



THE GOVERNMENT OF THE REPUBLIC OF MALAWI

SHIRE VALLEY TRANSFORMATION PROJECT

**Environmental and Social Management Plan for Proposed Njeleza Irrigation Block:
Kambadwe Cooperative; Chikwawa District**

P-MW-AA0-039 SVTP II (KAMBADWE AND MWANA ALIRENJI SCHEMES ESMPS

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May, 2026

EXECUTIVE SUMMARY

Overview of the Project

Goal and Development Objective

The Government of Malawi, through the Ministry of Agriculture, has prepared this Environmental and Social Management Plan (ESMP) for the proposed Njereza Irrigation Block to be managed by the Kambadwe Cooperative under the Shire Valley Transformation Programme (SVTP-2). The Programme Development Objective (PDO) 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.

The primary goal of the Kambadwe Cooperative is to establish a financially sustainable enterprise that generates consistent returns while securing the economic welfare of its members. The Cooperative seeks to enhance the socio-economic conditions of its members and surrounding communities by pooling productive resources and engaging in irrigation-based agriculture as a commercially viable venture, supported by modern irrigation systems and improved agricultural technologies. The specific objectives of the Cooperative are: (i) to maximise sustainable financial returns by achieving a minimum of 25 percent return on capital employed annually; (ii) to generate sustainable growth and operational excellence; (iii) to secure the economic welfare and well-being of members; (iv) to promote equitable ownership within the Cooperative; and (v) to achieve environmental sustainability.

The Cooperative comprises 169 members (52 male & 117 female) drawn from 7 villages of Njeleza, Mwalija, Ndola, Sekela Chivalamisengu, Bwalo and Kungoni. The SOCFE model constitutes the central institutional vehicle for transitioning participating households from subsistence farming to commercially viable agriculture under the SVTP.

Project Components and Main Activities

The project involves the development of approximately 137 hectares of irrigable land in Group Village Headmen Njeleza, Traditional Authority Kasisi, Chikwawa District. The irrigation block has a Gross Land Area of 137 hectares, of which about 105 hectares (77 percent) is earmarked for irrigation development. The remaining land is allocated to essential infrastructure, environmental buffers, and support facilities such as drainage systems, access roads, and service areas. Furrow Irrigation method has been allocated 61 hectares, while Sprinkler and drip Irrigation methods have been allocated 22 and 17 hectares respectively. Food parcel block have been allocated 5 hectares, Scheme Buildings have been allocated 5 hectares, drains (natural and man-made) 12 hectares, scheme roads 7 hectares and steep drop offs 8 hectares.

The total estimated project cost is approximately MWK 2.28 billion (equivalent to about USD 1.2 million). The estimated cost of implementing environmental and social mitigation and monitoring measures is approximately MWK 80,041,500 (equivalent to about USD 46,267), inclusive of a 10 percent contingency provision.

The project is expected to generate significant employment opportunities. Approximately 100 people are expected to be employed during the construction phase, while around 20 people will be employed during the operational phase. In line with national policies and international good practice, efforts will be made to ensure equitable employment opportunities, with a target of

achieving gender balance. Priority will be given to local communities within Njeleza and the wider Chikwawa District, particularly for unskilled labour.

Main Activities by Phase:

- **Planning and Design Phase:** Feasibility studies, ESMP preparation, market analysis, topographic and baseline surveys, stakeholder consultations, detailed designs.
- **Construction Phase:** Land clearing, excavation, earthworks, installation of irrigation infrastructure, development of access roads, waste management.
- **Operation Phase:** Irrigation management, crop production, maintenance of infrastructure, application of agricultural inputs, transportation of commodities.

Alternatives Considered

The following alternatives were assessed during project design, as documented in the ESMP. The parameters of the scheme are convincing in addressing the critical water-agriculture-nexus in Malawi. The without-project scenario would perpetuate the unsustainable livelihood scenario and poverty levels in Chikwawa and the Lower Shire, with long-term negative impacts on household food security and natural resource utilization. The technical design studies have been optimized from earlier versions developed over the years. Several options have been considered as part of the development of the design.

Alternative Considered	Description and Rationale	Outcome / Decision
Without-Project Scenario (No-Project Alternative)	Continuation of the current situation without development of Kambadwe cooperative irrigation block in Njeleza Village. Rain-fed subsistence agriculture would remain the dominant livelihood strategy, perpetuating food insecurity, poverty, and unsustainable natural resource use.	The no-project scenario would perpetuate poverty, food insecurity, and unregulated natural resource degradation in Njeleza and surrounding villages, foregoing the opportunity to deliver integrated landscape-level benefits for communities, natural resources, and wetland ecosystems. On balance, the project with robust mitigation measures is expected to deliver net positive social and environmental outcomes.

Alternative Considered	Description and Rationale	Outcome / Decision
Furrow irrigation system	Furrow irrigation was considered on 60.77 hectares in areas where the slopes are mild and necessitate minimal land levelling requirements.	Adopted. Furrow irrigation system will be implemented on 60.77 hectares on ground nuts and soya bean selected enterprises.
Centre Pivot	Centre pivots were considered on 23 hectares on the area close to the night storage reservoir within the irrigation block.	Rejected. This area was allocated to furrow irrigation system. Due to the irregular field shape of the blocks, Centre pivots are likely to reduce the net irrigable areas. The system also requires booster pumps which require consistent power.
Semi-solid set sprinklers	The system was considered on 22 hectares of land close to the eastern boundary bordering with the Shire River. This section of the irrigation block comes after a huge steep drop off which increases the natural available head from the main canal.	Adopted. Semi solid set sprinklers have been designed to irrigate 22 hectares Sorghum plot in Kambadwe irrigation block. The sprinklers have been designed to use natural pressure from the main canal due to sufficient head differences.
Drip system	Drip irrigation system was considered on the 17-hectares rocky zone where the cooperative plan to cultivate mangoes.	Adopted. Drip irrigation system has been designed for 15 hectares mangoes plot. The system has been adopted due to the planned crop (mangoes) in this section of the irrigation block.
Lined vs Unlined Feeder canals in furrow block	Lined canals were considered against unlined canals to minimise water conveyance losses and improve the system efficiency. However, lining these feeder canals has a cost implication. Unlined canals are cheaper to construct but require frequent routine maintenance.	Rejected. Lined canals will not be implemented for feeder canals in the furrow blocks. The canals will be unlined to minimise project development costs. Proper cohesive material has to be used for construction of these unlined feeder canals.
Piped vs open channel	A piped distribution network was considered in comparison to an open channel distribution network within the irrigation block. A piped distribution	Adopted. A piped distribution network will be used for all irrigation systems in Kambadwe irrigation block. This was chosen to maintain

Alternative Considered	Description and Rationale	Outcome / Decision
distribution network	network improves system efficiencies and maintains pressure within the irrigation system. However piped systems are considered more costly as compared to open channel networks.	pressures within the system and minimise on conveyance and distribution water losses.
Pump-Based vs. Gravity-Fed Irrigation	Smaller-scale pump-based irrigation alternatives were considered as a lower-cost initial option for expanding irrigated agriculture in the lower Shire Valley.	Pump-based irrigation rejected as technically, financially, and socially undesirable given Malawi's severely constrained energy situation. Gravity-fed irrigation enables a 40% expansion of irrigated area without reliance on energy-intensive pumping, while simultaneously releasing energy to the national grid through conversion of existing large-scale pump irrigation to gravity-fed systems.
Scheme Size — Full Command Area vs. Smaller Pilot Area	A smaller pilot command area was considered as a lower-risk initial investment, to be expanded in phases based on performance.	Smaller command area rejected. Costs per hectare would increase dramatically with a reduced command area, compromising the financial viability of the scheme and significantly constraining future expansion options. Short-term benefits would also be skewed towards existing commercial enterprises rather than smallholder farmers.
Flood Risk Management Floodplain Inclusion vs. Exclusion	Inclusion of areas within the 10-year floodplain in the scheme command area was considered, which would have expanded the total irrigable area but required construction of significant embankments.	Floodplain areas excluded from the irrigable zone. Embankment construction rejected on environmental grounds (loss of floodplain habitat), hydrological grounds (displacement of flooding to other areas), and economic grounds (high construction and maintenance costs). The current scheme design significantly reduces production risk by locating all irrigable land outside the 10-year floodplain.

Brief Description of the Project Site

Project Site Description

The Njeleza Irrigation Block is located in Group Village Headmen (GVH) Njeleza , under Traditional Authority (TA) Kasisi in Chikwawa District. The Kambadwe Irrigation Block is situated approximately 15 km from Chikwawa Boma in Chikwawa District, within the lower Shire Valley. The irrigation block is the first block along the SVTP main canal 1 located at around 9.5 km. The block is bordered by Masakale River, which runs adjacent to the northern boundary of the scheme, and Shire- river along the Eastern boundary.

The status of the land is customary and is currently utilised for subsistence cultivation. The influence area encompasses surrounding communities that rely on natural resources within and adjacent to the project footprint for their livelihoods and daily needs.

Chikwawa District is located within the Lower Shire Valley and forms part of the Great East African Rift Valley, with an average elevation of approximately 112 meters above sea level. The terrain is generally flat to gently undulating, situated within the floodplain of the Shire River.

Baseline Conditions

Climate

The Kambadwe Irrigation Block is situated in the lower Shire Valley, within Chikwawa District, at an altitude ranging between 70 and 100 metres above sea level. The climate of the lower Shire Valley is characterised by high temperatures throughout most months of the year, with rainfall confined to the period from December to April. The long-term mean (LTM) annual rainfall for the area is approximately 800 mm per annum, based on data recorded at the Ngabu meteorological station by the Shire Valley Agricultural Development Division (ADD) in 2021. Rainfall in the project area is highly unreliable and frequently erratic, rendering rain-fed agricultural production inherently vulnerable to inter-annual variability in precipitation patterns.

Due to the consistently high temperatures prevailing in the lower Shire Valley, both evaporation and evapotranspiration rates are elevated, averaging approximately 2,000 mm and 1,780 mm per annum respectively values that substantially exceed mean annual rainfall.

Rainfall and Evapotranspiration

In the project area, effective rainfall is, on a yearly average, approximately 48% lower than total recorded rainfall, meaning that only 52% of rainfall is effectively available for crop water requirements. This represents a highly significant constraint on rain-fed agricultural productivity in the project area.

Evapotranspiration the combined process of water transfer from the land surface to the atmosphere through soil evaporation and plant transpiration represents the primary pathway of water loss from the project area. The balance between rainfall (water input) and evapotranspiration (water output) in the project area shows a surplus of water only during the months of February to April, coinciding with the peak of the rainfall season. During the dry season, from May to November, soil moisture rapidly diminishes to zero. Surplus water only accumulates when soils reach saturation following

the first heavy rains at the onset of the wet season. Overall, the lower Shire Valley is characterised as a semi-arid environment, meaning that the project area generally experiences a persistent soil moisture deficit throughout most of the year. This climatic context fundamentally underpins the rationale for the development of irrigated agriculture in the project area.

Climate Change Considerations

The lower Shire Valley is among the regions of Malawi most severely affected by the adverse effects of climate change. Scientific evidence and national climate assessments indicate that the region is experiencing increasing frequency and severity of droughts, prolonged dry spells, erratic and unpredictable rainfall patterns, and more intense flooding events, all of which are consistent with projected climate change trends for southern Africa. These climate change-induced trends are directly exacerbating the already challenging semi-arid conditions of the project area and undermining the reliability and productivity of rain-fed agriculture among smallholder farming communities.

Topography

The topographic survey for Kambadwe cooperative block revealed that the project area is characterised by an undulating landscape, with several hilly areas and steep drop-offs. Significant gully formation resulting from severe historical erosion has contributed to the prevalence of steep slopes within and around the scheme area. The general topographic slope falls in an easterly direction towards the Shire River, which runs along the eastern boundary of the scheme. The Masakale River runs adjacent to the northern boundary of the scheme, with steep drop-offs noted as one moves towards the main river channels.

The scheme boundary excludes much of the high ground to the west of the project area; however, some steep and rocky areas remain within the allocated scheme boundary. Notable steep drop-offs running in an east-west direction lead down towards the confluence of the Masakale and Shire rivers in the north. All areas within the scheme boundary that were assessed as too steep for economically viable irrigation development were excluded from the irrigable area. Severe erosion is also evident in parts of the project area.

Soils

Soils in Njeleza irrigation block are characterised as Sandy Loam, with relatively high sand content and low clay content. The detailed soil surveys demarcated the block into three distractive soil units.

Particle Analysis	SMU 1	SMU 2	SMU 3
Sand (%)	78	65	79
Silt (%)	11	19	11
Clay (%)	11	16	10

Particle Analysis	SMU 1	SMU 2	SMU 3
Texture Class	Sandy Loam	Sandy Loam	Sandy Loam

Source: Soil Suitability Survey, Kambadwe Irrigation Block, September/October 2022.

SMU 1, comprising approximately 63 hectares, is characterised by Loamy Sand soils with mean clay percentages of 11%. The soils in this unit are of adequate depth and have effective natural drainage. Soil pH values range between 6.5 and 8.9, and salinity levels are acceptable at between 150 and 180 $\mu\text{S}/\text{cm}$. Good phosphorus and potassium levels indicate adequate initial soil fertility; however, soil organic matter levels are very low at approximately 1%, and soil conservation measures must therefore be treated as a high priority for agricultural development in this area. Nitrogen supplementation will be necessary to support crop production.

Soil Management Unit 2 (SMU 2) covers approximately 18 hectares. The soils of SMU 2 are particularly light-textured, with clay content of approximately 16% and the presence of pure sand at depth. Soil pH values are approximately 6.9, and salinity levels are acceptable. Good phosphorus and potassium levels indicate adequate initial soil fertility.

SMU 3 covers approximately 28 hectares and comprises Loamy Sand soils with mean clay percentages of 10%, similar in character to SMU 1 but occupying a smaller and more undulating area. Soil pH values range from 6.4 to 6.9, with limited salinity except in the vicinity of certain auger holes where elevated levels of deleterious salts, including high Exchangeable Sodium Percentage (ESP), were recorded.

Two additional soil zones within the project area were also assessed. SMU Us-1 covers approximately 78 hectares in the south-eastern corner of the project area. It is a low-altitude river deposition shelf characterised by obvious signs of seasonal flooding and prolonged water retention well after the end of the rains, and soil testing revealed the presence of deleterious salts rendering the area unsuitable for crop production. SMU Us-2 covers approximately 68 hectares and is topographically compromised, with minimal soil cover remaining as a result of severe sheet erosion that has stripped the land surface down to subsoil. SMU Us-2 is not suitable for cropping activities.

Flood Zones

Seasonal flooding constitutes a significant environmental hazard within and around the Kambadwe Irrigation Block project area. Both the northern and southern portions of the scheme are subject to periodic inundation, with some areas remaining waterlogged for extended periods, potentially lasting for almost the entire year in the most severely affected zones. Flooding in the project area is primarily driven by the Shire River, which can experience significant fluctuations in maximum flood water levels from season to season. The unpredictable and variable nature of flood events in the lower Shire Valley is expected to be further exacerbated by the impacts of climate change, including increased intensity and frequency of extreme rainfall events and the associated elevated flood risk in the lower catchment.

Geology

The geology of Chikwawa District is characterised by basement complex rocks of pre-Cambrian age, comprising gneisses and granulites, which underlie most of the hills and uplands of the district. Sedimentary rocks of the Karoo System including grits, sandstones, shales, and mudstones together with Mesozoic basalts, are found in the uplands to the west of the scheme area, which form part of the Great African Rift Valley. These geological formations are rich in minerals and represent areas of potential mineral exploration interest. The geological characteristics of the project area do not present significant constraints to the proposed irrigation scheme development; however, the presence of basement complex rocks in elevated areas adjacent to the scheme may influence the hydrological behaviour of the catchment and the recharge of surface water and groundwater resources in the project area.

Vegetation and Flora

A field survey of the vegetation and flora of the Kambadwe Irrigation Block project area was conducted during the ESMP preparation process in 2023. The project area was observed to be dominated by mango trees (*Mangifera indica*), Mtondo (*Calophyllum inophyllum*), Bwemba or tamarind (*Tamarindus indica*), together with grasses, herbs, and a limited number of shrubs. None of the tree species identified within the project area are listed among protected tree species under the Forestry Act (2016) of Malawi. It is however acknowledged that the vegetation survey conducted for this ESMP was observational in nature and did not include a systematic botanical inventory with species abundance and distribution mapping. This constitutes a data gap of moderate significance for the assessment of biodiversity impacts, and a more comprehensive pre-construction vegetation inventory is recommended prior to the commencement of clearing activities.

Fauna

No systematic fauna survey was conducted for the Kambadwe Irrigation Block project area as part of the ESMP preparation process. This represents a data gap of moderate to high significance, given the proximity of the project site to the Majete Wildlife Reserve, which is located approximately 3 km from the project boundary and is home to a wide range of mammal, bird, reptile, and amphibian species of conservation significance. A dedicated biodiversity assessment, including fauna surveys, is recommended prior to the commencement of construction activities to fully characterise the fauna of the project area and its surroundings, and to assess the potential for project activities to affect species associated with the Majete Wildlife Reserve or its buffer zone.

However, based on field observations conducted during the ESMP preparation, no large wildlife species have been recorded within the project area itself. Nonetheless, hippopotamuses and crocodiles are present in the Shire River and are known to move into adjacent areas at times to forage on crops and fish. Numerous bird, insect, and reptile species many of which have not been formally studied are present within the project area and play important functional roles in the local ecosystem, including pollination, pest regulation, and nutrient cycling

Social and Economic Environment

The socio-economic baseline presented in this section draws on data from multiple sources, including the demographic survey conducted in 2024, the SVTP Baseline Survey (2020), the Chikwawa District Council Socio-Economic Profile 2017-2022, the Integrated Household Survey 2016/17, the Chikwawa District Health Information System (DHIS 2, 2017), and field consultations conducted during the ESMP preparation process in 2023. Where data sources differ in their date of collection, this is noted and the most recent available data is prioritised. Disaggregated data for specific vulnerable groups including women-headed households, elderly persons, persons with disabilities, and youth remains limited across available sources, and this constitutes a data gap of high significance for the assessment of social risks and impacts.

Demography

According to the demographic survey conducted in 2024 using a representative sample of 1,002 households within the project area, 711 respondents (71%) were male-headed households and 291 (29%) were female-headed households. The average age of household heads was 46 years, with female heads being statistically older on average at 48 years compared to male heads. This age differential may reflect the higher prevalence of widowhood among women in the project area, a factor of relevance for the assessment of vulnerability and livelihood risks associated with the project.

In terms of religion, Christianity is the predominant faith, with 95% of all household heads identifying as Christian. When disaggregated by sex, a higher proportion of female household heads identified as Christian (98%) compared to male household heads (94%). The predominant ethnic groups in the project area are Sena (57%) and Mang'anja (29%), followed by Lomwe-headed households at approximately 6% of the total sample. The ethnic composition of the project-affected community is an important contextual factor for the design of culturally appropriate consultation, engagement, and grievance redress processes. (Source: SOCFE Baseline Survey Final Report, 2024)

Poverty Levels

The project area is characterised by high levels of poverty and inadequacy in meeting basic household needs. According to the Fourth Integrated Household Survey, approximately 72%, 56%, and 59.4% of households in Chikwawa District face inadequacies in food, housing, and healthcare respectively all higher than the corresponding national averages of 63.8%, 55.6%, and 54.8%. Only 4.9% of households have incomes sufficient to generate savings, while 31.7% rely on borrowing as their income is insufficient to meet basic needs. (Source: Chikwawa District Council Socio-Economic Profile 2017-2022)

The high poverty levels prevailing in the project area underscore the critical importance of ensuring that employment and livelihood opportunities generated by the project are equitably accessible to the poorest and most vulnerable community members. They also highlight the elevated vulnerability of project-affected households to any adverse project impacts including temporary loss of access to land or agricultural income and the need for robust livelihood protection and restoration measures.

Economic Activities

Households in the project area rely on multiple and diversified livelihood sources. The predominant economic activities are crop and livestock production, supplemented by participation in the farm and non-farm labour markets and self-employment activities. In remote rural areas within the project influence zone, household income is dominated by farm-based activities, with limited access to non-farm income opportunities. This dependence on subsistence agriculture makes households highly vulnerable to climate variability, high input costs, and market access constraints all of which are relevant contextual factors for the assessment of project risks and impacts on community livelihoods.

Social Infrastructure

The adequacy of social infrastructure in the project area is a key determinant of the capacity of communities to absorb and benefit from the project's positive impacts, and of their vulnerability to adverse project-related impacts.

Health Facilities

The Kambadwe project area is served by two primary health centres located within or in close proximity to the scheme, namely the Njereza Health Centre and the Mwalija Health Centre. For more complex medical needs, the nearest major referral health facilities are the Chikwawa District Hospital and the Nsanje District Hospital, both of which are accessible from the project area, with Chikwawa District Hospital located approximately 12 km east of Chikwawa Boma.

Chikwawa District registers significant burdens of disease among both outpatients and inpatients. According to the Chikwawa District Health Information System (DHIS 2, 2017), the leading causes of morbidity in the district include malaria, diarrhoea, acute respiratory infections (including pneumonia), skin infections, common injuries and wounds, and sexually transmitted infections (STIs).

The prevalence of these disease conditions is directly relevant to the assessment of community health and safety risks associated with the project, particularly the heightened risk of malaria and waterborne disease transmission arising from the presence of irrigation canals and standing water during the operation phase of the scheme.

Education Facilities

The Njeleza Primary School is located within Njeleza Village at a distance of less than 500 metres from the scheme boundary, making it the primary educational facility serving the project-affected community. The proximity of this school to the project site is a relevant consideration for the assessment of construction-related nuisance impacts, including noise, dust, and traffic hazards, as well as for the assessment of risks related to child labour during the operation phase. No secondary school facilities have been noted within the immediate project area.

The literacy rate in Chikwawa District is 59.9%, according to the Integrated Household Survey 2016/17 significantly lower than the national literacy rate of 72.8% and the southern regional rate of 70.9%. Literacy levels are further disaggregated by sex, with female literacy rates consistently lower than male rates at all levels. The low literacy rates in the project area have important

implications for the design of stakeholder engagement and information disclosure processes, as written communication channels may not be accessible to a significant proportion of the project-affected community, particularly women. Communication strategies will therefore need to prioritise oral and community-based approaches.

School dropout rates in the project area reflect district-wide patterns, with pupils dropping out due to illness, pregnancy, poor school facilities (particularly for girls), lack of family support, early marriages, long distances to school, lack of school fees, family responsibilities, violence at school, early employment, and inadequate teaching staff. High dropout rates particularly among girls are a contextual risk factor for child labour engagement within the irrigation scheme during the operation phase, underscoring the need for robust child labour prevention measures.

Water Supply and Sanitation

The primary source of domestic water supply for households in the project area is boreholes, which account for at least 92% of all water sources. Shallow wells contribute approximately 3%, with piped water within private plots accounting for 2%, communal standpipes 1%, and rivers and streams 1%. Despite the relatively high coverage of borehole water supply, households across the scheme employ a range of additional water treatment methods to ensure that drinking water is safe, including boiling, chlorination using water purification tablets (Waterguard), filtering, and covering water storage containers. The most commonly used method across both Phase 1 and Phase 2 communities was covering the water container a method that provides only limited protection against microbial contamination, as it only prevents exposure to dust and insects. In Phase 1 communities, 42% of households covered their containers, 24% used chlorination, and 26% employed other methods (COWI, 2016).

The SVTP Baseline Study revealed that 74% of male-headed households and 70% of female-headed households in the project impact area had access to toilet facilities, with the most common type being traditional pit latrines. Approximately 76% and 71% of male and female-headed households respectively in the comparison area had toilet access. An existing borehole at the scheme offices, equipped with a manual pump, has been tested and confirmed suitable for human consumption; however, the previously installed motorised pump and piped water supply system for management houses and offices is no longer functional and requires rehabilitation. The prevalence of pit latrines rather than improved sanitation facilities presents a baseline public health risk, which will be exacerbated during construction by the influx of workers if adequate sanitation facilities are not provided and maintained.

Energy

Access to electricity in the project area is limited, with the majority of rural households relying on solar lanterns, candles, and kerosene lamps for lighting, and firewood as the primary source of cooking energy. Connection to the national electricity grid remains low in the project area, and electricity is reported by households as unaffordable. The continued reliance on firewood as the dominant cooking energy source has significant implications for forest resources and vegetation cover in the project area, representing a contextual risk factor for biodiversity and land degradation that will need to be considered in the project's environmental management planning.

Access Roads and Transport

The project area is connected to major urban centres by a network of roads that are periodically maintained. The common modes of transport used by communities in the project area include motorcycles, bicycles (locally referred to as shapa or kabaza), motorised vehicles, and ox-carts. The majority of households own push bicycles, with a smaller proportion owning motorcycles and ox-carts. Push bicycles and motorcycles are the most commonly used modes of transport for accessing health facilities, trading centres, and markets. The relatively poor condition of both the main access road and internal scheme roads is identified by scheme members as a significant constraint on agricultural productivity and market access, contributing to high transport costs and reducing the competitiveness of produce sold by smallholder farmers. Road condition and transport infrastructure represent important contextual factors for the assessment of project risks and impacts, particularly with regard to the safe movement of construction vehicles and the transportation of agricultural produce during the operation phase.

Telecommunications

The project area is covered by mobile telecommunications networks from both Airtel Malawi and Telekom Networks Malawi; however, communities have reported that network signal quality is weak, particularly in areas away from the M1 road. The SVTP Baseline Survey (2020) indicated that 55% of male-headed households owned a mobile telephone, compared to only 23% of female-headed households, reflecting significant gender disparities in access to telecommunications and digital information in the project area.

Vulnerable Groups

The identification and characterisation of vulnerable and marginalised groups within the project-affected community is an essential component of the baseline assessment, in accordance with the requirements of the World Bank ESF (2018) ESS7 and the AfDB ISS (2023) OS7 on Vulnerable Groups. Based on available data from the SVTP Baseline Survey (2020) and community consultations conducted during the ESMP preparation process, the following groups have been identified as potentially vulnerable, marginalised, or underserved within the project area and its influence area:

- **Women-headed households:** The project area has a notable proportion of female-headed households, who may face additional constraints in accessing project benefits, employment opportunities, and compensation processes due to gender-based discrimination in land rights, social norms, and limited mobility.
- **Persons with disabilities:** Persons with disabilities in the project area face barriers to participation in economic activities, decision-making processes, and access to social services, in a context where disability-inclusive infrastructure and services are limited.
- **Youth:** Young people in the project area face limited employment opportunities and are at elevated risk of engagement in child labour during the operation phase if adequate safeguards are not implemented.

- Elderly persons: Elderly community members, particularly those who are economically dependent and have limited mobility, may face barriers to participation in project consultations and to accessing project benefits and the GRM.
- Persons living with HIV and AIDS: The project area has an existing HIV prevalence context, and persons living with HIV may face discrimination in employment recruitment if adequate safeguards are not in place.
- Smallholder farmers with very small or irregular landholdings: Farmers with very small plots or insecure customary land tenure may be disproportionately affected by land demarcation and registration processes associated with the project.

It is acknowledged that disaggregated data for specific vulnerable groups including data disaggregated by sex, age, disability status, and HIV status is limited in the available baseline sources. This represents a data gap of high significance for the assessment of social risks and impacts, and a targeted socio-economic survey disaggregated by key vulnerability characteristics is recommended to be conducted as part of the project's Stakeholder Engagement Plan (SEP) and Vulnerable Groups assessment prior to the commencement of construction activities.

Existing Challenges and Socio-Economic Problems

Long-serving scheme members and community representatives identified the following as the principal socio-economic challenges currently facing the project-affected community, all of which constitute important baseline contextual factors for the assessment of project risks and impacts:

- Insufficient water supply to meet current scheme irrigation requirements;
- Reduced irrigable area due to inadequate coverage by the existing irrigation network;
- Significant water losses arising from lack of improved canal lining and poor water distribution and scheduling practices;
- Recurrent flood damage from the Shire River, reducing the arable irrigable area and threatening existing scheme infrastructure;
- Poor condition of both the main access road and internal scheme roads, resulting in high transport costs and market access constraints;
- Lack of coordination among farmers to access reliable markets, resulting in dependence on middlemen and vendors who offer below-market prices for produce;
- Lack of coordinated access to agricultural credit and collective negotiation with input suppliers to reduce input costs;
- High cost of agricultural inputs, particularly fertilizers;
- Insufficient capacity building support for crop production and agricultural marketing;
- Declining numbers of agricultural extension workers available to support farmers; and
- Declining soil productivity attributable to poor agricultural practices in the past, including monoculture without crop rotation and inadequate nutrient replenishment.

Security and Crime

The Chikwawa District Police Station is the nearest police facility to the proposed project site, located approximately 12 km east of Chikwawa Boma. The Malawi Police Service has introduced

community-based policing as a complementary approach to conventional law enforcement, whereby communities are sensitised to actively participate in and support policing activities in their areas. In Chikwawa District, community policing structures have been established across all eleven Traditional Authority areas through Community Policing Forums, 79 Group Village Headman-level Crime Prevention Panels, and 593 Village Headman-level Crime Prevention Committees. Elected members at the forum level have been trained on the principles and practice of community policing and have been tasked with establishing and training similar structures at Group Village Headman and Village Headman levels. This programme is aimed at curbing crime and improving security across the district. The existence of established community policing structures in the project area is a positive baseline factor for the management of security-related risks associated with the construction phase, including risks of theft, criminal activity, and conflicts between construction workers and host communities.

Contextual Risks

In addition to the specific environmental and social baseline conditions described above, the following broader contextual risks have been identified as potentially affecting the ability of the project to be implemented in a manner consistent with the applicable international safeguard standards and human rights obligations:

- **Climate change vulnerability:** The lower Shire Valley is one of the most climate-vulnerable regions of Malawi, and increasing frequency and severity of climate-related hazards including droughts, floods, and erratic rainfall present ongoing risks to the sustainability and productivity of the irrigation scheme during its operational life.
- **Land tenure insecurity:** The customary land tenure system prevalent in the project area is characterised by increasing fragmentation and tenure insecurity, particularly for women and youth, which may create challenges for the equitable distribution of irrigable land parcels among scheme participants.
- **Gender inequality:** Prevailing gender norms and inequalities in the project area may constrain women's equal participation in scheme governance, employment opportunities, and access to project benefits if targeted gender mainstreaming measures are not implemented.
- **Institutional capacity:** The capacity of local government institutions, farmer cooperatives, and Water User Associations (WUAs) to effectively manage the environmental and social requirements of the project throughout its operational life may be limited, necessitating targeted capacity-building support.
- **Cumulative impacts:** The Kambadwe Irrigation Block project is being implemented as part of the broader Shire Valley Transformation Programme (SVTP), which encompasses multiple irrigation scheme development and rehabilitation activities across the lower Shire Valley. The cumulative environmental and social impacts of these overlapping development activities including on water resources, biodiversity, land use, and community livelihoods will need to be considered in the project's environmental and social impact assessment and management planning.

The following table summarizes the baseline conditions:

Parameter	Baseline Condition
Climate	Semi-arid; annual rainfall ~800 mm (Dec-Apr); effective rainfall only 52% of total
Evapotranspiration	~1,780 mm/annum (exceeds rainfall for most of the year)
Vegetation	Modified woodland, grassland, shrubland; dominated by <i>Albizia harveyi</i> , <i>Dalbergia melanoxylon</i> , <i>Adansonia digitata</i> ; 6.8% open woodland requires clearing
Soils	Sandy loam (48%); pH 6.03-6.88 (favorable); balanced sand/silt/clay composition
Water Resources	Shire River (primary); Masakale River (seasonal); 200m buffer zone incorporated into design
Population (project influence area)	~8,700 people; ~1,600 households; average household size 5.4 persons
Population age distribution	42% under 15 years; 54% working age (15-64); 4% over 65
Female-headed households	28% (above national average of 24%)
Poverty rate	72% (project area); 68% (district); national average 51%
Ultra-poverty rate	36% (project area); 32% (district); national average 21%
Average annual household income	MWK 420,000 (~USD 245 at 2020 rates)
HIV prevalence (adults 15-49)	11.8% (project area); 12.4% (district); national 8.9%
Access to improved water	68% within 500m; 62% boreholes; 32% rely on unimproved sources
Sanitation (toilet ownership)	74% (male-headed); 70% (female-headed); predominance of traditional latrines
Primary economic activities	92% of households derive livelihood from rain-fed agriculture (maize, cassava, sorghum, beans, cotton, sesame)

Institutional and Legal Framework for Implementation of the Project

National Legal Framework

The ESMP aligns with the following Malawian legislation. The Environment Management Act (2017) is the principal legislation governing environmental management in Malawi, mandating that all projects with potential environmental and social impacts undergo environmental

assessment and obtain approval from MEPA. The Land Act (2016) and Customary Land Act (2016) govern land administration and management, with the project being implemented primarily on customary land. The Lands Acquisition and Compensation Act (2017) provides for compulsory acquisition of land for public purposes and establishes procedures for compensation of affected persons. The Water Resources Act (2013) governs water abstraction and requires a water permit. The Occupational Safety, Health and Welfare Act (1997) provides for protection of workers from occupational hazards. The Employment Act (2000) governs labour relations and prohibits discrimination. The Public Health Act (1948) provides for sanitation, waste management, and control of communicable diseases. The National Construction Industry Act (1996) requires contractors to be registered with the CIRA. The Monuments and Relics Act (1990) governs protection of cultural heritage and chance finds.

The following table summarizes the key legal instruments:

Legal Instrument	Key Relevance to ESMP
Environment Management Act (2017)	Mandates ESMP approval from MEPA; environmental clearance required
Land Act (2016) & Customary Land Act (2016)	Governs customary land administration; requires engagement with Customary Land Committees
Lands Acquisition and Compensation Act (2017)	Provides for compulsory acquisition and asset-based compensation
Water Resources Act (2013)	Requires water abstraction permit; environmental flow provisions
Occupational Safety, Health and Welfare Act (1997)	Mandates PPE, safety training, risk assessments
Employment Act (2000)	Prohibits child labour; fair wages; non-discrimination
Public Health Act (1948)	Sanitation facilities; waste management; disease control
National Construction Industry Act (2025)	Contractor registration with CIRA; construction standards
Monuments and Relics Act (1990)	Chance find procedure; cultural heritage protection

Institutional Roles and Responsibilities

The institutional framework assigns clear responsibilities across the project lifecycle. The Ministry of Agriculture through the SVTP Programme Management Team (PMT) holds overall oversight, strategic direction, and compliance enforcement authority, including the power to impose contractual penalties, suspend works, or withhold payments for non-compliance. The Contractor serves as the primary implementer of all ESMP mitigation and enhancement measures at site level and is contractually required to prepare and submit for approval site-specific management plans. The Supervision Consultant provides independent technical monitoring and verification through scheduled and unannounced site inspections. The Malawi Environment Protection Authority (MEPA) provides independent regulatory oversight, including review of ESMP approval conditions, periodic inspections and audits, and enforcement of corrective measures. The Mwana Alirenji Cooperative and Water User Associations lead operational-phase management. Other

stakeholders include the Chikwawa District Council, National Water Resources Authority, Department of Forestry, Department of Health, Department of Antiquities, Department of National Parks and Wildlife, and development partners (AfDB, OFID and World Bank).

The following table summarizes the institutional roles and responsibilities:

Institution	Role and Responsibility
Ministry of Agriculture (PMT)	Overall ESMP oversight; compliance enforcement (contractual penalties, suspension, withholding payments); review and approval of site-specific plans
Contractor	Primary implementer of mitigation measures; prepares detailed design, prepares CESMP, Waste Plan, OHS Plan, HIV/AIDS Policy, Code of Conduct, GRM procedures, Chance Find Procedure
Supervision Consultant	Independent monitoring and verification; monthly inspections; corrective action recommendations
MEPA	Regulatory oversight; ESMP approval; environmental clearance; audits and enforcement
Chikwawa District Council	Waste approvals; land use planning; local compliance monitoring
NWRA	Water abstraction permit; environmental flow compliance
Department of Health	Health-related mitigation (HIV/AIDS, malaria, cholera); disease surveillance
Department of Antiquities	Chance find management
DNPW	Human-wildlife conflict (hippo/crocodile) management
Mwana Alirenji Cooperative (SOCFE)	Operational-phase management; WUA coordination; community-level GRM
Local Communities and Traditional Authorities	Stakeholder engagement; land access facilitation; conflict resolution

AfDB Operational Safeguards, World Bank ESF and OFID ESG Policy – Gap Analysis and Alignment

The ESMP includes a gap analysis between AfDB Operational Safeguards and national legislation. For the AfDB, the project is required to meet the environmental and social safeguards of the African Development Bank as a financing partner. The AfDB's Integrated Safeguards System comprises five Operational Safeguards (OS) that address environmental and social risks. The ESMP describes the relevance of each OS, compares applicable AfDB requirements with corresponding national legislation, identifies gaps, and provides recommendations for alignment. The hierarchy of standards is established: where a requirement of the AfDB Operational

Safeguards differs from or is more stringent than the corresponding requirement of Malawian national legislation, the AfDB standard shall prevail.

AfDB OS	Requirement	Gap Identified	Alignment Measure
OS1 (Environmental and Social Assessment); ESS1 (Assessment and management of environmental and social risks and impacts); and Section XVII of 7.2.2 of OFID ESG Policy (environmental and Social Due Diligence)	Cumulative impacts; climate risk assessment	Cumulative impacts not mandated in national format	Addressed in Chapter 5; reference in ESMP implementation records
OS2 (Involuntary Resettlement); ESS5 (land Acquisition, restrictions on land Use and involuntary resettlement); 7.2.2 of OFID ESG Policy (Resettlement Planning Framework and Land Acquisition Resettlement Plan)	Livelihood restoration; vulnerable group measures	No livelihood restoration framework; no vulnerable group-specific measures	Prepare Resettlement Policy Framework or ARAP with livelihood restoration; vulnerability screening; GRM for land grievances
OS3 (Biodiversity and Ecosystem Services); ESS6 (biodiversity Conservation and sustainable management of living natural resources); and 7.2.2 of OFID ESG Policy (Biodiversity Action Plan)	Mitigation hierarchy (avoid→minimize→restore→offset) sequential	Mitigation hierarchy not statutory; no offset requirement in national law	Explicitly document hierarchy in ESMP implementation; 200m buffer zone enforced; reforestation offset (1.3M trees) at 2:1 ratio
OS4 (Pollution Prevention and Control);	Site-specific IPM plans; hazardous waste management plans	No documented site-specific pollution	Contractor to prepare IPM Plan and Hazardous

AfDB OS	Requirement	Gap Identified	Alignment Measure
ESS3 (Resource efficiency and pollution prevention and management); and Section 4.1 of OFID ESG Policy (Pollution Prevention and Resource Efficiency)		prevention plans	Materials Plan before construction
OS5 (Labour and Working Conditions); ESS2 (Labor and Working Conditions); and Section 4.4 of OFID ESG Policy (Fair Treatment to Labour)	Code of Conduct with GBV/SEA provisions; worker-specific GRM	No mandatory CoC or worker-specific GRM	Prepare Labor Management Procedures with CoC (enforceable sanctions for GBV/SEA) and worker GRM; available in local languages
Stakeholder Engagement (cross-cutting)	Continuous engagement; stand-alone SEP	No continuous engagement mandate; no SEP requirement	Prepare Stakeholder Engagement Plan; integrate GRM; disclose publicly before construction

Enumeration of Major and Moderate Impacts

The ESMP identifies potential environmental and social impacts across planning, construction, operation, and decommissioning phases. The analysis considered magnitude, probability of occurrence, duration, and significance. The following impacts are enumerated from Chapter 5 of the ESMP.

Positive Impacts

- **Employment generation (planning phase):** Consultancies for feasibility studies, ESMP development, market analysis, and baseline studies created employment opportunities with engagement of consultants including at least 50 percent Malawian nationals.
- **Employment generation (construction phase):** Approximately 100 people employed, with 80 percent local labour target.

