and working conditions of workers	This is provided for under Part II of the Labour Relations Act (1996)
3 Working hours;	This is provided for under Part VI of Employment Act (2000) specifically Sections 36 which is on ‘Normal working hours, weekly rest etc.’; and Section 37 on ‘Maximum daily working hours’.
4 Salaries and wages and frequency of payments;	This is provided for under Part VII of Employment Act (2000) specifically on Sections 50, 51,52,53,54 and 55.
5 Leave provisions – annual, maternity, sick and holidays, leave provisions for working;	This is covered in Employment Act (2000) specifically under Part VI (sections 40,44,45 and 46)
6 Retrenchment/termination of contract arrangements;	This is provided for Under Part V Sections 28 and 29 of the Employment Act of 2000.
7 Freedom or association and labor unions;	This is provided for under Part II of the Labour Relations Act (1996)
8 Dispute resolution/grievance management systems;	This is provided for under Part V of the Labour Relations Act (1996)
9 Safety provisions;	Covered under Part VI of the Occupational Safety, Health and Welfare Act of 1996
10 Health and employee welfare provisions;	This is provided for under Part IV of the Occupational Safety, Health and Welfare Act of 1996
11 Hazardous and material waste processes;	This is covered under Part IV of the Employment Act of 2000 on ‘Employment on young persons’ specifically Section 22(1) and (2)
12 Registration of workplaces etc.	Part II Section 6 of the Occupational Safety, Health and Welfare Act of 1996

6.0 ROLES AND RESPONSIBILITIES FOR MANAGING THE LMP

The Project Management Team (PMT), which is the coordinating institution for the SVTP 2 will have overall responsibility for management of workers in the project. However, implementation of the SVTP 2 will be done in collaboration with several other stakeholders at national, district and community level who will also be expected to assist in management of workers within their areas of jurisdiction in the project. These include stakeholders from the District Council and other government ministries. Thus, successful management of project workers requires clear definition of roles and responsibilities of key players and stakeholders at community, district and national levels. The Supervising Engineer, will be responsible for the management of contractors and will ensure that Occupational Safety, Health and Welfare of the workers is planned for, monitored and implemented. Environment and Social Safeguard Specialists at the PMT in liaison with Component Leaders will be responsible for ensuring the Supervising Engineer undertakes their duties in accordance with their TOR.

Contractors will be responsible for the engagement with workers and training them for activities that will be implemented by contractors/subcontractors under the supervision of component leaders and Environment and Social Safeguard Specialist.

6.1 National Level

The Environmental and Social Safeguard Specialists at the PMT level, in collaboration with the Ministry of Labour will be responsible for monitoring contractors' implementation of their approved Labor Management Procedures and providing recommendations. Accordingly, Government Engineers will also continue working on the project as they have been doing under SVTP I. Serious OHS accidents will be reported by PMT.

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6.2 District Level

It is expected that government workers will collaborate with the project staff at PMT level or even with the contractor. These will include officers from the District Commissioner represented by various departments such as Agriculture, Labour, Social Welfare and Welfare and Works. Among other roles the district staff will be involved in sensitization meetings, grievance redress mechanism process, the RAP implementation, and. coordination of labour management issues in the project at district level. Among other roles, their responsibilities will include:

- Training of extension staff on labour management issues related to the project;
- Monitoring and supervising community workers to ensure compliance with occupational and community health and safety procedures for prevention of accidents;
- Administration of relevant forms and preparation of quarterly monitoring reports.

6.3 Supervision Engineers and Construction contractors

Project managers under the Contractors will be responsible for the following:

- Developing Labor Management Procedures and Occupational Health and Safety Plans which will apply to their own and subcontractor employees who work on the projects.

These procedures and plans will be submitted to PMT for review and approval before the contractors are allowed to mobilize to the field;

- Employing or appointing qualified social, labor (human resources), and occupational safety experts to prepare and implement Labor Management Procedures, Occupational Health and Safety Plans, and to manage subcontractor performance;
- Supervising subcontractors' implementation of labor managements procedures and Occupational Health and Safety Plans;
- Maintaining records of recruitment and employment of contracted workers;
- Communicating job descriptions and employment conditions to all workers;
- Having a system for regular review and reporting to corporate management on labor and on occupational safety and health performance;
- Providing induction (including social induction) and regular training to employees in labor protection requirements, including training on their rights under Malawi labour laws, on the risks of their jobs, and on measures to reduce risks to acceptable levels;
- Ensuring that all contractor and subcontractor workers understand and sign the Code of Conduct prior to the commencement of works; and
- Supervise compliance with the Code of Conduct.
- Recruiting OHS specialist, GBV specialist, "general" social specialist and other key staff on the project to liaise with client and other consultants such as GBV Service Providers.

Apart from the contractor who shall be required to comply to the measures above, there shall also be other contractors hired to do studies/plans/designs and other activities for which all these measures above may not apply.

It should also be recognized that there shall be workers at operational level who may not be specified at this stage. These shall also be required to observe all the measures and their rights shall also be protected as per all the project guidelines

7.0 POLICIES AND PROCEDURES

7.1 Gender Based Violence and Sexual Exploitation and Abuse (GBV and SEA)

SVTP 2 will put measures to mitigate against GBV at the work place as well as in the surrounding communities. While the recruitment of women is encouraged, it can also be a cause for concern in as far as GBV issues are concerned. At the same time while the implementation of SVTP 2 will improve socio-economic status of households working on the project activities through wages or salaries, it also has potential to cause GBV, SH and SEA.

GBV may be defined as any conduct, comment, gesture, or contact perpetrated by an individual based on gender on the project community or project surroundings area, or in any place that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to another individual without his/her consent, including threats of such acts, coercion, or arbitrary deprivations of liberty.

Sexual Exploitation and Abuse will occur within the project surrounding communities, perpetrated by project workers and mostly, girls and women are vulnerable to this kind of abuse.

The World Bank defines sexual harassment as any unwelcome sexual advance, request for sexual favor or other verbal, non-verbal, or physical conduct of a sexual nature which unreasonably interferes with work, alters or is made a condition of employment, or creates an intimidating, hostile, or offensive environment. Sexual harassment includes: unsolicited requests for sexual favors, requests for sexual favors linked to career prospects, unwanted physical contact, visual displays of degrading sexual images, sexually suggestive conduct, or offensive remarks of a sexual nature. Sexual harassment may occur between persons of the opposite sexes or of the same sex. Unwelcome sexual behavior may be obvious, or it may be subtle and persistent. While typically involving a pattern of behavior, it can take the form of a single incident. The most obvious form of sexual harassment in the workplace is a direct or implicit request for, or offer to, provide sexual favors in exchange for favorable career treatment. A wide range of other types of behavior can also constitute sexual harassment. These include: · the repetition of suggestive comments or innuendoes; · the exhibition of materials of a sexually-oriented nature (e.g., displaying pornographic web sites or screen savers); · the use of crude or obscene language or gestures, or the telling of risqué or obscene jokes; · repeated and/or exaggerated compliments about a colleague's personal appearance; · invitations to social activities if they persist after the recipient has made clear that they are not welcome;

GBV: Usually GBV occurs in a project surrounding communities because of the community involvement in the project as a source of income. Such incidences may arise especially in situations whereby household representatives that receive salaries or wages are forced to surrender the cash to spouses; where payments may be used to lure adolescents into unsafe sexual practices; or cases of forced sexual relationships in return for employment.

Detailed description of how the project will address GBV and SEA are included in the Stakeholder Engagement Plan. In all cases, the incidents of GBV and SEA will be reported and dealt with through the GRM procedure which will have protocols to manage information sharing and confidentiality of the survivors and accused persons. However, since GBV and SEA cases are substantively different from other complaints that are typically handled through the grievance redress mechanisms, such cases will need a specific channel within the GRM for their management. SVTP 1 recruited a GBV Service provider, specifically responsible for GBV issues in the project. SVTP 2 will continue to utilize the services of the GBV Service Provider

in the implementation of all GBV mitigation measures. All information will be treated as confidential and handled by the GBV/SEA/SH Service Provider. Some of the survivors will be referred to the One Stop Centre if the case requires expertise available in OSC.. The GBV/SEA/SH Service Provider will be known by all project workers to enable survivors of GBV/SEA/SH report their cases. However, criminal cases such as rape will be reported to police immediately as delays may lead to destruction of evidence. All cases will be reported to the PMT within 24hours and PMT will report to World Bank within 48 hours.

7.2 Age of Employment

As stipulated above, the Employment Act (2000) stipulates that the minimum age of employment in Malawi is 18, which is also stipulated in the International Labour Organization Conventions (138) on minimum age. These two legislations prohibit the employment of underage children. However, according to Section 21 of the Employment Act, children between the ages of 14 and 18 are allowed to participate in light work so long as it does not interfere with the child's education or harm the child's health or physical mental, spiritual, moral or social development.

Under the SVTP 2, children under the age of 18 will **NOT** be employed to work in different project activities because the activities are regarded as hazardous for young persons. The following procedure will be followed if underage worker (s) is (are) found:

- Underage workers identified will be removed as it is against the law to employ underage workers. Among other strategies, minimum age shall be monitored through the National Identification. Anybody whose National ID shows that they are below 18, shall not be accepted for employment.
- Any contractor that employs the underage shall be punished in line with the labour laws of Malawi..

All these requirements will be included in the contract that will be signed by contractors to ensure that not only are they enforceable but also legally binding.

During recruitment of workers who are felt to be underage, it will be compulsory to an Affidavit of Birth as a certification measure. Further, awareness raising sessions will be conducted regularly to the communities to sensitize them on prohibition and negative impact of child and forced labour. Primary supplier shall also be required evidence that all workers are of the required age.