- **Employment generation (operation phase):** Approximately 20 people employed in irrigation management, agricultural production, maintenance, and administrative functions.
- **Employment generation (decommissioning phase):** Approximately 20 people employed.
- **Household income increase:** Expected that people participating in irrigation activities will increase their income through sale of agricultural produce; estimated 150-300 percent increase within 3-5 years based on experience from similar irrigation schemes (baseline MWK 420,000/year).
- **Crop production increase:** Irrigation enables cultivation more than twice per year (currently rain-fed, single season), leading to stable year-round production.
- **Reforestation (biodiversity offset):** Tree planting programme of approximately 1,300,000 trees (14 hectares allocated) to offset vegetation loss.
- **Poverty reduction:** Target 50 percent reduction from baseline 72 percent poverty rate by project end.
- **Government revenue:** Implementation of the project will generate revenue for Government through taxes including Pay-As-You-Earn, Withholding Taxes, Value Added Taxes, and corporate taxes.

Negative Impacts (Pre-Mitigation)

- **Vegetation loss:** 6.8 percent of the area covered by open woodland requires heavy site clearing, involving clearing of grasses, shrubs, and climbers with very few trees. No protected tree species identified. The most significant vegetation-related impact is expected at the site of the proposed Night Storage Reservoir, where removal of trees and shrubs will be required. This impact represents a permanent change in land cover.
- **Disruption of animal habitats:** Clearance of vegetation will disturb natural habitat for some animals especially reptiles, amphibians and small mammals such as rodents. Habitat disturbance may lead to displacement of species and temporary loss of shelter and breeding grounds.
- **Soil erosion:** Clearing of vegetation will leave soils bare, resulting in soil erosion which can contribute to sedimentation of surrounding water bodies including the Shire River, loss of fertile topsoil, and reduced land productivity.
- **Dust emissions:** Excavation of soil and gravel material and speeding construction vehicles are likely to cause dust emission, affecting air quality, reducing visibility, and posing health risks to workers and nearby communities, particularly those with respiratory conditions.
- **Water pollution:** Waste from construction materials, oil spills, fuel leaks, and human waste from workers may pollute surrounding water bodies including the Shire River and its tributaries, degrading water quality, affecting aquatic life, and reducing availability of safe water for downstream users.
- **Noise pollution:** Construction machinery and vehicles will increase noise levels (levels above 80 dB may affect hearing), potentially disturbing nearby communities and causing discomfort, stress, and potential health effects.
- **Solid waste generation:** Construction activities may generate waste such as unused cement mortar, broken bricks, stones, packaging materials, scrap metal, and food remains, leading to land degradation, visual pollution, and potential contamination of soil and water resources.
- **Borrow pits:** Excavation works and extraction of fill materials are likely to create borrow pits that may pose safety and health risks to surrounding communities. Unrehabilitated

borrow pits may accumulate water, posing drowning risks (particularly to children) and serving as breeding grounds for disease vectors such as mosquitoes.

- **HIV/AIDS and STI transmission:** Labour influx and continued interaction between workers, traders, and communities may increase risk of transmission of HIV and other STIs. Baseline HIV prevalence in the project area is 11.8 percent, and in Chikwawa District is 12.4 percent (national average 8.9 percent).
- **GBV/SEA risk:** Construction activities may result in temporary labour influx, which has the potential to create social risks including increased risk of gender-based violence (GBV) and sexual exploitation and abuse (SEA).
- **Child labour:** During operation, some farmers may engage under-aged persons to provide cheap labour. This risk is associated with increased labour demand in irrigated farming systems and weak enforcement of labour standards.
- **Disruption of children's education:** Engagement of school-going children in farming activities may disrupt their education, leading to absenteeism and poor academic performance.
- **Water-related diseases:** Stagnant water in canals may create conditions for malaria and bilharzia (schistosomiasis). Poor sanitation may lead to diarrheal diseases (cholera, typhoid, dysentery). Irrigation systems can increase exposure to water-related diseases if not properly managed.
- **Water use conflict:** The Shire River is a shared resource and downstream users (including Katunga-Maseya Cane Growers Association and other cooperatives) may be affected by upstream abstraction. Competing demands may lead to conflicts, especially during dry periods when river flows are low. Up to 12 percent of the long-term Q80 Shire River flow for September at Kapichira will be abstracted, corresponding to an 8 percent net abstraction.
- **Agrochemical pollution:** Use of fertilizers, herbicides, and pesticides may lead to water and soil pollution. Agrochemical runoff may degrade water quality, affect aquatic ecosystems, and pose health risks to downstream users.
- **Agrochemical exposure:** Handling agrochemicals poses health risks to farmers and workers. Improper use may lead to acute poisoning (skin contact, inhalation, ingestion) and chronic health effects.
- **Hazardous waste generation:** Agrochemical use generates hazardous waste (empty containers, unused product, rinsate, contaminated PPE). Improper disposal may contaminate soil and water.
- **GHG emissions:** Irrigated agriculture may generate greenhouse gases such as methane, carbon dioxide, and nitrous oxide. Waterlogged conditions promote methane production. Fertilizer use (particularly nitrogen fertilizers) leads to nitrous oxide emissions.
- **Salinization:** Excessive use of chemical fertilizers and poor drainage can lead to increased soil salinity, acidity, and alkalinity over time. Salinization reduces soil productivity and may render land unsuitable for agriculture.
- **Human-wildlife conflict (hippopotamus and crocodile):** The Shire River supports populations of hippopotamus and Nile crocodile. Local communities and the SVTP baseline survey have reported that hippos occasionally emerge from the river to forage on crops in fields adjacent to the floodplain, particularly at night. Crocodiles pose risks to humans, livestock, and domestic animals when accessing water points or working near riverbanks. Risks include fatal or injurious attacks on farmers and workers, loss of livestock, destruction of crops, and psychological distress.
- **Loss of employment (decommissioning):** After construction activities, the contractor will lay off workers (approximately 150 workers). This impact will reduce incomes for persons

who were working under the project, potentially contributing to food insecurity within families.

- **Reduction of small-scale businesses (decommissioning):** Cessation of construction activities will lead to termination of employment for workers, resulting in reduced incomes and likely leading to a decline in small-scale businesses within the project area.
- **Increased generation of solid wastes (decommissioning):** Demolition of temporary shelters and pit latrines as construction ends will result in increased generation of solid waste within the project area.
- **Chance finds (cultural heritage):** The potential exists for chance finds during excavation, earthworks, and land preparation, including archaeological remains (pottery, stone tools, ironworking remnants), human remains, burial sites, or culturally significant objects.
- **Theft and vandalism:** Availability of farm inputs, equipment, and infrastructure (solar panels, pumps, pipes) at the irrigation block may attract thieves and vandals, leading to economic losses and potential danger to community members involved in theft.

Consultations (Locations, Dates, Stakeholders, Concerns Raised, Responses and Commitments)

Consultation Process

Public consultations were undertaken as an integral component of the ESMP preparation process for the Kambadwe Irrigation Block, in accordance with the requirements of the Environment Management Act (2017), World Bank ESS10 on Stakeholder Engagement and Information Disclosure, the AfDB ISS (2023) OS10 Stakeholder Engagement and Information Disclosure and Section ix of the OFID ESG Stakeholder Engagement and Consultation. The consultation process ensured that the views, concerns, and preferences of all relevant stakeholders were effectively identified, documented, and incorporated into decision-making related to the planning and implementation of the proposed project.

The purpose of stakeholder involvement was threefold: to inform stakeholders about the proposed project and its likely environmental and social effects; to canvass their inputs, views, and concerns; and to ensure that the information and perspectives gathered from the public were duly incorporated into the ESMP and the broader project decision-making process. Two stakeholder consultation and engagement meetings were conducted during the ESMP preparation, bringing together primary stakeholders comprising directly affected communities and individual landholders, secondary stakeholders including farmers and community-based organisations, and tertiary stakeholders comprising institutional bodies such as the Chikwawa District Council.

Stakeholders Consulted

The following stakeholders participated in the consultation process:

Category	Specific Stakeholders	Number/Location
Community members	Farmers from 7 villages	Njeleza, Mwalija, Ndola, Sekela Chivalamisengu, Bwalo & Kungoni
Cooperative leadership	Mwana Alirenji Cooperative members; Business Centre Committees (5 BCCs)	169 members (31 % male & 69 % female)

Category	Specific Stakeholders	Number/Location
Traditional authorities	Group Village Headmen, Traditional Authority Kasisi	GVH Njeleza, TA Kasisi
Government institutions	Department of Irrigation, Chikwawa District Council, MEPA	District-level
Development partners	World Bank, AfDB	Supervision missions
Other stakeholders	Katunga-Maseya Cane Growers Association; Pesticide Control Board; NWRA; Ministry of Lands, SVTP (PMT).	Regional and national

Stakeholder consultations were conducted at national, district, and community levels to ensure that the views, concerns, and priorities of all relevant parties were captured and incorporated into the ESMP. At the national level, key institutions consulted included the Malawi Environment Protection Authority (MEPA) and the Project Management Team (PMT). At the district level, consultations were conducted through the decentralised structures of Chikwawa District, involving the following offices and departments: the District Commissioner's Office; District Water Office; District Forestry Office; Directorate of Planning and Development; District Gender Office; District

Main Concerns Raised and Developer Responses/Commitments

The following table presents the key concerns raised by stakeholders during consultations including the individuals who raised issues. The corresponding responses and commitments documented in the ESMP are also provided.

SN	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
1	Construction Phase	
1.1	Positive Impacts	
1.1.1	Employment opportunity to the community there by reducing poverty levels	Adherence to minimum wages requirements for the government
		Employ mostly those from communities around the site (communities advocating for at least 50% of local people to be employed by the contractor)
		Involving chiefs and the WUA interim committee in recruiting capable locals from within the community and surrounding areas.
1.1.2	Skill transfer to the local	Contractor to provide skills transfer through recruitment of locals who can also gain

SN	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
	communities who might be involved in construction phase	experience in carrying out future routine maintenance of the structures, Recruitment process needs to be transparent Some few communities to be specially trained in carrying out small maintenances of the scheme and other areas (e.g. engage communities to be trained in solar maintenances and mechanical maintenances of the pipes and other related structures)
1.1.3	Opportunity for small scale business around the construction site	Loans or good payment to workers to help boost those businesses Provide safe business shelters for local businesses trading around the area. Deliberate directive/policy to buy materials from local people Small local businesses should be allowed to trade around the construction site
1.1.4	Reduced crime rates and other unruly behaviours within the communities due to involvement in employment especially to the youth	Ensure that more community members are employed at the construction site Conduct community sensitisation and produce ToRs on how the local communities will be involved in the project
1.1.5	Improvement of the infrastructure within the area	Ensure that the contractor improves the infrastructure being used during construction phase e.g. roads, availability of enough medicine at nearby health centre, and other corporate social responsibility
1.2	Negative Impacts	
1.2.1	Disturbance to girl child education	Contractors should have initiative to protect vulnerable people

SN	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
	(Dropouts, Pregnancies) due to outsiders/workers who may come with money to convince girls into sexual relationships	The contractors to have a child protection and HIV/Aids policy
		Civic education and sensitisation to girls and community in general
		By-laws to protect girls
		Sensitize communities on a need to report cases of abuse or child labour (local chiefs and nearby police officers)
		Children/Pupils should not be allowed at construction site
1.2.2	Spread of HIV and AIDS	Provide awareness to community
		Distribute condoms
		VDC and Chiefs to conduct awareness to families
		Strict laws on relationships among co-workers
1.2.3	Noise from construction site	Construction works should be restricted to day time only
		Construction vehicles should be well serviced
		Minimise idling of machinery to control noise levels
		Isolate the construction site through construction of temporary fencing to control noise levels (in noisy places)
		Noisy equipment to be placed away from villages
		Equipment, machinery and other construction vehicles should well service. Choose noise free machinery to be used onsite
1.2.4	Clearing of trees/vegetation	Replanting trees (choose tree species suitable for the area)
		Planting trees around the community college area to compensate for the cleared trees. The trees will also act as wind breaks, to protect the built infrastructure, especially in areas where there will be solar panels

SN	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
1.2.5	Disturbance to school going children who may come to see/watch construction works	Children should not be allowed at site
1.2.6	Dust emissions	Using water browsers to sprinkle water around construction premises
		Enforce speed limits for vehicles moving around the sites
		Cordoning off the area with fencing to trap some dust emissions.
1.2.7	Generation of waste	Proper disposal as recommended by District council
1.2.8	Injuries to workers and risks of other related accidents	Using PPE, and following engineering safety controls
		Sensitise communities in safety regarding to operation of machinery and other community safety issues
1.2.9	Child labour issues	Ministry of labour should be involved during the employment procedures to regulate and police child labour issues
1.2.10	Lifestyle changes among employed locals	Educating and sensitizing employed locals on the consequences of reckless behaviour
1.2.11	Destruction of marriages due to presence of workers	Chiefs should educate their people to stick to their partners
1.2.12	Increase in theft and vandalism	People found should be persecuted as per laws of the country
		Chiefs to sensitise their people on disadvantages of theft and vandalism

SN	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
1.2.13	Environmental degradation due to the use of environmentally unfriendly materials	Prohibit the use of burnt bricks for construction works
		Use energy and water efficient building technologies
1.2.14	Disruption of local pathways /access roads due to construction of the irrigation scheme	Contractor will need to liaise with the local leaders and communities before blocking or destruction of the local routes/roads
1.2.15	Charcoal production as a result of the presence of the large labour force during construction	Promotion of IGAs
		Access to microfinance institutions and reliable markets
		Sensitization meetings
		Local employment as casual labourers
		Enforcement of scheme and forestry by-laws
2	Operation Phase	
2.1	Positive Impacts	
2.1.1	Best use of available land which is currently underutilised due to poor rainfall patterns in the area	Ensure that the construction works should commence quickly as the communities have been waiting for the project for over 9 years
		Ensure that the structures to be built are of high standards to prevent frequent maintenance of the scheme
		Form, train and empower the WUA committee in management of the scheme

SN	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
		Train farmers in production of high value crops for profitability (choose profitable value chains)
		Link the farmers to existing markets or create new markets for the produce from farmers
		Sensitise more farmers regarding to advantages of irrigation farming
		Conduct land demarcation properly for the command area in the early stages of project to prevent land conflict issues which might arise in the future. Ensure that the copies of the demarcated land are available to the land owners
2.1.2	Enhanced development and economic activity in the area	Provide for more infrastructure association with the irrigation scheme
		Provide for loan opportunities to the youth
		Link the farmers to the large scale buyers and form corporative for collective bargaining of prices
2.1.3	Reduction in crime rates	More people will be involved in irrigation farming which will enable them to be economically active hence reduced crime rates
2.1.4	Opportunity to grow other crops which are not known to the communities	Train the communities on good value chains which are profitable
		Sensitisation on crop diversity practices to ensure that they income levels are depended on different types of crops
2.1.5	Reduced cases of hunger in the community (improved food security)	Encourage more farmers to be involved in irrigation farming

SN	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
2.1.6	Reduced cases of malnutrition	Encourage more farmers to practices crop diversification to ensure
2.2	Negative Impacts-operation phase	
2.2.1	Spread of STIS and HIV and AIDS	Community sensitisation
		Conduct awareness on sexually transmitted diseases
2.2.2	Destruction of natural resources due to clearance of land in some patches	Adopt agro-biodiversity and agro-forestry practices
		Follow sustainable land management practices during the operation of the scheme
2.2.3	Increased cases of diseases/illness due existence of the scheme e.g. bilharzia, cholera, schistosomiasis etc.	Work hand in hand with local health centre to prevent and treat the disease cases
2.2.4	Increased cases of theft or vandalism to equipment e.g. Solar panels, pumps	Provide more security personnel
		Construct perimeter fencing around the solar panels and also the pumping areas
2.2.5	Destruction /disturbance of aquatic biodiversity	Protect the aquatic biodiversity by provision of nets/mesh on the pumps to prevent fish or other aquatic animals from getting trapped in the pipes
2.2.6	Cases of children and animals drowning /injuries	Night reservoir storage tanks will need to be fenced in order to prevent access to the tanks by children or animals
2.2.7	Cases of land disputes	Train the community leaders and WUA committee on handling of disputes and management of the scheme

SN	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
		Ensure that land demarcation exercise is done in early stages of the project in collaboration with the communities
		A need for assurance to the communities that nobody will lose land due to irrigation development
2.2.8	Cases of crocodile attacks	Use pipes instead of canals in the main pipes from the Shire river to the tanks
		Ensure that the command areas is designed away from the Shire river to prevent the crocodiles from getting into the fields
2.2.9	Flooding of the irrigation scheme	Construction of flood protection bunds
		Provision of cut-off drainage, water outlets;
		Afforestation and re afforestation
		Planting of vertiver
2.2.10	Collapsing of Water reservoir	Incorporate safety features in design and construction
2.2.11	Formation of gullies due to field paths	Raising the footpath
		Planting of vegetative cover, star grass,
3	Decommissioning phase	
3.1	Positive impacts	
3.1.1	The communities stressed that there will not be any positive impacts due to closure of the project.	
3.2	Negative impacts	

SN	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
3.2.1	Reduced income levels, livelihoods, loss of jobs	Ensure that the project should have a long life to prevent early loss of benefits to the communities

Grievance Redress Mechanism (GRM)

A dedicated, multi-tiered Grievance Redress Mechanism (GRM) has been established operating at contractor, PMT, and MEPA levels. The GRM is free of charge, accessible in local languages (Chichewa and Chisena), and includes a target resolution timeframe of thirty calendar days for standard grievances, with expedited procedures for complaints related to Gender-Based Violence and Sexual Exploitation and Abuse. The GRM will be operationalized prior to commencement of construction and maintained throughout all phases of the project.

Environmental and Social Management Plan (ESMP)

Enumeration of Risks/Impacts Management Measures

The ESMP translates identified impacts into specific, measurable, and enforceable actions across four phases, applying the mitigation hierarchy (avoid → minimize → restore → offset) to all negative impacts. The following tables present the specific measures addressing each significant/moderate impact.

(a) Specific Measures Addressing Each Significant/Moderate Impact

The following table summarizes the key mitigation and enhancement measures for each project phase:

Phase	Key Mitigation/Enhancement Measures	Responsible Parties	Cost (USD)
Planning Phase	Local participation ($\geq 50\%$); stakeholder sensitization; GRM establishment; information disclosure	PMT, District Council, Local Leaders, GRM Committees	2,500.00
Construction Phase (Positive Impacts)	Local labour ($\geq 80\%$); local procurement; on-the-job training; tax compliance	Contractor, PMT, District Council	3,500 (plus contractor obligations)
Construction Phase (Negative Impacts)	Reforestation (1.3M trees; 2:1 ratio); erosion control (silt fences, sediment basins, diversion drains); dust suppression (water spraying 2x/day); water pollution prevention (bunded fueling areas, spill kits); noise controls	Contractor, PMT, MEPA, Department of Forestry, Department of Health,	17,000.00

Phase	Key Mitigation/Enhancement Measures	Responsible Parties	Cost (USD)
	(restricted hours 08:00-17:00); waste segregation; borrow pit rehabilitation; OHS training (including heat stress, confined spaces, working at height); GBV/SEA Code of Conduct; child labour enforcement; community policing; chance find procedure	NGOs/CSOs, Local Leaders, Department of Antiquities	
Operation Phase (Positive Impacts)	Efficient irrigation (pressurized systems); market linkages; crop diversification; nutrition awareness; farmer training (GAPs, IPM, financial literacy); environmental flows; WUA water allocation	Cooperative, Extension Services, PMT, NWRA, Department of Health	6,500.00
Operation Phase (Negative Impacts)	Drainage maintenance; IPM (to reduce chemical use); safe agrochemical use (approved pesticides only, restricted entry intervals 24-72 hrs); water allocation schedules (WUA-managed); environmental flow releases (NWRA permit compliance); vector control (larviciding, larvivorous fish); PPE provision (chemical-resistant gloves, coveralls, respirator); hazardous waste collection (triple-rinse, container collection); zoonotic disease prevention (vaccination, stocking limits of 20/HH); theft/vandalism prevention (security lighting, fencing, community policing); human-wildlife conflict mitigation (fencing, lighting, deterrents, compensation mechanism with DNPW); soil salinity monitoring	WUA, Cooperative, Extension Services, Department of Health, NWRA, DNPW, District Council	12,000.00
Demobilisation Phase	Site restoration ($\geq 90\%$ restored); terminal benefits (minimum 30 days notice, outstanding wages, severance as	Contractor, PMT, MEPA, District Council	8,500.00

Phase	Key Mitigation/Enhancement Measures	Responsible Parties	Cost (USD)
	per Employment Act); vendor transition support; waste cleanup		

(b) Specific EOHS Clauses to Insert in Works Contracts

The following specific clauses shall be inserted into all works contracts, as derived from the ESMP:

(i) General Rules of Hygiene, Health and Safety (HHS) on Construction Sites:

- The Contractor shall provide and maintain adequate sanitation facilities (minimum 1 toilet per 15 workers, separate for men and women) and potable drinking water at all work sites.
- The Contractor shall implement a site-specific Occupational Health and Safety Plan approved by the PMT before construction commences.
- The Contractor shall provide and enforce use of appropriate personal protective equipment including hard hats, steel-toed boots, high-visibility vests, dust masks (N95/P100), ear muffs (31 dB NRR), gloves, and chemical-resistant PPE where applicable.
- The Contractor shall conduct daily pre-start safety briefings and weekly toolbox talks, and maintain a first-aid kit and trained first-aider on site at all times.
- The Contractor shall implement heat stress management: rest breaks (15 minutes every 2 hours in hot conditions), shaded rest areas, acclimatization period for new workers (7 days), and work cessation when wet bulb globe temperature exceeds 30°C.
- The Contractor shall implement safety protocols for working at height (guardrails at 1.1m, fall arrest systems), confined spaces (permit system, atmospheric monitoring), excavation/trenching (shoring or sloping, competent person daily inspection), and heavy machinery operation (exclusion zones minimum 10m, spotter for reverse operations).

(ii) STD - HIV Awareness:

- The Contractor shall implement an HIV/AIDS Workplace Policy approved by the PMT, conduct HIV/AIDS awareness campaigns for all workers (minimum 4 per year), and provide condoms at all work sites (accessible, free of charge).
- The Contractor shall partner with local health services to provide on-site voluntary counseling and testing (VCT) services and establish referral pathways to Chikwawa District Hospital for HIV care and treatment.
- The Contractor shall prohibit discrimination against people living with HIV in employment.

(iii) Management of the Relationship Between Employees and Communities in the Project Area, with Emphasis on Protection of Minors and Other Vulnerable Groups:

- The Contractor shall implement a Code of Conduct (CoC) with specific provisions prohibiting sexual harassment, sexual exploitation and abuse (SEA), and discrimination, including enforceable sanctions including immediate termination for substantiated GBV/SEA violations.
- The Contractor shall establish a confidential worker-specific GRM for reporting violations, prohibit children (persons under 18 years) from entering construction sites, and implement a community liaison function to receive and address community concerns.

- The Contractor shall conduct sensitization sessions for workers on respectful interaction with local communities and ensure that recruitment does not disrupt children's education.

(iv) Consideration of Gender Equity and Gender-Based Violence (GBV) as well as Sexual Exploitation and Abuse (SEA):

- The Contractor shall target minimum 40 percent female participation in unskilled labour positions, ensure equal pay for equal work regardless of gender, and provide separate and secure sanitation facilities for women and men.
- The Contractor shall implement a SEA/SH Action Plan including risk assessment specific to GBV/SEA, prevention measures (awareness training, CoC), response measures (confidential reporting, survivor-centered referrals), and monitoring and evaluation.
- The Contractor shall establish referral pathways for GBV/SEA survivors to health, psychosocial, and legal support services, ensure confidentiality and protections against retaliation for complainants, and maintain anonymized records of GBV/SEA incidents for monitoring purposes.

(v) Management of "Chance Finds":

- The Contractor shall include a Chance Find Procedure in site-specific management plans approved by PMT prior to construction, train all construction personnel on the Chance Find Procedure, and designate a site officer responsible for receiving and acting on chance find reports.
- Upon discovery of any potential cultural heritage object or human remains, the Contractor shall cease work within a 50-meter radius, immediately notify the PMT, who shall notify the Department of Antiquities within 48 hours.
- No further disturbance shall occur until the Department of Antiquities has assessed the find and issued instructions for salvage, protection, or relocation. If human remains are discovered, the Department of Antiquities shall coordinate with local traditional authorities and the community on appropriate handling and reburial protocols.

(c) Environmental and Social Monitoring Plan (ESMoP) – Key Indicators

The following table presents key monitoring indicators

Indicator	Baseline	Target	Verification Method	Frequency	Responsibility
Local employment (planning)	Not applicable	≥50% local staff	Employment records	Once	PMT
Local employment (construction)	Not applicable	≥80% local labour	Payroll	Monthly	Contractor, PMT
Grievance resolution	No GRM in place	100% within 30 days (standard); expedited for GBV/SEA	GRM logs	Monthly	PMT, GRM Committees

Indicator	Baseline	Target	Verification Method	Frequency	Responsibility
Vegetation restoration	6.8% open woodland (pre-clearance)	Area cleared vs restored documented; 1.3M trees planted (2:1 offset ratio)	Site reports; planting records	Monthly (clearance); Quarterly (planting)	Contractor, Department of Forestry
PPE compliance	Not applicable	≥90%	Site inspections	Daily/Monthly	Contractor
Water quality	Baseline testing to be established	No exceedance of Malawi national water quality standards	Laboratory testing (pH, turbidity, agrochemical residues, E. coli)	Monthly	Contractor, MEPA
GBV/SEA incidents	No system in place	100% reported and responded (confidential)	GRM reports (anonymized)	Monthly	Contractor, PMT, NGOs/CSOs
Child labour	No systematic monitoring	Zero incidents (verified age records)	Age verification records; site inspections	Monthly	Contractor, PMT, Ministry of Labour
HIV/AIDS awareness	Baseline awareness not assessed	Minimum 4 campaigns/year	Campaign reports	Quarterly	Contractor, Department of Health
Water conflict resolution	No formal mechanism	Zero unresolved conflicts >30 days	GRM logs; WUA meeting minutes	Monthly	WUA, NWRA, Local Leaders
Environmental flows	No formal monitoring	Compliance with NWRA permit conditions	Flow monitoring data	Continuous	PMT, NWRA

Indicator	Baseline	Target	Verification Method	Frequency	Responsibility
Human-wildlife conflict incidents	No systematic reporting	Zero fatalities; reduction in crop losses	Incident reports; DNPW records	Monthly	WUA, Cooperative, DNPW
Soil salinity	pH 6.03-6.88 (baseline)	No significant increase (maintain pH 6.0-7.5)	Soil laboratory analysis	Annually (pre- and post-wet season)	Extension Services, Cooperative
Site restoration (decommissioning)	Not applicable	≥90% restored	Independent inspection	Once (post-decommissioning)	Contractor, MEPA

ESMP Budget

The following table presents the overall cost of the ESMP from the ESMP:

Measures	Description	Cost (MWK)	Cost (USD)
MITIGATION			
Mitigation	Planning Phase	1,750,000	1,012
	Construction Phase	19,810,000	11,451
	Demobilisation Phase	4,865,000	2,812
	Operation Phase	19,880,000	11,491
Subtotal Mitigation		46,305,000	26,766
MONITORING			
Monitoring	Planning Phase	750,000	434
	Construction Phase	8,490,000	4,908
	Demobilisation Phase	2,085,000	1,205

Measures	Description	Cost (MWK)	Cost (USD)
	Operation Phase	8,520,000	4,925
Subtotal Monitoring		19,845,000	11,471
CAPACITY BUILDING			
Capacity Building	Training of relevant stakeholders and staff	6,615,000	3,824
Subtotal Capacity Building		6,615,000	3,824
Sum of Subtotals		72,765,000	42,061
Contingency (10%)		7,276,500	4,206
Grand Total		80,041,500	46,267

The ESMP budget represents significantly less than 1 percent of total project cost (USD 1.2 Million), this is so because Njeleza irrigation block is relatively a small irrigation scheme as per national and international standards.

Site-Specific Management Plans (To Be Prepared by Contractor Before Construction)

To operationalize ESMP requirements, the Contractor shall prepare and submit to the PMT for approval the following site-specific management plans. No construction activities shall commence until these plans have been formally approved by the PMT:

1. Construction Environmental and Social Management Plan (CESMP)
2. Waste Management Plan
3. Occupational Health and Safety Plan (including heat stress, confined spaces, working at height, electrical safety, manual handling, and psychosocial risks)
4. HIV/AIDS Workplace Policy
5. Code of Conduct (CoC) with GBV/SEA provisions (including enforceable sanctions and referral pathways)
6. Grievance Redress Mechanism (GRM) procedures (worker-specific and community-level)
7. Chance Find Procedure (aligned with Monuments and Relics Act and Department of Antiquities requirements)
8. Cholera Response Plan
9. Drinking Water Management Plan
10. Integrated Pest Management (IPM) Plan
11. Hazardous Materials Management Plan
12. Labor Management Procedures (LMP) with worker-specific GRM
13. Stakeholder Engagement Plan (SEP)

Adaptive Management and Compliance Enforcement

Compliance thresholds are defined in the ESMP. Where monitoring indicators fall below acceptable limits (e.g., PPE compliance below 80 percent, grievance resolution beyond 30 days, or failure to meet environmental flow requirements), corrective actions will be triggered immediately. A structured corrective action process is applied including identification and documentation of non-compliance, issuance of corrective action instructions, implementation of corrective measures within defined timelines, and verification of compliance through follow-up inspections.

For significant or repeated non-compliance, the PMT will enforce corrective action plans, contractual penalties or sanctions may be applied, and the issue will be escalated to MEPA for regulatory intervention where required.

An adaptive management approach is embedded in the ESMP. Where monitoring indicates that mitigation measures are ineffective or insufficient, mitigation strategies will be revised, additional control measures introduced, and implementation approaches adjusted to site-specific conditions. This adaptive approach ensures that environmental and social management remains responsive, effective, and aligned with evolving project risks.

Conclusion and Recommendations

The ESMP concludes that the Njeleza Irrigation Scheme is environmentally and socially feasible and sustainable. The identified adverse impacts are localized, largely reversible, and can be effectively managed through proper implementation of the proposed mitigation measures. The anticipated socio-economic benefits, including increased agricultural productivity, improved household incomes, enhanced food and nutrition security, strengthened market integration, expanded livelihood opportunities, and reduced vulnerability to climate variability, significantly outweigh the potential negative impacts. The institutional framework, monitoring systems, Grievance Redress Mechanism, and budget allocations are adequate and robust to ensure compliance with national regulations and international safeguards requirements.

Based on the findings of this assessment, the following recommendations are made for AfDB consideration:

1. The ESMP shall be formally integrated into all project contracts and procurement documents, ensuring that compliance with environmental and social requirements is a binding contractual obligation for all implementing entities.
2. The Grievance Redress Mechanism shall be operationalized and made fully accessible to all affected communities and workers prior to the commencement of any construction activities and shall be maintained throughout all phases of the project.
3. All site-specific management plans, including the Construction Environmental and Social Management Plan, Labor Management Procedures, Stakeholder Engagement Plan, SEA/SH Action Plan, Waste Management Plan, and Occupational Health and Safety Plan, shall be submitted to the PMT for review and formal approval before any construction activities begin.
4. A Project Decommissioning Plan shall be prepared prior to project closure, outlining specific decommissioning activities, environmental and social management measures, roles and responsibilities, timelines, and monitoring requirements to ensure that decommissioning is carried out in a safe and environmentally sound manner.

5. Adequate financial, technical, and human resources shall be secured and maintained throughout the project lifecycle to support ESMP implementation, monitoring, reporting, and adaptive management.
6. Targeted capacity building and training programmes shall be implemented for the PMT, Contractor, Supervision Consultant, Cooperative members, and local stakeholders to strengthen environmental and social management capabilities.
7. Continuous and structured stakeholder engagement shall be maintained to promote transparency, inclusiveness, and community ownership of the project, with documented records of all consultations maintained for audit purposes.
8. Regular monitoring and compliance reports shall be submitted to MEPA, the World Bank, the African Development Bank, and other relevant authorities in accordance with the reporting protocols established in the ESMoP, ensuring accountability and facilitating effective oversight throughout the project lifecycle.
9. The Contractor shall prepare and submit for approval a Resettlement Policy Framework or Abbreviated Resettlement Action Plan consistent with AfDB OS2 prior to any land acquisition.
10. The Contractor shall prepare and submit for approval an Integrated Pest Management Plan and Hazardous Materials Management Plan consistent with AfDB OS4 prior to construction.
11. The Contractor shall prepare and submit for approval Labor Management Procedures with Code of Conduct and worker-specific GRM consistent with AfDB OS5 prior to construction.
12. A stand-alone Stakeholder Engagement Plan consistent with AfDB OS10 shall be prepared and disclosed publicly prior to construction.

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1 BACKGROUND

1.1 OVERVIEW OF SHIRE VALLEY TRANSFORMATION PROGRAMME II

The Shire Valley Transformation Programme (SVTP)-2 is a development program launched by the Government of Malawi (GoM) with the aim of transforming the Shire Valley within the administrative districts of Chikwawa and Nsanje into a productive and commercially viable agricultural hub. The Programme is being financed by the World Bank, the African Development Bank, the OPEC Fund for International Development (OFID), the Global Environment Facility, and the Government of Malawi. The Programme Development Objective (PDO) 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.

The Programme involves the development of key irrigation infrastructure, including water abstraction from the Shire River at Kapichira Dam, conveyance systems comprising primary and secondary canals, drainage infrastructure, and associated support facilities. These components are designed to ensure reliable year-round irrigation water supply, improve climate resilience, and support sustainable agricultural intensification within the Shire Valley.

In line with the SVTP ESMP, site specific ESMPs for irrigation blocks will be developed and aligned to national and development partners' safeguards policies as required. All development blocks are managed by cooperatives and one such block is Njeleza managed by Kambadwe Cooperative.

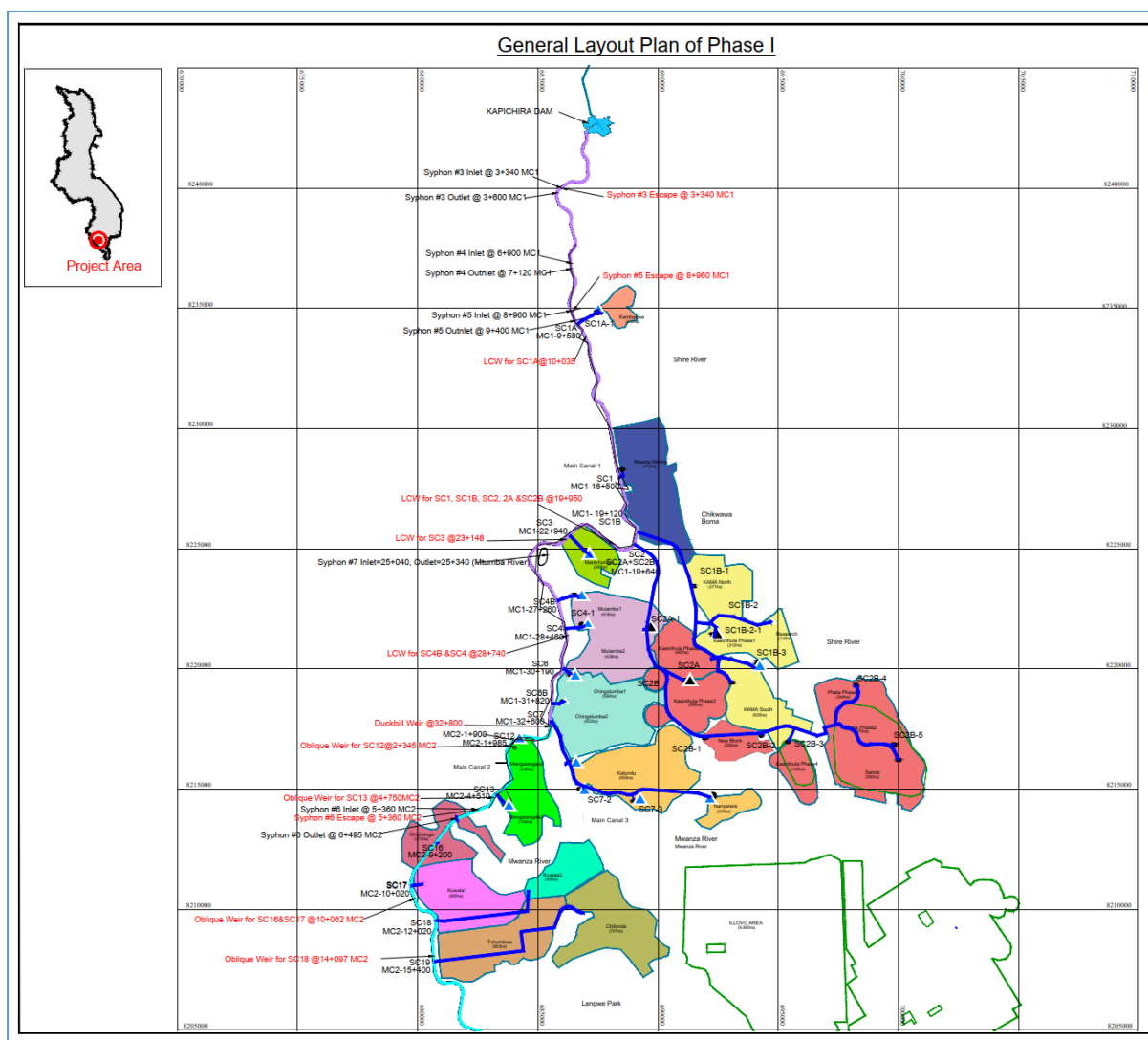


Figure 1: Layout Plan for Shire Valley Transformation Programme (SVTP-1) Showing Location of Mwana Alirenji

3.2 BACKGROUND OF KAMBABWE COOPERATIVE

The Kambabwe Irrigation Block is situated approximately 15 km east of Chikwawa Boma in Chikwawa District, within the lower Shire Valley of Malawi. The irrigation block covers a total area of net irrigable area of 105 hectares (137 hectares gross) and is located adjacent to the main secondary service road T416, providing reasonable accessibility for the transportation of construction materials, equipment, and agricultural produce.

The block falls within Traditional Area Kasisi, under Group Village Head Njereza. Of particular environmental significance is the proximity of the irrigation block to the Majete Wildlife Reserve, which is located approximately 3 km from the project site. Figure 1 shows the location of Njeleza Irrigation Block (Kambabwe Cooperative).

allocated to essential infrastructure, environmental buffers, and support facilities such as drainage systems, access roads, and service areas.

The Cooperative comprises 169 members (52 male & 117 female) drawn from 7 villages of Njeleza, Mwalija, Ndola, Sekela Chivalamisengu, Bwalo and Kungoni.

The total estimated project cost is approximately MWK 2.28 billion (equivalent to about USD 1.2 million). The estimated cost of implementing environmental and social mitigation and monitoring measures is approximately MWK 80,041,500 (equivalent to about USD 46,267), inclusive of a 10 percent contingency provision.

The project is expected to generate significant employment opportunities. Approximately 100 people are expected to be employed during the construction phase, while around 20 people will be employed during the operational phase. In line with national policies and international good practice, efforts will be made to ensure equitable employment opportunities, with a target of achieving gender balance. Priority will be given to local communities within Njeleza and the wider Chikwawa District, particularly for unskilled labour.

The SOCFE model constitutes the central institutional vehicle for transitioning participating households from subsistence farming to commercially viable agriculture under the SVTP.

The Cooperative plays a central role in the implementation and sustainability of the irrigation scheme, and its structure, membership, and operations are critical in shaping the environmental and social context of the project. As such, understanding the characteristics of the Cooperative provides an important basis for assessing potential impacts, designing appropriate mitigation measures, and ensuring inclusive and sustainable project outcomes.

1.3 MAIN OBJECTIVE OF THE COOPERATIVE

The primary goal of Kambadwe Cooperative is to establish a financially sustainable enterprise that generates consistent returns while securing the economic welfare of its members. The Cooperative seeks to enhance the socio-economic conditions of its members and surrounding communities by pooling productive resources and engaging in irrigation-based agriculture as a commercially viable venture, supported by modern irrigation systems and improved agricultural technologies.