7.3 Terms and Conditions

As already indicated, the SVTP 2 will involve three main categories of workers namely: Contracted Workers a Local Workers and Migrant Workers.

The Government officials at District Level and National Level and the project officers who are employed and deployed to the project's office under the SVTP 2 with an effective legal transfer of their employment to the project will constitute the direct workers. The terms and conditions of the employment for the staff of Government Departments and the SVTP 2 shall be guided by the national civil service regulations and other National Labour and Employment legislation. These include Occupational Safety, Health and Welfare Act (1997) which regulates work conditions with respect to safety, health, and welfare of workers; Labour Relations Act (1996) which promotes sound labour relations through the protection and promotion of freedom of association, encourages effective collective bargaining and promotes orderly and expeditious

dispute settlement, conducive to social justice and economic development; and Employment Act (2000) which makes provision for establishment, reinforcement and regulating minimum standards of employment with the purpose of ensuring equity necessary for enhancing industrial peace, accelerated economic growth and social justice.

In addition to the general terms and conditions of work provided by the civil service regulations, PMT staff shall also be guided by SVTP 2 Terms and Conditions of Service.

The Contractor's contract will set out terms and conditions for the contracted and subcontracted workers. These terms and conditions will be in line, at a minimum, with these Labor Management Procedures, the Malawian Labor Code, General Conditions of Contract, and the Particular Conditions of Contract of the relevant World Bank Standard Procurement Documents.

8.0 WORKERS GRIEVANCE REDRESS MECHANISM

The SVTP 2 will have Workers Grievance Redress Mechanism (WGRM) to ensure that workers have the ability and opportunity to lodge complaints or concerns, without cost, and with the assurance of a timely and satisfactory resolution of issues. All workers under the project will be informed of the WGRM and the procedures that will be involved. The workers will be informed about the procedures during contract negotiations and once they are engaged by the project Contractors, Consultants including Supervising Engineers. All Contractors, Consulting Engineers including Consultants shall be informed about a requirement to have a well laid out WGRM within their systems.

In order to resolve all grievances effectively, the SVTP 2 shall establish Workers Grievance Redress and Management Committees at, District and Workplace levels. These committees will ensure the capturing and resolution of all issues within the prescribed timeframes. The WGRM will handle all types of work-related grievances arising from implementation of all the programs under the SVTP 2. The workers' GRC will have 2 GBV champions as focal personnel on issues of GBV/SEA /SH. . Stakeholders can also access the Bank's corporate Grievance Redress Service (<http://www.worldbank.org/GRS>; e-mail: grievances@worldbank.org) for addressing concerns and grievances arising in connection with the project.

Examples of Grievances that may come from workers include:

- i. Unfair dismissal from work;
- ii. Suspected corruption and theft cases;
- iii. Lower wages than the minimum set by labour related legislation in Malawi;
- iv. delayed wages;
- v. Working conditions/hours;
- vi. Child labour;
- vii. Sexual Harrassment
- viii. Gender based violence; and
- ix. Sexual exploitation and abuse.

8.1 WGRM Stages

The Workers grievance procedure will have five major stages. These stages include: (i) the complaint or grievance uptake (ii) Assessment, analysis and response (iii) Resolution and closure (iv) Registry and monitoring (v) GRM Evaluation.

Stage 1: Complaint Uptake:

Employed workers will present their complaints or grievances to the Workers Grievance Redress Mechanism Committee (WGRMC). The WGRMC will record all received complaints or grievances in a workers' Log and Resolution form as attached in Annex 2. The case shall only be referred to District Grievance Redress Mechanism Committee (DGRMC) when it has not been resolved at Workers Grievance Mechanism Redress Committee (WGRMC). One committee member from the workers will undertake the responsibility to ensure the cases are followed up and feedback is provided.

Stage 2: Assessment, Analysis and Response:

When a complaint is received, a maximum of 5 days has been provided for the WGRMC to resolve the complaint or respond to the complainant. This is so to make sure that grievances/complaints are resolved as early as possible.

Once complaints are received, the WGRMC shall assess whether the complaint or grievance is related to SVTP 2 activity implementation or not. In a situation where the complaints are not related to the project, complainant shall be advised to channel their complaints to the right institutions. If a complaint is related to SVTP 2 activities, the WGRMC shall hear such cases and make necessary follow ups to gather evidence and make necessary determination. The outcome of the analysis shall be communicated to the complainant.

Stage 3: Resolution and Closure:

Where a resolution has been arrived at and the complainant accepts the resolution, the complainant shall be required to sign the resolution and closure section in Workers Grievance Log and Resolution Form. The chairperson of the WGRMC shall also be required to counter sign. This shall signify that the complaint or grievance which was presented has been fully discussed resolved and closed.