The Cooperative aims to achieve long-term financial sustainability through the adoption of efficient farming practices, diversification of income streams, and integration into agricultural value chains. These efforts are expected to contribute to improved household incomes, enhanced food security, and overall economic development within the project area. In addition, the Cooperative is committed to promoting environmentally sustainable agricultural practices and responsible resource management, in line with the broader objectives of the Shire Valley Transformation Programme. This approach is intended to ensure that economic gains are achieved alongside the sustainable use of natural resources and long-term resilience of the farming system.

1.4 PROJECT DURATION

The development of the Njeleza Irrigation Block is expected to take approximately 6 months. The project will be implemented in distinct phases, including planning, construction, operation and maintenance, and decommissioning. These phases will require varying levels of labour and technical input over time.

The project is expected to generate significant employment opportunities, with more than 150 people anticipated to be engaged across different phases of implementation. During the planning phase, over 30 people are expected to be employed, while the construction phase is also expected to employ more than 100 people. Similarly, the operation and maintenance phase is projected to engage more than 20 people, while the decommissioning phase is expected to employ more than 20 people. In line with national policies and international good practice, the project will promote equitable employment opportunities, with a target of achieving gender balance in employment. Priority will be given to local communities within Njeleza and surrounding villages, as well as the wider Chikwawa District, particularly for unskilled labour. All employees will undergo appropriate occupational health and safety training to ensure safe working conditions and compliance with labour and safety standards throughout the project lifecycle.

1.5 DETAILS OF THE PROJECT PROPONENT

Table 1.3 provides the details of the project proponent, which is the Government of Malawi through the Ministry of Agriculture.

Table 1: Details of Project Proponent

Item	Description
Proponent Name	Ministry of Agriculture – Shire Valley Transformation Programme (SVTP-2)
Postal Address	Private Bag 379, Chichiri, Blantyre 3, Malawi
Contact Person	Limbani Gomani (Project Coordinator)
Email	lgomani.doi@svtp.gov.mw

1.6 SCOPE OF ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

This section outlines the scope, objectives, and methodological approach adopted in the preparation of the Environmental and Social Management Plan (ESMP). The scope of the study involved undertaking environmental and social assessments in line with the Guidelines for Environmental Assessment in Malawi (2025) and the requirements of the Environment Management Act (EMA), 2017. The study covered the entire Njeleza irrigation block, the immediate environment surrounding the project site, and all associated project implementation activities. The report includes a description of the project setting, a comprehensive evaluation of the site and its surrounding environment, and an assessment of predicted environmental and social impacts, as well as applicable legal and regulatory frameworks. It also outlines mitigation and enhancement measures, together with strategies and recommendations for managing the environmental and social impacts of the project.

In addition, the scope of this ESMP has been defined to align with international good practice, including the safeguards requirements of the African Development Bank, Opec Fund for International Development and the World Bank, ensuring that environmental and social risks are systematically identified, assessed, and managed throughout the project lifecycle.

1.7 JUSTIFICATION FOR THE ESMP

In accordance with the Environment Management Act (2017), a screening exercise was conducted to determine whether an Environmental and Social Impact Assessment (ESIA) was required and, if so, the appropriate level of assessment. The total land area for the irrigation block is approximately 137 hectares, which classifies the project as a Category 1 project under the National Environmental Impact Assessment (EIA) Guidelines (2025) that stipulates a threshold of 30 ha and applicable safeguards requirements.

However, given that the project forms part of the Shire Valley Transformation Programme (SVTP-1), for which a comprehensive ESIA has already been undertaken for the broader project area, the Malawi Environment Protection Authority (MEPA) exempted this sub-project from conducting a full ESIA and instead required the preparation of an Environmental and Social Management Plan (ESMP).

The ESMP has therefore been developed based on Terms of Reference (ToRs) provided by MEPA (Annex 1), and is intended to address site-specific environmental and social risks and impacts associated with the proposed irrigation scheme.

The preparation of this ESMP ensures that site-specific environmental and social risks are effectively managed in a manner consistent with national legislation and international safeguards requirements.

1.8 MAIN OBJECTIVE OF THE ESMP

The main objective of the ESMP is to identify, assess, and predict potential positive and negative environmental and social impacts associated with the project, and to develop appropriate mitigation and enhancement measures to ensure sustainable project implementation. The ESMP will guide stakeholders in the implementation of environmental and social safeguards, including contractor compliance with safeguards requirements, establishment and functioning of grievance redress mechanisms, promotion of gender, youth, and community participation, and awareness and sensitisation on environmental and social management issues.

The ESMP also aims to ensure compliance with applicable national regulations and international safeguard standards, while promoting sustainable resource use and enhancing positive socio-economic outcomes. The ESMP further provides a framework for continuous monitoring, reporting, and adaptive management throughout the project lifecycle.

1.9 SPECIFIC OBJECTIVES OF THE ESMP

The specific objectives of the ESMP study are to:

- Identify necessary statutory and regulatory approvals and licences required for the project;
- Determine the compatibility of the proposed project with the local environmental and social conditions of the project area;
- Assess the physical, biological, and socio-economic environment of the project area;
- Identify and evaluate potential positive and negative environmental and social impacts associated with the project;
- Propose appropriate mitigation and enhancement measures for significant impacts;

- Prepare an Environmental and Social Management Plan (ESMP) for the project;
- Develop an Environmental and Social Monitoring Plan (ESMoP) to support effective implementation of the ESMP; and
- Ensure continuous stakeholder engagement and integration of feedback throughout the project lifecycle.

1.10 SCOPE OF THE ESMP

In accordance with the national environmental and social regulatory framework and relevant international standards, the scope of the ESMP includes:

- i. Assessment of the current status of the biophysical and socio-economic environment within the project area;
- ii. Identification of potential environmental and social risks and impacts throughout the project lifecycle, including pre-construction, construction, and operation phases;
- iii. Conduct of stakeholder consultations at various levels to capture concerns, expectations, and potential impacts;
- iv. Alignment of mitigation and enhancement measures with national and international environmental and social standards;
- v. Preparation of the ESMP, including monitoring plans and budget provisions; Assessment of institutional arrangements for managing environmental and social aspects of the project; and
- vi. Establishment of mechanisms for monitoring, reporting, and adaptive management of environmental and social performance.

1.11 PROJECT JUSTIFICATION / RATIONALE

The Shire Valley Transformation Programme (SVTP-1) is a 14-year programme (2017–2031) structured around three coordinated pillars: (i) provision of reliable, professionally managed and sustainably financed irrigation services through phased development of irrigation infrastructure; (ii) support for farmer organization, land tenure strengthening, and natural resource management; and (iii) establishment and investment in Smallholder-Owned Commercial Farm Enterprises (SOCFEs) to facilitate transition to commercial agriculture.

Under the Programme, smallholder farmers benefit from access to irrigated agriculture, secure land and water tenure, improved agricultural production systems, enhanced advisory services, and improved access to financial services and markets. The Programme also promotes formalization of farmer groups as irrigation service users and facilitates partnerships with service providers and off-takers in commercial agriculture to irrigate approximately 43,000 hectares of land.

In this context, the development of the Njeleza Irrigation Block under Kambadwe Cooperative will enable beneficiaries to access these Programme benefits, thereby improving agricultural productivity, household incomes, and overall socio-economic development within the project area.

1.12 METHODOLOGY

1.12.1 Technical Approach to the Study

The study adopted a mixed-method approach, integrating both qualitative and quantitative techniques to ensure comprehensive data collection and analysis. This approach enabled the capture of both scientific data and stakeholder perspectives relevant to the ESMP.

The general steps followed during the assessment included desk studies, field surveys, stakeholder consultations, and reporting. Data collection methods included literature review, site observations, and stakeholder engagement through community meetings, key informant interviews, and focus group discussions.

1.12.2 Desk Studies

Literature review involved review of SVTP project documents, environmental and social safeguards documents, district development plans, previous ESIAs/ESMPs, and relevant policy and legal frameworks.

1.12.3 Field Surveys

Field investigations included site inspections, biodiversity observations, topographic surveys, and soil assessments to establish baseline environmental conditions.

1.12.4 Stakeholder Consultations

Stakeholder consultations were conducted through community meetings, focus group discussions, and key informant interviews involving local communities, cooperative members, government institutions, and other stakeholders.

The consultations were conducted in an inclusive manner to ensure representation of different groups, including women and youth, and provided critical input into impact identification and mitigation planning.

1.13 SITE LOCATION

The Njeleza Irrigation Block is located in Group Village Headmen (GVH) Njeleza , under Traditional Authority (TA) Kasisi in Chikwawa District. The Kambadwe Irrigation Block is situated approximately 15 km from Chikwawa Boma in Chikwawa District, within the lower Shire Valley. The irrigation block is the first block along the SVTP main canal 1 located at around 9.5 km. The block is bordered by Masakale River, which runs adjacent to the northern boundary of the scheme, and Shire- river along the Eastern boundary.

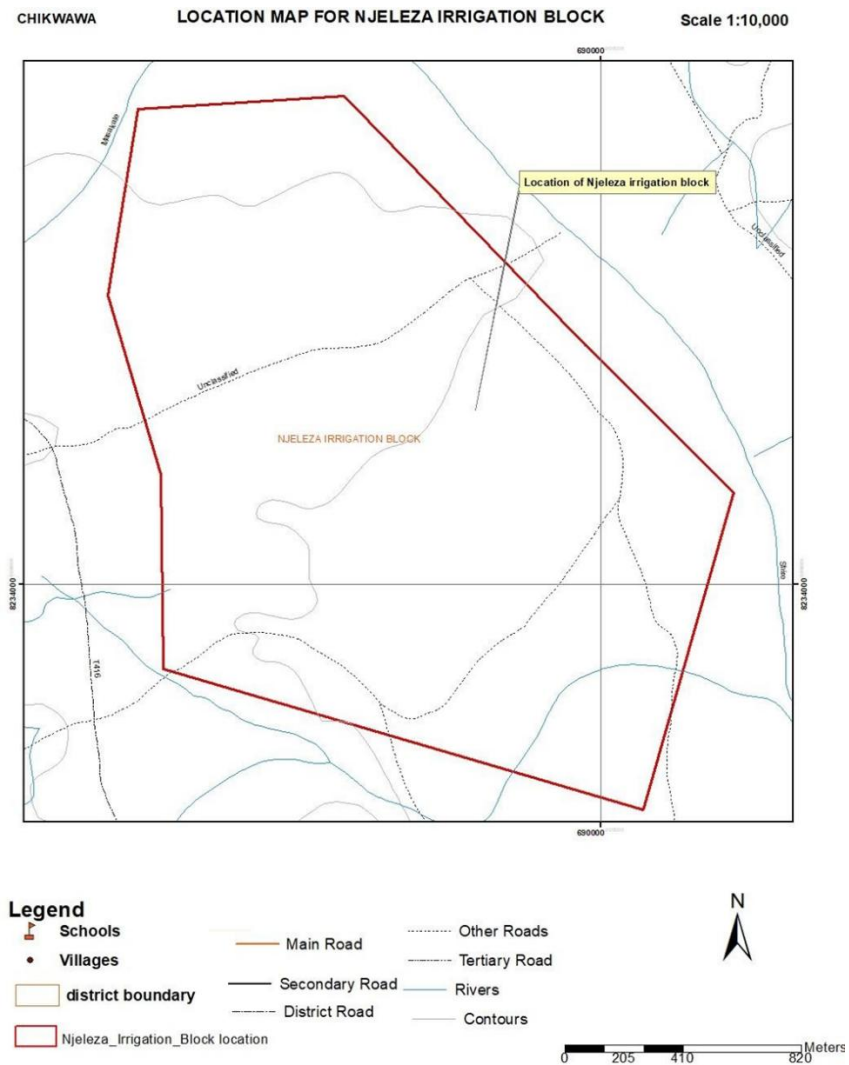


Figure 3: Location Map of Njeredza Irrigation Block on 1:10,000 scale

The map illustrates the geographical location of the project area and its spatial relationship with surrounding settlements and infrastructure, which is important for understanding potential environmental and social interactions.

1.14 LAND OWNERSHIP AND LAND TENURE

The proposed project area is customary land and currently is used for cultivation. Once the project is in operation the WUA will be in charge. 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.

1.15 POTENTIAL USERS

The Environmental and Social Management Plan (ESMP) is intended to guide sustainable development of the Kambadwe Cooperative Irrigation Scheme at Njeleza in Chikwawa by identifying the principal issues to be considered in the Environmental and Social Management Plan (ESMP). The ESMP is intended for use by, among others, the following:

The Supervising Engineer: The supervising engineer will employ the ESMP to ensure that the contractor complies with the recommendations made in this document for the benefit of the beneficiaries and employees. This will be done through scheduled and unscheduled monitoring visits to the project sites. Full time Environmental and Social Experts will be responsible to monitor the activities of the contractor so that they meet Environmental, Social, gender and Health and safety requirements.

The construction company: In minimizing the negative impacts emanating from the construction works, the contractor will implement the strategies stipulated in this report especially the ESMP to mitigate against such impacts.

Malawi Environment Protection Authority (MEPA): As a custodial institution of the Environment Management Act (2017), MEPA will conduct routine monitoring visits through its inspectorate unit to ensure compliance with the recommendation made in this report.

Department of Irrigation (DoI): The Department of Irrigation is the technical arm of the project and, in addition to the consulting engineer, has responsibility to ensure that the construction company complies with the recommendations contained in the ESMP. The DoI will upon conducting the monitoring visits, make recommendations as to the furtherance of the ESIA recommendations.

Ministry of Labour: The Ministry of Labour is an important part of the project. It has responsibility to ensure that the construction company complies human resource with the recommendations contained in the ESMP.

Chikwawa District Council: The District Council has a legal duty to foster environmental management within the Decentralized Environmental Management (DEM) framework. The council host the District Environmental Sub-Committee (DESC) whose function is to further environmental management. The District Irrigation Officer is the responsible technical officer for the management of irrigation projects and sits on the DESC. He will be appraised on environmental and construction issues in addition to making supervision visits to the site.

Communities: The communities, being residents of the project sites, will assist in monitoring compliance to the ESIA by the contractor. Acting through the Water Users Associations (WUAs) in the two project sites, they will report to the consultant and district officials on any malpractice and defaults regarding implementation of the recommendation contained in the ESMP.

Development Partners (World Bank/ADB/GES): The development partners, in their supervision visits, will ensure compliance to the ESMP. Both partners will ensure that there is also compliance to the safeguards policies contained in the contract document.

Pesticide Control Board: The Pesticide Control Board plays a critical role in the effective implementation of an Environmental and Social Management Plan (ESMP) by regulating and monitoring the use of pesticides in various sectors. Its responsibilities include assessing the environmental and social impacts of pesticide use, setting standards and guidelines for pesticide application, issuing permits, and enforcing compliance with regulations. Additionally, the board conducts inspections, educates stakeholders on safe pesticide practices, and facilitates research on alternative pest management strategies. By ensuring the responsible and sustainable use of pesticides, the Pesticide Control Board contributes to safeguarding environmental integrity, protecting public health, and promoting the overall success of ESMP initiatives

Ministry of water: The Ministry of Water plays a pivotal role in overseeing the management, conservation, and equitable distribution of water resources within a country. Its responsibilities encompass a wide range of activities, including developing water policies, regulating water use, implementing water infrastructure projects, and promoting water conservation and efficiency measures. The ministry collaborates with various stakeholders, including government agencies, local communities, and private entities, to address water-related challenges such as water scarcity, pollution, and inadequate access to clean water and sanitation services. By prioritizing sustainable water management practices, the Ministry of Water contributes to safeguarding the environment, supporting socio-economic development, and ensuring the well-being of present and future generations.

National Water Resources Authority: The National Water Resources Authority (NWRA) is a key governmental institution tasked with the comprehensive management and regulation of a country's water resources. Its primary role involves overseeing the sustainable use, conservation, and allocation of water for various sectors such as agriculture, industry, domestic use, and environmental preservation. The NWRA typically develops and implements policies, strategies, and regulations to ensure the equitable distribution of water, mitigate water-related risks such as droughts and floods, and promote efficient water resource utilization. Additionally, it may engage in monitoring water quality, conducting hydrological assessments, and coordinating water-related projects and initiatives across different regions and stakeholders. Through its activities, the National Water Resources Authority plays a crucial role in safeguarding water security, supporting socio-economic development, and preserving ecosystems dependent on water resources.

Ministry of Land: The Ministry of Land is a governmental body responsible for the administration, regulation, and management of land resources within a country. Its primary functions include land tenure systems, land use planning, land registration, and land policy formulation. The ministry ensures the effective utilization of land resources for various purposes such as agriculture, urban development, infrastructure projects, conservation, and natural resource management. It also addresses issues related to land ownership, land disputes, and land rights, working to establish transparent and equitable land governance systems. By promoting sustainable land management

practices and facilitating land-related services, the Ministry of Land contributes to fostering economic growth, environmental sustainability, and social stability within the nation.

2 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1 POLICY FRAMEWORK

This section presents key national policies relevant to the proposed Njeleza Irrigation Block and analyses their implications for environmental and social management. The policies provide strategic direction for sustainable development in Malawi and establish the basis upon which sectoral interventions, including irrigation development, must be designed and implemented.

The relevance of each policy is assessed in relation to the project's environmental and social footprint, including land use, water resource utilization, agricultural intensification, labour management, and community welfare.

2.1.1 Malawi Vision 2063

Malawi Vision 2063 (MW2063) is the country's overarching long-term development strategy, which aims to transform Malawi into a wealthy, self-reliant, industrialized upper-middle-income economy by the year 2063. The Vision places strong emphasis on agricultural transformation, commercialization, and industrialization as key drivers of economic growth.

The agriculture sector is identified as a critical pillar of the economy, currently supporting approximately 80 percent of the population. However, the Vision acknowledges persistent challenges such as low productivity, dependence on rain-fed agriculture, environmental degradation, climate variability, fragmented land tenure systems, and limited irrigation infrastructure.

To address these challenges, MW2063 promotes climate-smart agriculture, expansion of irrigation systems, improved land management practices, and increased access to agricultural inputs, finance, and markets. The Vision further recognizes the importance of strengthening value chains and transitioning from subsistence farming to commercial agriculture.

The proposed irrigation scheme directly contributes to these objectives by enhancing agricultural productivity, promoting commercialization, and reducing vulnerability to climate variability. Through the development of irrigation infrastructure and support to cooperative-based farming, the project aligns with national priorities for economic transformation, food security, and climate resilience.

2.1.2 National Environmental Policy (2004)

The National Environmental Policy provides the overarching framework for environmental management in Malawi. It recognizes that natural resources constitute the foundation of the country's socio-economic development and emphasizes the need for sustainable utilization and conservation of these resources.

The policy identifies key environmental challenges including land degradation, deforestation, water pollution, and loss of biodiversity, which are often exacerbated by development activities. It therefore promotes the integration of environmental considerations into development planning through tools such as Environmental and Social Impact Assessments (ESIAs), Environmental and Social Management Plans (ESMPs), environmental audits, and monitoring systems.

For the proposed irrigation project, the policy is particularly relevant given the potential impacts associated with land clearing, water abstraction, agrochemical use, and infrastructure development. In line with the policy, environmental and social considerations have been integrated into project planning and design through the preparation of this ESMP, which outlines measures to avoid, minimize, and mitigate adverse impacts while enhancing positive outcomes.

2.1.3 National Land Policy (2002)

The National Land Policy provides guidance on land administration, tenure security, and sustainable land management. It recognizes land as a fundamental resource for socio-economic development and emphasizes equitable access, efficient utilization, and protection of land rights.

The policy highlights the need to safeguard the rights of vulnerable groups, including women, children, and persons with disabilities, particularly in the context of land-based investments. It also promotes the use of environmental management tools to ensure that land development projects do not compromise ecological integrity.

The proposed project may involve land acquisition for infrastructure development, including borrow pits, access roads, and irrigation facilities. In line with the policy, any land acquisition will be undertaken in a transparent and equitable manner, with affected persons receiving fair compensation and livelihood restoration support where necessary. The project will also ensure that land use changes are environmentally sustainable and socially acceptable.

2.1.4 National Water Policy (2023)

The National Water Policy promotes integrated and sustainable management of water resources in Malawi. It emphasizes equitable allocation, efficient utilization, and protection of water resources to support socio-economic development and environmental sustainability.

The policy is highly relevant to the proposed irrigation scheme, which involves abstraction of water from the Shire River. Key principles of the policy include decentralized water management, stakeholder participation, and the “polluter pays” principle, which holds users accountable for preventing water pollution.

The project will comply with the provisions of the policy by implementing water-efficient irrigation technologies, minimizing water losses, and ensuring that abstraction does not adversely affect downstream users or ecological systems. Measures to prevent water pollution from agricultural runoff, including the promotion of integrated pest management, will also be implemented.

2.1.5 National Irrigation Policy (2024)

The National Irrigation Policy provides strategic direction for the development and management of irrigated agriculture in Malawi. Its objectives include increasing land under irrigation, promoting crop diversification, enhancing productivity, and strengthening institutional capacity.

The policy recognizes irrigation as a key intervention for achieving food security, economic growth, and climate resilience. It also promotes the development of sustainable irrigation systems and the establishment of water user institutions to manage irrigation schemes effectively.

The proposed project is directly aligned with the policy, as it involves the development of irrigation infrastructure and the strengthening of cooperative-based management systems. The project also supports sustainable irrigation practices and contributes to the expansion of irrigated agriculture in the Shire Valley.

2.1.6 National Climate Change Management Policy (2016)

The National Climate Change Management Policy provides a framework for coordinated and integrated climate change management in Malawi. It emphasizes both mitigation of greenhouse gas emissions and adaptation to the impacts of climate change.

The policy identifies agriculture as one of the most climate-sensitive sectors and prioritizes interventions that enhance resilience to climate variability. These include the promotion of climate-smart agriculture, sustainable water management, and diversification of livelihoods.

The proposed irrigation scheme contributes to climate adaptation by reducing reliance on rain-fed agriculture and enhancing the resilience of farming systems. Climate considerations have been integrated into the design of the irrigation system and the ESMP, including measures to ensure efficient water use and sustainable land management.

2.1.7 National Gender Policy (2015)

The National Gender Policy aims to promote gender equality and empower women in all sectors of development. It emphasizes the need for gender mainstreaming in policies, programs, and projects to ensure equitable participation and benefit-sharing.

The project recognizes the importance of gender inclusion and will ensure that both men and women have equal access to employment opportunities, decision-making processes, and project benefits. Measures will also be implemented to prevent gender-based violence, sexual exploitation, and discrimination, in line with national policy and international safeguards requirements.

2.1.8 National Sanitation Policy (2008)

The National Sanitation Policy provides a framework for improving sanitation and hygiene in Malawi. It emphasizes the importance of proper waste management, pollution control, and public health protection.

The project will comply with the policy by providing adequate sanitation facilities during construction and operation phases, and by implementing measures to manage wastewater and prevent contamination of water resources. These measures are essential to protect both environmental quality and public health.

2.1.9 National Employment and Labour Policy (2021)

The National Employment and Labour Policy promotes decent work, fair labour practices, and social protection for workers. It emphasizes safe working conditions, non-discrimination, and inclusive employment.

The project will align with this policy by ensuring that employment opportunities are provided in a fair and transparent manner, with priority given to local communities. Labour management

procedures will be implemented to safeguard workers' rights, promote occupational health and safety, and prevent exploitation.

2.2 LEGAL AND REGULATORY FRAMEWORK

This section outlines the key legal instruments governing environmental and social management in Malawi and analyses their relevance to the proposed irrigation project. The legal framework provides enforceable provisions for environmental protection, land administration, water resource management, labour relations, and public health, which are directly applicable to the project.

The implementation of the project will be guided by these legal requirements, ensuring compliance throughout the project lifecycle, including planning, construction, operation, and decommissioning phases.

2.2.1 Environment Management Act (2017)

The Environment Management Act (EMA), 2017 is the principal legislation governing environmental management in Malawi. The Act provides the legal basis for environmental protection, sustainable resource management, and regulation of development activities that may have adverse environmental and social impacts. The Act mandates that all projects with potential environmental and social impacts undergo environmental assessment and obtain approval from the Malawi Environment Protection Authority (MEPA) prior to implementation. It also provides for environmental monitoring, audits, and enforcement of compliance measures. For the proposed irrigation project, the EMA is highly relevant as it requires the identification, assessment, and mitigation of environmental and social impacts associated with land clearing, water abstraction, construction activities, and agricultural operations. The preparation of this ESMP is in compliance with the Act and provides a framework for ongoing environmental and social management.

2.2.2 Land Act (2016)

The Land Act (2016) provides the legal framework for land administration and management in Malawi. It classifies land into public land, private land, and customary land, and establishes procedures for land allocation, registration, and transfer. The project will be implemented primarily on customary land, which is governed by traditional authorities but subject to statutory regulation. The Act requires that any land acquisition or change in land use be conducted in a transparent and lawful manner. In the context of this project, the Land Act is particularly relevant for infrastructure development, including irrigation facilities, access roads, and borrow areas. Any land acquisition or loss of land use will be managed in accordance with the provisions of the Act, ensuring that affected persons are treated fairly and that their rights are protected.

2.2.3 Customary Land Act (2016)

The Customary Land Act complements the Land Act by providing specific provisions for the management and administration of customary land. It introduces mechanisms for formalizing customary land rights and establishes Customary Land Committees responsible for land governance at local levels. The Act is highly relevant to the project given that the irrigation scheme is located within customary land areas. It provides a framework for securing land tenure, reducing land disputes, and ensuring community participation in land-related decisions. The project will engage with local land governance structures, including Traditional Authorities and Customary Land Committees, to ensure that land-related issues are managed in a transparent and participatory manner.

2.2.4 Lands Acquisition and Compensation Act (2017)

The Lands Acquisition and Compensation Act (2017) provides legal provisions for compulsory acquisition of land for public purposes and establishes procedures for compensation of affected persons.

The Act requires that any person whose land or assets are affected by a development project be compensated fairly and promptly. Compensation must take into account the value of land, structures, crops, and other assets, as well as any associated livelihood impacts.

Although large-scale displacement is not anticipated, the project may involve localized land acquisition for infrastructure development. In such cases, the Act will guide the compensation process, ensuring that affected persons are adequately compensated and supported.

2.2.5 Water Resources Act (2013)

The Water Resources Act (2013) governs the management, development, and use of water resources in Malawi. It establishes the legal framework for water abstraction, allocation, and protection of water resources.

The Act requires that any entity intending to abstract water must obtain a water permit from the relevant authority. It also provides for the protection of water quality and the regulation of activities that may affect water resources.

Given that the project involves abstraction of water from the Shire River, compliance with the Act is critical. The project will obtain the necessary water abstraction permits and ensure that water use does not adversely affect downstream users or ecological systems. Measures to prevent pollution of water resources will also be implemented.

2.2.6 Occupational Safety, Health and Welfare Act (1997)

The Occupational Safety, Health and Welfare Act provides for the protection of workers from occupational hazards and ensures safe working conditions in all workplaces.

The Act requires employers to provide appropriate safety equipment, training, and supervision to prevent accidents and injuries. It also mandates the identification and management of workplace risks. This Act is particularly relevant during the construction phase, which involves the use of heavy machinery and potentially hazardous activities. The project will implement occupational health and safety measures in compliance with the Act, including training, provision of personal protective equipment (PPE), and regular safety inspections.

2.2.7 Employment Act (2000)

The Employment Act governs labour relations in Malawi and provides for fair employment practices, including wages, working conditions, and termination of employment.

The Act prohibits discrimination and promotes equal opportunity in employment. It also provides protections for workers, including provisions related to contracts, working hours, and dispute resolution. The project will comply with the Act by ensuring that all workers are employed under fair

and transparent conditions, with clear contracts and adherence to labour standards. Particular attention will be given to protecting vulnerable groups and promoting inclusive employment.

2.2.8 Public Health Act (1948)

The Public Health Act provides for the protection and promotion of public health in Malawi. It includes provisions for sanitation, waste management, and control of communicable diseases.

The Act is relevant to the project in relation to sanitation facilities, waste management, and prevention of health risks associated with construction and operation activities. The project will implement measures to ensure that sanitation standards are maintained and that potential health risks are minimized.

2.2.9 Local Government Act (1998)

The Local Government Act establishes the framework for decentralized governance and assigns responsibilities for environmental and social management to local authorities. District Councils are responsible for overseeing development activities within their jurisdictions, including environmental management, land use planning, and service delivery. The project will work closely with Chikwawa District Council to ensure compliance with local regulations and coordination of project activities with district development plans.

2.2.10 National Construction Industry Act (2025)

The National Construction Industry Act regulates the construction sector in Malawi and provides for the registration and supervision of contractors. The Act ensures that construction works are carried out by qualified and registered contractors who adhere to industry standards and safety requirements. For this project, all construction activities will be undertaken by contractors registered with the Construction Industry Regulatory Authority (CIRA), ensuring compliance with national standards and minimizing risks associated with poor workmanship.

2.3 INSTITUTIONAL FRAMEWORK

This section outlines the institutional arrangements relevant to the implementation, regulation, and monitoring of environmental and social aspects of the proposed irrigation project. Effective coordination among institutions is essential to ensure compliance with national legal requirements and international safeguards standards. The implementation of the project involves multiple institutions at national, district, and community levels, each with specific roles and responsibilities in environmental and social management. These institutions collectively provide oversight, technical support, regulatory enforcement, and operational management throughout the project lifecycle.

2.3.1 Malawi Environment Protection Authority (MEPA)

The Malawi Environment Protection Authority (MEPA) is the principal regulatory body responsible for environmental management and oversight in Malawi. MEPA operates under the Environment Management Act (2017) and is mandated to review and approve environmental and social assessment reports, including ESMPs, and to monitor compliance with environmental regulations. For this project, MEPA will be responsible for reviewing and approving the ESMP, issuing environmental clearance, and conducting periodic monitoring and audits to ensure compliance. The Authority also has enforcement powers to require corrective actions in cases of non-compliance.

2.3.2 Ministry of Agriculture (Department of Irrigation)

The Ministry of Agriculture, through the Department of Irrigation, serves as the lead implementing agency for the Shire Valley Transformation Programme (SVTP). The Ministry is responsible for overall project coordination, technical oversight, and ensuring that the project aligns with national agricultural and irrigation policies. In the context of environmental and social management, the Ministry will ensure that ESMP requirements are integrated into project planning and implementation. It will also coordinate with other institutions to ensure compliance with regulatory and safeguards requirements.

2.3.3 Chikwawa District Council

The Chikwawa District Council is the local authority responsible for governance and development coordination within the project area. The Council plays a critical role in land use planning, environmental management, and service delivery at the district level. The Council will facilitate local-level coordination of project activities, support stakeholder engagement, and ensure that the project is aligned with district development priorities. It will also participate in monitoring environmental and social performance and addressing community concerns.

2.3.4 Ministry Responsible for Lands

The Ministry responsible for Lands is responsible for land administration, including land allocation, registration, and management. It also oversees land acquisition processes and ensures compliance with land-related legislation. For this project, the Ministry will play a key role in addressing land tenure issues, facilitating land acquisition where necessary, and ensuring that affected persons are compensated in accordance with applicable laws.

2.3.5 Ministry Responsible for Water Development

The Ministry responsible for Water Development is responsible for the management and regulation of water resources in Malawi. This includes issuance of water abstraction permits and monitoring of water use. Given the project's reliance on water from the Shire River, the Ministry will ensure that water abstraction is conducted in accordance with legal requirements and does not adversely affect other users or ecological systems.

2.3.6 Ministry of Labour

The Ministry of Labour is responsible for regulating labour practices and ensuring compliance with labour laws, including occupational health and safety standards. The Ministry will oversee compliance with labour regulations during project implementation, particularly during the construction phase, to ensure that workers' rights are protected and that safe working conditions are maintained.

2.3.7 Contractor

The Contractor will be responsible for the day-to-day implementation of construction activities and for ensuring compliance with environmental and social management requirements as specified in the ESMP and contract documents. This includes implementation of mitigation measures, management of waste, control of pollution, and adherence to occupational health and safety standards. The Contractor will also be required to prepare site-specific management plans and report regularly on environmental and social performance.

2.3.8 Supervising Engineer

The Supervising Engineer will be responsible for overseeing the Contractor's activities and ensuring that construction works are carried out in accordance with technical specifications and ESMP requirements. The Supervising Engineer will verify compliance with environmental and social measures, conduct site inspections, and provide guidance on corrective actions where necessary. The Engineer plays a critical role in bridging project implementation and safeguards compliance.

2.3.9 Kambadwe Cooperative

The Kambadwe Cooperative will be responsible for the management and operation of the irrigation scheme during the operational phase. This includes irrigation management, agricultural production, maintenance of infrastructure, and coordination of cooperative members. The Cooperative will also be responsible for implementing environmental and social management measures during operation, including sustainable water use, proper management of agrochemicals, and maintenance of sanitation facilities.

2.3.10 Local Communities and Traditional Authorities

Local communities and Traditional Authorities play a key role in project implementation, particularly in relation to land access, stakeholder engagement, and conflict resolution. Their involvement is essential in ensuring community acceptance of the project, facilitating communication between project implementers and local stakeholders, and addressing grievances. Traditional leadership structures will also support land governance and help manage local-level disputes.

2.3.11 Development Partners

Development partners, including the African Development Bank and the World Bank, provide financial and technical support to the project. These institutions also provide oversight to ensure that the project complies with international environmental and social safeguards standards. They may conduct supervision missions, review reports, and provide guidance on safeguards implementation.

2.3.12 Institutional Coordination

Effective implementation of the ESMP requires strong coordination among all institutions involved. This includes clear communication channels, defined roles and responsibilities, and regular monitoring and reporting mechanisms. Coordination will be facilitated through the project implementation structure, with the Ministry of Agriculture providing overall leadership and other institutions contributing according to their mandates. The institutional arrangements will ensure that environmental and social issues are addressed in a timely and effective manner throughout the project lifecycle.

2.4 PERMITS AND APPROVALS

This section outlines the statutory permits and approvals required for the implementation of the proposed irrigation project. Compliance with these requirements is essential to ensure that all project activities are undertaken in accordance with applicable national legislation and regulatory standards, as well as aligned with international safeguards requirements.

The project proponent, through the Ministry of Agriculture and its implementing partners, will be responsible for securing all relevant permits and approvals prior to commencement of specific project activities. Contractors engaged in the project will also be required to comply with permit conditions as part of their contractual obligations and will be monitored to ensure adherence to these requirements. The identification and timely acquisition of permits is critical to ensuring legal compliance, minimizing environmental and social risks, and facilitating smooth project implementation.

2.4.1 Environmental Approval

In accordance with the Environment Management Act (2017), all development projects with potential environmental and social impacts are required to obtain environmental clearance from the Malawi Environment Protection Authority (MEPA). For this project, an Environmental and Social Management Plan (ESMP) has been prepared in line with MEPA requirements. Approval of the ESMP by MEPA will constitute environmental clearance for the project. Compliance with any conditions attached to this approval will be mandatory throughout the project lifecycle, including construction and operation phases.

2.4.2 Water Abstraction Permit

The project involves abstraction of water from the Shire River for irrigation purposes. In accordance with the Water Resources Act (2013), a water abstraction permit must be obtained from the relevant authority prior to commencement of water use.

The permit will define allowable abstraction volumes, abstraction points, and conditions for water use, including requirements for monitoring and reporting. Compliance with these conditions is essential to ensure sustainable use of water resources and to avoid adverse impacts on downstream users and aquatic ecosystems.

2.4.3 Land Use and Land Acquisition Approvals

Where land is required for infrastructure development, including irrigation facilities, access roads, and borrow areas, approvals will be obtained in accordance with the Land Act (2016), the Customary Land Act (2016), and the Lands Acquisition and Compensation Act (2017).

These approvals will be facilitated through the Ministry responsible for Lands in collaboration with local authorities and Traditional Leaders. The process will ensure that land acquisition is conducted in a transparent and equitable manner, and that any affected persons are compensated in accordance with applicable legal provisions and safeguards requirements.

2.4.4 Construction Permits and Contractor Compliance

All construction activities will be undertaken in compliance with national construction regulations. Contractors engaged in the project will be required to be registered with the Construction Industry Regulatory Authority (CIRA) and to obtain any necessary construction-related permits prior to commencement of works. Construction activities will be subject to inspection and supervision to ensure compliance with technical specifications, environmental standards, and occupational health and safety requirements. Contractors will also be required to prepare and implement site-specific environmental and social management plans consistent with the ESMP.

2.4.5 Waste Management and Disposal Approvals

The project will generate various types of waste, including solid waste, liquid waste, and potentially hazardous materials. Disposal of such waste will be carried out in accordance with applicable environmental regulations and local authority requirements. Approvals for waste disposal will be obtained from relevant authorities, including the District Council, and waste will be disposed of at designated and approved sites. Hazardous materials, including fuels, oils, and lubricants, will be managed in accordance with established guidelines to prevent contamination of soil and water resources.

2.4.6 Occupational Health and Safety Compliance

Compliance with occupational health and safety regulations is mandatory under the Occupational Safety, Health and Welfare Act (1997). While a specific permit may not always be required, adherence to safety standards is a legal obligation. The Contractor will be required to prepare and implement site-specific health and safety plans, including risk assessments, emergency response procedures, and provision of personal protective equipment (PPE). Compliance will be monitored by the Ministry of Labour and other relevant authorities.

2.4.7 Local Authority Approvals

The Chikwawa District Council, as the local authority, will provide approvals related to land use, waste management, and local development compliance. The Council will also play a role in monitoring project activities and ensuring alignment with district development plans and local regulatory requirements.

2.4.8 Summary of Required Permits

Table 3.4 provides a summary of the key permits and approvals required for the project, the responsible authorities, and their legal basis.

Table 2: Summary of Permits and Approvals Required

Permit / Approval	Responsible Authority	Legal Basis	Applicability to Project
Environmental Approval (ESMP)	MEPA	Environment Management Act (2017)	Required prior to project implementation
Water Abstraction Permit	Water Resources Authority	Water Resources Act (2013)	Required for irrigation water use
Land Acquisition Approval	Ministry of Lands	Land Act (2016), Lands Acquisition Act (2017)	Required for infrastructure development
Construction Permit	CIRA / Local Authorities	National Construction Industry Act	Required for construction works
Waste Disposal Approval	District Council	Public Health Act / Environmental Regulations	Required for waste management

Permit / Approval	Responsible Authority	Legal Basis	Applicability to Project
Occupational Health & Safety Compliance	Ministry of Labour	Occupational Safety Act	Required during construction and operation

2.4.9 Compliance and Monitoring

Compliance with permit conditions will be monitored throughout the project lifecycle by relevant authorities, including MEPA, the Ministry of Agriculture, and the Chikwawa District Council. The Contractor and Project Implementing Agency will be required to maintain records and submit periodic reports demonstrating compliance with permit conditions.

All relevant permits and approvals will be obtained prior to commencement of the respective project activities, and compliance with permit conditions will be integrated into contractual obligations and ESMP implementation procedures.

The enforcement of regulatory requirements will be supported by periodic inspections, reporting obligations, and corrective action mechanisms to ensure continuous compliance throughout the project lifecycle. Failure to comply with permit conditions may result in enforcement actions, including suspension of activities, penalties, or revocation of permits.

2.5 INTERNATIONAL SAFEGUARDS FRAMEWORK – WORLD BANK

The proposed project is financed by development partners, including the World Bank. As such, it is required to comply with the World Bank's Environmental and Social Framework (ESF), implemented through a set of Environmental and Social Standards (ESSs). The ESMP has been prepared to reflect the requirements of the ESF, particularly ESS1 (Assessment and Management), ESS2 (Labour and Working Conditions), ESS3 (Resource Efficiency), ESS4 (Community Health and Safety), ESS5 (Land Acquisition), and ESS10 (Stakeholder Engagement)

2.5.1 African Development Bank Operational Safeguards: Relevance and Gap Analysis

In addition to compliance with national legislation and World Bank requirements, this project is required to meet the environmental and social safeguards of the African Development Bank (AfDB) as a financing partner. The AfDB's Integrated Safeguards System comprises five Operational Safeguards (OS) that address environmental and social risks. This section describes the relevance of each OS to the proposed irrigation scheme, compares applicable AfDB requirements with corresponding national legislation, identifies any gaps, and provides recommendations for alignment.