Stage 4: GRM Registry

A register shall be kept at all levels of WGRM to ensure proper record of all complaints and their resolutions. For any case heard, closed or referred at the WGRMC, a copy of logs and resolution forms for every case shall be submitted to the two upper levels for records, i.e. the DGRMC and the PMT. Similarly, if a case is handled at DGRMC, a copy shall be sent to PMS. and another to WGRMC to notify them how the referred case was handled. This shall enable the District to keep a register (Annex 4), of all cases recoded and handled by any GRM committee in their District. Using this information, councils will be able to generate a matrix of cases and agreed resolutions and be able to follow up if the resolutions are being implemented.

Stage 5: GRM Evaluation

The WGRM evaluation can be undertaken alongside any other evaluation exercises for the project. This will be possible using copies of registers that Councils and SVTP Secretariat will be keeping. This may assist to trace whether the WGRM system was efficient and effective to respond to worker's complaints and whether the GRM principles were met during the project implementation.

The grievance redress mechanism shall contribute a lot to the efficient running of the project as it shall assist to investigate complaints and bring up a much clear version of the complaint at an earliest time possible, provide a fair and speedy means of dealing with complaints, prevent minor disagreements from developing into more serious disputes, thereby, providing a simple, speedy and cost-effective mechanism of re-installing satisfaction to the ones that were affected.

8.2 Processes and Institutional Arrangements

The Grievance redress system shall be established at three levels: WGRMC at work place level e.g. Construction site level; DGRMC at District level. At district level, the project shall utilise CCJP, the GBV/SEA Service provider in collaboration with district Labour Office. At the third level will be PMT which shall hear cases that have failed to be resolved at the two lower levels. PMT shall, when required, convene an independent investigation or hearing committee to hear the cases.

8.3 Workers Grievance Redress Management Committee (WGRMC)

- i. Two worker representatives (Male and Female)
- ii. Client representative
- iii. Consultant representative
- iv. Contractor representative

8.4 District Grievances Redress Management Committee (DGRMC)

- i. Representative of CCJP
- ii. The District Labour Officer
- iii. The District Social Welfare Officer
- iv. Representative from Police
- v. Representative from the District Hospital

8.5 Project Management Team Grievance Redress Committee

- i. The Project Coordinator
- ii. Social Safeguards Specialist
- iii. Legal Representative (Attorney General's Office)
- iv. Human Resource Manager (Department of Irrigation)
- v. Project Engineer

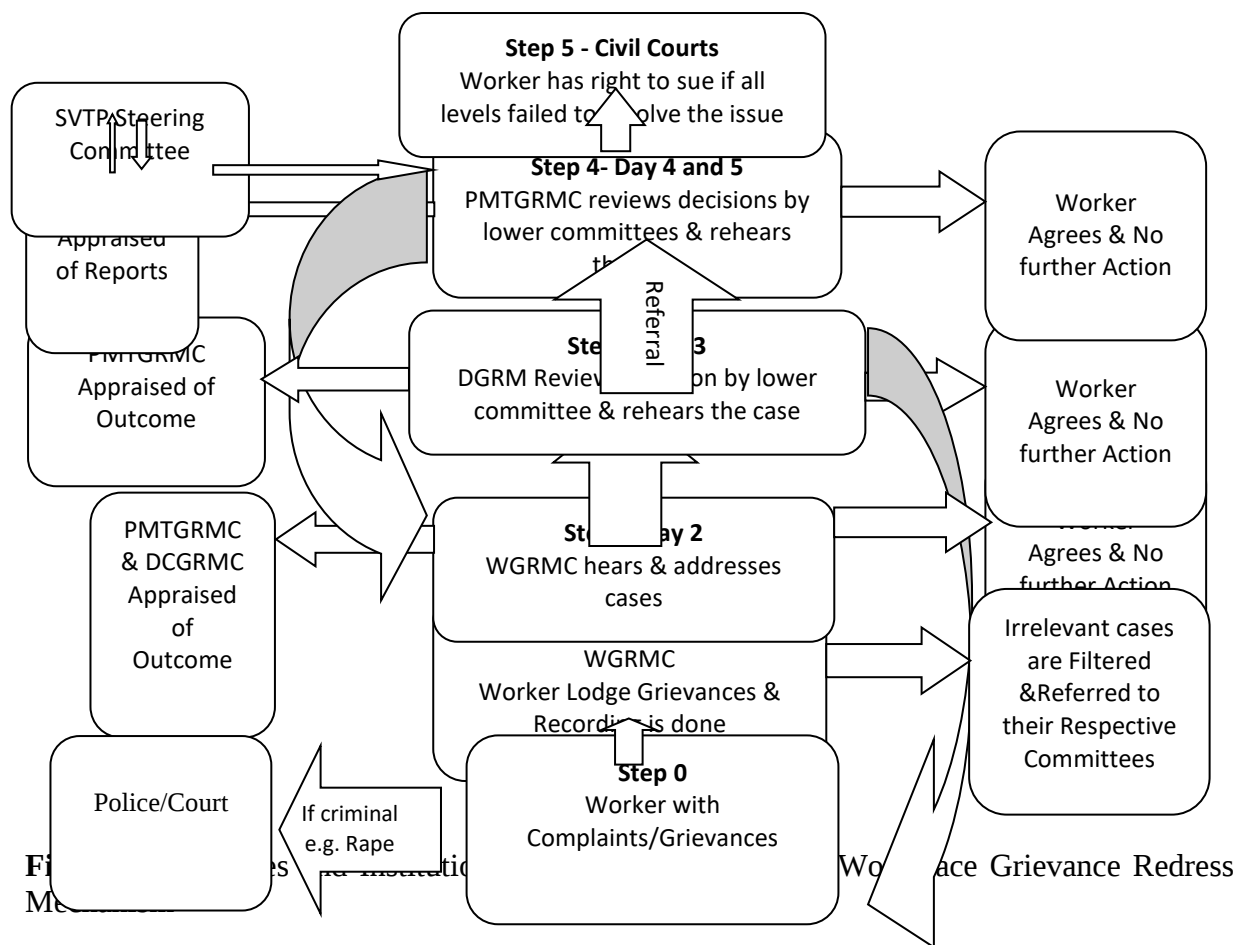
PMT, through CCJP shall orient all the Workers Grievance Redress Committees to ensure that they understand their role in the grievance redress process. CCJP shall be responsible for implementation of GBV/SEA/SH mitigation measures and day to day management of GBV issues for prevention and response to GBV/SEA/SH. CCJP shall continue to utilise the structures already put in place at local level, the GBV Champions embedded in the Community GRCs as well as the One Stop Centre at Chikwawa District Hospital designed to assist survivors with the required interventions as may be required according to initial assessments. CCJP shall also be responsible in enforcing GBV best practice compliance by the Contractor and that shall include sensitising the contractor's workers of their rights and the existence of GRM. With regard to grievances, CCJP shall record, vet and hear cases as submitted to them by complainants. If the complainant is satisfied with the resolution, the case will be closed.

If cases at the Community GRC (CGRC) and Workers GRC (WGRC) level are not closed, the grievances shall be referred to the District GRC (DGRC). The complainant shall be communicated that his/her issue was referred to the upper committee for hearing. The DGRC shall receive and record the cases as referred to them by the WGRC. This committee shall hear the case from the complainant and review the decision made by WGRC. If the complainant is satisfied with the decision, the case will be closed.

If the case was not closed at DGRC, the case will be referred to the PMTGRC. The DGRC shall record the Grievance in the District Grievance Log & Resolution Form (Annex 3). The PMTGRC shall invite the affected person to hear the case and also review the decisions made earlier by the two lower committees. The PMTGRC shall record the grievances in PMSU

Grievance Log & Resolution Form provided in Annex 5. Where need be, the PMSU shall liaise with Project Steering Committee (PSC) so that a resolution should be made for the case at hand. If the PAP shall accept the resolution made, the case shall therefore be closed at this level. Where the case was not closed at PMTGRC level, the complainant shall be advised to seek justice from the Court of Law and the decision made by the Court of Law shall be final. Some cases such as rape and theft which need evidence in the court may go straight to court by complainant to avoid destruction of evidence required legally. Figure 1 provides a summary of the processes and Institutional arrangement for SVTP Workplace Grievance Redress Mechanism.

Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.



9.0 CONTRACTOR MANAGEMENT

It is expected that under SVTP 2, contractors will be engaged for construction and operational activities. In order to ensure fair competition and transparency, the selection of contractors will be based on the Government of Malawi's Public Procurement and Disposal of Assets Authority (PPDA) and World Bank procurement procedures which regulate the engagement of contractors. Procurement of contractors and infrastructure operator will align with the WB Procurement regulations, and require the use of relevant SPD.

This includes:

- Competitive bidding through transparent open advertising;
- Shortlisting and selection of contractors and
- Contractual signing.

The National Local Government Finance Committee (NLGFC) will ensure that the requirements of the Environmental and Social Standard (ESS 2) and non-compliance remedies are incorporated into contractual agreements. Contractors will be required to develop and sign a contractors' ESMP that will also include issues of code of conduct, GBV/SEA/SH, child labour and GRM at contractor's worksite. These requirements will also be included in the bid documents and also reflected in the contractor's Contract. Similarly, it will ensure that issues concerning sub-contracting are done with the consent of the Government. In ensuring that there is compliance with the requirements of ESS 2 by service providers, the project will regularly monitor and evaluate activities of contractors in line with the SVTP 2 Monitoring and Evaluation Framework. The project will also strengthen awareness among workers to ensure that they are aware of their entitlements.