Hierarchy of Standards

In the implementation of this ESMP, where a requirement of the AfDB Operational Safeguards differs from or is more stringent than the corresponding requirement of Malawian national legislation or World Bank standards, the AfDB standard shall prevail. Conversely, where national legislation or World Bank standards impose a stricter requirement, the more stringent provision shall apply. This approach ensures the highest practicable level of environmental and social protection.

2.5.2 Operational Safeguard 1 (OS1): Environmental and Social Assessment

Relevance: OS1 requires that projects undergo environmental and social assessment proportionate to the level of risk. This ESMP fulfills that requirement. OS1 also requires consideration of cumulative impacts, transboundary effects, and climate change.

Comparison with National Legislation: Malawi's Environment Management Act (2017) and EIA Guidelines (1997) require ESIA or ESMP based on project category. The national system does not explicitly require cumulative impact assessment or climate risk assessment as standard components, though these are recognized in the National Climate Change Management Policy.

Gap Identified: The national ESMP format does not mandate separate analysis of cumulative impacts or climate vulnerability. These are, however, included in this ESMP (see Chapter 5).

Recommendation: The ESMP already addresses cumulative impacts (Section 5.1.1) and climate resilience (Section 2.6 and 4.2). This shall be explicitly referenced in ESMP implementation records as evidence of OS1 compliance.

2.5.3 Operational Safeguard 2 (OS2): Involuntary Resettlement

Relevance: OS2 applies to any project causing physical or economic displacement, including restrictions on land use. The project involves customary land with potential localized land acquisition for infrastructure.

Comparison with National Legislation: Malawi's Lands Acquisition and Compensation Act (2017) provides for compulsory acquisition and compensation. However, the national Act does not fully align with OS2 requirements for: (i) restoration of livelihoods to pre-project levels (not just compensation for assets), (ii) vulnerable group-specific measures, or (iii) community participation in resettlement planning.

Gap Identified: The national compensation framework focuses on asset valuation rather than livelihood restoration. OS2 requires that displaced persons be at least as well off after displacement.

Recommendation: The project shall prepare a Resettlement Policy Framework or Abbreviated Resettlement Action Plan consistent with OS2, even where displacement is localized. This shall include livelihood restoration measures, vulnerability screening, and a grievance mechanism specific to land and compensation issues. The GRM described in Chapter 6 shall be explicitly accessible for land-related grievances.

2.5.4 Operational Safeguard 3 (OS3): Biodiversity and Ecosystem Services

Relevance: OS3 applies to projects affecting natural habitats. The project involves vegetation clearance and alteration of water bodies.

Comparison with National Legislation: Malawi's National Environmental Policy and Forestry Act protect certain species and require environmental assessments. The National Biodiversity Strategy and Action Plan provides guidance. However, national legislation does not explicitly require the application of the mitigation hierarchy (avoid → minimize → restore → offset) in the sequential manner required under OS3.

Gap Identified: The mitigation hierarchy is applied in this ESMP but is not a statutory requirement under national law. Additionally, OS3 prohibits projects that would result in significant conversion or degradation of critical natural habitats.

Recommendation: The ESMP shall explicitly document application of the mitigation hierarchy for all biodiversity impacts. The reforestation programme (1,300,000 trees) shall be designed as a biodiversity offset only after avoidance and minimization have been demonstrated. The 200-meter river buffer zone shall be maintained and enforced as a no-go area for cultivation.

2.5.5 Operational Safeguard 4 (OS4): Pollution Prevention and Control, Hazardous Materials, and Resource Efficiency

Relevance: OS4 applies to all project-related pollution risks, including agrochemical use, waste management, and emissions.

Comparison with National Legislation: Malawi has environmental regulations on waste management, chemicals, and hazardous substances. The Pesticides Act regulates agrochemical use. However, national regulations do not explicitly require the preparation of Integrated Pest Management (IPM) plans, hazardous waste management plans, or the application of best available techniques for pollution prevention.

Gap Identified: While mitigation measures are proposed in Table 6.1, OS4 requires documented site-specific pollution prevention plans.

Recommendation: The Contractor shall prepare and submit for approval a Hazardous Materials Management Plan and an IPM Plan prior to construction, consistent with OS4 requirements. These shall address storage, handling, application, disposal, and emergency response for all agrochemicals and hazardous substances.

2.5.6 Operational Safeguard 5 (OS5): Labour and Working Conditions

Relevance: OS5 applies to all project workers, including direct employees, contracted labour, and supply chain workers.

Comparison with National Legislation: Malawi's Employment Act (2000) and Occupational Safety, Health and Welfare Act (1997) cover basic labour standards. However, OS5 includes specific requirements that go beyond national law, including: (i) a formal Code of Conduct addressing GBV/SEA, (ii) grievance mechanisms for workers, (iii) occupational health services, (iv) non-discrimination provisions explicitly covering vulnerable workers, and (v) prohibition of forced labour with specific monitoring requirements.

Gap Identified: National labour law does not mandate a stand-alone Code of Conduct with GBV/SEA provisions, nor does it require worker-specific grievance mechanisms separate from the general GRM.

Recommendation: The project shall prepare and implement a Labor Management Procedures (LMP) document consistent with OS5. This shall include a worker-specific GRM, a Code of Conduct with enforceable sanctions for GBV/SEA, provisions for occupational health services, and measures to prevent child and forced labour. The LMP shall be submitted to the PMT and made available to all workers in local languages.

2.5.7 Additional Safeguards – Stakeholder Engagement (OS4 and OS10 cross-cutting)

Relevance: AfDB requires ongoing, documented, and inclusive stakeholder engagement throughout the project lifecycle.

Comparison with National Legislation: Malawi's Environment Management Act requires public consultation during ESIA/ESMP preparation but does not mandate continuous engagement or a stand-alone Stakeholder Engagement Plan (SEP).

Gap Identified: No documented commitment to a SEP covering the full project lifecycle.

Recommendation: A stand-alone Stakeholder Engagement Plan shall be prepared, describing consultation methods, frequency, documentation procedures, and feedback mechanisms. The GRM shall be integrated into the SEP. Both documents shall be disclosed publicly prior to construction.

Table 3: Summary of Gaps and Alignment Measures

AfDB OS	National Law	Gap Identified	Alignment Measure
OS1 (Assessment)	EMA 2017	Cumulative impacts not mandated	Addressed in Chapter 5; reference in ESMP implementation records
OS2 (Resettlement)	Lands Acquisition Act 2017	Livelihood restoration, vulnerable groups	Prepare Resettlement Policy Framework or ARAP with livelihood restoration
OS3 (Biodiversity)	Environmental Policy, Forestry Act	Mitigation hierarchy not sequential	Explicitly document hierarchy in ESMP implementation
OS4 (Pollution)	Pesticides Act, Waste Regulations	Site-specific plans (IPM, hazardous waste)	Prepare IPM Plan and Hazardous Materials Plan
OS5 (Labour)	Employment Act, OSH Act	Code of Conduct, worker GRM, GBV/SEA provisions	Prepare Labor Management Procedures with CoC and worker GRM
Stakeholder Engagement	EMA 2017 (consultation only)	Continuous engagement, stand-alone SEP	Prepare Stakeholder Engagement Plan and disclose

2.6 APPLICATION OF MORE STRINGENT STANDARD

Where this analysis identifies a requirement under AfDB OS that is not explicitly provided for under national legislation, the project shall apply the AfDB standard. This applies specifically to livelihood restoration under OS2, the sequential mitigation hierarchy under OS3, site-specific pollution prevention plans under OS4, and the Labor Management Procedures with GBV/SEA provisions under

OS5. Compliance with both national law and AfDB OS shall be verified through the monitoring framework established in Table 6.2 of this ESMP.

3 ANALYSIS OF ALTERNATIVES CONSIDERED

This chapter presents the assessment of alternatives considered during the planning and design of the Kambadwe Irrigation Block under the Shire Valley Transformation Programme (SVTP). The analysis of alternatives is a mandatory component of the Environmental and Social Impact Assessment (ESIA) process under both the Malawi Environment Management Act (2017) and the applicable international safeguard frameworks, including the World Bank Environmental and Social Framework (ESF, 2018) and the African Development Bank Group's updated Integrated Safeguards System (ISS, 2023). The purpose of this analysis is to demonstrate that the selected project design represents the most technically, financially, environmentally, and socially sound option among a range of alternatives assessed, including the without-project scenario.

A range of alternatives were systematically considered during the programme design process, encompassing the without-project scenario, alternative project locations, and technical designs, alternative irrigation technologies, and alternative scheme sizes. Each alternative was evaluated against a set of criteria including technical feasibility, financial viability, environmental impact, social acceptability, and alignment with the programme's development objectives. The outcomes of this alternatives analysis are summarised in the sections below and in the comparison, table presented at the end of this chapter.

3.1 JUSTIFICATION FOR THE SELECTED PROJECT LOCATION AND DESIGN

The Kambadwe Irrigation Block, as part of the broader SVTP, is convincingly justified in terms of its location, design parameters, and development rationale on the basis of the following three overarching considerations:

3.1.1 AGRICULTURAL AND ECONOMIC POTENTIAL OF THE LOWER SHIRE VALLEY

The lower Shire Valley possesses exceptional agro-ecological potential for irrigated agriculture, provided that reliable water supply is made available. This potential is clearly demonstrated by the productivity of existing pumped irrigation schemes in the valley, which have achieved high crop yields despite operating under suboptimal conditions. The area is particularly well-suited for commercial irrigated agriculture for the following reasons: the semi-arid climate of the lower Shire Valley characterised by high temperatures, low and erratic rainfall, and a long dry season means that even subsistence rain-fed agriculture is highly precarious, making irrigation an essential prerequisite for reliable agricultural production; the project area is strategically located in close proximity to Blantyre, Malawi's largest commercial city and primary transportation hub, facilitating efficient access to markets for irrigated produce; and the project area has access to the Nacala railway corridor, providing a competitive export route for high-value agricultural commodities produced within the scheme.

Any meaningful intensification of commercial agriculture in Malawi fundamentally requires investment in irrigation. The Kambadwe Irrigation Block represents one of the most cost-effective and strategically located opportunities to achieve this at scale, and its development has been confirmed as a high priority in Malawi's national investment prioritisation matrices for agricultural development.

3.1.2 TOPOGRAPHY OF THE AREA

After evaluating the terrain of Kambadwe cooperative block and its adjacent areas with respect to the main canal, it was found that the area within the block is undulated, with several hilly areas and steep drop-offs. Significant gully formation also exists, but this is due to severe erosion, contributing to steep slopes in the scheme area. Despite being relatively undulated, the general slopes for most of the areas are considered suitable for most irrigation types. The general slope falls in an easterly direction with an elevation drop of over 20m towards the Shire River. The terrain was evaluated upon undertaking detailed topographic surveys.

The irrigation block is 1 km away from the main canal, this distance necessitates that the block has an available head of up to 40 metres from the main canal.

3.1.3 SOIL TYPE

Soil suitability surveys for Kambadwe cooperative block showed that Njereza has very light-textured Loamy sand and Sandy Loam soils. These types of soils are best suited to overhead irrigation systems, where smaller water applications are better utilized and controlled. Surface irrigation encompassing shorter furrows and borders are another option in loam sand and sandy loam soils.

The soils are productive and are currently being cultivated under rainfed subsistence farming. The soils have the potential to support the various farming enterprises that the cooperative will undertake as a commercial entity.

Table 3.1 below provides a consolidated summary of all project alternatives considered during the planning and design of the Kambadwe Irrigation Block, including the without-project scenario, , alternative irrigation technologies, and alternative scheme sizes.

3.2 TECHNICAL DESIGN ALTERNATIVES CONSIDERED

The technical design of the Kambadwe Irrigation Block and the broader SVTP has been progressively optimised over multiple design iterations spanning several years. More importantly, different types of irrigation systems were considered. A range of specific technical alternatives i.e. the infield irrigation system and water conveyance, were considered and evaluated during this process, as described in the following sub-sections.

3.2.1 FURROW IRRIGATION METHOD

Furrow irrigation delivers water to crops through shallow furrows or ridges in the field, utilizing gravity for water distribution. Typically, water is conveyed to the fields via siphon pipes from feeder canals (otherwise known as tertiary canals) running along the top of each field. Alternatives for feeder or tertiary canals, such as piped feeder systems using flexible lay-flat pipes with specially designed outlets (known as the "gated pipe" system), also exist. Although gated piped systems are extensively used in low-population areas like Australia, extensive trials in southern Africa revealed their susceptibility to damage and vandalism. As a result, very few projects have successfully maintained these systems due to the unsustainable cost of ongoing pipe replacement. Consequently, piped feeder options were not considered.

Furrow irrigation is Malawi's most widely used system due to its relative ease of construction, maintenance, and management, low technology, and low operational costs. However, furrow irrigation requires high initial capital costs due to its land preparation requirements e.g., land levelling.

3.2.2 CENTRE PIVOT

Centre pivot irrigation is a form of sprinkler irrigation. Centre pivot irrigation systems are popular because of their relatively high efficiency, uniformity, and ability to irrigate uneven terrain. Centre pivot irrigation systems use a movable pipe structure that rotates around a central pivot point connected to a water supply. Centre pivot irrigation requires moderate pressure to operate and, in the context of Kambadwe irrigation block, it would require a booster pumpstation(s) to achieve this.

Centre pivots are an excellent irrigation option in terms of application efficiency and low initial capital costs, however, their high level of technology, need for pumping, and higher operating costs are some of its disadvantages.

3.3.3 SEMI-SOLID SET SPRINKLERS

Sprinkler irrigation involves applying water under pressure as a spray through nozzles above the crop. This method typically requires high pressures, often achieved through pumping, to operate effectively. Among various types of sprinkler irrigation, semi-solid-set sprinkler irrigation has proven most practical for large-scale developments. This entails raised impact sprinkler systems that move from one position to the next along hydrant riser valves installed at regular intervals along buried lateral pipelines.

Kambadwe has significantly high head from the main canal, as such the semi -solid sprinkler system using natural pressure from the main canal was considered.

Sprinkler irrigation systems are extensively used in the Shire valley irrigated estates. These systems however encounter issues of extreme theft of sprinkler pipes, high energy costs, and sensitivity to poor management.

3.3.4 DRIP IRRIGATION

Drip irrigation is a precise and efficient method of delivering water to crops, employing specialized dripper lines with evenly spaced emitters along their length. The emitters, or drippers, release water drop by drop directly onto the soil near the plants. The water flow rate from each dripper is carefully controlled, providing a precise amount of water to the plant's root zone. These dripper lines can be installed on the ground or buried beneath the soil surface (surface or sub-surface drip), depending on the crop type and the desired level of flexibility. Drip irrigation comprises specialized pressure control and filtration systems. Filtration is critical for drip irrigation systems.

Drip irrigation is, a good option for potential orchard crops located in steeper, more marginal areas that have been deemed unsuitable or unreachable for other irrigation options.

Drip irrigation systems have the highest water use efficiency but has issues of emitter blockage, inflexibility to crop rotations and high operational costs.

3.3.5 LINED CANAL NETWORKS

In the case of furrow irrigation system, the option of lining the feeder canals with concrete to minimize water losses and increase conveyance and system efficiencies. Lined canals reduce the need for frequent maintenance of the canal networks.

3.3.6 UNLINED CANAL NETWORKS

Unlined canal networks for furrow irrigation significantly reduce capital investment costs. However, these canals experience significant conveyance losses due to water seepage, particularly in lighter-textured soils and require frequent maintenance.

3.3.7 PIPED DISTRIBUTION NETWORK

A piped distribution network was considered for all irrigation systems within the Kambadwe irrigation block to maximize conveyance and water use efficiencies.

3.3.8 GRAVITY-FED VS. PUMP-BASED IRRIGATION TECHNOLOGY

Smaller-scale pump-based irrigation schemes were considered as an alternative approach to expanding irrigated agriculture in the lower Shire Valley. Pump-based irrigation was assessed as technically feasible in principle but was ultimately rejected as both financially undesirable and socially inequitable in the Malawian context, for the following reasons. Malawi's severely constrained national energy supply makes large-scale pump-based irrigation operationally unreliable and prohibitively expensive in terms of recurrent energy costs, rendering such schemes financially unsustainable for smallholder farmers in the long term. In contrast, the gravity-fed design adopted for the Kambadwe Irrigation Block and the broader SVTP enables the expansion of irrigated area by approximately 40% at the national level without any dependence on the constrained electricity grid, while simultaneously releasing previously consumed electricity back to the grid through the conversion of existing pump-based irrigation to gravity-fed systems. This dual benefit expanded irrigated area combined with net energy savings represents a compelling case for the selected gravity-fed technology that cannot be replicated by pump-based alternatives.

3.3.9 SCHEME SIZE FULL COMMAND AREA VS. SMALLER PILOT

The option of implementing a smaller pilot command area as an initial phase, to be expanded in subsequent phases based on performance, was considered as a lower-risk and lower-cost initial investment option. This alternative was rejected on the following grounds. First, the cost per hectare of scheme development increases dramatically as the command area decreases below the threshold of economic viability, significantly reducing the financial returns to investment and compromising the scheme's ability to service its infrastructure costs. Second, implementing a smaller pilot scheme would significantly constrain future expansion options by committing to sub-optimal infrastructure sizing and alignment. Third, the short-term benefits of a smaller scheme would be disproportionately captured by existing commercial enterprises rather than by the smallholder farming communities who are the primary intended beneficiaries of the SVTP. The full command area design was therefore retained as the most technically, financially, and socially appropriate option.

3.3.10 FLOOD RISK MANAGEMENT: FLOODPLAIN INCLUSION VS. EXCLUSION

The inclusion of areas within the 10-year floodplain in the scheme command area was considered as an option that would have expanded the total irrigable area. However, this alternative was rejected on

three grounds. Environmentally, the construction of embankments required to protect floodplain areas from inundation would result in significant loss of floodplain habitat and associated biodiversity. Hydrologically, the construction of embankments within the floodplain displaces flood flows to other areas, potentially increasing flood risk for communities and infrastructure in the broader catchment. Economically, the construction and long-term maintenance costs of the embankments required to protect floodplain areas would be prohibitive and would significantly reduce the financial returns to scheme investment. The current design therefore confines all irrigable land to areas outside the 10-year floodplain, substantially reducing production risk for scheme participants while avoiding the significant environmental, hydrological, and economic costs associated with the floodplain inclusion alternative.

3.3 THE WITHOUT-PROJECT (NO-PROJECT) SCENARIO

The without-project scenario the continuation of existing conditions without any irrigation scheme development was assessed as the baseline alternative against which all other options were evaluated. Under the without-project scenario, the following conditions would prevail:

- Smallholder farmers in the Njeleza village would continue to depend on highly unreliable and erratic rain-fed subsistence agriculture as their primary livelihood, perpetuating chronic food insecurity, poverty, and vulnerability to climate variability.
- The irrigation potential of the lower Shire Valley estimated at a significant proportion of Malawi's total unexploited irrigation potential would remain undeveloped, forgoing the substantial food security, income, and economic development benefits that irrigated agriculture can deliver.
- Land use within the irrigation block will remain the same, with farmers cultivating on individual land parcels rather than one consolidated land parcels.
- The opportunity to leverage SVTP programme resources for integrated landscape-level natural resource management including catchment rehabilitation, biodiversity conservation, and ecosystem services protection would be foregone.

From an environmental and social safeguards perspective, the without-project scenario would avoid certain construction-related impacts associated with development of large-scale irrigation systems. However, it would also forgo the significant opportunities that the project provides for addressing longstanding environmental and social challenges through an integrated landscape approach, including sustainable water resource management, community livelihood improvement, and conservation of nationally significant ecosystems.

On balance, and taking into account the comprehensive mitigation measures proposed in the ESMP, the project is anticipated to deliver net positive social and environmental benefits compared to the without-project baseline. The no-project scenario is therefore assessed as the least desirable of all alternatives considered and has been rejected as the basis for programme implementation.

3.4 SUMMARY OF ALTERNATIVES ASSESSMENT

Table 3.1 below provides a consolidated summary of all alternatives considered, the rationale for their assessment, and the outcome of the alternatives analysis.

Table 4: Summary of Alternatives Considered in Kambadwe Irrigation Block

Alternative Considered	Description and Rationale	Outcome / Decision
Without-Project Scenario (No-Project Alternative)	Continuation of the current situation without development of Kambadwe cooperative irrigation block in Njeleza Village. Rain-fed subsistence agriculture would remain the dominant livelihood strategy, perpetuating food insecurity, poverty, and unsustainable natural resource use.	Rejected. The no-project scenario would perpetuate poverty, food insecurity, and unregulated natural resource degradation in Njeleza village, foregone the opportunity to deliver integrated landscape-level benefits for communities, natural resources, and wetland ecosystems. On balance, the project with robust mitigation measures is expected to deliver net positive social and environmental outcomes.
Furrow irrigation system	Furrow irrigation was considered on 60.77 hectares in areas where the slopes are mild and necessitate minimal land levelling requirements.	Adopted. Furrow irrigation system will be implemented on 60.77 hectares on ground nuts and soya bean selected enterprises.
Centre Pivot	Centre pivots were considered on 23 hectares on the area close to the night storage reservoir within the irrigation block.	Rejected. This area was allocated to furrow irrigation system. Due to the irregular field shape of the blocks, Centre pivots are likely to reduce the net irrigable areas. The system also requires booster pumps which require consistent power.
Semi-solid set sprinklers	The system was considered on 22 hectares of land close to the eastern boundary bordering with the Shire River. This section of the irrigation block comes after a huge steep drop off which increases the natural available head from the main canal.	Adopted. Semi solid set sprinklers have been designed to irrigate 22 hectares Sorghum plot in Kambadwe irrigation block. The sprinklers have been designed to use natural pressure from the main canal due to sufficient head differences.
Drip system	Drip irrigation system was considered on the 17-hectares rocky zone where the cooperative plan to cultivate mangoes.	Adopted. Drip irrigation system has been designed for 15 hectares mangoes plot. The system has been adopted due to the planned crop (mangoes) in this section of the irrigation block.

Alternative Considered	Description and Rationale	Outcome / Decision
Lined vs Unlined Feeder canals in furrow block	Lined canals were considered against unlined canals to minimise water conveyance losses and improve the system efficiency. However, lining these feeder canals has a cost implication. Unlined canals are cheaper to construct but require frequent routine maintenance.	Rejected. Lined canals will not be implemented for feeder canals in the furrow blocks. The canals will be unlined to minimise project development costs. Proper cohesive material has to be used for construction of these unlined feeder canals.
Piped vs open channel distribution network	A piped distribution network was considered in comparison to an open channel distribution network within the irrigation block. A piped distribution network improves system efficiencies and maintains pressure within the irrigation system. However piped systems are considered more costly as compared to open channel networks.	Adopted. A piped distribution network will be used for all irrigation systems in Kambadwe irrigation block. This was chosen to maintain pressures within the system and minimise on conveyance and distribution water losses.
Pump-Based vs. Gravity-Fed Irrigation	Smaller-scale pump-based irrigation alternatives were considered as a lower-cost initial option for expanding irrigated agriculture in the lower Shire Valley.	Pump-based irrigation rejected as technically, financially, and socially undesirable given Malawi's severely constrained energy situation. Gravity-fed irrigation enables a 40% expansion of irrigated area without reliance on energy-intensive pumping, while simultaneously releasing energy to the national grid through conversion of existing large-scale pump irrigation to gravity-fed systems.
Scheme Size — Full Command Area vs. Smaller Pilot Area	A smaller pilot command area was considered as a lower-risk initial investment, to be expanded in phases based on performance.	Smaller command area rejected. Costs per hectare would increase dramatically with a reduced command area, compromising the financial viability of the scheme and significantly constraining future expansion options. Short-term benefits would also be skewed towards existing commercial enterprises rather than smallholder farmers.

Alternative Considered	Description and Rationale	Outcome / Decision
Flood Risk Management Floodplain Inclusion vs. Exclusion	Inclusion of areas within the 10-year floodplain in the scheme command area was considered, which would have expanded the total irrigable area but required construction of significant embankments.	Floodplain areas excluded from the irrigable zone. Embankment construction rejected on environmental grounds (loss of floodplain habitat), hydrological grounds (displacement of flooding to other areas), and economic grounds (high construction and maintenance costs). The current scheme design significantly reduces production risk by locating all irrigable land outside the 10-year floodplain.

Source: SVTP Programme Design Documentation; Feasibility Studies for the Kambadwe Irrigation Block, Department of Irrigation.

4 DESIGN MEASURES

The hybrid design option that has a combination of Sprinkler, Drip and furrow irrigation systems was selected. This design involves the construction and installation sprinklers, drip lines and drippers, furrows and associated infrastructure in Njereza block. This design was selected as the preferred option because it has the following advantages over other systems: water use efficient, enhanced crop yields, mitigates the effects of soil erosion, allows the production of special crops like Mangoes, adapted to soil type and terrain and it is fast and easy to install. The design is firmly grounded in the application of the mitigation hierarchy.

Firstly, the design seeks to minimize the water losses through evaporation and increases water use efficiency by utilizing controlled application rates that mimic rainfall and controlled flooding. Water delivered to the block and applied to the field is used by the crops efficiently. This design reduces water loss through deep percolation as the system utilizes a closed conveyance system.

The various system designs are set to best suited places in the block to produce best yields and perform well in water saving, work well in uneven topographies, farmers do not have to unnaturally flatten or deforest their land to accommodate water flow. This design will reduce the construction period which will enable the cooperative members to start utilizing the scheme faster than other designs reducing the access disturbance period.

Where impacts for example of soil degradation and waterlogging cannot be fully mitigated, the design allows supplies of adequate water depending on crop needs. The furrow irrigation block has a good slope to allow good water flow along the field. The design does not also allow overwatering that washes fertilizers, pesticides, and topsoil into local streams and groundwater aquifers. The controlled application of water used in the design keep water locked in the soil profile, minimizing toxic agricultural runoff. The design also allows the farmer to prevent water logging and high salinity levels that can destroy the arable land.

The project provides for the restoration of affected areas once construction is completed. Road access disturbances and food crop production will be address through site rehabilitation, reinstatement of access routes and provision of food land parcels within the block.

In summary, the design option represents the most sustainable design measure, as it avoids unnecessary impacts, minimizes unavoidable disturbances, and restores affected areas thereby aligning with international best practices.

5 PROJECT DESCRIPTION

This chapter provides a comprehensive description of the proposed land use, project components, infrastructure, and implementation processes. It presents the technical characteristics of the irrigation scheme and outlines the key activities to be undertaken during the planning, construction, operation, and decommissioning phases. The description highlights elements of the project that may have environmental and social implications, thereby forming the basis for impact identification and the development of mitigation and management measures in subsequent chapters of this Environmental and Social Management Plan (ESMP).

The project forms part of the broader Shire Valley Transformation Programme (SVTP), and its design has taken into account cumulative impacts associated with multiple irrigation schemes within the Shire Valley.

5.1 LAND USE PLANS

Land use planning for the Kambadwe Irrigation Block was undertaken under the SVTP framework to ensure optimal utilization of available land while supporting the economic objectives of the Cooperative. The land use plan reflects a balance between commercial agricultural production, environmental considerations, and infrastructure development. The irrigation block has a Gross Land Area (GLA) of approximately 137 hectares, of which about 105 hectares (77%) will be developed for commercial irrigation. The remaining land is allocated to essential infrastructure, environmental buffers, and support facilities such as drainage systems, access roads, and service areas.

Figures 4 to 6 below present the spatial layout of the project area, including its geographical location and the proposed land use configuration.

Scale 1:50,000

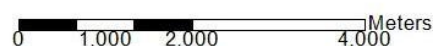
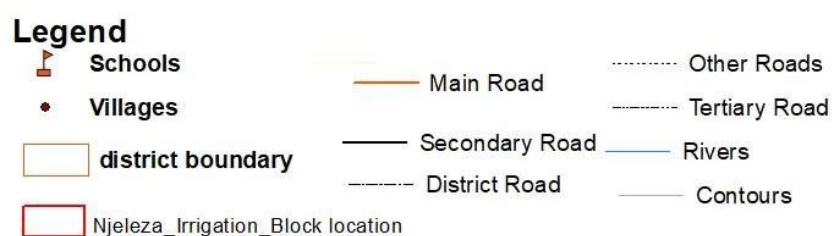


Figure 4: Location of Njeleza Irrigation Block on 1:50,000 scale

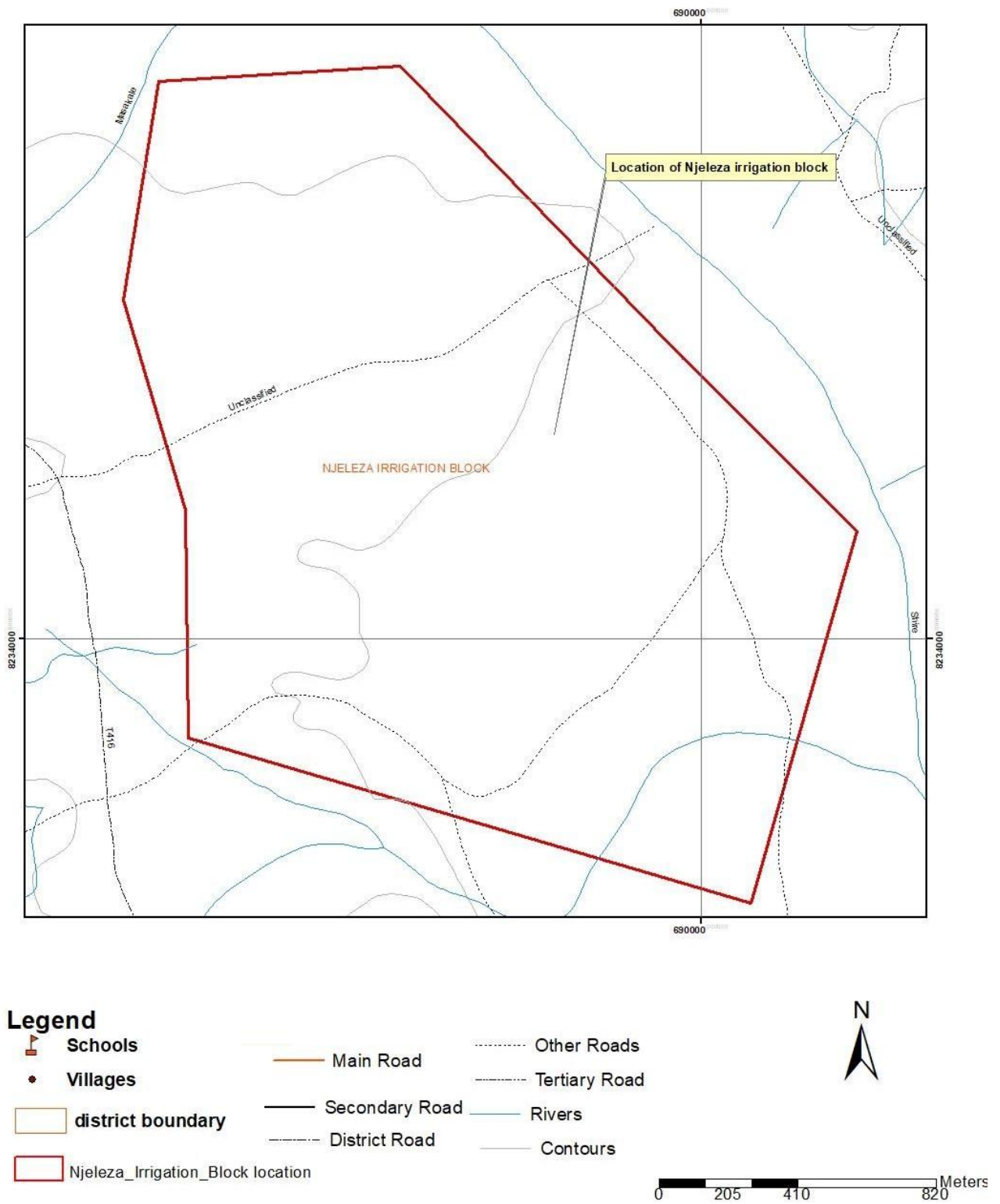


Figure 5: Location of Njeleza Irrigation Block on 1:10,000 scale

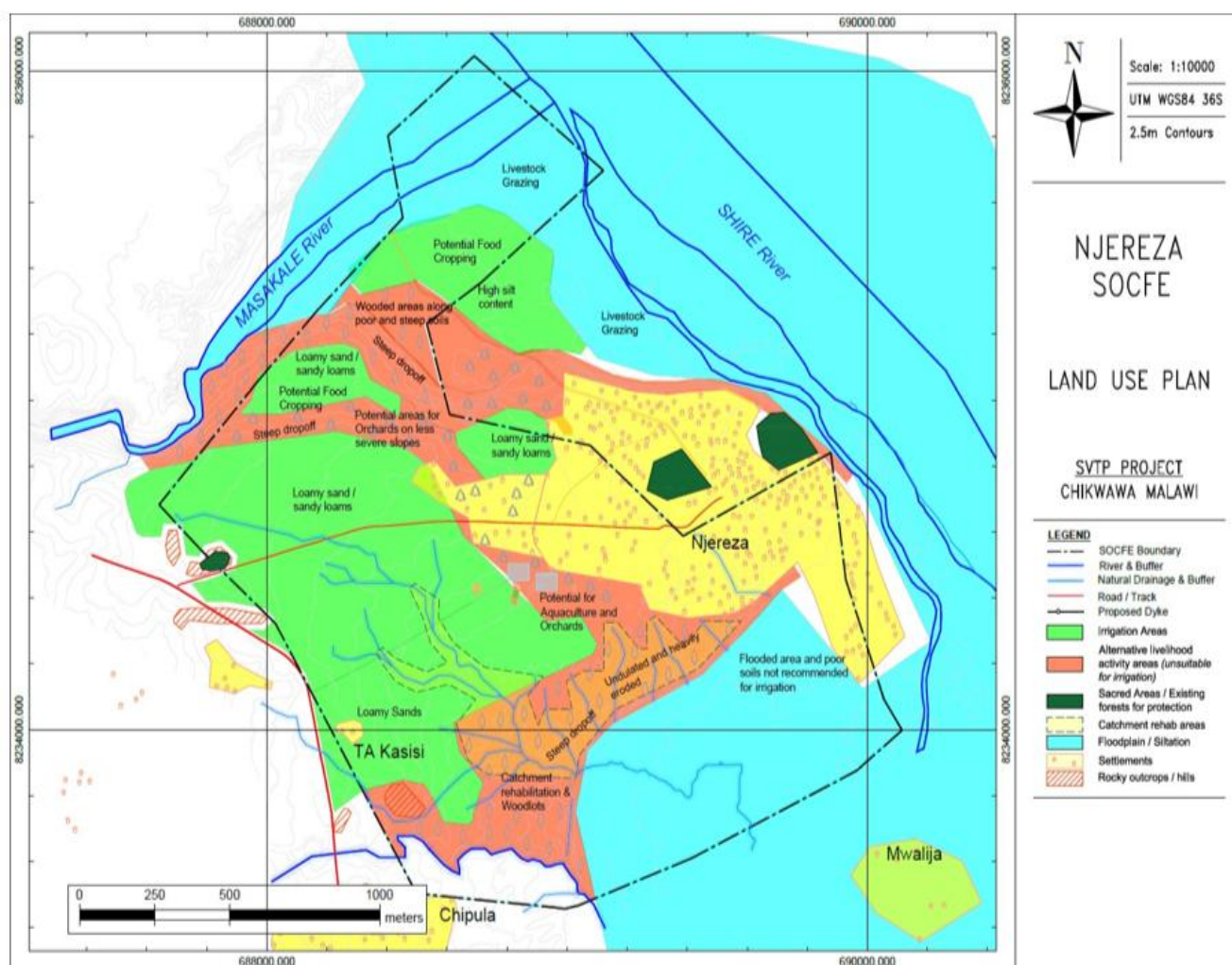


Figure 6: Land Use Map Under Pressurized Irrigation Systems

From Figure 6, land has been allocated to the enterprises as follows:

- Commercial production under different methods of irrigation;
- Food crop production;
- Farmstead for offices and warehouses;
- Scheme roads; and
- Drainage system – the scheme has natural water ways, some of which would be made into drains for the blocks.

The irrigation block has a Gross Land Area of 137 hectares, of which about 105 hectares (77 percent) is earmarked for irrigation development. The remaining land is allocated to essential infrastructure, environmental buffers, and support facilities such as drainage systems, access roads, and service areas. Furrow Irrigation method has been allocated 61 hectares, while Sprinkler and drip Irrigation methods have been allocated 22 and 17 hectares respectively. Food parcel block have been allocated 5 hectares, Scheme Buildings have been allocated 5 hectares, drains (natural and man- made) 12 hectares, scheme roads 7 hectares and steep drop offs 8 hectares.

This chapter provides a detailed description of the components and activities of the Kambadwe Irrigation Block project that are likely to have significant impacts on the biophysical and social environment. The description covers all four phases of the project cycle, namely the planning and design phase, the construction phase, the operation and maintenance phase, and the decommissioning phase.

5.2 OVERVIEW OF PROJECT PHASES AND IMPLEMENTATION PERIOD

The Kambadwe Irrigation Block project will be implemented in four phases:

- Planning and design;
- Construction, encompassing land clearing and irrigation infrastructure development;
- Operation and maintenance; and
- Decommissioning.

The proposed project implementation period for the construction phase is 6 months. The detailed activities to be undertaken during each phase are described in the sections below.

5.2.1 PLANNING AND DESIGN PHASE

During the planning and design phase, the following key activities will be undertaken to ensure that the project is soundly planned and that all environmental and social considerations are integrated from the outset of the project cycle:

- Validation of soil and geotechnical surveys to characterise the physical properties of the project site;
- Review of existing preliminary /detailed engineering designs;
- Detailed design of irrigation system(s)
- Analysis and identification of existing biophysical characteristics, socio-economic conditions, and environmental status of the project area;
- Assessment of potential environmental and social impacts associated with the proposed project activities;
- Formulation of appropriate mitigation and enhancement measures and strategies; and
- Preparation of the Construction Environmental and Social Management Plan (C-ESMP) for the project.

5.2.2 CONSTRUCTION PHASE

The construction phase will encompass activities like: land preparation, procurement of irrigation equipment including the installation and construction of irrigation infrastructure. Continuous stakeholder consultation will be maintained throughout the construction phase to ensure that community concerns are promptly identified and addressed. The following sections describe the key construction activities in detail.

5.2.3 LAND PREPARATION ACTIVITIES

Prior to the commencement of irrigation infrastructure construction, the project site will be cleared and prepared in accordance with the planned project design and layouts. Land preparation activities will involve the clearing and grubbing of vegetation, including the removal and disposal of all grass, debris, bushes, dense bush, trees, hedges, undergrowth,

stumps, roots, and shrub plants, as well as the backfilling of holes left by the removal of stumps and roots. Land survey and demarcation of plots and blocks will also be undertaken in accordance with the project design.

A range of heavy machinery will be deployed during this phase, including bulldozers, front-end loaders, back-end loaders, excavators, graders, dump trucks and tractors. Approximately 20 workers will be employed during land preparation activities, of whom at least 60% will be recruited from within the project area of impact. Migrant workers will only be engaged for specialised and skilled tasks that cannot be undertaken by locally available workers. Both project beneficiaries and non-beneficiary community members will be considered for both skilled and unskilled employment opportunities.

5.2.3.1 Bush Clearing

Vegetation will be removed in all critical areas where installation of system components and construction works will be carried out. Bush clearing will be undertaken using heavy machinery, including bulldozers and excavators, which will also be used to fell trees and remove root systems where necessary. Prior to the commencement of clearing activities, a comprehensive vegetation inventory will be conducted to ascertain the quantity and species composition of trees to be removed, thereby informing the reforestation and revegetation requirements for the project.

5.2.3.2 Ripping

Following bush clearing, the top soils in critical areas will be ripped using graders. The areas subject to ripping will generally correspond to those identified under the bush clearing activities. Appropriate measures will be implemented to ensure that stripped top soils are carefully retained on site and subsequently reused for landscaping, rehabilitation of excavations, and other site restoration activities upon completion of construction works.