9.1 Code of Conduct

The code of conduct aims at preventing and/ or mitigating social risks within the context of the project. The social risks that may arise include but not limited to GBV, SEA, SH; VAC; HIV/AIDS infection and prevention and Occupational Health and Safety. The Code of Conduct will also include issues to do with drug abuse, theft and other vices deemed unlawful and worth to be included in the Code of Conduct. The Code of Conduct shall be subject to review whenever necessary to ensure that it responds to relevant issues at a given time.

Contractors who may be engaged under the SVTP 2 will be required to implement a code of conduct that will commit them to create and maintain an environment which prevents social risks. The code of conduct is set out in the relevant SPDs. The contractor will be required to communicate clearly to all those engaged on the project the behaviors which guard against any form of abuse and exploitation in order to prevent social risks. Code of Conduct is provided in Annex 3.

10.0 PUBLIC CONSULTATIONS

Consultations done for SVTP 2 also provided and collected information for the LMP. A number of stakeholders were consulted, including members of the District Council; Ministry of Labour, Skills and Innovation which provided policy direction on labour issues in Malawi; Community Members around one of the proposed project sites including vulnerable groups such as women and youth and the World Bank. No specific women groups were consulted but the District Stakeholders that were consulted included women.

A Number of issues were raised some of which were general in nature and others were labour related issues. The issue of prioritizing locals for employment took centre stage. The communities consulted felt that jobs that can be done by the locals should not be given to migrants so that the locals can really feel that they are benefiting from the project. Annex 2 of the report presents a summary some of the labour related issues that were raised and how these have been incorporated while Annex 4 presents a list some stakeholders that were consulted during the preparation of the LMP. This Labour Management Procedures will be disclosed to all stakeholders. The disclosure will be done after the Procedures have been cleared by Government of Malawi and the World Bank.

12.0 OVERVIEW OF LABOR USE ON THE PROJECT

The Labor Management Plan (LMP) applies to project workers including full-time, part-time, temporary, migrant workers⁷ etc. The LMP is applicable, per ESS2 to the project in the following manner:

1. people employed or engaged directly by the Contractor (including the project proponent and the project implementing agencies) to work specifically in relation to the project (*direct workers*);
2. people employed or engaged through third parties to perform work related to core of the project, regardless of location (contracted workers);

12.1 Procedure

The SVTP 2 will be committed to safeguarding worker rights and will implement good practice in relation to labour and working conditions of the project. This LMP contains the human resource policies and procedures that will be implemented by the project. The requirements discussed in this plan apply to the project commitments during the project implementation as in the project ESIA.

The following sections outline principles and measures that will be taken to address each of the standards and policies outlined above.

12.2 Employment/Labour requirements

The construction works for the canal and other ancillary structures on the project will require a number of employees for its various works though details of the specific labor needs will be clearer during works. It is estimated that, about 700 or more workers will be recruited in the project for its various works and these to include: Civil engineers, works supervisors, Human resource managers; Clerks of works, Laborers, Security, Laboratory staff, Drivers, Masons, Carpenters, Operators, Technicians, Admin staff, Foremen, Mechanics, Welders, Casual Labourers, Cleaners, Kitchen staff, to mention but a few.

12.3 Availability of labour

Depending on the availability of the human resources in the surrounding area, majority of the employment opportunities, where possible, will be provided to the people in the nearby villages. Details of specific job opportunities will be released and information provided on application procedures.

Unskilled labour force - the Contractor will be instructed to place emphasis the labour force within the project area to minimize on the labour force immigration into the project area.

Skilled labour – the Contractor/Consultants will be advised to follow a recruitment procedure that places emphasis on the local people (Malawians). Foreign workers will only be allowed where there is a skills deficiency on the national market. The Contractor/Consultant will have to demonstrate this deficiency. The CONTRACT recommendations on labour force will also be employed where necessary.

The other positions will be competed for fairly and during the recruitment process, ladies will be encouraged to apply.

12.4 Freedom of Association

The project will need to recognize the freedom of its employees and those of its sub-contractors to be able to participate in collective bargaining agreements. Workers shall be allowed to establish and join work-based organizations if they wish to negotiate wages and other working conditions.

12.5 Equality of Treatment

The Project is committed to ensuring that men and women hired for work receive equal rates of pay for equal types of work. It will not discriminate in its hiring and employment practices on any basis of sex, race, culture, religion, sexual orientation, or indeed any other aspects.

All workplaces including site work points will have gender segregated facilities. For example

1. Separate Toilets/Washrooms
2. Separate Dressing Rooms/Locker Rooms
3. PPE Gear – suitable for both male and female workers.

Wages

The Contractor will determine Wages in accordance to The Minimum Wages as stipulated in the Labour Laws of Malawi. The Contractor will establish rates of wages and observe conditions equitable to those established for the trade or industry where the work is carried out. In the absence of trade or industry-established rates of wages or conditions of labour, shall pay rates of wages and observe conditions of labour which are equitable to the general level of wages and conditions observed by other employers engaged in trades or industries similar to those of the project.