5.2.3.3 Levelling

Land levelling will be carried out using a grader or bulldozer during and after the ripping phase and prior to harrowing. Detailed topographic surveys will have to be undertaken to ensure proper estimation of cut and fill volumes. Levelling of the land is essential to maintain acceptable slopes for furrows and ensure that field drains function effectively as conduits for the removal and management of surplus water within the irrigation scheme.

5.2.3.4 Installation of System components and Construction of Irrigation Infrastructure

The whole 105 hectares command area will be divided into smaller farm blocks or parcels with respect to the irrigation method. Kambadwe is a hybrid irrigation system with multiple irrigation systems.

Within the blocks, roads of width 4 – 6 m have been designed to create access to these blocks. A comprehensive and well linked drainage network will be constructed within the irrigation scheme to drain away excess irrigation water away from the irrigable areas to existing and established natural drainage networks.

Irrigation system components shall be installed in line with National and international guidelines and standards e.g ICOP, ISO and FAO to maintain and ensure high quality of works.

5.3 IRRIGATION SYSTEM DESIGN OPTIONS AND RECOMMENDATIONS

Soil and topographic assessments conducted for the Kambadwe Irrigation Block indicate that the soils and slopes of the project area are suitable for most irrigation types.

The irrigation system design has been developed based on internationally recognized standards and best practices. It includes conveyance and distribution systems, hydraulic structures, and storage facilities necessary for reliable irrigation water supply.

The design incorporates climate resilience considerations by ensuring efficient water use, minimizing losses, and accommodating variability in water availability associated with climate change.

Detailed engineering designs and calculations are provided in the design documentation and are summarized here for purposes of environmental and social assessment.

5.3.1 IRRIGATION SELECTION CRITERIA

During the preliminary irrigation system design and crop enterprise selection processes four (4) irrigation systems namely centre pivots, furrow (surface), drip and semi-solid set sprinklers were considered. These options underwent a rigorous selection matrix process considering all technical, social and environmental factors.

The selection matrix ranked Furrow irrigation method as the most suitable irrigation method for the project's conditions and requirements. This is due to factors of low operational costs, negligible pumping requirements, traditional experience with the system type, low system complexity (appropriate technology), and general ease of management. Centre pivot irrigation was ranked second. Centre pivots scored well with regard to capital cost, ease and speed of erection, reasonably high irrigation efficiency, labour saving (ease of automation), and relative ease of management. However, centre pivot encountered negative scores primarily influenced by high pumping costs (compared to furrow irrigation), dependence on reliable electricity, considerations related to shape (such as outfall areas being created, and partially complete pivot circles due to geometric constraints), and vulnerability to cable theft. Furthermore, the replacement of parts for overhead systems is expensive and time-consuming, it also relies on the availability of foreign currency, which is a recurrent financial challenge in Malawi. Centre pivots also require a combination with other irrigation systems such as sprinklers and centre pivots to irrigate outfall areas that the pivots cannot command due to their shape, this adds complexity to the overall system by having systems with different pressure and management requirements. Though the pivots ranked second, the Kambadwe site is relatively small, with irregularly shaped development areas due to complex natural topography and drainage. This makes it very difficult to site centre pivots efficiently, resulting in high costs and low conversion from gross available area to net irrigated area. Therefore, a significant portion of the project area would need to be irrigated using other irrigation methods such as sprinkler or furrow irrigation.

Sprinkler irrigation was ranked third primarily due to high pumping costs, dependence on reliable electricity, susceptibility to mismanagement, vandalism and theft of overhead sprinkler systems in the Shire Valley region. Considering these factors, sprinkler irrigation, was recommended as a secondary irrigation for Kambadwe in areas that are restrictive to furrow irrigation (e.g., areas that may be too sandy or slightly too steep for furrow irrigation).

Drip irrigation is unsuitable for general row cropping areas. This is primarily due to its high operation and maintenance costs, sensitivity to poor management, and the need for advanced technology. Drip irrigation system is considered ideal in specialist setups for smaller or high-value crops or even in perennial tree orchards on slopes.

additional factors in respect of suitability		1=bad	3=Neutral	5=good
	Furrow	Drip	Centre Pivot	Semi Solid-Set Sprinkler
Local Experience and exposure to irrigation type	5	1	2	2
Complexity - requiring specialist technical support	5	2	3	4
Availability of spares in country and time to service breakdowns	5	2	2	4
Reliance on FOREX availability to purchase spares	5	1	1	3
Irrigation uniformity to wind affects	5	5	3	2
Mechanical harvest capability	2	5	4	4
Shallow root affects (drought prone and wind damage-collapse)	5	2	5	4
Slope affects in respect of design complexity, cost and efficiency	2	4	3	3
potential to over-irrigate	2	5	4	3
Environmental affects - (waste products)	5	2	5	4
Potential Germination Difficulties due to restricted wetting pattern	5	5	5	4
Tendency to promote runoff	1	5	3	4
Ease of application of fertilizers and chemicals	1	5	4	3
Ease for 24h operation	1	4	5	4
TOTAL	49	48	49	48
Position	1	3	1	3

Figure 7: Irrigation method selection matrix for Kambadwe

Despite the use of selection matrix, selection of the irrigation systems in Kambadwe cooperative block considered the topography, selected crop enterprises, energy requirements and initial development including operation and maintenance costs. With these considerations furrow, sprinkler and drip irrigation methods were selected for the hybrid system.

5.3.2 DRAINAGE SYSTEM DESIGN

The drainage system has been designed to manage excess irrigation water and runoff effectively while preserving natural drainage patterns.

Consideration has been given to integrating natural drainage channels with engineered systems to ensure efficient removal of excess water while minimizing environmental disturbance.

Poorly managed drainage systems can result in waterlogging, soil salinization, and downstream sedimentation. The design of the drainage system therefore incorporates measures to ensure adequate flow capacity and minimize adverse environmental impacts, particularly during periods of heavy rainfall.

The drainage system also contributes to climate resilience by reducing the risk of flooding and maintaining soil productivity.

5.4 COST ESTIMATES

Cost estimates have been developed to provide an indication of the financial requirements for project implementation. These estimates include costs associated with irrigation infrastructure, machinery, and operational requirements.

These cost estimates provide a basis for understanding the scale of investment and are complemented by environmental and social management costs presented in Chapter 6.

5.5 MACHINERY AND EQUIPMENT TO BE USED ON SITE

A range of hand tools and heavy machinery will be deployed on site during the construction phase to ensure the effective and efficient implementation of construction works. Ergonomic principles will be applied to ensure that workers are appropriately matched to the equipment they are assigned to operate. Quality assurance measures will be enforced for all machinery, and the use of improvised or defective tools or equipment will not be permitted on site.

Table 5 below outlines the principal hand tools and heavy machinery required for each major construction activity during the construction phase of the Kambadwe Irrigation Block project.

Table 5: Equipment Required for Construction Activities

Activity	Equipment Required
Clearing	Bulldozer, Excavator, Front end loaders, Back-end loaders, Dump trucks, Axes, hoes, bush knives, shovels, spades, wheelbarrows, chisels, wedges
Earthworks	Hydraulic excavator, front-end loaders, back-end loaders, dump trucks.
Setting Out	Differential GPS, dumpy level, ranging rods, profile boards, measuring tapes, hammers, chisels, strings.
Construction	Tipper trucks, front-end loaders, vibrator compactors, jack hammers, water sprinklers, aggregate processing plant, concrete mixer (batch plant where applicable), transit mixer trucks, mobile cranes, plumbing units
Decommissioning	Excavator, mobile cranes, trucks, bull dozers, low- bed

5.4.3 CONSTRUCTION RAW MATERIALS

The construction of the Kambadwe Irrigation Block will require a range of raw materials. A life cycle assessment approach will be applied throughout the construction process to ensure that all materials used are environmentally appropriate. The contractor will be required to implement measures for waste reduction, pollution prevention, embodied energy reduction, construction waste minimisation, water conservation, and energy efficiency. Table 5.3 below

presents the major raw materials anticipated to be used during construction, together with their associated environmental considerations and proposed management measures.

Table 6: Construction Raw Materials and Environmental Considerations

Raw Material	Environmental Considerations and Management Measures
Water	Wastewater generated from concrete mixing and construction works may be hazardous to public health and aquatic life. A concrete wash pit will be constructed on site to manage this type of waste in accordance with applicable national standards.
Energy (Fuels and Other Energy Sources)	Use of biomass by construction workers for domestic energy may lead to localised deforestation. Sustainable energy sources will be encouraged and enforced. Fuel leakages from containers and tanks may pollute soil and water resources. A spill control management plan will be maintained on site at all times.
Steel	Construction works will require the use of steel in certain circumstances owing to its durability, low maintenance requirements, and reusability.
Plastic and PVC Pipes	Pipes will be procured from certified and licensed suppliers verified to be environmentally compliant. Localised pollution may occur from breakages and cuttings given that plastics are non-biodegradable. Proper waste segregation and disposal measures will be implemented.
Concrete	Concrete wastage may occur and could lead to uncontrolled surface hardening. Waste concrete will be managed and disposed of in accordance with the project waste management plan.
Chemicals and Adhesives	Adhesive materials and chemicals may accidentally spill onto soil, water bodies, and vegetation, posing risks to public health, aquatic life, and other organisms. Pollution control mechanisms including spill containment and response procedures will be maintained on site.
Earth Materials	Construction activities will involve excavations for reservoir construction, canal layout, and pipe laying, which may lead to erosion, water resource degradation, and public hazard through the creation of borrow pits. All borrow pits and deep excavations will be progressively rehabilitated and backfilled prior to project decommissioning.
Other Construction Materials	The use of burnt bricks may catalyse forest loss in the vicinity of the construction site. Environmentally friendly construction materials will be used wherever possible, and the use of materials that contribute to deforestation will be minimised.

5.4 DE-MOBILISATION OF TEMPORARY STRUCTURES

Upon completion of the construction works, all temporary structures and facilities that are not required for the operation phase of the irrigation block will be demobilised and removed from the project site. Demobilisation activities will include the clearing of construction debris and waste from the site; removal and appropriate disposal of project equipment and machinery; progressive rehabilitation and backfilling of all borrow pits; replanting of trees in areas where vegetation was removed; and demobilisation of any surplus labour force, with adequate notice and terminal benefits provided in accordance with applicable national labour legislation.

5.5 OPERATION AND MAINTENANCE PHASE

The operation of each farm block within the Kambadwe Irrigation Block will be determined by the responsible farmer cooperative, reflecting the desired crop mix, long-term investment plans, and agreed working arrangements among members. The irrigation scheme will operate using a gravity-fed system. The key activities to be undertaken during the operation and maintenance phase are described in the following sections.

5.5.1 Plot Demarcation and Land Preparation

Prior to the commencement of farming activities, individual plots will be formally demarcated and any remaining vegetation on the land will be cleared. In plots that have not previously been cultivated, a wide variety of perennial grasses and herbaceous plants may be present. During vegetation clearing, due consideration will be given to the protection of stream bank buffer strips; the retention of leguminous trees for improved soil fertility; the establishment of off-season cover crops to hold nutrients and provide organic matter for composting; the protection of fragile or endemic ecosystems within or adjacent to the scheme; and the retention of existing mature fruit and shade trees where feasible.

5.5.2 Soil Cultivation

Soil cultivation will be undertaken in accordance with the principles of conservation agriculture to minimise adverse environmental impacts and maintain long-term soil health and productivity. Key principles to be observed include: minimising mechanical soil disturbance; avoiding soil compaction beyond its natural elasticity; maintaining and improving soil organic matter during crop rotations until an equilibrium level is reached; maintaining organic ground cover through crop residues and cover crops to minimise erosion by wind and water; maintaining balanced nutrient levels in soils; and avoiding contamination with agrochemicals, organic and inorganic fertilizers, and other pollutants by carefully adapting application quantities, methods, and timing to agronomic and environmental requirements.

5.5.3 Crop Planting

Productivity within the irrigation scheme will be enhanced through the introduction of high-yielding, short-maturing, and drought-resistant crop varieties. The availability and correct use of agricultural inputs, including inoculated legume seeds, fertilizers, natural herbicides and pesticides, and agro-chemicals, will be actively promoted among all scheme participants to maximise yields and improve the nutritional and economic outcomes of farming households.

5.5.4 Fertilizer Application

Fertilizer application within the irrigation scheme will be undertaken in a controlled and monitored manner to prevent over-fertilisation, which can lead to the pollution of water resources through nutrient runoff and leaching. The use of organic fertilizers will be promoted as a preferred alternative to synthetic chemical products, as a key measure to minimise pollution arising from agrochemical use. Soil organic matter management, including the use of cover crops and crop residues, and the judicious selection of crop species and rotations, will play a central role in sustainable soil fertility management within the scheme.

5.5.5 Pest and Disease Control

Pest and disease control within the Kambadwe Irrigation Block will be undertaken using an integrated and environmentally responsible approach. Control methods will include the burial or burning of plants affected by aphids and other pests; the practice of good crop rotation to minimise the transfer of pests and diseases between growing seasons; the use of chemical sprays strictly in accordance with manufacturers' instructions and the approved list of the Pesticides and Poisons Board; the application of Integrated Pest Management (IPM) principles; the use of organic pesticides; and biological pest and disease control methods where applicable. Water hyacinth is identified as a significant invasive plant species likely to infest the irrigation scheme if not effectively controlled. The scheme intake design will therefore incorporate a mechanism for controlling water hyacinth from entering the conveyance system, and a monitoring and control protocol will be developed and implemented during the operation phase.

5.5.6 Harvesting

Upon maturation, crops will be harvested in a timely manner to minimise post-harvest losses. Easily perishable crops will be transported to markets as promptly as possible following harvest. Crops intended for household consumption will be stored and consumed prior to deterioration in quality, and farmers will be encouraged to adopt appropriate post-harvest storage and handling practices to maximise the nutritional and economic value of their produce.

5.5.7 Maintenance of the Irrigation Block

Routine maintenance of the Kambadwe Irrigation Block infrastructure, including the canal system, control structures, and farm roads, will be the primary responsibility of the farmer cooperative managing the scheme. Farmer-led maintenance is recommended as the preferred approach to reduce the monetary costs associated with engaging external third-party service providers, and to foster a sense of ownership and long-term stewardship of the irrigation infrastructure among scheme participants. The Water User Association (WUA) will be responsible for coordinating and overseeing maintenance activities and ensuring that the scheme continues to operate effectively and sustainably.

5.6 DECOMMISSIONING PHASE

Decommissioning refers to a range of possible actions associated with the cessation of operations of the Kambadwe Irrigation Block, which may include the deliberate breaching and removal of structures, rehabilitation of the project site, and restoration of the affected environment. Decommissioning is generally considered as an economical option when the

costs of continuing to manage a facility outweigh its ongoing benefits, or when an irrigation scheme has reached the end of its useful life. The following circumstances may necessitate the decommissioning of the irrigation block:

- Economic reasons, where continued maintenance and operation are determined to be uneconomical;
- Scheme safety and security concerns, where the irrigation infrastructure has significantly deteriorated and is deemed unsafe;
- Ecosystem restoration requirements, where the continued operation of the irrigation block significantly endangers the survival of aquatic species, including fish breeding populations; and
- Site restoration requirements, where the irrigation block becomes choked with sediments and is rendered operationally unviable.

At present, there are no plans to decommission the Kambadwe Irrigation Block, as water for irrigation will continue to be required for as long as farming activities are taking place in the target area. However, should the project proponent decide to discontinue the project after the expiry of its useful life, the Farmer Cooperative will be required to develop a Project Decommissioning Plan (PDP) in accordance with the requirements of the Malawi Environment Protection Authority (MEPA). Decommissioning activities may generate a range of potential environmental and social issues, including the disposal of hazardous materials used during construction and operation, which will be minimised through the implementation of appropriate closure and remediation measures as specified in the PDP.

5.7 WASTE GENERATION AND MANAGEMENT

The construction phase of the project will generate both liquid and solid wastes that will require careful management to prevent adverse impacts on the surrounding environment and communities. Liquid waste is expected to be generated at the construction camp and from vehicle and machinery maintenance areas. The ESMP sets out measures to contain construction site runoff and prevent the disposal of liquid waste into surface water bodies. The contractor will be required to provide appropriate liquid waste collection facilities, including septic tanks or portable chemical toilets, and to ensure that all collected liquid waste is disposed of in accordance with applicable national laws and regulations, including the Environmental Management (Waste and Sanitation) Regulations (2008).

The construction phase will also generate significant quantities of solid waste, including demolition waste, organic residues from ground clearance operations, and construction yard waste such as metals, wood, used oils, lubricants, oil derivatives, tyres, plastics, paper, cardboard, glass, and organic waste. Construction machinery will require periodic servicing and fuel supply, which will generate hazardous waste if conducted on the construction site. A designated waste management area will be established within the construction yard, equipped with a temporary storage facility and a set of segregated waste receptacles for the proper sorting and storage of different categories of waste. It is estimated that approximately 3,400 kg of solid waste and 2,400 litres of wastewater will be generated throughout the construction period. During the operation and maintenance phase, the principal types of waste expected include seed and chemical packaging materials, pesticide containers, obsolete chemicals, and maintenance consumables such as pipes, valves, and adhesives. All hazardous waste, including

pesticide containers and obsolete chemicals, will be disposed of in liaison with MEPA and in accordance with the applicable national regulatory framework.

5.8 WATER SUPPLY

Water supply requirements for all phases of the project will be met through abstraction from the Shire River. The precise quantities of water required will be determined following the optimisation of the preliminary engineering designs for the scheme. A water abstraction permit will be applied for from the National Water Resources Authority (NWRA) in accordance with the Water Resources Act (2013) prior to the commencement of water abstraction activities.

5.9 ENERGY

Electricity will be required during the construction phase for the operation of equipment and machinery, as well as for normal day-to-day activities in the construction yard, site office, and storage areas. The contractor will utilise solar energy as the primary source of electricity at the camp site, with a diesel generator maintained as a backup power supply. During the operation and maintenance phase, the irrigation water supply system will be gravity-fed, consistent with the selected furrow irrigation technology, thereby eliminating the need for energy-intensive pumping systems and significantly reducing the operational energy requirements and costs of the scheme.

5.10 SANITATION AND HYGIENE

Adequate sanitation facilities for all workers and project beneficiaries will be provided at the project site throughout the construction phase. Separate pit latrines for male and female workers will be constructed at the construction site in accordance with the requirements of the Amended Public Health Act (1992) and the National Sanitation and Hygiene Policy (2023). Water-borne toilets will be installed within the site office block, with liquid waste from these facilities managed through a septic tank connected via a reticulated pipe network and manhole system. The septic tank network will be regularly inspected and maintained to prevent blockages and spillages that could adversely affect the surrounding environment and public health. All sanitation facilities will be maintained in a clean, functional, and hygienic condition throughout the construction period.

5.11 EMPLOYMENT OPPORTUNITIES

The project is expected to generate both direct and indirect employment opportunities for local communities during construction and operation phases. These opportunities will contribute to improved household incomes and overall socio-economic development within the project area.

During the construction phase, labour demand will increase for both skilled and unskilled workers, with priority given to local communities in line with project commitments. Employment during the operation phase will focus on irrigation management, agricultural production, maintenance of infrastructure, and administrative functions within the Cooperative.

Employment opportunities will be implemented in a manner that promotes inclusivity, with particular attention to women, youth, and vulnerable groups, in line with national policies and

international safeguards requirements. The project will also promote fair labour practices, including safe working conditions, non-discrimination, and equal opportunity.

While employment creation presents positive socio-economic benefits, it may also introduce potential social risks, including labour influx and pressure on local services. These aspects will be managed through the implementation of labour management procedures and other mitigation measures outlined in the ESMP.

5.12 AGRICULTURAL ENTERPRISES

The Cooperative will undertake crop production based on market demand, agro-climatic suitability, and economic viability, with a focus on transitioning from subsistence farming to commercial agriculture. Planned agricultural enterprises are expected to include a mix of staple crops, cash crops, and high-value horticultural crops to ensure both food security and income generation.

The adoption of irrigation-based agriculture will enable multiple cropping seasons and improved productivity, thereby enhancing resilience to climate variability. Agricultural practices will be supported by modern irrigation technologies, improved seed varieties, and access to extension services.

However, intensified agricultural production may also introduce environmental and social risks, including increased use of agrochemicals, water demand, and potential soil degradation. These risks will be managed through the promotion of sustainable agricultural practices, including integrated pest management, efficient water use, and soil conservation measures.

The development of agricultural enterprises under the Cooperative model is expected to strengthen value chains, improve market access, and enhance livelihoods, while ensuring that environmental and social considerations are adequately addressed through the ESMP.

6 DESCRIPTION OF THE BIOLOGICAL, PHYSICAL AND SOCIO-ECONOMIC ENVIRONMENT

This chapter describes the existing biological, physical, and socio-economic baseline conditions of the Kambadwe Irrigation Block project area and its broader influence area. The baseline characterisation is directly relevant to decisions regarding project location, design, operation, and mitigation measures, and provides the reference conditions against which potential environmental and social risks and impacts will be assessed. Key data gaps and uncertainties are identified and their significance for the characterisation of anticipated environmental and social risks and impacts is assessed.

The baseline data presented in this chapter was primarily sourced from the geotechnical and soil suitability survey conducted in September and October 2022, the geo-corrected orthomosaic topographic drone survey conducted in September 2022, the Shire Valley Agricultural Development Division (ADD) climate records for 2021, the SVTP Baseline Survey conducted in 2020, and field observations and community consultations conducted during the ESMP preparation process in 2023. While these data sources are considered reliable and appropriate for the purposes of this assessment, some data gaps exist, particularly with respect to biodiversity surveys, disaggregated socio-economic data for vulnerable groups, and

long-term climate trend data. These gaps are noted where relevant, and their implications for the assessment of environmental and social risks and impacts are discussed.

Cumulative impacts arising from other development activities within the project area and its broader influence area including the wider SVTP programme, the existing Njereza Irrigation Scheme, and other planned infrastructure developments in Chikwawa District have also been considered in the characterisation of baseline conditions presented in this chapter.

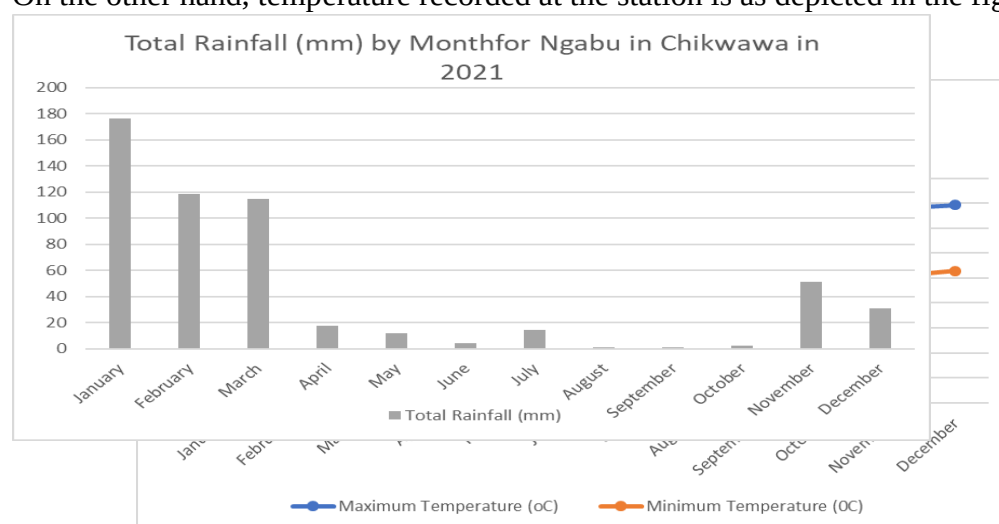
6.1 PHYSICAL ENVIRONMENT

6.1.1 Climate

The Kambadwe Irrigation Block is situated in the lower Shire Valley, within Chikwawa District, at an altitude ranging between 70 and 100 metres above sea level. The climate of the lower Shire Valley is characterised by high temperatures throughout most months of the year, with rainfall confined to the period from December to April. The long-term mean (LTM) annual rainfall for the area is approximately 800 mm per annum, based on data recorded at the Ngabu meteorological station by the Shire Valley Agricultural Development Division (ADD) in 2021. Rainfall in the project area is highly unreliable and frequently erratic, rendering rain-fed agricultural production inherently vulnerable to inter-annual variability in precipitation patterns.

Due to the consistently high temperatures prevailing in the lower Shire Valley, both evaporation and evapotranspiration rates are elevated, averaging approximately 2,000 mm and 1,780 mm per annum respectively values that substantially exceed mean annual rainfall. Monthly rainfall and temperature data recorded at the Ngabu station are presented in Figures 6.1 and 6.2 respectively. Figure 6.1 and Figure 6.2 below show the main figures related to climate: rainfall and Data was obtained from the Shire Valley ADD in 2021.

On the other hand, temperature recorded at the station is as depicted in the figure below:



The data was obtained from the Shire Valley ADD in 2021 and is considered reliable for general characterisation purposes, although it represents a single year of observation and may not fully reflect long-term climatic trends. Long-term climate data series spanning multiple decades would be required to more accurately characterise inter-annual variability and trends

in the project area; this constitutes a data gap of moderate significance for the assessment of climate-related risks.

6.1.1.1 Rainfall and Evapotranspiration

In the context of agricultural production, the concept of effective rainfall is of critical importance, as it accounts for the portion of total rainfall that is actually available for crop uptake, after deducting losses attributable to rapid surface evaporation, deep percolation, and rapid runoff to surface water bodies. In the Kambadwe project area, effective rainfall is, on a yearly average, approximately 48% lower than total recorded rainfall, meaning that only 52% of rainfall is effectively available for crop water requirements. This represents a highly significant constraint on rain-fed agricultural productivity in the project area.

Evapotranspiration the combined process of water transfer from the land surface to the atmosphere through soil evaporation and plant transpiration represents the primary pathway of water loss from the project area. The balance between rainfall (water input) and evapotranspiration (water output) in the project area shows a surplus of water only during the months of February to April, coinciding with the peak of the rainfall season. During the dry season, from May to November, soil moisture rapidly diminishes to zero. Surplus water only accumulates when soils reach saturation following the first heavy rains at the onset of the wet season. Overall, the lower Shire Valley is characterised as a semi-arid environment, meaning that the project area generally experiences a persistent soil moisture deficit throughout most of the year. This climatic context fundamentally underpins the rationale for the development of irrigated agriculture in the project area.

6.1.1.2 Climate Change Considerations

The lower Shire Valley is among the regions of Malawi most severely affected by the adverse effects of climate change. Scientific evidence and national climate assessments indicate that the region is experiencing increasing frequency and severity of droughts, prolonged dry spells, erratic and unpredictable rainfall patterns, and more intense flooding events, all of which are consistent with projected climate change trends for southern Africa. These climate change-induced trends are directly exacerbating the already challenging semi-arid conditions of the project area and undermining the reliability and productivity of rain-fed agriculture among smallholder farming communities.

The Kambadwe Irrigation Block project is designed as a climate change adaptation intervention, providing smallholder farmers with access to reliable irrigated water supply that reduces their dependence on erratic rainfall and enhances their resilience to the adverse impacts of climate change. However, the project itself may also be subject to climate change-related risks during its operational life, including increased variability and potential reduction in dry season river flows in the Shire River the primary water source for the scheme as a result of reduced catchment rainfall and increased upstream water demand. Changes in the intensity and frequency of flooding events in the lower Shire Valley may also pose risks to the scheme's physical infrastructure, particularly canal systems and the night storage reservoir. These climate risks will need to be explicitly considered in the detailed engineering design and operational management of the scheme. The project's contribution to greenhouse gas emissions is expected to be minimal, given the adoption of gravity-fed irrigation technology and the planned use of solar energy at the construction camp, consistent with the objectives of the National Climate Change Management Policy (2016).

6.1.2 Topography

A geo-corrected orthomosaic topographic drone survey was conducted in September 2022 to characterise the topography of the Kambadwe Irrigation Block project area. The survey data is considered highly accurate and reliable, representing the most current and spatially precise topographic information available for the project site. The survey revealed that the project area is characterised by an undulating landscape, with several hilly areas and steep drop-offs. Significant gully formation resulting from severe historical erosion has contributed to the prevalence of steep slopes within and around the scheme area. The general topographic slope falls in an easterly direction towards the Shire River, which runs along the eastern boundary of the scheme. The Masakale River runs adjacent to the northern boundary of the scheme, with steep drop-offs noted as one moves towards the main river channels.

The scheme boundary excludes much of the high ground to the west of the project area; however, some steep and rocky areas remain within the allocated scheme boundary. Notable steep drop-offs running in an east-west direction lead down towards the confluence of the Masakale and Shire rivers in the north. All areas within the scheme boundary that were assessed as too steep for economically viable irrigation development were excluded from the irrigable area. Severe erosion is also evident in parts of the project area, as illustrated in the topographic heat map (Figure 6.3) and shaded elevation maps (Figure 6.4) presented below. These topographic characteristics have important implications for irrigation system design, drainage management, erosion control, and the selection of appropriate irrigation technologies for the scheme.

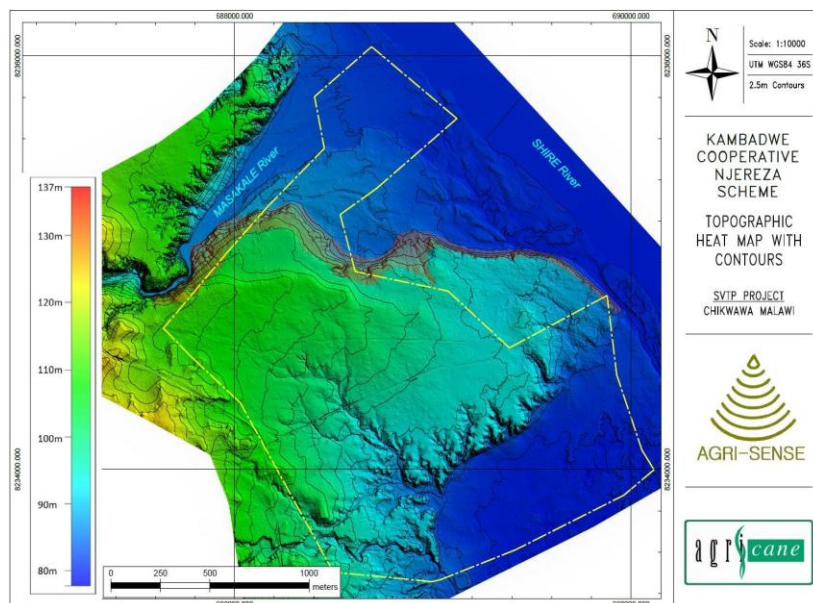


Figure 8: Geo-corrected orthomosaic topographic heat map

Figure 8 above shows the geo-corrected orthomosaic topographic heat map of the Kambadwe Irrigation Block project area derived from a drone survey conducted in September 2022 wherea Figure 9 depicts a shaded elevation heat map of the same area . The yellow boundary represents the project gross area. The map illustrates the undulating topography, hilly terrain, and gully formations that characterise the site.

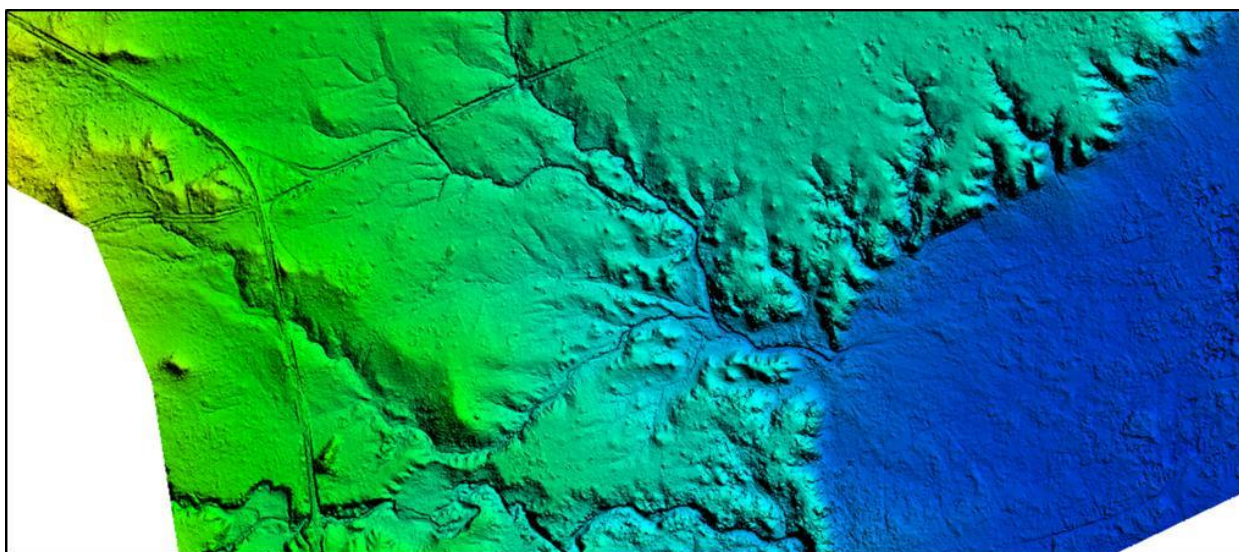


Figure 9: Shaded Elevation Heat Map of the Project Area

6.1.3 Soils

A comprehensive soil suitability survey was conducted in September and October 2022 to characterise the physical and chemical properties of soils within the Kambadwe Irrigation Block project area and to assess their suitability for irrigated agriculture. The survey methodology included the identification of soil units through aerial imagery interpretation, verified in the field through representative auger holes and observation pits. Soil samples collected from representative pit and auger sites were submitted for laboratory analysis to confirm their physical and chemical characteristics. The data generated by this survey is considered reliable and fit for purpose for irrigation planning, although it is noted that the spatial extent of sampling may not fully capture micro-scale variability in soil properties across the project area.

Through this process, three suitable Soil Management Units (SMUs) were identified, mapped, and assessed for irrigation suitability within the project area. Two additional unusable soil zones were identified and excluded from the irrigable area. The overall soil texture of the suitable SMUs is characterised as Sandy Loam, with relatively high sand content and low clay content, as summarised in Table 6.1 below. The irrigation suitability map is presented in Figure 10.

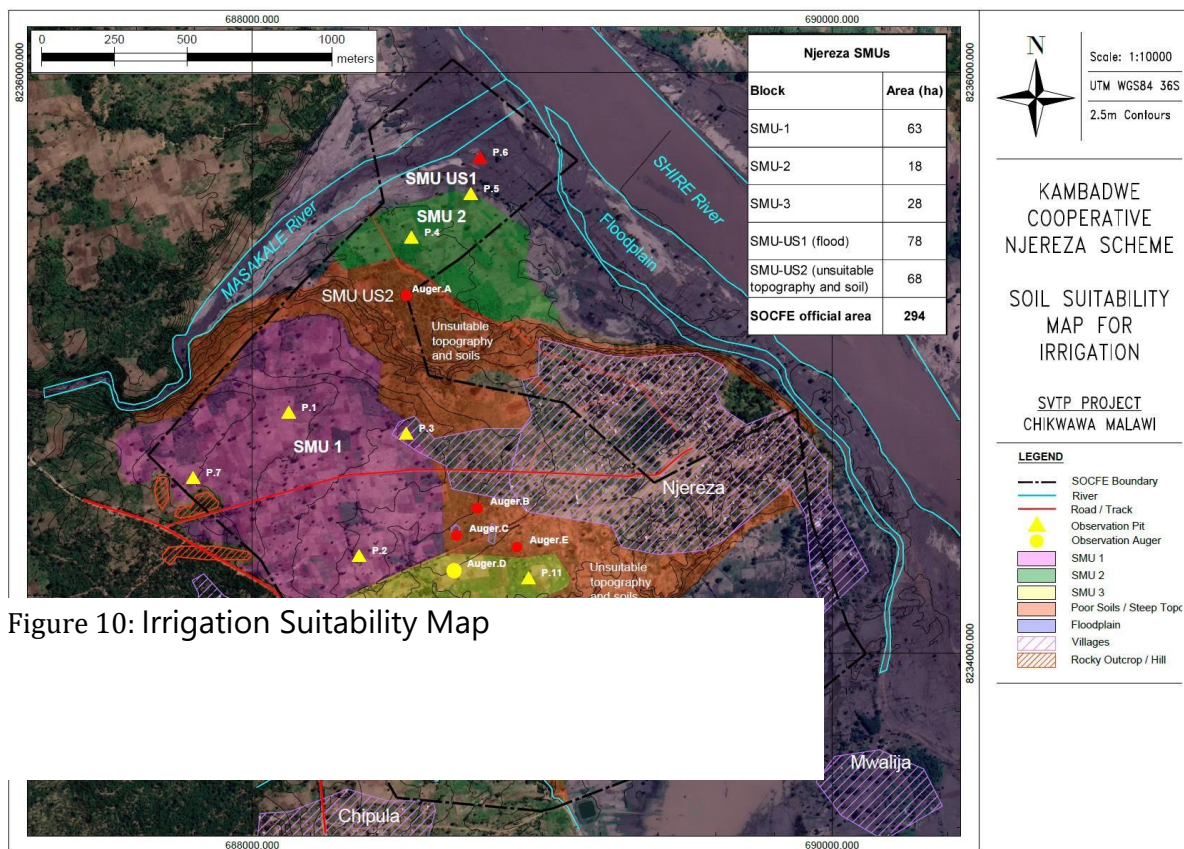


Figure 10: Irrigation Suitability Map

Table 7 below presents the particle size analysis results for the three suitable Soil Management Units identified within the project area, based on laboratory analysis of soil samples collected during the soil suitability survey conducted in September and October 2022.

Table 7: Particle Size Analysis for Suitable Soil Management Units

Particle Analysis	SMU 1	SMU 2	SMU 3
Sand (%)	78	65	79
Silt (%)	11	19	11
Clay (%)	11	16	10
Texture Class	Sandy Loam	Sandy Loam	Sandy Loam

Source: Soil Suitability Survey, Kambadwe Irrigation Block, September/October 2022.

6.1.3.1 Soil Management Unit 1 (SMU 1) — 63 Hectares

SMU 1, comprising approximately 63 hectares, is characterised by Loamy Sand soils with mean clay percentages of 11%. The soils in this unit are of adequate depth and have effective natural drainage. Soil pH values range between 6.5 and 8.9, and salinity levels are acceptable

at between 150 and 180 $\mu\text{S}/\text{cm}$. Good phosphorus and potassium levels indicate adequate initial soil fertility; however, soil organic matter levels are very low at approximately 1%, and soil conservation measures must therefore be treated as a high priority for agricultural development in this area. Nitrogen supplementation will be necessary to support crop production. Due to the light soil textures and generally steep topography, these soils are more suited to overhead irrigation than furrow irrigation, although short furrow irrigation is feasible provided that furrow line lengths are kept short and appropriate measures are implemented to control tail water and prevent water losses and soil erosion.

6.1.3.2 Soil Management Unit 2 (SMU 2) — 18 Hectares

SMU 2 covers approximately 18 hectares, of which only the area surrounding Pit 4 is considered suitable for irrigation development. The areas surrounding Pits 5 and 6 are located on a lower river shelf and are prone to seasonal flooding, with one pit found to contain water at the time of survey. An attempt to expand this unit through the inclusion of additional auger holes was precluded by elevated salinity and sodicity levels that render these areas unsuitable for irrigated agriculture. The soils of SMU 2 are particularly light-textured, with clay content of approximately 16% and the presence of pure sand at depth. Soil pH values are approximately 6.9, and salinity levels are acceptable. Good phosphorus and potassium levels indicate adequate initial soil fertility. These soils are only suited to overhead irrigation systems.

6.1.3.3 Soil Management Unit 3 (SMU 3) — 28 Hectares

SMU 3 covers approximately 28 hectares and comprises Loamy Sand soils with mean clay percentages of 10%, similar in character to SMU 1 but occupying a smaller and more undulating area. Soil pH values range from 6.4 to 6.9, with limited salinity except in the vicinity of certain auger holes where elevated levels of deleterious salts, including high Exchangeable Sodium Percentage (ESP), were recorded. These areas have been excluded from the irrigable zone. Due to the combination of excessive land slope and light soil textures, SMU 3 is best suited to overhead irrigation, although short furrow irrigation is feasible in parts of this area. The potential for soil erosion in this zone is assessed as high, necessitating robust erosion control measures during both construction and operation.

6.1.3.4 Unsuitable Soil Management Units

Two additional soil zones within the project area were assessed as unsuitable for irrigated agriculture and excluded from the irrigable area. SMU Us-1 covers approximately 78 hectares in the south-eastern corner of the project area. It is a low-altitude river deposition shelf characterised by obvious signs of seasonal flooding and prolonged water retention well after the end of the rains, and soil testing revealed the presence of deleterious salts rendering the area unsuitable for crop production. SMU Us-2 covers approximately 68 hectares and is topographically compromised, with minimal soil cover remaining as a result of severe sheet erosion that has stripped the land surface down to subsoil. SMU Us-2 is not suitable for cropping activities.

6.1.4 Flood Zones

Seasonal flooding constitutes a significant environmental hazard within and around the Kambadwe Irrigation Block project area. Both the northern and southern portions of the scheme are subject to periodic inundation, with some areas remaining waterlogged for extended

periods, potentially lasting for almost the entire year in the most severely affected zones. Flooding in the project area is primarily driven by the Shire River, which can experience significant fluctuations in maximum flood water levels from season to season. The unpredictable and variable nature of flood events in the lower Shire Valley is expected to be further exacerbated by the impacts of climate change, including increased intensity and frequency of extreme rainfall events and the associated elevated flood risk in the lower catchment. Flood risk must be explicitly considered in the design of the scheme's canal system, night storage reservoir, and flood protection infrastructure to ensure the long-term safety and resilience of the irrigation scheme.

6.1.5 Geology

The geology of Chikwawa District is characterised by basement complex rocks of pre-Cambrian age, comprising gneisses and granulites, which underlie most of the hills and uplands of the district. Sedimentary rocks of the Karoo System including grits, sandstones, shales, and mudstones together with Mesozoic basalts, are found in the uplands to the west of the scheme area, which form part of the Great African Rift Valley. These geological formations are rich in minerals and represent areas of potential mineral exploration interest. The geological characteristics of the project area do not present significant constraints to the proposed irrigation scheme development; however, the presence of basement complex rocks in elevated areas adjacent to the scheme may influence the hydrological behaviour of the catchment and the recharge of surface water and groundwater resources in the project area.

6.2 BIOLOGICAL ENVIRONMENT

6.2.1 Vegetation and Flora

A field survey of the vegetation and flora of the Kambadwe Irrigation Block project area was conducted during the ESMP preparation process in 2023. The project area was observed to be dominated by mango trees (*Mangifera indica*), Mtondo (*Calophyllum inophyllum*), Bwemba or tamarind (*Tamarindus indica*), together with grasses, herbs, and a limited number of shrubs. None of the tree species identified within the project area are listed among protected tree species under the Forestry Act (2016) of Malawi. It is however acknowledged that the vegetation survey conducted for this ESMP was observational in nature and did not include a systematic botanical inventory with species abundance and distribution mapping. This constitutes a data gap of moderate significance for the assessment of biodiversity impacts, and a more comprehensive pre-construction vegetation inventory is recommended prior to the commencement of clearing activities.

The proposed construction activities are designed to minimise impacts on existing trees, and the project layout has been developed to avoid the few remaining trees of significant size within the project footprint. The principal impact on flora will arise from the clearing of grasses, herbs, and shrubs to prepare the site for construction, and from the removal of trees and vegetation from the proposed Night Storage Reservoir (NSR) site. These activities will also result in some loss of habitat for associated fauna. To compensate for vegetation loss, an extensive reforestation programme is planned for all land within the project area of impact that has been assessed as unsuitable for crop production, including river buffer zones and areas with poor soil quality. This programme targets the planting of approximately 1,250,000 trees within the project area, representing a substantial positive contribution to biodiversity and environmental restoration in the lower Shire Valley.

6.2.2 Fauna

No systematic fauna survey was conducted for the Kambadwe Irrigation Block project area as part of the ESMP preparation process. This represents a data gap of moderate to high significance, given the proximity of the project site to the Majete Wildlife Reserve, which is located approximately 3 km from the project boundary and is home to a wide range of mammal, bird, reptile, and amphibian species of conservation significance. A dedicated biodiversity assessment, including fauna surveys, is recommended prior to the commencement of construction activities to fully characterise the fauna of the project area and its surroundings, and to assess the potential for project activities to affect species associated with the Majete Wildlife Reserve or its buffer zone.

Based on field observations conducted during the ESMP preparation, no large wildlife species have been recorded within the project area itself. However, hippopotamuses and crocodiles are present in the Shire River and are known to move into adjacent areas at times to forage on crops and fish. Impacts on these species from project activities are expected to be minimal, provided that construction activities are confined to the demarcated project footprint and appropriate protocols are established for managing encounters between construction workers and wildlife. Numerous bird, insect, and reptile species many of which have not been formally studied are present within the project area and play important functional roles in the local ecosystem, including pollination, pest regulation, and nutrient cycling. Scheme rehabilitation activities, particularly the construction of the Night Storage Reservoir (NSR), are expected to create a substantial body of well-aerated water that may enhance the occurrence and diversity of aquatic fauna, particularly fish species, within the scheme area.

6.3 SOCIAL AND ECONOMIC ENVIRONMENT

The socio-economic baseline presented in this section draws on data from multiple sources, including the demographic survey conducted in 2024, the SVTP Baseline Survey (2020), the Chikwawa District Council Socio-Economic Profile 2017-2022, the Integrated Household Survey 2016/17, the Chikwawa District Health Information System (DHIS 2, 2017), and field consultations conducted during the ESMP preparation process in 2023. Where data sources differ in their date of collection, this is noted and the most recent available data is prioritised. Disaggregated data for specific vulnerable groups including women-headed households, elderly persons, persons with disabilities, and youth remains limited across available sources, and this constitutes a data gap of high significance for the assessment of social risks and impacts.

6.3.1 Demography

According to the demographic survey conducted in 2024 using a representative sample of 1,002 households within the project area, 711 respondents (71%) were male-headed households and 291 (29%) were female-headed households. The average age of household heads was 46 years, with female heads being statistically older on average at 48 years compared to male heads. This age differential may reflect the higher prevalence of widowhood among women in the project area, a factor of relevance for the assessment of vulnerability and livelihood risks associated with the project.

In terms of religion, Christianity is the predominant faith, with 95% of all household heads identifying as Christian. When disaggregated by sex, a higher proportion of female household

heads identified as Christian (98%) compared to male household heads (94%). The predominant ethnic groups in the project area are Sena (57%) and Mang'anja (29%), followed by Lomwe-headed households at approximately 6% of the total sample. The ethnic composition of the project-affected community is an important contextual factor for the design of culturally appropriate consultation, engagement, and grievance redress processes. (Source: SOCFE Baseline Survey Final Report, 2024)

6.3.2 Poverty Levels

The project area is characterised by high levels of poverty and inadequacy in meeting basic household needs. According to the Fourth Integrated Household Survey, approximately 72%, 56%, and 59.4% of households in Chikwawa District face inadequacies in food, housing, and healthcare respectively all higher than the corresponding national averages of 63.8%, 55.6%, and 54.8%. Only 4.9% of households have incomes sufficient to generate savings, while 31.7% rely on borrowing as their income is insufficient to meet basic needs. (Source: Chikwawa District Council Socio-Economic Profile 2017-2022)

The high poverty levels prevailing in the project area underscore the critical importance of ensuring that employment and livelihood opportunities generated by the project are equitably accessible to the poorest and most vulnerable community members. They also highlight the elevated vulnerability of project-affected households to any adverse project impacts including temporary loss of access to land or agricultural income and the need for robust livelihood protection and restoration measures.

6.3.3 Economic Activities

Households in the project area rely on multiple and diversified livelihood sources. The predominant economic activities are crop and livestock production, supplemented by participation in the farm and non-farm labour markets and self-employment activities. In remote rural areas within the project influence zone, household income is dominated by farm-based activities, with limited access to non-farm income opportunities. This dependence on subsistence agriculture makes households highly vulnerable to climate variability, high input costs, and market access constraints all of which are relevant contextual factors for the assessment of project risks and impacts on community livelihoods.

6.3.4 Social Infrastructure

The adequacy of social infrastructure in the project area is a key determinant of the capacity of communities to absorb and benefit from the project's positive impacts, and of their vulnerability to adverse project-related impacts.

6.3.4.1 Health Facilities

The Kambadwe project area is served by two primary health centres located within or in close proximity to the scheme, namely the Njereza Health Centre and the Mwalija Health Centre. For more complex medical needs, the nearest major referral health facilities are the Chikwawa District Hospital and the Nsanje District Hospital, both of which are accessible from the project area, with Chikwawa District Hospital located approximately 12 km east of Chikwawa Boma.

Chikwawa District registers significant burdens of disease among both outpatients and inpatients. According to the Chikwawa District Health Information System (DHIS 2, 2017), the leading causes of morbidity in the district include malaria, diarrhoea, acute respiratory infections (including pneumonia), skin infections, common injuries and wounds, and sexually transmitted infections (STIs) as shown in Figure 11 below.

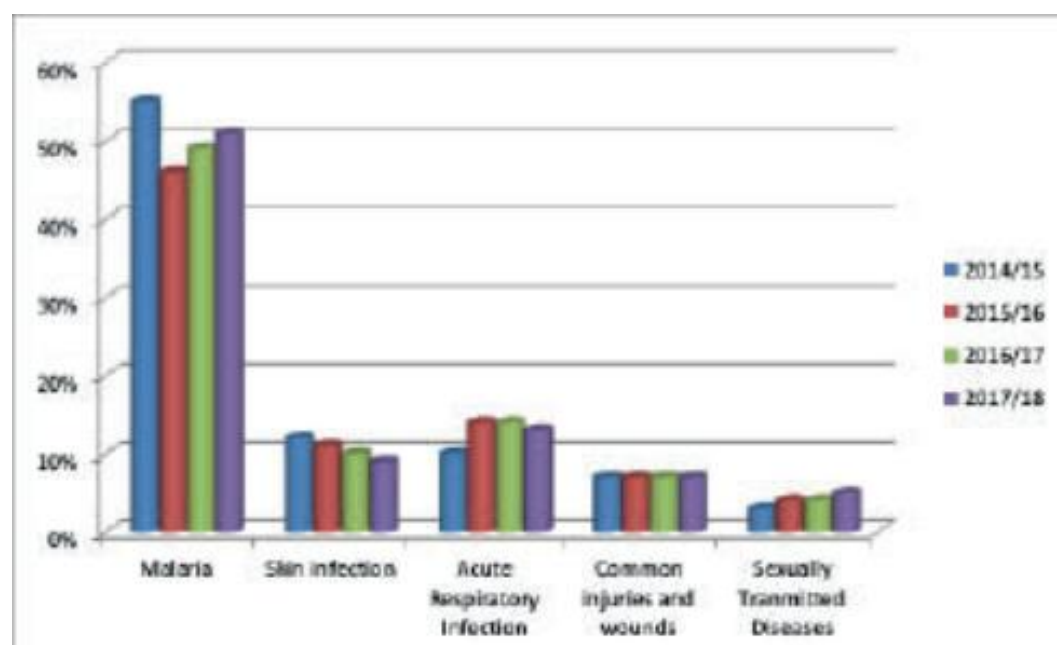


Figure 11: Showing prevalence of diseases, Source: Chikwawa DHIS 2, 2017

The prevalence of these disease conditions is directly relevant to the assessment of community health and safety risks associated with the project, particularly the heightened risk of malaria and waterborne disease transmission arising from the presence of irrigation canals and standing water during the operation phase of the scheme.

6.3.4.2 Education Facilities

The Njereza Primary School is located within Njereza Village at a distance of less than 500 metres from the scheme boundary, making it the primary educational facility serving the project-affected community. The proximity of this school to the project site is a relevant consideration for the assessment of construction-related nuisance impacts, including noise, dust, and traffic hazards, as well as for the assessment of risks related to child labour during the operation phase. No secondary school facilities have been noted within the immediate project area.

The literacy rate in Chikwawa District is 59.9%, according to the Integrated Household Survey 2016/17 significantly lower than the national literacy rate of 72.8% and the southern regional rate of 70.9%. Literacy levels are further disaggregated by sex, with female literacy rates consistently lower than male rates at all levels. The low literacy rates in the project area have

important implications for the design of stakeholder engagement and information disclosure processes, as written communication channels may not be accessible to a significant proportion of the project-affected community, particularly women. Communication strategies will therefore need to prioritise oral and community-based approaches.

School dropout rates in the project area reflect district-wide patterns, with pupils dropping out due to illness, pregnancy, poor school facilities (particularly for girls), lack of family support, early marriages, long distances to school, lack of school fees, family responsibilities, violence at school, early employment, and inadequate teaching staff. High dropout rates particularly among girls are a contextual risk factor for child labour engagement within the irrigation scheme during the operation phase, underscoring the need for robust child labour prevention measures.

6.3.4.3 Water Supply and Sanitation

The primary source of domestic water supply for households in the project area is boreholes, which account for at least 92% of all water sources. Shallow wells contribute approximately 3%, with piped water within private plots accounting for 2%, communal standpipes 1%, and rivers and streams 1%. Despite the relatively high coverage of borehole water supply, households across the scheme employ a range of additional water treatment methods to ensure that drinking water is safe, including boiling, chlorination using water purification tablets (Waterguard), filtering, and covering water storage containers. The most commonly used method across both Phase 1 and Phase 2 communities was covering the water container a method that provides only limited protection against microbial contamination, as it only prevents exposure to dust and insects. In Phase 1 communities, 42% of households covered their containers, 24% used chlorination, and 26% employed other methods (COWI, 2016).

The SVTP Baseline Study revealed that 74% of male-headed households and 70% of female-headed households in the project impact area had access to toilet facilities, with the most common type being traditional pit latrines. Approximately 76% and 71% of male and female-headed households respectively in the comparison area had toilet access. An existing borehole at the scheme offices, equipped with a manual pump, has been tested and confirmed suitable for human consumption; however, the previously installed motorised pump and piped water supply system for management houses and offices is no longer functional and requires rehabilitation. The prevalence of pit latrines rather than improved sanitation facilities presents a baseline public health risk, which will be exacerbated during construction by the influx of workers if adequate sanitation facilities are not provided and maintained.

6.3.4.4 Energy

Access to electricity in the project area is limited, with the majority of rural households relying on solar lanterns, candles, and kerosene lamps for lighting, and firewood as the primary source of cooking energy. Connection to the national electricity grid remains low in the project area, and electricity is reported by households as unaffordable. The continued reliance on firewood as the dominant cooking energy source has significant implications for forest resources and vegetation cover in the project area, representing a contextual risk factor for biodiversity and land degradation that will need to be considered in the project's environmental management planning.

6.3.5 Access Roads and Transport

The project area is connected to major urban centres by a network of roads that are periodically maintained. The common modes of transport used by communities in the project area include motorcycles, bicycles (locally referred to as shapa or kabaza), motorised vehicles, and ox-carts. The majority of households own push bicycles, with a smaller proportion owning motorcycles and ox-carts. Push bicycles and motorcycles are the most commonly used modes of transport for accessing health facilities, trading centres, and markets. The relatively poor condition of both the main access road and internal scheme roads is identified by scheme members as a significant constraint on agricultural productivity and market access, contributing to high transport costs and reducing the competitiveness of produce sold by smallholder farmers. Road condition and transport infrastructure represent important contextual factors for the assessment of project risks and impacts, particularly with regard to the safe movement of construction vehicles and the transportation of agricultural produce during the operation phase.

6.3.6 Telecommunications

The project area is covered by mobile telecommunications networks from both Airtel Malawi and Telekom Networks Malawi; however, communities have reported that network signal quality is weak, particularly in areas away from the M1 road. The SVTP Baseline Survey (2020) indicated that 55% of male-headed households owned a mobile telephone, compared to only 23% of female-headed households, reflecting significant gender disparities in access to telecommunications and digital information in the project area.

6.3.7 Vulnerable Groups

The identification and characterisation of vulnerable and marginalised groups within the project-affected community is an essential component of the baseline assessment, in accordance with the requirements of the World Bank ESF (2018) ESS7 and the AfDB ISS (2023) OS7 on Vulnerable Groups. Based on available data from the SVTP Baseline Survey (2020) and community consultations conducted during the ESMP preparation process, the following groups have been identified as potentially vulnerable, marginalised, or underserved within the project area and its influence area:

- **Women-headed households:** The project area has a notable proportion of female-headed households, who may face additional constraints in accessing project benefits, employment opportunities, and compensation processes due to gender-based discrimination in land rights, social norms, and limited mobility.
- **Persons with disabilities:** Persons with disabilities in the project area face barriers to participation in economic activities, decision-making processes, and access to social services, in a context where disability-inclusive infrastructure and services are limited.
- **Youth:** Young people in the project area face limited employment opportunities and are at elevated risk of engagement in child labour during the operation phase if adequate safeguards are not implemented.
- **Elderly persons:** Elderly community members, particularly those who are economically dependent and have limited mobility, may face barriers to participation in project consultations and to accessing project benefits and the GRM.
- **Persons living with HIV and AIDS:** The project area has an existing HIV prevalence context, and persons living with HIV may face discrimination in employment recruitment if adequate safeguards are not in place.

- Smallholder farmers with very small or irregular landholdings: Farmers with very small plots or insecure customary land tenure may be disproportionately affected by land demarcation and registration processes associated with the project.

It is acknowledged that disaggregated data for specific vulnerable groups including data disaggregated by sex, age, disability status, and HIV status is limited in the available baseline sources. This represents a data gap of high significance for the assessment of social risks and impacts, and a targeted socio-economic survey disaggregated by key vulnerability characteristics is recommended to be conducted as part of the project's Stakeholder Engagement Plan (SEP) and Vulnerable Groups assessment prior to the commencement of construction activities.

6.3.8 Existing Challenges and Socio-Economic Problems

Long-serving scheme members and community representatives identified the following as the principal socio-economic challenges currently facing the project-affected community, all of which constitute important baseline contextual factors for the assessment of project risks and impacts:

- Insufficient water supply to meet current scheme irrigation requirements;
- Reduced irrigable area due to inadequate coverage by the existing irrigation network;
- Significant water losses arising from lack of improved canal lining and poor water distribution and scheduling practices;
- Recurrent flood damage from the Shire River, reducing the arable irrigable area and threatening existing scheme infrastructure;
- Poor condition of both the main access road and internal scheme roads, resulting in high transport costs and market access constraints;
- Lack of coordination among farmers to access reliable markets, resulting in dependence on middlemen and vendors who offer below-market prices for produce;
- Lack of coordinated access to agricultural credit and collective negotiation with input suppliers to reduce input costs;
- High cost of agricultural inputs, particularly fertilizers;
- Insufficient capacity building support for crop production and agricultural marketing;
- Declining numbers of agricultural extension workers available to support farmers; and
- Declining soil productivity attributable to poor agricultural practices in the past, including monoculture without crop rotation and inadequate nutrient replenishment.

6.3.9 Security and Crime

The Chikwawa District Police Station is the nearest police facility to the proposed project site, located approximately 12 km east of Chikwawa Boma. The Malawi Police Service has introduced community-based policing as a complementary approach to conventional law enforcement, whereby communities are sensitised to actively participate in and support policing activities in their areas. In Chikwawa District, community policing structures have been established across all eleven Traditional Authority areas through Community Policing Forums, 79 Group Village Headman-level Crime Prevention Panels, and 593 Village Headman-level Crime Prevention Committees. Elected members at the forum level have been trained on the principles and practice of community policing and have been tasked with establishing and training similar structures at Group Village Headman and Village Headman

levels. This programme is aimed at curbing crime and improving security across the district. The existence of established community policing structures in the project area is a positive baseline factor for the management of security-related risks associated with the construction phase, including risks of theft, criminal activity, and conflicts between construction workers and host communities.

6.3.10 Contextual Risks

In addition to the specific environmental and social baseline conditions described above, the following broader contextual risks have been identified as potentially affecting the ability of the project to be implemented in a manner consistent with the applicable international safeguard standards and human rights obligations:

Climate change vulnerability: The lower Shire Valley is one of the most climate-vulnerable regions of Malawi, and increasing frequency and severity of climate-related hazards including droughts, floods, and erratic rainfall present ongoing risks to the sustainability and productivity of the irrigation scheme during its operational life.

Land tenure insecurity: The customary land tenure system prevalent in the project area is characterised by increasing fragmentation and tenure insecurity, particularly for women and youth, which may create challenges for the equitable distribution of irrigable land parcels among scheme participants.

Gender inequality: Prevailing gender norms and inequalities in the project area may constrain women's equal participation in scheme governance, employment opportunities, and access to project benefits if targeted gender mainstreaming measures are not implemented.

Institutional capacity: The capacity of local government institutions, farmer cooperatives, and Water User Associations (WUAs) to effectively manage the environmental and social requirements of the project throughout its operational life may be limited, necessitating targeted capacity-building support.

Cumulative impacts: The Kambadwe Irrigation Block project is being implemented as part of the broader Shire Valley Transformation Programme (SVTP), which encompasses multiple irrigation scheme development and rehabilitation activities across the lower Shire Valley. The cumulative environmental and social impacts of these overlapping development activities including on water resources, biodiversity, land use, and community livelihoods will need to be considered in the project's environmental and social impact assessment and management planning.

6.4 DEVELOPMENT LAND USE PLANNING

Given the transformative scale and significant investment attraction potential of the Shire Valley Transformation Programme (SVTP), the programme recognised the critical importance of supporting both Chikwawa and Nsanje District Councils in the preparation of comprehensive land use plans to guide the location and nature of development interventions across the project area. To this end, District Physical Development Plans were prepared for both districts, complemented by urban development plans for key urban centres and village-level land use plans covering communities within the programme's area of influence. The village-level land use plans have been particularly instrumental in guiding Area Development

Committees on the appropriate spatial allocation of farming, settlement, conservation, and community areas, and in providing a practical framework for their implementation and enforcement through the respective Customary Land Committees and the Physical Planning Committees at the district level. The overarching purpose of these plans is to safeguard the most agriculturally productive land in the Shire Valley from encroachment by competing land uses including residential settlements, industrial activities, and commercial developments thereby protecting the long-term productive potential of the irrigation programme for the benefit of smallholder farming communities.

The land use plan for the Kambadwe Irrigation Block was developed through a systematic and evidence-based integration of all available physical site assessments, encompassing topographic drone surveys, soil suitability analyses, flood extent mapping, current land use surveys, and assessments of existing and planned infrastructure and other relevant site characteristics. The delineation of suitable irrigation areas was achieved through the spatial overlay of soil suitability maps with topographic maps identifying areas of limiting slope, followed by the systematic exclusion of all areas assessed as unsuitable for economically viable irrigation development. Areas excluded from the irrigable zone include those subjects to excessive slope or undulation, seasonal flooding, severe sheet and gully erosion, existing settlements, natural drainage corridors, existing road and infrastructure corridors, and rocky terrain. The resulting land use plan reflects a carefully balanced allocation of the 294-hectare project area across irrigable land, flood protection zones, catchment rehabilitation areas, village settlements, and protected woodlots.

Given the transformative scale and expected investment attraction potential of the SVTP, the programme recognised the critical importance of ensuring that both Chikwawa and Nsanje District Councils were supported in the preparation of comprehensive land use plans to guide the location and nature of development interventions in the project area. District Physical Development Plans for both districts, urban development plans for key urban areas, and village-level land use plans were prepared. Village land use plans have been instrumental in guiding Area Development Committees on the appropriate location of farming, settlement, conservation, and community areas, and in providing a framework for their implementation and enforcement through the respective Customary Land Committees and the Physical Planning Committee at the district level. The primary purpose of these plans is to ensure that the most productive agricultural land in the Shire Valley is protected from competing land uses such as settlements, industrial developments, and commercial activities.

The land use plan for the Kambadwe Irrigation Block was developed through a systematic integration of all physical site assessments, including topographic surveys, soil suitability analyses, flood extent mapping, current land use surveys, and assessments of existing and planned infrastructure and other site characteristics. The process of delineating suitable irrigation areas involved the spatial overlay of soil suitability maps with topographic maps showing areas of limiting slope, and the exclusion of areas deemed too steep or undulating for economically viable irrigation development, as well as areas subject to seasonal flooding, severe erosion, settlements, natural drainage corridors, existing infrastructure, and rocky terrain.

6.5 LAND TENURE

The commencement of the SVTP in 2017 coincided with the implementation of the newly enacted land-related laws of 2016, including the Land Act (2016) and the Customary Land Act

(2016). The land tenure services for the programme were initially designed to be provided by a contracted service provider; however, due to budgetary constraints, the Ministry of Lands was engaged to provide these services directly. Key district-level staff were deployed to the project area, supported by technical officers from the Ministry headquarters in Lilongwe and the regional office in Blantyre. To safeguard project interests and ensure the effective implementation of land tenure activities, the SVTP recruited three dedicated field staff, with the approval of the World Bank, to supervise and support the implementation of land tenure activities by the Government. The key stages of the land tenure security programme are described below.

6.5.1 Resettlement Action Plans

All land to be acquired and utilised for project activities particularly for canal construction was systematically identified, mapped, and assessed for valuation purposes to enable the fair compensation of identified Project Affected Persons (PAPs). The preparation of Resettlement Action Plans (RAPs) for project-affected areas formed a core component of the land tenure security activities, ensuring that all affected landholders were informed of their rights and provided with timely and adequate compensation prior to the commencement of construction activities on their land.

6.5.2 Land Lease Records and Moratorium

Customary land in Malawi and particularly in the Shire Valley has historically been vulnerable to conversion to private leases for sugar plantations and animal ranches, creating deep-seated anxieties among local communities about losing their land to outside investors. The introduction of the SVTP renewed these anxieties, as the programme attracted investors seeking to take advantage of the new irrigation infrastructure by leasing land in the project area. To protect the customary land rights of smallholder farmers as the ultimate beneficiaries of the programme, the SVTP requested the Ministry of Lands to issue a moratorium on new land leases in the project area in 2019, thereby preventing land speculation and safeguarding customary landholdings from conversion to private leases. The programme also undertook a comprehensive inventory of all existing agricultural leases in the Phase 1 area to determine their current status, spatial extent, and potential impacts on proposed irrigation blocks and water demand.

6.5.3 Community Engagement

A comprehensive series of stakeholder meetings was conducted at both national and district levels to inform and sensitise all relevant parties about the enactment of the land laws of 2016 and the role of the SVTP in piloting their implementation. Key district-level stakeholders engaged included the District Councils of Chikwawa and Nsanje, traditional authorities, and village headmen, with focused consultations aimed at developing a shared understanding of the roles of chiefs in land administration under the new land laws, which emphasise community participation and transparency. Community sensitisation meetings informed residents of the new land legislation, the importance of land demarcation and registration, the nature and scope of the SVTP, and the direct benefits available to landowners whose land falls within irrigable areas. Communities were also sensitised on the importance of land consolidation following registration, to enable the creation of viable farming units that participants can own, manage, and develop for commercial agriculture.

6.5.4 Establishment of Land Governance Institutions

The new land laws of 2016 require that land decisions be made by committees rather than by individual traditional authorities, to promote transparency, accountability, popular participation, and fairness. In 2019, gender-sensitive six-member Customary Land Committees were established at the Group Village Headman level across all Traditional Authority areas within the project footprint. The law provides for a minimum of three female members on each committee, with the Group Village Headman serving as the seventh member and chairperson. The primary mandate of the Customary Land Committee is to manage all customary land in trust for all residents of the area.

At the Traditional Authority level, Customary Land Tribunals each chaired by the Traditional Authority and comprising three men and three women appointed by the Chief were established in 2021 across all five Traditional Land Management Authorities (TLMAs) under Phase 1 of the programme, to hear and resolve land disputes referred from the Customary Land Committees at Group Village Headman level. A District Land Tribunal was also established to hear appeals from Traditional Authority-level decisions, initially chaired by the District Commissioner and now chaired by the most senior chief in the district. A District Land Registry was established to support the functionality of the committees and tribunals and to facilitate the implementation of the land laws at the district level. Land Clerks were deployed to each Traditional Authority to serve as secretariat to the land committees and tribunals, and to support land use planning, adjudication, demarcation, and registration of customary land.

6.5.5 Adjudication, Demarcation and Registration of Customary Land

The core activities of the land tenure security programme are adjudication, demarcation, and registration of customary land parcels. Adjudication is a participatory process through which the rights of community residents over land parcels are identified and confirmed through application to the Customary Land Committee. Where multiple persons claim rights over the same parcel, all names are recorded as joint owners or tenants in common, with the percentage ownership of each person specified. Gender is a central principle of the Customary Land Act and the land registration approach: the systematic demarcation process ensures that all women-owned parcels are explicitly included, and the procedure informs landowners of the option of joint titling with a partner and/or children, while also affirming a woman's right to register a parcel solely in her own name or with only her children as co-owners.

Once the claims of the Customary Land Committee members and adjacent landholders have been confirmed, the personal details of the landowner are recorded in the register, and the parcel is physically demarcated by walking its perimeter in the presence of community members and preparing a cadastral map of the land. The demarcated land records and maps are displayed publicly in the community for confirmation or correction before the land is formally registered in the District Land Registry and the landowner is issued with a Certificate of Customary Estate as documentary evidence of ownership.

6.5.6 Land Consolidation

Feasibility studies for the SVTP provided maps of irrigable areas and the proposed locations of irrigation farms. From 2021, adjudication and demarcation activities in these areas were specifically oriented towards enabling land consolidation into viable irrigation farm units, and landowners were sensitised that the primary purpose of having their land demarcated was to

facilitate their inclusion in the land to be consolidated into irrigation farms through the formation of Smallholder Commercial Farm Enterprises (SOCFEs). Physical verification of the irrigability of parcels was conducted jointly by engineers, land surveyors, Customary Land Committees, and landowners, to ensure transparency and shared understanding of the criteria for SOCFE membership, with irrigability of land being the primary eligibility criterion.

6.5.7 Land Dispute Resolution

The fair and timely resolution of land disputes has been one of the central challenges addressed by the land tenure component of the SVTP. Land disputes in the project area fall into two main categories: ownership disputes and boundary disputes. Ownership disputes have been the most persistent and complex, manifesting through land grabbing by powerful individuals including some traditional leaders, inheritance conflicts, and illegal land sales. While these disputes persist to some degree, their incidence has significantly declined in areas where adjudication, demarcation, and registration have been completed. Boundary disputes have been most prevalent on un-demarcated land, where owners struggle to identify their boundaries given the flat terrain of the lower Shire Valley and seasonal flooding that removes physical boundary markers. Inter-authority boundary disputes between Traditional Authority and Village Headman boundaries have also indirectly affected individual parcel boundaries and complicated programme implementation in certain areas. The establishment and progressive operationalisation of Customary Land Committees, Customary Land Tribunals, and District Land Tribunals have significantly reduced the number and severity of land disputes in the project area. The inventory of existing agricultural leases and the documentation of their locations have also helped to reduce disputes between local communities and lease holders, where some historical leases were granted without proper consultation or the informed consent of customary landowners

7 IDENTIFICATION AND ANALYSIS OF IMPACTS

7.1 INTRODUCTION AND SCOPE OF IMPACT ASSESSMENT

This chapter identifies, characterises, and evaluates the potential environmental and social (E&S) risks and impacts associated with the implementation of the Kambadwe Irrigation Block project across all four phases of the project cycle: planning and design, construction, operation and maintenance, and decommissioning. The assessment covers both positive and negative impacts on the biophysical and socio-economic environment, including cumulative impacts arising from the interaction of the Kambadwe Irrigation Block with other development activities within the project area and its broader influence zone, particularly the wider Shire Valley Transformation Programme (SVTP).

The assessment considers all E&S risks and impacts specifically identified in the applicable international safeguard frameworks, including the World Bank Environmental and Social Framework (ESF, 2018) and the African Development Bank Group's updated Integrated Safeguards System (ISS, 2023), as well as risks and impacts arising from the specific nature and context of the project. Residual impacts are characterised in terms of their magnitude, extent, duration, reversibility, and significance following the application of proposed mitigation measures. Impacts that do not require further attention are identified and the basis for this determination is provided.

7.2 METHODOLOGY OF IMPACT IDENTIFICATION

The methodology adopted for impact identification and analysis was structured around a five-step process designed to ensure comprehensive and systematic identification of all relevant E&S risks and impacts across all project phases:

- Step 1 Baseline Assessment: Characterisation of the existing environmental and social conditions of the project area and its influence zone, as described in Chapter 4, to establish the reference conditions against which project-induced changes are assessed.
- Step 2 Examination of Project Inputs: Assessment of project inputs — including construction machinery, materials, chemicals, and energy sources — to determine potential changes and impacts on the biophysical, social, and cultural environment.
- Step 3 Examination of Project Activities: Systematic review of all project activities across each phase to identify the environmental and social impacts arising from their implementation.
- Step 4 Examination of Project Outputs: Assessment of the changes and impacts likely to arise from the delivery of project outputs, including the completed irrigation infrastructure and associated land use changes.
- Step 5 Determination of Environmental and Social Impacts: Application of a combination of expert professional judgement, stakeholder consultation, and a Leopold interaction matrix to identify and characterise direct, indirect, and cumulative E&S impacts. The mitigation hierarchy comprising avoidance, minimisation, restoration, and compensation was applied in developing management responses to identified negative impacts.

7.3 IMPACT CHARACTERISATION CRITERIA

All identified impacts were characterised using the following criteria, which together determine the overall significance of each impact:

- Magnitude: The degree, extensiveness, and scale of the impact, assessed at local, regional, or national level.
- Probability of Occurrence: The likelihood of the impact occurring, assessed as Possible (may occur but not probable), Probable (very likely to occur), or Definite (unavoidable).
- Duration: The timeframe over which the impact is expected to occur, assessed as Short-term (less than 5 years), Medium-term (5 to 10 years), or Long-term (over 10 years).
- Reversibility: Whether the impact can be reversed or remediated following the cessation of the causative activity, assessed as Reversible, Partially Reversible, or Irreversible.
- Significance: The overall importance of the impact, assessed as Negligible, Low, Moderate, or High, reflecting the combined consideration of magnitude, probability, duration, and reversibility.

Residual risk is assessed following the application of proposed mitigation or enhancement measures, and represents the level of risk or impact that remains after all feasible management

measures have been implemented. Where residual risks are assessed as Moderate or High, these are specifically identified and additional management measures are recommended.

7.4 CUMULATIVE IMPACTS

The assessment of cumulative impacts considers the combined effects of the Kambadwe Irrigation Block project with other existing and planned development activities within the project area and its influence zone. Key sources of cumulative impacts identified for this project include:

- The broader SVTP programme, which encompasses multiple irrigation scheme development and rehabilitation activities across the lower Shire Valley, with associated cumulative impacts on water resources, biodiversity, land use, and community livelihoods in the Shire River catchment;
- Existing agricultural land use and associated pressures on soil quality, vegetation cover, and water resources in the lower Shire Valley;
- The cumulative effect of increased water abstraction from the Shire River by multiple irrigation schemes, with potential implications for downstream river flows, aquatic biodiversity, and the water supply needs of downstream communities and ecosystems; and
- The cumulative social impacts of multiple construction projects operating simultaneously in the lower Shire Valley, including the combined effects on the local labour market, community health and safety, and HIV/AIDS and GBV risks.

Cumulative impacts are addressed through the mitigation and management measures proposed in this chapter and in the ESMP, with particular emphasis on water resource management, biodiversity conservation, community health and safety, and social cohesion measures that are coordinated across the wider SVTP programme.

7.5 VULNERABLE GROUPS AND DIFFERENTIATED IMPACTS

The assessment of environmental and social impacts has specifically considered the potential for adverse impacts to fall disproportionately on vulnerable and marginalised groups within the project-affected community, in accordance with the requirements of OS7 of the AfDB ISS (2023) and ESS7 of the World Bank ESF (2018). The key vulnerable groups identified in the project area including women-headed households, youth, elderly persons, persons with disabilities, and persons living with HIV and AIDS face elevated vulnerability to the following project-related impacts:

- Women-headed households and women generally: Disproportionately affected by GBV and SEA risks associated with the construction workforce influx; potential exclusion from employment opportunities and scheme governance due to gender norms; risk of being overlooked in land demarcation and compensation processes.
- Youth: Elevated risk of child labour engagement during the operation phase; risk of school dropout arising from farming demands; limited access to formal employment

opportunities during construction if targeted recruitment measures are not implemented.

- Persons with disabilities: Barriers to participation in scheme governance, GRM processes, and employment opportunities if inclusive design principles are not applied.
- Persons living with HIV and AIDS: Risk of discrimination in employment recruitment if adequate safeguards are not in place; elevated vulnerability to health impacts from increased disease burden associated with irrigation canals.

Specific differentiated mitigation measures targeting each of these vulnerable groups are incorporated into the impact management measures presented in Table 5.1 below and in the ESMP matrix in Chapter 6.

7.6 ISSUES NOT REQUIRING FURTHER ATTENTION

Based on the impact assessment conducted for the Kambadwe Irrigation Block project, the following issues have been assessed as not requiring further detailed attention in the ESMP, on the basis of the justifications provided:

- Archaeological and physical cultural resources: A preliminary field assessment did not identify any significant archaeological or cultural heritage sites within the project footprint. While a Chance Finds Procedure will be implemented during construction as a precautionary measure, no further detailed cultural heritage assessment is considered necessary at this stage, given the absence of identified heritage resources.
- Seismic and geological hazards: The geological conditions of the project area do not present significant seismic or geological stability risks to the proposed irrigation infrastructure, based on the geotechnical survey conducted in 2022. No further detailed geological hazard assessment is considered necessary.
- Air quality from greenhouse gas emissions: The contribution of the project to greenhouse gas emissions is assessed as negligible in the global context, given the small scale of the scheme and the adoption of gravity-fed irrigation technology. While mitigation measures for GHG emissions from irrigated agriculture are included in the ESMP, no detailed GHG quantification or reporting is considered necessary at this scale.
- Transboundary impacts: The project does not involve any activities or impacts that are anticipated to have significant transboundary effects beyond the national jurisdiction of Malawi. No further transboundary impact assessment is therefore required.

7.7 SUMMARY OF IDENTIFIED IMPACTS AND MANAGEMENT MEASURES

Table 8 below provides a comprehensive summary of all identified positive and negative environmental and social impacts across all four project phases, together with their characterisation in terms of magnitude, duration, significance, reversibility, key management measures, and residual risk. The table is structured to clearly demonstrate the application of the mitigation hierarchy and to identify residual impacts that require ongoing monitoring and management.