12.6 Health and Safety

The contractor will be committed to the safety of its employees and non-employee workers at the worksite and will operate in collaboration with and to the requirements of the local health authorities. In addition, the Contractor will have to prepare a Health and Safety Management Plan which outlines specific health and safety related policies and procedures to be followed during the construction phase of the project.

The Contractor will comply with the Government of Malawi's Workers' Compensation Act which outlines the compensation to workers for injuries suffered and Scheduled diseases incurred during the course of employment.

The Act recognizes the importance that workplace must be safe and without risk of injury to employees. Malawi regulations require basic protective clothing for construction including proper foot protection, overalls where needed, protective gloves, and raincoats for wet weather work.

The Contractor or his sub-contractor will ensure that all PPE including protective clothing and equipment purchased for use by its employers is manufactured to such a nationally and internationally recognized standard as to ensure adequate protection against injury and accident. The contractor will also ensure that any sub-contractors involved with the construction phase of the canal and the ancillary structures provide the appropriate level of PPE to their employees.

12.7 Epidemics

In the event of any outbreak of illness of an epidemic nature, the project will comply with and carry out such regulations, orders and requirements as may be made by the Government, World Health Organization or the local medical or sanitary authorities, for the purpose of dealing with and overcoming the epidemic.

12.8 Reporting of Accidents

The Contractor and any sub-contracts working on the project will outline the responsibilities to report to appropriate project staff the details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, contractor would ensure that the sub-contractors are aware of the importance to notify the contractor immediately by the quickest available means following an accident

12.9 Records of Safety and Health

The contractor will maintain safety and health records and make reports concerning safety, health and welfare of persons and damage available to the appropriate authorities.

12.10 Amenities

The, contractor will in so far as is reasonably practicable, having regard to local conditions, provide on the worksite an adequate supply of potable and non-potable drinking water for the use of his employees and non-employee workers.

The contractor will provide and maintain adequate sanitary latrine accommodation for the use of the employees and non-employee workers for the interconnection project and shall keep the whole of the facility and latrines in a clean and sanitary condition in accordance with the requirements of the Health Authorities of the Government.

12.11 Engagement of Labour

The contractor's preference is to employ local staff where possible and with the required qualifications and experience. The project will make arrangements for the engagement of expatriate labour and for the housing, health, welfare and repatriation of the same. Contractor will be responsible for the return of expatriates to the place where they were recruited following the termination of their employment.

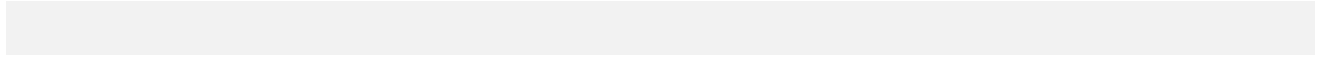
The Contractor will comply with the applicable provisions of the World Bank and Malawi Government policies regarding avoidance of forced labour. The contractor may from time to time employ casual/temporary labour for the project. Contractor will keep records to include information on casual/temporary labour and intends to avoid long term status of casual workers.

The Contractor will keep proper records of the time worked by every employee engaged on the project irrespective of the employee's method of payment (hourly or salary), the class of work on which employed and the wages paid. The project will also keep proper records for every employee engaged, their gender, the class of work in which employed, whether as a casual or permanent employee, and the wages (and allowances if any), paid in accordance with Malawian regulations. These records will be available at any time for inspection by authorized lender representative or authorised representative of the government. The Contractor will produce, if required, other records that may be necessary to provide evidence of their compliance with the requirements of this paragraph.

12.12 Grievance Redress

The contractor shall facilitate formation of Workers Grievance Redress Committees to ensure that employees have a platform of channelling their grievances to Management and also to ensure that all grievances are resolved amicably to ensure that grievances do not negatively impacting the project. The Contractor shall also ensure that all staff are well sensitised against any vices including gender based violence and that all staff have signed a code of conduct.

Annex 1: Risk Assessment Tool



Annex 1: Summary of Labour Related Issues from Consultations

Issue	Response
1. How shall the project ensure that local people are given first priority to the available jobs.	All non-skilled jobs shall be given to locals and qualified locals shall be given an opportunity to compete for the available skilled jobs.
2. How shall the project ensure fairness in recruitment.	The Contractor shall be requested to work hand in hand with the district council through the district labour office. This shall ensure that there is transparency and accountability in the recruitment process.
3. How shall the project mitigate against workers exploitation.	The Contractor shall sign a Code of Conduct which stipulates good work ethics and also has specific prevention or mitigation measures on issues such as GBV, HIV/IDS, Grievance Resolutions etc
4. How shall the Project specifically protect female workers who are generally survivorshas put in place mitigation measure against such of GBV (sexual exploitation and sexual harassment)?	The Project has a zero GBV tolerance policy and has put in place mitigation measure against such a malpractice. The Contractor as well as all employees are mandated to sign a workers' Code of Conduct that comprehensively stipulates issues of GBV/SEA/SH (which specifically stipulates issues of GBV/SEA/SH and penalties for perpetrators) to ensure that they understand their role in SEA/SH prevention at workplace and also the consequences of engaging in SEA/SH.
5. How shall the project ensure that the anticipated increased risk of HIV/ AIDS due to influx of migrant workers in the project area are mitigated	Apart from Public Awareness and provision of Information, Education and Communication materials on HIV/AIDS including provision of free condoms to workers, the recommendation of this LMP is that most of the labour force for the project should be sourced from the surrounding communities as this will lessen the influx of migrant workers. The reduction in influx of migrant workers will reduce the risk of HIV/AIDS as most workers will be commuting from their houses where they stay with their families
6. How shall the project avoid/minimise child labour during project implementation?	The Labour Management Procedures (LMP) discourages the use of Child Labour when implementing project activities in accordance with Employment Act (2000) and other labour related pieces of legislation.
7. How shall the project avoid/minimize/mitigate child labour	Sensitization of household beneficiaries on child labour

household level emanating from the fact that adults are going to be preoccupied with project activities?

8. How will the project mitigate against sexAll contractors under this project will be given exploitation in exchange for offer ofcode of Conduct that they will sign which will employment including GBV? among other things contain issues of sex exploitation including GBV

4.0 Action Plan

The action plan for the Implementation for the Code of Conduct outlines the key stakeholders, their roles and responsibilities. The main key stakeholders for the implementation of the action plan are PMSU, EAD, Contractors, Site Supervisors, Construction workers and District Councils. Table 3.1 shows a typical example of how an implementation action plan for codes of conduct for SVTP 2 subprojects may constitute.

Table 3.1: Typical Example of an Implementing action plan for the SVTP 2 Codes of Conduct

Key stakeholder	Roles and responsibilities	Time Frame
PMT and Local Councils	Awareness raising to other key stakeholders	Onset of the project
	Monitoring compliance	On-going basis
	Recording, processing and reporting grievance	On-going basis
PMT	Inclusion of Code of Conduct as addendum to contract	Before signing of the contract
	Monitoring compliance	On-going basis
	Recording, processing and reporting grievances Translation of Code of Conduct in relevant local language	On-going basis
Contractors	Designate suitable personnel responsible for Code of Conduct implementation	Before mobilisation
	Raise awareness of the code of conduct to all workers including supervisors	During recruitment
	Keep record of signed code of conduct	On-going basis
	Recording, processing and reporting grievances	On-going basis
	Comply to contractors code of conduct	On-going basis
Site supervisors	Establish workers committee to manage environmental and social risks	Immediately after recruitment
	Explain Code of Conduct to all workers in local language they understand	During recruitment
	Conduct toolbox talks on Code of Conduct issues	On-going basis
	Recording, processing and reporting grievances	On-going basis
	Monitoring worker compliance on Code of Conduct	On-going basis
	Comply to Contractor and supervisor Code of Conduct	On-going basis
Workers	Attend tool box talks/induction prior to commencement of work and sign attendance registers	On-going
	Understand Code of Conduct and sign	During recruitment
	Comply with Code of Conduct	On-going

	Report all grievances to WGRMC	On-going
District Councils	Awareness raising to other key stakeholders	On-going
	Monitoring compliance	On-going
	Community engagement	On-going
	Recording, processing and reporting grievances	On-going

Annex 4: Issues raised at Stakeholder Consultative Meeting and their responses

Issue	Response
9. How shall the project ensure that local people are given first priority to the available jobs.	All non-skilled jobs shall be given to locals and qualified locals shall be given an opportunity to compete for the available skilled jobs.
10. How shall the project ensure fairness in recruitment.	The Contractor shall be requested to work hand in hand with the district council through the district labour office. This shall ensure that there is transparency and accountability in the recruitment process.
11. How shall the project mitigate against workers exploitation.	The Contractor shall sign a Code of Conduct which stipulates good work ethics and also has specific prevention or mitigation measures on issues such as GBV, HIV/IDS, Grievance Resolutions etc
12. How shall the Project specifically protect female workers who are generally victims of GBV (sexual exploitation and sexual harassment)?	The Project has a zero GBV tolerance policy and has put in place mitigation measure against such malpractice. The Contractor as well as all employees are mandated to sign a GBV Code of Conduct to ensure that they understand their in GBV prevention at workplace and also the consequences of engaging in GBV.

Annex 4: List of Stakeholders Consulted

List of Stakeholders Consulted

1. Ministry of Gender
2. Ministry of Labour and Innovation
3. Ministry of Public Works
4. Ministry of Health
5. Paramount Chief Lundu
6. Traditional Authority Kasisi
7. Traditional Authority Chapananga
8. Conduril Construction (the Contractor from the intake to 6km)
9. Synohydro Construction (the Contractor from 6 km to 42km)

10. Catholic Commission for Justice and Peace (CCJP)



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