Table 8: Summary of Environmental and Social Impacts and Management Measures in Kambadwe Irrigation Block

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
PLANNING PHASE								
Planning	Creation of employment (consultancies)	Positive	Local	Short-term	Moderate	N/A	Ensure at least 50% Malawian personnel in all consultant teams to enhance local capacity building	Low
Planning	Community anxiety over potential land loss	Negative	Local	Short-term	Low	Reversible	Conduct comprehensive community sensitisation meetings; clearly communicate project scope, land use arrangements, and voluntary nature of land contribution; establish GRM prior to any site activities	Negligible

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
CONSTRUCTION PHASE — POSITIVE IMPACTS								
Construction	Creation of direct employment (~100 workers)	Positive	Local	Short-term	High	N/A	Recruit minimum 80% of labour force from surrounding communities; pay wages above government stipulated rates; ensure equal employment opportunities for men and women; target at least 40% female employment	Low
Construction	Increased local economic activity	Positive	Local	Short-term	Moderate	N/A	Designate formal trading site within project area; support local enterprise development; facilitate market linkages; promote economic diversification and value chain development	Low
Construction	Skills transfer to local communities	Positive	Local	Long-term	Moderate	N/A	Pair skilled and unskilled workers; formalise on-the-job training with learning targets; maximise local employment particularly for unskilled roles	Low
Construction	Government tax revenue generation	Positive	National	Short-term	Low	N/A	Remit all taxes (PAYE, WHT, VAT) to MRA on time; procure materials from tax-compliant businesses	Low

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
CONSTRUCTION PHASE — NEGATIVE IMPACTS								
Construction	Loss of vegetation and habitat	Negative	Local	Short-term	Moderate	Reversible	Restrict clearing to demarcated footprint only; conduct pre-construction vegetation inventory; implement reforestation programme (1,250,000 trees); collaborate with Department of Forestry on catchment management; develop contractor environmental rules and regulations	Low
Construction	Disruption of animal habitats (reptiles, amphibians, small mammals)	Negative	Local	Short-term	Low	Reversible	Restrict vegetation clearing to demarcated areas only; conduct environmental awareness sessions with workers; develop and enforce contractor biodiversity protection rules	Negligible
Construction	Dust emissions from earthworks	Negative	Local	Short-term	Low	Reversible	Spray water on unpaved surfaces and access roads; enforce vehicle speed limits (max 20 km/h on unpaved roads); provide appropriate dust PPE to all workers	Negligible

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
	and vehicle movement							
Construction	Increased soil erosion and sedimentation of Shire River	Negative	Local/Regional	Short-term	Moderate	Reversible	Install diversion drains and sediment fences prior to earthworks; time earthworks to coincide with dry season where possible; revegetate disturbed areas progressively; restrict clearing to demarcated footprint	Low
Construction	Generation of construction waste	Negative	Local	Short-term	Low	Reversible	Reuse construction waste for borrow pit backfilling; segregate and dispose of waste at designated sites in liaison with Chikwawa District Council; train workers on Reduce-Reuse-Recycle principles	Negligible
Construction	Water pollution from oil spills, cement, and human waste	Negative	Local	Short-term	Moderate	Reversible	Construct temporary toilets and enforce their use; concrete and bund all fuelling areas; collect and dispose of used oils in leak-proof containers; sensitise workers on good hygiene; prohibit disposal of waste into water bodies	Low

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
Construction	Noise pollution (>80 dB) from machinery and vehicles	Negative	Local	Short-term	Low	Reversible	Fit silencers to heavy machinery exhaust systems; service all machinery regularly; provide ear protection to all exposed workers	Negligible
Construction	Social disruption and family instability from migrant worker influx	Negative	Local	Short-term	Moderate	Reversible	Recruit minimum 80% of labour force from surrounding communities; develop and enforce comprehensive workers Code of Conduct; establish community liaison and GRM mechanisms	Low
Construction	Increased risk of STIs, HIV and AIDS transmission	Negative	Local	Short-term	High	Reversible	Recruit minimum 80% workforce locally; provide free condoms; distribute HIV/AIDS IEC materials to workers and communities; conduct regular sensitisation sessions with District AIDS Coordinator; establish referral pathway to health services	Moderate
Construction	Increased risk of GBV and SEA	Negative	Local	Short-term	High	Reversible	Develop and enforce zero-tolerance workers Code of Conduct on GBV and SEA; sensitise all workers and	Moderate

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
							communities; establish community-level GRM with dedicated GBV reporting channel; establish GBV referral pathway to service providers; implement survivor-centred response protocols	
Construction	Child labour engagement by contractor	Negative	Local	Short-term	Moderate	Reversible	Verify national ID cards for all recruited workers; enforce minimum age of 18 years; display child labour prohibition signage; develop and communicate clear employment plan to communities; include child labour prohibition in works contract EOHS clauses	Low
Construction	Increased criminal activity from population influx	Negative	Local	Short-term	Low	Reversible	Recruit minimum 80% workforce locally; strengthen community policing structures; sensitise communities and migrant workers against criminal activities; include criminal conduct provisions in workers Code of Conduct	Negligible
Construction	Exploitation of labourers (underpayment)	Negative	Local	Short-term	Moderate	Reversible	Ensure all workers have signed employment contracts; pay at or above government minimum wages; enforce	Low

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
	t, overworking)						legally mandated working hours; pay overtime in accordance with Employment Act; establish worker grievance mechanism independent of project GRM	
Construction	COVID-19 and communicable disease transmission among workers	Negative	Local	Short-term	Low	Reversible	Sensitise workers and communities on COVID-19 and communicable disease prevention; provide handwashing facilities, masks, and sanitisers; enforce COVID-19 prevention protocols on site; encourage vaccination	Negligible
OPERATION AND MAINTENANCE PHASE — POSITIVE IMPACTS								
Operation	Increased crop production (2-3 seasons per year)	Positive	Local/National	Long-term	High	N/A	Adopt water-saving irrigation technologies; use improved high-yielding hybrid seeds; promote conservation agriculture; provide agricultural extension support	Low
Operation	Increased household	Positive	Local	Long-term	High	N/A	Link farmers to formal markets and commercial buyers; facilitate formation	Low

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
	income from sale of irrigated produce						of cooperatives; support post-harvest handling and storage; provide starter packs for vulnerable households	
Operation	Improved nutrition and food security	Positive	Local	Long-term	High	N/A	Encourage crop diversification; train farmers on GAPs; promote nutrition-sensitive agriculture; ensure women's equal access to scheme benefits	Low
Operation	Improved market linkages for farmers	Positive	Local/Regional	Long-term	Moderate	N/A	Identify and formalise market linkages; assist farmers to form cooperatives; facilitate value chain development; support agribusiness development	Low
Operation	Skills transfer in GAPs, water-saving technologies, and value chains	Positive	Local	Long-term	Moderate	N/A	Establish farmer field schools; train WUA members on scheme management; facilitate cooperation with agricultural colleges for field learning access	Low

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
Operation	Improved dry-season water availability for surrounding communities	Positive	Local	Long-term	Moderate	N/A	Provide controlled community access to the night storage reservoir; coordinate with WUA on equitable water allocation	Low
Operation	Aquatic biodiversity conservation through environmental flows	Positive	Local/Regional	Long-term	Moderate	N/A	Mimic dry-season ecological flow requirements; release minimum environmental flows downstream; monitor downstream river health and aquatic biodiversity	Low
OPERATION AND MAINTENANCE PHASE — NEGATIVE IMPACTS								
Operation	Waterlogging and associated mosquito breeding	Negative	Local	Long-term	Moderate	Reversible	Design self-draining field canals; train farmers in best irrigation practices and water scheduling; regulate water application to prevent over-irrigation	Low
Operation	Child labour in farming activities	Negative	Local	Long-term	Moderate	Reversible	Sensitise farmers on dangers of child labour; enforce minimum age of 18 for farm labour; develop bylaws through	Low

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
							WUA to deter engagement of minors; coordinate with District Education Manager	
Operation	Disruption of children's education by farming demands	Negative	Local	Long-term	Moderate	Reversible	Sensitise parents on importance of children's education; develop WUA bylaws prohibiting engagement of school-going children in farming during school hours; coordinate with District Education Manager	Low
Operation	Water and soil pollution from agrochemicals and human waste	Negative	Local/Regional	Long-term	High	Reversible	Implement Integrated Pest Management (IPM); restrict pesticides to Pesticides Control Board approved list; promote organic farming; construct scheme toilets and boreholes; conduct farmer training on agrochemical handling; coordinate with NWRA on water quality monitoring	Moderate
Operation	Increased HIV/AIDS and STI transmission	Negative	Local	Long-term	Moderate	Reversible	Recruit workforce locally; provide free condoms; distribute HIV/AIDS IEC materials; conduct sensitisation sessions; establish health referral pathway	Low

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
	risk from labour influx							
Operation	Vector-borne and waterborne diseases (malaria, schistosomiasis, diarrhoea, cholera)	Negative	Local	Long-term	High	Reversible	Design canals to prevent stagnant water; promote insecticide-treated mosquito net use; provide PPE for water-logged areas; construct toilets and boreholes; implement vector management programme; coordinate with District Environmental Health Officer	Moderate
Operation	Greenhouse gas emissions (CO ₂ , CH ₄ , N ₂ O) from irrigated agriculture	Negative	Global	Long-term	Low	Partially reversible	Regulate water application to minimise waterlogging; adopt efficient fertiliser application practices; promote conservation agriculture; monitor GHG emissions where feasible	Low
Operation	Water use conflict with downstream users	Negative	Regional	Long-term	Moderate	Reversible	Apply for water abstraction permit from NWRA; adopt water-saving technologies; coordinate with downstream irrigation blocks on water	Low

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
							allocation; establish environmental flow releases	
Operation	Occupational injuries to maintenance workers and farmers	Negative	Local	Long-term	Moderate	Reversible	Provide PPE to all farmers and maintenance workers; train workers on safe use of PPE and equipment; establish OHS protocols for scheme maintenance activities	Low
Operation	Reduced downstream river flows affecting ecological and downstream users	Negative	Regional	Long-term	Moderate	Partially reversible	Commission reservoir at peak of rainy season; design penstock to automatically release minimum ecological flows; mimic dry-season environmental flow requirements; coordinate with NWRA and downstream stakeholders	Low
Operation	Proliferation of disease vectors (mosquitoes, bilharzia snails)	Negative	Local	Long-term	High	Reversible	Sensitise communities on dangers of stagnant water; promote insecticide-treated mosquito net use; implement biological and chemical vector control in canals; coordinate with District Environmental Health Officer	Moderate

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
Operation	Farmer exposure to agrochemicals (handling and application)	Negative	Local	Long-term	Moderate	Reversible	Train farmers on safe handling, storage, and application of agrochemicals; restrict use to approved pesticides; promote organic alternatives; provide appropriate PPE; promote IPM practices	Low
Operation	Generation of hazardous waste (pesticide containers, obsolete chemicals)	Negative	Local	Long-term	Moderate	Reversible	Train farmers on safe waste disposal; restrict use to approved pesticides; collect and dispose of hazardous waste in liaison with MEPA; promote IPM to reduce agrochemical use	Low
DECOMMISSIONING PHASE — POSITIVE IMPACTS								
Decommissioning	Improved environmental aesthetics from site restoration	Positive	Local	Long-term	Moderate	N/A	Rehabilitate all borrow pits; revegetate all areas stripped of cover; remove and dispose of all construction waste at designated sites; restore site to productive land use	Low

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
Decommissioning	Reduced noise levels following cessation of construction	Positive	Local	Long-term	Low	N/A	Service and redeploy construction machinery; restore site conditions to pre-construction baseline	Low
Decommissioning	Reduced occupational health and safety risks for workers	Positive	Local	Long-term	Moderate	N/A	Progressively rehabilitate borrow pits; remove hazardous materials; encourage communities to continue using insecticide-treated mosquito nets	Low
DECOMMISSIONING PHASE — NEGATIVE IMPACTS								
Decommissioning	Loss of employment for construction workers	Negative	Local	Short-term	Moderate	Reversible	Provide adequate notice of contract termination; pay all terminal benefits and outstanding wages; facilitate workers' transition to agricultural employment in scheme; provide skills training for alternative livelihoods	Low
Decommissioning	Reduction of small-scale businesses	Negative	Local	Short-term	Low	Reversible	Sensitize traders and service providers on construction timeline well in advance; assist traders to identify alternative	Negligible

Phase	Impact	Type (+/-)	Magnitude	Duration	Significance	Reversibility	Key Mitigation / Enhancement Measures	Residual Risk
	reliant on construction activity						markets; encourage diversification of business activities	
Decommissioning	Increased solid waste generation from demolition of temporary structures	Negative	Local	Short-term	Low	Reversible	Allow communities to collect reusable materials; use demolition rubble to rehabilitate borrow pits; dispose of remaining waste at designated sites in liaison with Chikwawa District Council	Negligible

7.8 DETAILED IMPACT DESCRIPTIONS AND MANAGEMENT MEASURES BY PHASE

The following sections provide detailed descriptions of each identified impact, including its cause, anticipated extent and significance, applicable mitigation or enhancement measures, feasibility considerations, institutional requirements, and residual risk. Impacts are organised by project phase and distinguished between positive and negative impacts.

7.8.1 Planning and Design Phase

The planning and design phase is characterised by limited physical activity on the ground, with the primary activities comprising consultancy studies, community consultations, and site surveys. The environmental and social impacts of this phase are therefore of limited extent and significance. Two impacts are identified:

7.8.1.1 Creation of Employment (Positive)

During the planning phase, consultants were engaged to undertake feasibility studies, ESMP development, market analysis studies, baseline surveys, and other related studies. These activities created short-term employment opportunities for a range of technical and support personnel. The significance of this impact is assessed as Moderate at the local level, with a short-term duration.

Enhancement measure: All consultant teams engaged under the project should include a minimum of 50% Malawian personnel to maximise local capacity building and technology transfer. This measure is straightforward to implement through contract specifications and requires no significant capital or recurrent costs. Compliance will be monitored by the PIU through review of consultant staffing lists.

7.8.1.2 Community Anxiety over Potential Land Loss (Negative)

The presence of survey teams and consultants in the project area during the planning phase generated anxiety among some community members regarding the potential loss of their land to the irrigation scheme. This impact is assessed as Low in significance with short-term duration, and is readily reversible through timely and transparent communication.

Mitigation measure: Comprehensive community sensitisation meetings must be conducted prior to and throughout the planning phase to clearly communicate the scope of the project, the voluntary nature of land contribution, the land demarcation and registration process, and the rights of community members. The GRM must be established and made accessible to all community members prior to the commencement of any site activities. This measure is low-cost and can be implemented immediately by the PIU in coordination with the District Council and traditional authorities. Residual risk is assessed as Negligible.

7.8.2 Construction Phase

The construction phase presents the greatest concentration of negative environmental and social impacts, arising primarily from land preparation, earthworks, canal construction, and the presence of a large construction workforce in the project area. However, the phase also generates significant positive impacts through employment creation and local economic stimulation. All construction-phase negative impacts are assessed as reversible and mitigatable, with the exception of HIV/AIDS

and GBV risks, which may have moderate residual significance if mitigation measures are not rigorously implemented and enforced.

Key construction-phase impacts of note include the risk of increased HIV/AIDS and STI transmission and GBV and SEA incidents associated with the presence of an itinerant construction workforce. These risks are assessed as High in significance prior to mitigation, and Moderate in residual significance even after the application of proposed mitigation measures, given the systemic and contextual nature of these risks in the lower Shire Valley. Rigorous implementation of the workers Code of Conduct, GBV referral pathway, HIV/AIDS sensitization programme, and community-level GRM are therefore identified as critical mitigation priorities for the construction phase.

Water pollution from oil spills, cement waste, and human waste poses a Moderate risk to the Shire River and surrounding water bodies during construction. Effective implementation of the proposed mitigation measures including designated and bunded fueling areas, proper sanitation facilities, and prohibition of waste disposal into water bodies is expected to reduce this impact to Low residual risk.

Soil erosion and sedimentation of the Shire River arising from vegetation clearing and earthworks is assessed as Moderate in significance and requires timely implementation of erosion control measures including sediment fences, diversion drains, and progressive revegetation to reduce residual risk to Low.

7.8.3 Operation and Maintenance Phase

The operation phase generates substantial positive impacts on food security, household incomes, nutrition, and livelihoods at the local level, with long-term duration and High significance. These positive impacts represent the primary development rationale for the project and should be actively enhanced through market linkage support, farmer training, and cooperative development.

However, the operation phase also generates several negative impacts of High significance that require sustained and long-term management. Water and soil pollution from agrochemicals, vector-borne and waterborne diseases, and the proliferation of disease vectors are all assessed as High in pre-mitigation significance, with Moderate residual risk even after the application of proposed mitigation measures, given the long-term and ongoing nature of these risks during scheme operation. These impacts therefore require sustained management attention, ongoing monitoring, and regular review of mitigation effectiveness throughout the operational life of the scheme.

The risk of reduced downstream river flows affecting ecological integrity and the water needs of downstream users is assessed as Moderate in significance and Partially Reversible. The design of appropriate environmental flow release provisions in the scheme's water management plan is therefore a priority measure for addressing this risk.

Cumulative water resource impacts including the combined effect of water abstraction by the Kambadwe Irrigation Block and other SVTP irrigation blocks from the Shire River require ongoing monitoring and coordination with the National Water Resources Authority to ensure that the cumulative abstraction volumes remain within sustainable limits.

7.8.4 Decommissioning Phase

The decommissioning phase generates both positive impacts including improved environmental aesthetics from site restoration and reduced noise levels and negative impacts primarily associated with the loss of employment and small-scale business opportunities for workers and traders who benefited from construction activities. All decommissioning-phase negative impacts are assessed as Low in significance with short-term duration and are readily manageable through appropriate advance notification, terminal benefits provision, and business transition support. Residual risks are assessed as Negligible to Low across all decommissioning-phase impacts.

7.9 Mitigation Feasibility and Institutional Requirements

All proposed mitigation measures have been assessed for feasibility in the local context of the Kambadwe project area. The following observations are made regarding the feasibility, cost, and institutional requirements of key mitigation measures:

- GBV and SEA prevention and response: Implementation of GBV mitigation measures requires dedicated financial resources for training, Code of Conduct development and enforcement, GRM establishment, and referral pathway coordination with GBV service providers. These costs are included in the ESMP budget. The primary institutional challenge is ensuring the consistent enforcement of the workers Code of Conduct by the contractor and the Supervising Engineer throughout the construction period. Coordination with the District Social Welfare Office and available GBV service providers in Chikwawa District is essential.
- HIV/AIDS prevention: Sensitization sessions, IEC material distribution, and condom provision are low-cost measures with demonstrated effectiveness. Coordination with the Chikwawa District AIDS Coordinator is a prerequisite for implementation and adds no significant cost. Residual risk is Moderate due to the systemic nature of HIV transmission risk in the context of migrant labour.
- Agrochemical and water pollution management: Implementation of IPM practices and restriction of pesticide use to approved products are feasible under local conditions but require sustained farmer training and extension support. Coordination with the Pesticides and Poisons Board, the National Water Resources Authority, and the District Agriculture Development Office is required. Annual water quality monitoring of the Shire River is recommended and is included in the ESMP environmental monitoring matrix.
- Vector and waterborne disease management: Implementation of vector management programmes requires coordination with the Chikwawa District Environmental Health Office and the District Health Office. Provision of insecticide-treated mosquito nets and PPE for waterlogged work areas are low-cost measures; however, ongoing community sensitization requires sustained resources over the operational life of the scheme.
- Child labour prevention: Enforcement of minimum age requirements during construction is straightforward and low-cost. Prevention of child labour during the operation phase requires sustained community sensitization and coordination with the District Labour Office and District Education Manager all of which are low-cost measures achievable within the ESMP framework.
- Environmental flow management: Design of penstock systems to release minimum ecological flows is a technical engineering measure that must be incorporated into the detailed design of

the night storage reservoir. This measure incurs a capital cost that is included in the scheme's engineering budget. Ongoing monitoring of downstream river flows requires coordination with the National Water Resources Authority and is included in the ESMP environmental monitoring matrix.

8.1 Impact Identification

The construction of Njeleza Irrigation Scheme is expected to generate a wide range of impacts in the project impact area. Some of the impacts are expected to be positive while others will be negative. The impacts will have a bearing on the biophysical and socio-economic environment. The main purpose of this Chapter, therefore, is to identify the potential environmental and social impacts that will be associated with the implementation of Njeleza Irrigation Scheme project, assess the extent and significance of the impacts and propose measures to manage them.

This Chapter builds on the baseline conditions described in Chapter 4 and assesses how project activities during the pre-construction, construction, operation and post-construction phases will interact with environmental and social receptors. The analysis considers direct, indirect and cumulative impacts, and distinguishes between impacts occurring at different stages of project implementation.

8.1.1 Methodology of Impact Identification

The methodology adopted for impact prediction mainly considered the impacts at various phases of the project and the activities to be undertaken at each phase.

This approach ensures that impacts are systematically identified based on the relationship between project activities and the environmental and social receptors that may be affected. The impacts were identified by considering project inputs, activities and outputs in all the project phases and how these would impact on the environment and the people. A step-by-step approach was taken to identify the potential impacts as follows:

Step 1: Assessment of baseline conditions

The purpose of assessing baseline conditions was to understand the existing situation as this is the basis for determining changes that may occur as a result of the proposed project.

Baseline conditions provide the reference against which impacts are measured and also indicate the sensitivity of environmental and social receptors to potential project-induced changes.

Step 2: Examination of project inputs associated with the proposed project

Project inputs such as project machinery were examined to determine the potential changes and impacts on the biophysical, social and cultural environment that would be created through the application and use of project inputs. This includes consideration of resource use (e.g. water abstraction, construction materials, fuel) and how these may introduce pressures on existing environmental and social systems.

Step 3: Examination of project activities that will be undertaken

Project activities were examined to identify the impacts that the activities would bring on the biophysical and socio-economic environment. This step establishes the cause–effect relationship between specific project activities (such as land clearing, excavation, canal construction, and irrigation operations) and the resulting environmental and social impacts.

Step 4: Examination of project outputs associated with the proposed project

Project outputs were examined to determine the potential changes and impacts that would happen through the delivery of project outputs. Project outputs such as irrigation infrastructure, improved water availability, and increased agricultural production may generate both beneficial impacts (e.g. improved livelihoods) and adverse impacts (e.g. increased pressure on natural resources).

Step 5: Determination of environmental impacts

A combination of techniques was used to isolate the impacts as well as the causes and sources of the impacts. A Leopold matrix was used to identify direct potential environmental impacts that can arise from the project. A combination of professional judgment and expert consultation was used to identify both the direct and indirect impacts on the biophysical, social and cultural environment. In addition, the assessment considered cumulative impacts arising from the interaction of project activities with existing and planned developments in the area. Valued Environmental and Social Components (VECs) were identified to focus the assessment on key receptors that are critical for ecological integrity, human well-being, and socio-economic sustainability.

8.1.2 Analysis of Predicted Impacts

After identifying the positive and negative environmental impacts Njeleza Irrigation Scheme will have on the environment and social lives of people, further analysis was conducted to determine the extent and significance of the impacts. The aspects that were considered were magnitude, significance, probability of occurrence and duration of impacts which are explained below:

The assessment of impact significance was based on a combination of these criteria, allowing for a structured evaluation of how serious each impact is in terms of its scale, likelihood, and persistence. This provides a basis for prioritizing mitigation measures.

8.1.2.1 Magnitude

Magnitude is a measure of the general degree, extensiveness, or scale of impacts. It refers to the intensity or severity of an impact on a given receptor, taking into account the degree of change from baseline conditions. This may range from negligible to high depending on the nature of the impact. The magnitude was scored at three levels i.e. local level, regional level and national level. In this context, the classification into local, regional and national levels is more appropriately associated with the spatial extent of impacts. Therefore, both magnitude (intensity of impact) and extent (area over which the impact occurs) are considered in determining overall significance.

8.1.2.2 Probability of Occurrence

Provides an estimate of the probability of an impact occurring before mitigation is applied. The impacts were considered as:

- a) Possible (impact may occur but it is not probable);
- b) Probable (the impact is very likely to occur); and
- c) Definite (impact is unavoidable).

This classification helps in assessing the likelihood of impacts and supports risk-based prioritization of mitigation measures. Additional criteria considered in the assessment include duration (short-term, medium-term, long-term) and reversibility (whether the impact can be reversed or is permanent). These factors are critical in determining the overall significance of impacts and the appropriate mitigation response.

The scoping methodology involved an evaluation of the potential environmental effects, including cumulative environmental effects, regarding VECs. The VECs for this project were identified through a process whereby the features and activities (both planned and unplanned) associated with planning and designing, construction and operation phases of the project have been considered with respect to their potential impact with resources or receptors.

VECs represent key environmental and social components that are considered important for ecological sustainability and human well-being, and therefore require focused assessment. These include, for example, water resources, soils, biodiversity, public health, and livelihoods. This method identifies VECs and activities that could reasonably act as a source of impact and the vertical axis of a Potential Interaction Matrix as listed in Table 9 below.

Table 9: Potential Interaction Matrix

Receptor Component		Anticipated Environmental and Social Impacts																							
		SES 2						SES 3							SES 4					SES 5		SES 6		SES 10	
		Occupational Safety and Health	Risk of Forced Labour	Risk of Child Labour	Impact on Economy & Livelihood	HIV and AIDS	Risk of GBV & Sexual Harassment	Resource Consumption	Soil contamination	Air Pollution	Noise and Vibration	Water Contamination	Land Degradation	Increased Waste Generation	Provision of Education Services	Conflict on use of Amenities	Traffic & Road Safety Risks	Increase in theft and vandalism	Community Health and Safety	Forced Eviction	Involuntary Resettlement	Impact on Flora	Impact on Fauna	Anxiety over Loss of Land	Community Grievance Redress
SN	Project activity/Hazard																								
1	Pre-Construction Phase																								
2	Construction and Operation Phases																								
3	Post-Construction Phase																								

Key for Potential Interactive Matrix

	Scoped In
	Scoped Out
	Scoped Out with Justification
	Positive Impacts

Each impact was allocated a score from 1 to 5 based on criteria presented in Table 10. The scores for each impact were added to give a composite score. The composite score was then compared against numerical range bands, as shown in Table 8.3, which corresponds to a level of significance/change as described subsequently. A high negative score represents the greatest impact and a low score the least. The positive and negative scores signify positive and negative impacts respectively. The scoring system provides a simplified approach to evaluating impacts by combining key attributes of each impact into a single composite score. These attributes include the extent of the impact, its significance, and its duration. While these parameters are presented within a unified scoring scale, they are interpreted collectively to reflect both the intensity and spatial influence of impacts on environmental and social receptors.

Table 10: Scoring for Environmental and Social Impacts

Score	Coverage or Extent	Significance	Duration
1	Impacts will occur only on-site.	Low: A small change that is hardly detectable.	Short term, during the exploration phase only.
2		Moderate. An impact that is measurable but does not alter processes.	Medium-term, during early operations.
3	Impacts will occur within a 3-5 km radius of the site.	High. Many environmental and social components are lost or affected. A major disruption of ecosystem / socioeconomic status.	
4		Very high. A process or area or socioeconomic status is completely disrupted or destroyed.	Long-term, for the entire operational phase.
5	Impacts will occur beyond 5km.	Unknown. Insufficient information is available to determine impacts – apply the cautionary principle.	Very long term, for the entire operational phase and after closure.

In applying this scoring system, it is important to interpret the scores holistically. The “coverage or extent” column reflects the spatial influence of impacts, while the “significance” column reflects the degree of change to environmental or social conditions, and the “duration” column reflects the temporal persistence of impacts. These dimensions are considered together when assigning scores, rather than as independent parameters as indicated in Table 11 below..

Table 11: Evaluation Numerical Range Bands

Impact Score	Range Band	Description of Range Band
0	N	No Change
1 to 3	A	Negligible negative/positive change/impact
4 to 6	B	Slight Negative/positive change/impact
7 to 9	C	Moderate negative/positive change/impact
10 to 12	D	Significant negative/positive change/impact
13 to 15	E	Major negative/positive change/impact

The range bands provide a classification of impacts from negligible to major based on the composite score. This allows for a consistent interpretation of impact significance across different environmental and social components.

8.2 IMPACT SIGNIFICANCE RATING FOR THE IDENTIFIED IMPACTS

The potential environmental and social impacts were assessed and the significance ratings before the mitigation measures are applied as presented in Table 12.

The assessment reflects a pre-mitigation scenario, which provides a baseline understanding of the potential severity of impacts prior to the implementation of management measures. This approach allows for the identification of priority impacts that require mitigation.

Table 12: Summary of Assessment of Impacts and their Ratings

SN	Category	Impact	Coverage or Extent	Significance	Duration	Impact Score	Range Band
1	Planning Phase						
1.1	Economy and Livelihoods	Creation of Employment opportunities	+3	+3	+2	+8	+C
2	Operation and Maintenance Phase						
2.1	Economy and Livelihoods	Foreign income	+5	+2	+2	+9	C
		Employment generation	+3	+2	+1	+6	B
		Increased incidences of child labour	-3	-2	-1	-6	B
		Increased cases of sexual harassment and Gender Based Violence	-3	-2	-1	-6	B
2.2	Air Quality & Emissions	Increased generation of particulate matter (especially dust)	-3	-1	-1	-5	B
		Increase in combustion emissions	-3	-2	-1	-5	B
2.3	Landscape and Visual Amenity	Visual scarring of the landscape	0	0	0	0	N
		Aesthetic change to the nature topography	0	0	0	0	N
2.4	Water Quality and Resource	Pollution of surface water and contamination of groundwater	-1	-2	-4	-7	C
		Reduced water availability	-3	-2	-4	-9	C
2.5	Soil Degradation	Contamination of soil with chemicals	-1	-2	-1	-4	B
		Increased susceptibility of soil to erosion	-1	-2	-1	-4	B
2.6	Noise and Vibration	Increase in ambient sound levels	-1	-2	-1	-4	B
		Risk of earth movement	-3	-2	-1	-5	B
2.7	Waste	Increased generation of non-hazardous and general waste	-1	-2	-1	-4	B
		Increased generation of hazardous waste	-1	-1	-1	-3	B
		Increased sewage generation	-1	-1	-1	-3	B
2.8	Flora and Fauna	Loss of natural habitat for flora and fauna	-1	-1	-3	-5	B
		Introduction of invasive and alien species	0	0	0	0	N
2.9	Community Health and Safety	Social conflicts resulting from access to jobs	-1	-1	-3	-5	B
		Decrease in human health due to air emissions	-1	-1	-3	-5	B

2.10	Occupational Health and Safety	Increased risk of fire and explosions	-1	-1	-1	-3	B
		Increased risk of traffic accidents	-1	-1	-4	-6	B
		Increased risk of accidents and exposure to hazardous material	-1	-3	-2	-6	B
		Increased transmission of communicable diseases such as STIs & HIV and AIDS	-3	-2	-4	-9	C
		Increased risk of spread of Cholera	-1	-1	-1	-3	B

The table presents the composite scores derived from the scoring system and classifies each impact according to the range bands defined in Table 5.3. The scoring reflects the combined effect of impact extent, duration, and significance, and provides a relative indication of impact severity.

8.2.1 Duration

Refers to the period of time over which an impact may occur, from once-off to continuous for the life of the project. Duration of impacts was considered in terms of the following criteria: Short term (less than 5 years); Medium term (between 5 and 10 years) and Long term (over 10 years). Duration is a critical factor in determining impact significance, as impacts that persist over longer periods are generally considered more significant, particularly where they affect sensitive environmental or social receptors.

8.2.2 Significance

Significance is a measure of the importance of a particular action on the environmental factor in the specific instance under consideration. This will be scored using colours for both positive and negative impacts. Red colour represents negative impacts while the green colour represents the positive impacts. The intensity of the colour will represent the severity of the impacts as presented below in Figure 12. In addition to the colour-based representation, significance is interpreted based on the composite scores and corresponding range bands. This ensures that the assessment is not only visual but also quantitatively supported.

Negative	Significance	Positive
	Negligible	
	Low	
	Moderate	
	High	

Figure 12: Severity of Impacts

From the impact scoring matrix, 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 of Njeleza Irrigation Block project are mitigatable. Most of the negative impacts have short term duration with very few with long term duration. Additionally, most of the negative impacts have low significance with some having negligible significance. While many of the identified impacts are assessed as having low to moderate significance, it is important to note that certain impacts, particularly those related to water resources, public health, and social risks (such as Gender-Based Violence and communicable diseases), may have higher significance due to their potential cumulative effects and sensitivity of affected communities. Therefore, these impacts require careful management despite their initial scoring. This entails that the irrigation project is not only environmentally friendly but also socio-economically sound. Overall, the assessment indicates that the project has the potential to generate significant positive socio-economic benefits while negative impacts can be effectively managed through the implementation of appropriate mitigation measures. However, this conclusion is contingent upon the effective application of the proposed environmental and social management measures. However, in order to maximize the project benefits, the developer will be required to implement the proposed mitigate measures for the negative impacts and enhancement measures for the positive ones. The section which follows provides the proposed management measures for anticipated impacts during the Planning, Construction, Operation and Demobilisation Phases of the Njeleza Irrigation Block project. The subsequent sections therefore translate the identified impacts into actionable mitigation and enhancement measures, ensuring that environmental and social risks are minimized while project benefits are optimized.

8. EVALUATION OF MAIN IMPACTS AND THEIR MANAGEMENT MEASURES

8.1.3 Planning Phase

8.1.3.1 5.3.1.1 Positive Impacts

i. Creation of Employment

Cause and Comment:

During the planning phase of the Njeleza Irrigation Block project, consultants were engaged to undertake Feasibility Studies, ESMP Development, Market Analysis Studies, Baseline Studies and other related studies. These consultancies created employment opportunities. The engagement of consultants during this phase provides short-term employment opportunities and contributes to knowledge generation required for informed project design. Involvement of national professionals enhances local capacity in environmental and social assessment, irrigation planning, and project development.

Enhancement Measures (applying enhancement hierarchy: enable → strengthen → sustain):

Hierarchy Level	Measure
Enable	Ensure that consultants engaged to undertake different studies include at least 50 percent Malawian nationals as part of their personnel.
Strengthen	Promote participation of local professionals and institutions in study teams to strengthen national expertise and ensure knowledge transfer. Encourage mentorship arrangements between international and local experts.
Sustain	Document methodologies and findings in formats accessible to local institutions for use in future projects. Provide training materials to local universities and colleges.

Responsibility: PMT

Cost Estimate (USD): 1000

8.1.3.2 Negative Impacts

i. Anxiety on Loss of Land

Cause and Comment:

The presence of people conducting different studies in the project area during the planning phase may create anxiety among community members regarding potential loss of land. This anxiety arises from uncertainty about land acquisition, compensation processes, and potential displacement. If not properly

managed, such concerns may lead to mistrust, resistance to project activities, and the spread of misinformation among affected communities.

Mitigation Measures (applying mitigation hierarchy: avoid → minimize → restore → offset):

Hierarchy Level	Measure
Avoid	Clearly define the project footprint early in the planning phase to avoid unnecessary speculation about land take. Limit studies to the minimum area required.
Minimize	Conduct sensitization meetings with affected and surrounding communities before any field studies commence. Provide clear, written information (in Chichewa and Chisena) on project scope, land requirements, and compensation processes. Use multiple communication channels (meetings, posters, radio announcements) to reach all segments of the community.
Restore	Where community members express specific concerns, address them individually through the Grievance Redress Mechanism (GRM) and document resolutions.
Offset	Not applicable to this impact.

Additional Measures:

- Engage communities through structured stakeholder consultation processes, including separate meetings with women, youth, and vulnerable groups to ensure all voices are heard.
- Establish and communicate a functional GRM prior to commencement of planning phase activities, with clear procedures for receiving, registering, and responding to land-related concerns.

Responsibility: PMT, District Council, Traditional Authorities

Cost Estimate (USD): 1,500,

8.1.4 Construction Phase

8.1.4.1 Positive Impacts

i. Creation of Employment

Cause and Comment:

Construction activities of the Chikhambi/Mbenderana Irrigation Block will employ approximately 100 people, primarily from the project area. This will create employment for surrounding communities and people from other parts of the country. Employment opportunities generated during the construction phase are primarily short-term but provide an important source of income for local households, contributing to improved household welfare, increased purchasing power, and temporary reduction in poverty levels.

Enhancement Measures (applying enhancement hierarchy: enable → strengthen → sustain):

Hierarchy Level	Measure
Enable	Engage at least 80 percent of the labour force from surrounding communities. Pay wages above government-stipulated minimum rates. Ensure equal opportunities for both male and female workers (target: minimum 40 percent female participation in unskilled labour).
Strengthen	Implement training programs, vocational courses, and on-the-job skill development to enhance capacity and employability of local residents. Pair skilled and unskilled workers during construction assignments to facilitate skills transfer. Formalize on-the-job training with learning targets and performance monitoring.
Sustain	Document and certify acquired skills where possible to enhance long-term employability. Provide letters of recommendation and skill records to workers upon completion of employment.

Additional Measures:

- Ensure transparent and fair recruitment processes using publicly advertised criteria and local recruitment committees that include women and youth representatives.
- Prohibit any form of discrimination in recruitment based on ethnicity, religion, disability, or social status.

Responsibility: Contractor, PMT

Cost Estimate (USD): 1,500

ii. Increased Economic Activities within the Project Area**Cause and Comment:**

Construction activities are expected to increase the level of economic activity in the project area. Workers will create demand for various goods such as food, creating opportunities for local small-scale businesses (selling food items, provisions, and other commodities). This increased demand can stimulate local markets, support small-scale enterprises, and promote local economic growth. However, these benefits are often temporary and depend on the duration of construction activities.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Designate an appropriate site within the project area for local vendors to sell food and other goods. Provide basic infrastructure (shade, water access, waste bins) at no cost to local vendors.
Strengthen	Engage with local communities, businesses, and relevant stakeholders through regular consultations to align project economic activities with local needs. Support local vendors through fair access to project-related markets and avoid monopolization by external suppliers. Facilitate access to finance and technical assistance for local entrepreneurs.
Sustain	Encourage formation of vendor associations to continue economic activity beyond the construction phase. Link local producers to agricultural value chains that will persist under the irrigation scheme.

Responsibility: Contractor, PMT, District Council

Cost Estimate (USD): 1000

iii. Skills Transfer to Local Communities**Cause and Comment:**

Engagement of local people in construction activities will facilitate transfer of skills in the construction sector. This provides an opportunity for local workers to acquire practical skills in areas such as masonry, equipment handling, basic engineering works, and health and safety practices, which may improve their future employability beyond the project lifecycle.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Maximize employment of local people, particularly for unskilled labour positions. Pair skilled and unskilled workers during construction assignments.
Strengthen	Formalize on-the-job training for local unskilled labour with structured learning targets and performance monitoring. Provide classroom-based safety and skills training where appropriate.
Sustain	Document and certify acquired skills through recognized certification bodies (e.g., TEVET). Provide workers with written records of competencies gained.

Responsibility: Contractor

Cost Estimate (USD): 1,000

iv. Source of Government Revenue through Taxes

Cause and Comment:

Implementation of the project will generate revenue for government through taxes, including Pay-As-You-Earn (PAYE), Withholding Taxes, Value Added Taxes (VAT), and corporate taxes. This contributes to national and local economic development by increasing government revenue, which can be reinvested in public services and infrastructure.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Remit all taxes to Malawi Revenue Authority on time as required by law.
Strengthen	Purchase materials from tax-compliant businesses to support formal economic activity.
Sustain	Ensure full compliance with national tax regulations and reporting requirements throughout the project lifecycle.

Responsibility: Contractor

Cost Estimate (USD): Included in contractor obligations

8.1.4.2 Negative Impacts

i. Loss of Vegetation

Cause and Comment:

There will be loss of vegetation during construction. Vegetation will be cleared to accommodate construction activities, primarily grasses, shrubs, and climbers, with very few trees. Vegetation clearance reduces ground cover, which may lead to increased soil exposure, reduced biodiversity, and disruption of ecological functions such as erosion control and water regulation. Although tree cover is limited, removal of grasses and shrubs may still have localized ecological impacts, particularly in sensitive areas near water bodies.

Mitigation Measures (applying mitigation hierarchy: avoid → minimize → restore → offset):

Hierarchy Level	Measure
Avoid	Conduct pre-construction vegetation survey to identify areas of higher ecological value. Mark clearing boundaries with flagging tape before any equipment enters the site. Restrict clearing to the minimum necessary footprint. Avoid clearing within the 200-meter river buffer zone except for essential infrastructure.
Minimize	Clear vegetation in phases rather than all at once. Use hand clearing rather than machinery near water bodies. Time clearing to avoid bird nesting seasons (September–February) where feasible. Retain mature trees wherever possible through micro-siting of infrastructure.
Restore	Re-vegetate cleared areas immediately after construction is complete in each section, using native grass and shrub species. For areas not required for permanent infrastructure, restore to pre-construction condition or better.
Offset	Implement the reforestation programme (1,300,000 trees) targeting native species suitable for semi-arid conditions (<i>Albizia harveyi</i> , <i>Dalbergia melanoxylon</i> , <i>Adansonia digitata</i> , <i>Pterocarpus lucens</i>). Plant at minimum 2:1 ratio (trees planted to trees removed). Prioritize planting in degraded areas, the 200-meter river buffer zone, and along the Shire River catchment.

Additional Measures:

- Collaborate with Department of Forestry and other upstream irrigation schemes on catchment management activities.
- Conduct environmental awareness training for all construction personnel and community members.
- Develop and enforce environmental rules and regulations for contractors with defined penalties for non-compliance.

Responsibility: Contractor, PMT, Department of Forestry

Cost Estimate (USD): 2,000

ii. Disruption of Animal Habitats

Cause and Comment:

Clearance of vegetation will disturb natural habitats for some animals, especially reptiles, amphibians, and small mammals such as rodents. Habitat disturbance may lead to displacement of species and temporary loss of shelter and breeding grounds. Although large wildlife species are

limited in the area, smaller fauna play important ecological roles, and their disturbance may affect local ecosystem balance.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Restrict clearing to demarcated areas only. Avoid clearing in areas with evidence of burrows, nests, or dens where feasible.
Minimize	Conduct pre-clearance surveys for active nests or dens. If active nests or dens are found, establish a buffer zone (minimum 30 meters) until young have fledged or moved. Time clearing to avoid breeding seasons.
Restore	Re-vegetate cleared areas with native species to restore habitat connectivity. Install artificial habitat features (e.g., nest boxes, brush piles) if displacement of cavity-nesting species is unavoidable.
Offset	Incorporate wildlife habitat features into the reforestation programme (e.g., planting fruiting trees, maintaining thickets).

Additional Measures:

- Conduct environmental awareness discussions with workers and communities on protection of wildlife.
- Prohibit hunting, trapping, or killing of wildlife by workers or contractors; enforce through Code of Conduct.

Responsibility: Contractor, PMT

Cost Estimate (USD): 1,000

iii. Increased Risk of Dust Emission

Cause and Comment:

Excavation of soil and gravel material and speeding construction vehicles are likely to cause dust emission during the construction phase. Dust emissions may affect air quality, reduce visibility, and pose health risks to workers and nearby communities, particularly those with respiratory conditions such as asthma or chronic bronchitis.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Schedule earthworks during wet season where feasible to naturally suppress dust. Use paved or stabilized surfaces for high-traffic areas.
Minimize	Suppress dust by sprinkling water on exposed surfaces and loose materials at least twice daily during dry conditions. Apply dust suppressants (e.g., calcium chloride) to haul roads if water is scarce. Enforce speed limits for construction vehicles (maximum 30 km/h on unpaved roads). Limit vegetation clearance to reduce exposed soil area.
Restore	Re-vegetate exposed areas as soon as construction in that section is complete.
Offset	Not applicable.

Additional Measures:

- Ensure use of personal protective equipment (e.g., N95 or P100 dust masks) for workers exposed to dusty conditions.

Responsibility: Contractor

Cost Estimate (USD): 1,500

iv. Increased Risk of Soil Erosion**Cause and Comment:**

Clearing of vegetation will leave soils bare, potentially leading to soil erosion. Erosion can contribute to sedimentation of surrounding water bodies, including the Shire River, and loss of fertile topsoil. Sedimentation reduces water quality, affects aquatic habitats, and may reduce reservoir and canal capacity over time.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Minimize area and duration of soil exposure. Phase vegetation clearance so that clearance occurs immediately prior to earthworks, not weeks or months in advance. Avoid earthworks during the peak rainy season (January–March) where feasible.

Hierarchy Level	Measure
Minimize	Install silt fences, sediment basins, or straw bale barriers downslope of cleared areas before earthworks begin. Construct diversion drains to channel runoff away from cleared areas. Maintain buffer strips of undisturbed vegetation along water bodies. Cover stockpiles of excavated material with tarpaulins or vegetation.
Restore	Re-vegetate exposed surfaces promptly after construction activities (within 14 days of completion). Use fast-growing native grasses and shrubs for rapid soil stabilization. Apply mulch or erosion control blankets on steep slopes.
Offset	Plant additional vegetation in degraded areas outside the project footprint to compensate for erosion risk.

Additional Measures:

- Develop and enforce environmental rules for contractors with specified erosion control requirements.
- Conduct weekly erosion inspections after rainfall events.

Responsibility: Contractor, Supervision Consultant

Cost Estimate (USD): 2,000

v. Creation of Borrow Pits

Cause and Comment:

Excavation works and extraction of fill materials are likely to create borrow pits that may pose safety and health risks to surrounding communities. Unrehabilitated borrow pits may accumulate water, posing drowning risks (particularly to children) and serving as breeding grounds for disease vectors such as mosquitoes.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Minimize number and size of borrow pits by using imported fill where cost-effective. Locate borrow pits away from settlements, schools, and paths.
Minimize	Secure and demarcate borrow pit areas with fencing or warning signs to prevent unauthorized access during construction. Ensure pits are not left open overnight without barriers. Limit depth to prevent permanent water accumulation.

Hierarchy Level	Measure
Restore	Rehabilitate all borrow pits progressively after use by backfilling with construction rubble and surplus soil. Grade to match surrounding topography. Re-vegetate with native grasses. For pits that cannot be fully backfilled, grade to safe slopes (maximum 3:1) and install safety ladders.
Offset	For pits that remain as permanent water bodies (with community consent), develop as small reservoirs or fish ponds with appropriate safety measures (fencing, life rings, signage).

Additional Measures:

- Obtain permits from Chikwawa District Council before establishing borrow pits.
- Compensate land owners where borrow pits are created, including loss of land use during construction and any permanent change in land value.

Responsibility: Contractor, PMT, District Council

Cost Estimate (USD): 2,000

vi. Increased Generation of Solid Waste

Cause and Comment:

Construction activities may generate waste such as unused cement mortar, broken bricks, stones, packaging materials, scrap metal, and food remains. Improper disposal may lead to land degradation, visual pollution, and potential contamination of soil and water resources.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Minimize waste generation through accurate material estimation and ordering. Require suppliers to take back packaging where feasible.
Minimize	Segregate waste streams at source into categories: inert construction waste (concrete, bricks, stones), metal, plastic packaging, organic waste, and hazardous waste (oils, chemicals). Reuse construction waste for backfilling where feasible. Recycle metal, plastic, and paper through licensed recyclers.
Restore	Dispose of non-recyclable waste at designated sites approved by Chikwawa District Council. Maintain disposal records for audit.
Offset	Not applicable.

Additional Measures:

- Promote "Reduce, Re-use, Recycle" practices among workers through training and signage.
- Provide designated waste collection points with separate bins for each waste category.
- Prohibit open burning of waste except in designated incinerators for hazardous medical waste (if any).

Responsibility: Contractor, District Council

Cost Estimate (USD): 2,000

vii. Increased Risk of Water Pollution**Cause and Comment:**

Waste from construction materials, oil spills, fuel leaks, and human waste from workers may pollute surrounding water bodies including the Shire River and its tributaries. Water pollution may degrade water quality, affect aquatic life, and reduce availability of safe water for downstream users.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Locate fueling areas, vehicle maintenance areas, and chemical storage at least 100 meters from any water body. Use drip trays under all stationary equipment.
Minimize	Ensure fueling areas are bunded and impermeable (concrete or liner) to contain spills. Store fuels, oils, and chemicals in leak-proof, secondary-contained containers. Implement spill response procedures including spill kits at all fueling and maintenance areas.
Restore	If a spill occurs, contain immediately using absorbent materials. Remove contaminated soil to designated hazardous waste facility. Report all spills exceeding 5 liters to MEPA within 24 hours.
Offset	Not applicable.

Additional Measures:

- Sensitize workers on hygiene practices and prohibition of washing equipment or discharging waste into water bodies.
- Conduct daily inspections of fueling and maintenance areas.
- Maintain a spill response log.

Responsibility: Contractor, MEPA (oversight)

Cost Estimate (USD): 3,000

viii. Increased Risk of Noise Pollution

Cause and Comment:

Construction machinery and vehicles will increase noise levels in the area, potentially disturbing nearby communities. Noise levels above 80 dB may cause hearing damage to workers. Prolonged exposure may lead to discomfort, stress, sleep disturbance, and potential health effects for both workers and nearby residents.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Locate noisy equipment and activities as far from residential areas, schools, and health facilities as site conditions allow. Use electric or hydraulic equipment instead of diesel where feasible.
Minimize	Fit all machinery with functioning silencers. Maintain equipment regularly to prevent excessive noise. Restrict working hours to 08:00 to 17:00 Monday through Saturday. Avoid high-noise activities near schools during examination periods. Establish noise barriers (earth berms, temporary fencing with sound-absorbing material) for stationary equipment.
Restore	Not applicable (noise is temporary).
Offset	Not applicable.

Additional Measures:

- Provide appropriate PPE (ear muffs with 31 dB NRR or ear plugs) to workers in high-noise zones (>85 dB).
- Post signage at high-noise area boundaries.
- Conduct baseline and periodic noise monitoring at nearest sensitive receptors.

Responsibility: Contractor

Cost Estimate (USD): 1,000

ix. Cultural Heritage and Chance Finds

Cause and Comment:

The project area has been occupied for generations by Mang'anja and Sena communities. While no designated or registered cultural heritage sites (burial grounds, sacred groves, historical structures) have been identified within the irrigation block footprint, the potential exists for chance finds during excavation, earthworks, and land preparation. Chance finds may include archaeological remains (pottery, stone tools, ironworking remnants), human remains, burial sites, or culturally significant

objects. Disturbance or destruction of such finds without proper handling would violate the Monuments and Relics Act (1990), cause significant cultural harm to local communities, and risk project delays and reputational damage.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Conduct a pre-construction cultural heritage walkover survey in areas of ground disturbance (borrow pits, reservoir site, major canal alignments) in consultation with local elders and the Department of Antiquities. Use survey results to avoid known or suspected heritage sites.
Minimize	Include a Chance Find Procedure in the Contractor's site-specific management plans, approved by PMT prior to construction. Train all construction personnel on the Chance Find Procedure. Designate a site officer responsible for receiving and acting on chance find reports.
Restore	Upon discovery of any potential cultural heritage object or human remains, work shall cease within a 50-meter radius. The Contractor shall immediately notify the PMT, who shall notify the Department of Antiquities within 48 hours. No further disturbance shall occur until the Department of Antiquities has assessed the find and issued instructions for salvage, protection, or relocation. If human remains are discovered, the Department of Antiquities shall coordinate with local traditional authorities and the community on appropriate handling and reburial protocols.
Offset	Not applicable.

Responsibility: Contractor (immediate response), PMT (notification and coordination), Department of Antiquities (assessment and direction)

Cost Estimate (USD): 1,000

x. Community Health, Safety and Security Risks

Cause and Comment:

Construction activities introduce multiple risks to surrounding communities beyond those addressed in individual impact subsections. These include risks to community members (particularly children and elderly) from construction traffic, unsecured excavations and borrow pits, unattended construction materials, and unauthorized site access. Security risks include theft of construction materials and equipment (which may lead to community members being injured or arrested), potential conflicts between workers and community members over resources (water, firewood, local services), and

increased risk of road traffic accidents. Children are particularly vulnerable to drowning in excavations, borrow pits, or canals.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Locate construction camps, borrow pits, and high-risk activities away from community settlements, schools, and water points where feasible. Schedule transport of heavy materials outside school opening and closing hours (07:00-08:00 and 13:00-14:00) near schools.
Minimize	Fence or securely barrier all excavations deeper than 1.5 meters, borrow pits, and the Night Storage Reservoir during construction. Install warning signs (in Chichewa, Chisena, and pictograms) around hazardous areas. Enforce speed limits for construction vehicles (maximum 30 km/h on unpaved roads, 15 km/h near schools and settlements). Provide dedicated pedestrian walkways or crossing points where construction traffic routes intersect community pathways. Secure construction sites with fencing or guards after hours to prevent unauthorized entry. Implement a community security awareness programme covering risks of entering construction sites, swimming in borrow pits, and approaching heavy machinery. Establish a Community Liaison Officer position to receive and address community safety concerns.
Restore	Maintain a first-aid post accessible to community members for emergency treatment of injuries. Provide prompt medical referral for any community member injured by project activities, with costs borne by the Contractor.
Offset	Not applicable.

Additional Measures:

- Establish a community reporting mechanism for safety hazards through the GRM.
- Conduct regular community safety meetings to raise awareness and receive feedback.

Responsibility: Contractor, PMT, Community Liaison Officer, GRM Committee

Cost Estimate (USD): 2,000,

xi. Comprehensive Occupational Health and Safety Hazards

Cause and Comment:

Construction and operation of the irrigation scheme expose workers to a wide range of occupational health and safety hazards. The hot semi-arid climate (temperatures exceeding 38°C) creates risks of

heat stress, dehydration, and heat stroke. Heavy machinery operation poses risks of struck-by injuries, crushing, entrapment, and rollovers. Working near water creates drowning risks. Manual handling poses risks of musculoskeletal injury. Noise poses risk of hearing loss. Dust poses respiratory risks. Excavation work poses risks of collapse. Working at height poses fall risks. Electrical hazards exist from pumping systems and solar installations. Agrochemical handling poses risks of poisoning and dermatitis. Fatigue increases accident risk. Psychosocial risks include stress, harassment, and GBV/SEA.

Mitigation Measures (applying hierarchy of controls: elimination → substitution → engineering controls → administrative controls → PPE):

Hazard Category	Specific Hazard	Mitigation Measures (by control hierarchy)
Thermal stress	Heat stroke, dehydration, heat exhaustion	Elimination: Schedule heavy work during cooler hours (06:00-10:00 and 15:00-18:00). Administrative: Mandatory rest breaks (15 minutes every 2 hours in hot conditions); shaded rest areas; acclimatization period for new workers (7 days). PPE: Lightweight, breathable clothing; wide-brimmed hats; sunscreen. Monitoring: Daily temperature monitoring; enforce work cessation when wet bulb globe temperature exceeds 30°C.
Heavy machinery	Struck-by, crushing, rollovers, entrapment	Elimination: Use machinery only where necessary; maintain exclusion zones. Engineering: Backup cameras, audible reverse alarms, rollover protection structures. Administrative: Exclusion zones (minimum 10 meters from operating machinery); spotter for reverse operations; daily pre-start equipment checks; licensed operators only. PPE: High-visibility vests, hard hats, steel-toed boots.
Drowning	Canal, reservoir, borrow pit immersion	Elimination: Fence Night Storage Reservoir and deep excavations. Engineering: Safety ladders in canals; life rings at reservoir. Administrative: No swimming; two-person rule for work near water; life jackets for over-water work. PPE: Life jackets (Type II or III).

Hazard Category	Specific Hazard	Mitigation Measures (by control hierarchy)
Excavation/trenching	Collapse, entrapment, falling objects	Elimination: Avoid trenches deeper than 1.5 meters where possible. Engineering: Shoring, shielding, or sloping (1:1 for cohesive soil, 1.5:1 for granular). Administrative: Competent person daily inspection; spoil piles minimum 1 meter from trench edge; means of egress every 7.5 meters. PPE: Hard hats, steel-toed boots.
Working at height	Falls from elevation	Elimination: Design ground-level maintenance access where feasible. Engineering: Guardrails at 1.1 meters; safety nets. Administrative: Fall arrest systems; ladder inspection; no work at height during high winds. PPE: Full-body harness with lanyard; hard hats.
Noise	Hearing loss, stress	Elimination: Electric pumps instead of diesel where feasible. Engineering: Enclose noisy pumps; silencers on machinery. Administrative: Rotate workers to limit exposure (maximum 8 hours at 85 dB; 50 percent reduction per 3 dB increase); signage at high-noise areas. PPE: Ear muffs (31 dB NRR) or ear plugs; mandatory in >85 dB zones.
Dust	Respiratory illness, silicosis	Elimination: Wet methods for cutting/drilling. Engineering: Dust suppression (water spraying); windbreaks. Administrative: Speed limits on unpaved roads (30 km/h). PPE: N95 or P100 respirators in dusty conditions.
Manual handling	Musculoskeletal injury	Engineering: Mechanical lifting aids (cranes, hoists, wheelbarrows). Administrative: Team lifting (>20 kg requires two persons); training on proper lifting technique; weight limits (maximum 25 kg per person). PPE: Gloves with grip, back belts (as reminder only).

Hazard Category	Specific Hazard	Mitigation Measures (by control hierarchy)
Agrochemical exposure (operation phase)	Poisoning, dermatitis, respiratory illness	Elimination: IPM to reduce chemical use. Substitution: Lower-toxicity chemicals. Engineering: Closed mixing systems; ventilation in storage areas. Administrative: Certified applicators only; restricted entry intervals; washing facilities. PPE: Chemical-resistant gloves, coveralls, respirator, goggles.
Electrical	Shock, electrocution, fire	Elimination: Lockout/tagout (LOTO) for maintenance. Engineering: Ground fault circuit interrupters (GFCIs); insulation; guarding. Administrative: Licensed electricians only; daily visual inspection; LOTO procedures. PPE: Insulated gloves, rubber-soled boots.
Psychosocial	Stress, fatigue, harassment, GBV/SEA	Elimination: Prohibit harassment, GBV/SEA through Code of Conduct with enforcement. Administrative: Maximum 48-hour work week (8 hours/day, 6 days/week); paid leave; worker GRM; confidential reporting mechanism; training on respect and harassment prevention. Support: Access to counseling services; referral pathways for GBV/SEA survivors.

Responsibility: Contractor (construction), Cooperative/WUA (operation), PMT (oversight), Ministry of Labour (compliance monitoring)

Monitoring Indicators:

- Incident frequency rate (IFR) and severity rate (monthly)
- PPE compliance rate (target >95 percent)
- Heat stress incidents (number, severity)
- Near-miss reports by category
- Worker satisfaction with safety (through quarterly surveys)
- GBV/SEA reports and response times

Cost Estimate (USD): 4,000

8.1.5 Operation and Maintenance Phase

8.1.5.1 Positive Impacts

i. Increased Crop Production

Cause and Comment:

The availability of water for irrigation will enable farmers to cultivate more than twice per year, increasing crop production in the project area. Reliable irrigation water supply reduces dependence on erratic rainfall and allows multiple cropping cycles, leading to improved agricultural productivity and more stable food production throughout the year.

Enhancement Measures (applying enhancement hierarchy):

Hierarchy Level	Measure
Enable	Provide access to water-saving irrigation technologies (drip, sprinkler, center pivot) and improved hybrid seeds suitable for the semi-arid climate.
Strengthen	Train farmers on Good Agricultural Practices (GAPs), irrigation scheduling, and crop management through Water User Associations and farmer field schools. Promote climate-resilient crop varieties to enhance sustainability under changing climatic conditions.
Sustain	Establish demonstration plots and farmer-to-farmer extension networks to maintain knowledge transfer beyond the project period.

Responsibility: Cooperative, Extension Services, PMT

Cost Estimate (USD): 2,000

ii. Increased Income at Household Level

Cause and Comment:

People participating in irrigation activities will increase their income through sale of agricultural produce. Increased production and market access will enhance household income, improve purchasing power, and contribute to poverty reduction in the project area.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Link farmers to reliable markets through contract farming arrangements and cooperative marketing. Provide training in financial management and agribusiness.

Hierarchy Level	Measure
Strengthen	Facilitate access to agricultural credit and savings groups. Support value addition through post-harvest handling, storage, and processing.
Sustain	Establish market information systems (mobile-based price alerts) and long-term buyer relationships.

Responsibility: PMT, Cooperative, Agribusiness Specialist

Cost Estimate (USD): 1,500

iii. Improved Nutrition Status of Communities

Cause and Comment:

Increased food availability and diversity in the project area is likely to improve nutrition status of community members. Greater availability of diverse crops contributes to improved dietary diversity and food security, particularly for vulnerable households.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Encourage farmers to grow diverse crops, including legumes, vegetables, and fruits, through seed distribution and training.
Strengthen	Train farmers on nutrition-sensitive agriculture and home gardening. Conduct nutrition awareness campaigns targeting women and caregivers.
Sustain	Integrate nutrition education into WUA activities and school programs.

Responsibility: Extension Services, Department of Health, Cooperative

Cost Estimate (USD): 1,000

iv. Improved Linkage of Farmers to Markets

Cause and Comment:

The Department of Irrigation through SVTP will link farmers to different markets, enabling them to sell produce at better prices. Improved market access reduces post-harvest losses and enhances profitability, thereby incentivizing increased production.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Identify reliable and profitable markets through market assessments. Facilitate contract farming arrangements with off-takers.
Strengthen	Support formation of farmer cooperatives for collective bargaining. Provide storage facilities to allow timing of sales to optimize prices.
Sustain	Establish long-term market linkages and cooperative marketing structures.

Responsibility: PMT, Cooperative, Agribusiness Specialist

Cost Estimate (USD): 1,000

v. Skills Transfer to Farmers**Cause and Comment:**

The Department of Irrigation through SVTP will engage consultants to train farmers through Water User Associations on GAPs, water-saving technologies, and value chain development. Capacity building enhances farmers' technical knowledge and improves efficiency, productivity, and long-term sustainability of irrigation practices.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Facilitate farmer field schools and demonstration plots. Provide extension services through trained WUA lead farmers.
Strengthen	Deliver structured training modules covering agronomy, irrigation management, pest control, financial literacy, and cooperative governance.
Sustain	Establish farmer-to-farmer extension networks and refresher training programs. Certify trained farmers where possible.

Responsibility: Extension Services, PMT, Cooperative

Cost Estimate (USD): 1,500

vi. Increased Knowledge Transfer to Agricultural Students

Cause and Comment:

The availability of well-managed irrigation fields will attract students for practical learning. The project area can serve as a demonstration site for irrigation practices, supporting agricultural education and capacity building.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Facilitate access to demonstration plots for agricultural colleges and universities.
Strengthen	Promote partnerships between the scheme and academic institutions for research, internships, and practical training.
Sustain	Develop training materials and case studies based on scheme experience for use in curricula.

Responsibility: Cooperative, PMT, Ministry of Education

Cost Estimate (USD): 1000

vii. Improved Availability of Water to Surrounding Communities

Cause and Comment:

During operation, water stored in the Night Storage Reservoir and flowing through irrigation canals may improve access to water for surrounding communities, particularly during dry months. Improved water availability can support domestic use and small-scale productive activities, enhancing community resilience during dry periods. *Note: The project does not include construction of a dam on the Shire River; water abstraction is from the existing Kapichira Dam, which is part of the broader SVTP infrastructure.*

Enhancement Measures:

Hierarchy Level	Measure
Enable	Provide controlled access to water from the Night Storage Reservoir and canals for domestic use by surrounding communities, subject to water availability and quality standards.

Hierarchy Level	Measure
Strengthen	Develop agreements between the Cooperative and surrounding communities on water sharing during dry periods.
Sustain	Integrate community water access into WUA water allocation plans.

Responsibility: WUA, Cooperative, NWRA

Cost Estimate (USD): 1,000

viii. Aquatic Biodiversity Conservation

Cause and Comment:

Maintained water flow will support aquatic biodiversity in the catchment. Environmental flows are important for sustaining aquatic ecosystems, maintaining species diversity, and supporting downstream ecological functions.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Release water downstream to sustain aquatic life as required by water abstraction permit conditions. Install fish-friendly screens on pump intakes to prevent fish entrainment.
Strengthen	Monitor water flows and aquatic biodiversity to ensure ecological balance is maintained. Coordinate with other SVTP cooperatives on cumulative flow management.
Sustain	Establish long-term environmental flow commitments in water user agreements.

Responsibility: PMT, NWRA, Cooperative

Cost Estimate (USD): 1,500

ix. Potential for Increased Fish Production (Future Enhancement)

Cause and Comment:

While the current project design does not include a dedicated aquaculture component, the land use plan (Chapter 2) identifies 5 hectares allocated for aquaculture as a potential future enterprise. The Night Storage Reservoir and perennial water in canals may create conditions suitable for small-scale fish production. If the Cooperative decides to integrate aquaculture in the future, it shall be subject to appropriate environmental and social assessment.

Enhancement Measures (if implemented in future):

Hierarchy Level	Measure
Enable	Conduct site-specific environmental assessment for aquaculture prior to establishment.
Strengthen	Implement biosecurity measures to prevent disease introduction and spread. Employ trained aquaculture personnel. Maintain appropriate stocking densities and water quality.
Sustain	Establish fish health monitoring and disease response protocols. Use effluent from fish ponds for agricultural irrigation.

Responsibility: Cooperative (if future decision to include aquaculture)

Cost Estimate (MWK): Not currently budgeted; would require separate assessment

8.1.5.2 Negative Impacts**i. Increased Risk of Water Logging Conditions****Cause and Comment:**

Poor water application methods can cause accumulation of water in soil pores, leading to waterlogging. This condition reduces soil aeration, adversely affects crop growth, and creates favorable conditions for vector-borne diseases, particularly malaria.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Design self-draining irrigation structures (field canals with adequate slope). Avoid over-irrigation through proper system design.
Minimize	Train farmers in best irrigation practices, including scheduling based on crop water requirements and soil moisture monitoring. Promote proper irrigation scheduling to avoid over-application of water. Install drainage systems (field drains, collector drains) with adequate capacity.
Restore	Regularly maintain drainage systems to prevent clogging and stagnation. Where waterlogging occurs, install additional drainage or transition to better-drained crops.
Offset	Not applicable.

Responsibility: WUA, Cooperative, Extension Services

Cost Estimate (USD): 2,000

ii. Increased Risk of Child Labour

Cause and Comment:

During operation, some farmers may engage under-aged persons to provide cheap labour. This risk is associated with increased labour demand in irrigated farming systems and weak enforcement of labour standards.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Engage only persons aged 18 years and above as workers on the scheme. Include age verification in recruitment procedures.
Minimize	Sensitize farmers on dangers of child labour and legal consequences through WUA meetings and IEC materials. Work with local authorities and community leaders to enforce compliance with labour laws (Employment Act 2000). Display child labour prohibition notices at scheme entry points.
Restore	If child labour is detected, report to Ministry of Labour and social welfare authorities. Support referral of child to education or social services.
Offset	Not applicable.

Additional Measures:

- Integrate child protection awareness into WUA activities and cooperative by-laws.
- Conduct regular monitoring of labour practices on scheme farms.

Responsibility: Cooperative, WUA, Ministry of Labour, Local Authorities

Cost Estimate (USD): 1,500

iii. Increased Risk of Disruption of Children's Education

Cause and Comment:

Engagement of school-going children in farming activities may disrupt their education, leading to absenteeism and poor academic performance. This may have long-term socio-economic implications by limiting educational attainment and future opportunities for children.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Prohibit engagement of school-aged children during school hours. Schedule farm activities that require family labour outside school hours (early morning, late afternoon, weekends, school holidays).
Minimize	Sensitize parents on importance of education through community meetings and schools. Develop cooperative by-laws that penalize members who regularly withdraw children from school for farm work.
Restore	Collaborate with schools and community leaders to monitor school attendance and identify at-risk children. Support re-enrollment of children who have dropped out.
Offset	Not applicable.

Responsibility: Cooperative, WUA, Schools, Local Authorities

Cost Estimate (USD): 1,000

iv. Increased Risk of Pollution of Water from Agrochemicals**Cause and Comment:**

Use of fertilizers, herbicides, and pesticides may lead to water and soil pollution. Agrochemical runoff may degrade water quality, affect aquatic ecosystems, and pose health risks to downstream users.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Promote Integrated Pest Management (IPM) to reduce reliance on chemical inputs. Establish buffer zones (minimum 30 meters) between cultivated areas and water bodies where no agrochemicals are applied.
Minimize	Restrict use to approved pesticides only (registered with Pesticides Control Board). Ensure proper selection, timing, and application rates based on extension recommendations. Train farmers on safe handling, storage, and disposal of agrochemicals. Use precision application equipment to reduce overspray and drift.
Restore	Where contamination occurs, report to MEPA and implement remediation measures (e.g., removal of contaminated soil, bioremediation).

Hierarchy Level	Measure
Offset	Not applicable.

Additional Measures:

- Construct toilets for farmers at field locations to prevent open defecation.
- Provide potable water through boreholes to reduce need for surface water use.
- Promote organic farming practices where feasible.
- Implement triple-rinsing of agrochemical containers and disposal through collection systems.

Responsibility: Extension Services, Cooperative, Pesticides Control Board

Cost Estimate (USD): 2,500

v. Risk of Increased Incidences of HIV and AIDS and STIs

Cause and Comment:

Continued interaction between workers, traders, and communities may increase the risk of transmission of HIV and other STIs. Increased economic activity and mobility during operation may sustain behavioral risk factors associated with disease transmission.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Recruit labour locally where possible to reduce influx of workers from high-prevalence areas.
Minimize	Conduct awareness campaigns on HIV prevention, testing, and treatment through WUA meetings and community events. Distribute condoms at scheme offices and health posts. Provide IEC materials (posters, brochures) in local languages. Partner with local health services to provide on-site voluntary counseling and testing (VCT) services.
Restore	Establish referral pathways to Chikwawa District Hospital and local health centers for HIV care and treatment. Coordinate with District Health Office on post-exposure prophylaxis (PEP) for occupational exposures.
Offset	Not applicable.

Additional Measures:

- Integrate HIV/AIDS education into farmer group activities and cooperative governance training.

- Prohibit discrimination against people living with HIV in employment or cooperative membership.

Responsibility: Department of Health, Cooperative, WUA, NGOs/CSOs

Cost Estimate (USD): 2,000

vi. Increased Risk of Water-Related Diseases

Cause and Comment:

Stagnant water in canals may create conditions for malaria and bilharzia (schistosomiasis). Poor sanitation may lead to diarrheal diseases (cholera, typhoid, dysentery). Irrigation systems can increase exposure to water-related diseases if not properly managed.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Design canals with adequate slope (minimum 0.05 percent) to prevent stagnation. Avoid creating permanent pools or low-flow zones.
Minimize	Maintain canals and drainage systems regularly to prevent vegetation overgrowth and sediment accumulation that creates vector habitat. Promote use of insecticide-treated nets (ITNs) through distribution campaigns and education. Conduct regular health awareness campaigns on water-related disease prevention. Implement community-led total sanitation (CLTS) to reduce open defecation.
Restore	Where disease outbreaks occur, coordinate with District Health Office on vector control (indoor residual spraying, larviciding) and case management. Provide water treatment supplies (chlorine, Waterguard) during outbreak periods.
Offset	Not applicable.

Additional Measures:

- Encourage use of PPE (boots) in waterlogged areas to reduce bilharzia exposure.
- Construct and maintain adequate toilet facilities at scheme offices and field locations.

Responsibility: Department of Health, WUA, Cooperative

Cost Estimate (USD): 3,000

vii. Increased Risk of Contracting Communicable and Emerging Infectious Diseases (including COVID-19, Mpox, and Cholera)

Cause and Comment:

Large numbers of people working together may increase transmission risks of communicable diseases. Cholera is endemic in Chikwawa District, with outbreaks typically during the rainy season. COVID-19 remains a risk during periods of new variant circulation. Mpox (monkeypox) has been reported in Malawi, with transmission risks associated with contact with infected animals (rodents, primates) and close human-to-human contact. High interaction levels among farmers and traders facilitate spread.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Recruit labour locally to reduce disease introduction. Avoid worker camps in flood-prone areas where waterborne disease risk is elevated.
Minimize	Implement vaccination campaigns for workers where vaccines available (cholera, COVID-19) in coordination with District Health Office. Provide handwashing stations with soap and safe water at all project sites. Maintain adequate sanitation facilities. Conduct daily health screening (temperature checks, symptom questionnaires) during outbreak periods. Sensitize workers and communities on transmission routes, symptoms, and prevention measures for cholera, COVID-19, Mpox, and other endemic diseases using IEC materials in local languages. For Mpox specifically: Educate workers to avoid contact with sick or dead animals, practice hand hygiene, use PPE when handling potentially infected animals or persons, and report suspected cases immediately.
Restore	Establish referral pathways to Chikwawa District Hospital for diagnosis and treatment. Stock adequate supplies of oral rehydration solution (ORS) at scheme offices. Coordinate with District Health Office on disease surveillance, contact tracing, and outbreak response. Isolate suspected cases and arrange for medical evaluation without delay.
Offset	Not applicable.

Responsibility: Contractor (construction), Cooperative/WUA (operation), Department of Health, District Health Office

Cost Estimate (USD): 2,000

viii. Increased Risk of Generation of Greenhouse Gases (GHGs)

Cause and Comment:

Irrigated agriculture may generate greenhouse gases such as methane, carbon dioxide, and nitrous oxide. Waterlogged conditions promote methane production. Fertilizer use (particularly nitrogen fertilizers) leads to nitrous oxide emissions. Both are potent greenhouse gases.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Regulate water application to prevent waterlogging and anaerobic conditions. Use alternate wetting and drying (AWD) irrigation where suitable for crops.
Minimize	Improve fertilizer management through soil testing and precision application. Use nitrification inhibitors or slow-release fertilizers. Promote efficient irrigation practices (drip, sprinkler) over flood irrigation.
Restore	Not applicable.
Offset	Encourage climate-smart agriculture approaches that sequester carbon (agroforestry, conservation tillage, cover cropping). Tree planting programme (1,300,000 trees) will sequester carbon over time.

Responsibility: Extension Services, Cooperative

Cost Estimate (USD): 1,500

ix. Increased Risk of Water Use Conflict

Cause and Comment:

The Shire River is a shared resource, and downstream users (including the Katunga-Maseya Cane Growers Association and other cooperatives) may be affected by upstream abstraction. Competing demands may lead to conflicts, especially during dry periods when river flows are low.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Design irrigation system for maximum water efficiency (pressurized systems selected) to minimize abstraction volumes.
Minimize	Obtain water abstraction permits from NWRA with clearly defined allowable volumes and periods. Implement WUA-based water allocation systems with transparent rules. Coordinate abstraction schedules with other SVTP cooperatives to manage cumulative impacts. Monitor water abstraction and maintain records for NWRA audit.
Restore	If conflict arises, use GRM and WUA dispute resolution mechanisms. Escalate to NWRA for mediation if needed.
Offset	Not applicable.

Responsibility: WUA, Cooperative, NWRA, PMT

Cost Estimate (USD): 2,000

x. Increased Risk of Injuries to Maintenance Workers and Farmers**Cause and Comment:**

Workers and farmers may be exposed to occupational risks during maintenance of the Night Storage Reservoir, pumping stations, and irrigation infrastructure. Risks arise from working near water, using hand and power tools, operating equipment, and environmental conditions (heat, fatigue).

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Design infrastructure for safe access and maintenance (walkways, guardrails, non-slip surfaces).
Minimize	Provide task-appropriate PPE for maintenance activities (gloves, safety glasses, hard hats, life jackets when working near water). Train workers on safe work procedures and equipment use. Establish lockout/tagout procedures for electrical and mechanical maintenance.
Restore	Maintain first-aid kits and trained first-aiders at scheme offices. Establish emergency response procedures for injuries.

Offset	Not applicable.
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Responsibility: Cooperative, WUA

Cost Estimate (USD): 2,000

xi. Reduced Availability of Water Downstream

Cause and Comment:

Abstraction of water from the Shire River for irrigation may reduce downstream flows during dry periods, potentially affecting downstream users (including the Katunga-Maseya Cane Growers Association and other cooperatives) and aquatic ecosystems. The project involves abstraction from the existing Kapichira Dam, which has established operating rules under the broader SVTP.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Design efficient irrigation system to minimize abstraction volumes relative to irrigated area.
Minimize	Comply with water abstraction permit conditions, including maximum abstraction volumes and periods. Maintain environmental flows as specified by the National Water Resources Authority. Coordinate water abstraction with other SVTP cooperatives to manage cumulative impacts.
Restore	Monitor downstream flows and adjust abstraction if ecological or user impacts are detected. If impacts occur, implement compensatory measures (e.g., water releases during critical dry periods).
Offset	Not applicable.

Responsibility: PMT, NWRA, Cooperative

Cost Estimate (USD): 2,500

xii. Increased Growth and Proliferation of Disease Vectors

Cause and Comment:

Permanent water bodies (canals, Night Storage Reservoir) may promote breeding of disease vectors, particularly mosquitoes (malaria) and snails (bilharzia/schistosomiasis).

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Design canals with adequate slope and flow velocity to prevent stagnation. Avoid creating permanent pools in drainage systems.
Minimize	Maintain canals regularly to remove vegetation and sediment that create vector habitat. Promote use of insecticide-treated nets. Implement vector control measures (larviciding, biological control using larvivorous fish) in coordination with District Health Office.
Restore	During disease outbreaks, support indoor residual spraying (IRS) and case management.
Offset	Not applicable.

Responsibility: Department of Health, WUA, Cooperative

Cost Estimate (USD): 2,000

xiii. Increased Exposure to Agrochemicals

Cause and Comment:

Handling agrochemicals poses health risks to farmers and workers. Improper use may lead to acute poisoning (skin contact, inhalation, ingestion) and chronic health effects (cancer, reproductive harm, neurological damage).

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Promote IPM and organic farming to eliminate or reduce chemical use.
Minimize	Restrict use of only approved pesticides (registered with Pesticides Control Board). Train farmers on safe handling, mixing, application, storage, and disposal. Implement restricted entry intervals after application (24-72 hours depending on chemical). Provide washing facilities for decontamination.
Restore	If poisoning occurs, provide first aid and transport to health facility. Report occupational poisonings to Ministry of Labour.
Offset	Not applicable.

Additional Measures:

- Provide appropriate PPE (chemical-resistant gloves, coveralls, respirator, goggles) for pesticide applicators.
- Establish no-spray zones near water bodies, homes, and schools.

Responsibility: Extension Services, Cooperative, Pesticides Control Board

Cost Estimate (USD): 2,000

xiv. Increased Generation of Hazardous Waste**Cause and Comment:**

Agrochemical use generates hazardous waste (empty containers, unused product, rinsate, contaminated PPE). Improper disposal may contaminate soil and water.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Minimize chemical use through IPM. Purchase only required quantities.
Minimize	Implement triple-rinse of containers; use rinsate as diluted application. Establish container collection system for recycling (where available) or disposal through licensed hazardous waste facility. Train farmers on safe disposal methods.
Restore	If contamination occurs, report to MEPA and implement remediation.
Offset	Not applicable.

Responsibility: Cooperative, WUA, District Council, Pesticides Control Board

Cost Estimate (USD): 1,500

xv. Increase in Spread of Fish Diseases (if aquaculture implemented in future)**Cause and Comment:**

If aquaculture is implemented, poor water quality and overcrowding may lead to fish diseases. Disease outbreaks may reduce productivity and cause economic losses.

Mitigation Measures (if aquaculture implemented):

Hierarchy Level	Measure
Avoid	Source healthy, disease-free fingerlings from certified hatcheries.
Minimize	Maintain appropriate stocking densities. Maintain water quality through regular monitoring and exchange. Avoid using contaminated equipment across ponds.
Restore	Quarantine sick fish. Consult aquaculture extension services for diagnosis and treatment. Implement biosecurity measures.
Offset	Not applicable.

Responsibility: Cooperative (if aquaculture implemented), Department of Fisheries

Cost Estimate (MWK): Not currently budgeted

xvi. Increase in Spread of Zoonotic Diseases

Cause and Comment:

Rearing of livestock (goats, pigs, cattle, poultry) within the scheme may increase risk of zoonotic disease transmission (e.g., anthrax, brucellosis, rabies, leptospirosis, avian influenza) if care is not taken.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Maintain separation between livestock areas and crop production areas. Exclude livestock from water bodies used for human consumption.
Minimize	Practice proper livestock handling and hygiene (handwashing after contact, use of PPE). Adhere to recommended stocking capacity (maximum 20 livestock units per household). Vaccinate livestock against endemic zoonotic diseases (e.g., anthrax, rabies).
Restore	If zoonotic disease is suspected, report to veterinary and health authorities immediately. Quarantine affected animals.
Offset	Not applicable.

Responsibility: Cooperative, Department of Animal Health and Livestock Development

Cost Estimate (USD): 1,500

xvii. Increase in Generation of Wastewater

Cause and Comment:

Wastewater will be generated from scheme infrastructure (offices, toilets, worker facilities) and, if implemented, from periodic draining of fish ponds. This effluent may contain chemicals, organic matter, and pathogens that can impact aquatic and terrestrial ecosystems if inappropriately discharged.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Minimize water use in facilities through water-efficient fittings.
Minimize	Provide pit latrines or septic tanks with soak ways for office and field wastewater. Use effluent from any future fish ponds for agricultural irrigation (nutrient-rich).
Restore	If wastewater discharge is necessary, install sedimentation ponds or constructed wetlands to capture and treat effluent before it enters natural waterways.
Offset	Not applicable.

Responsibility: Cooperative

Cost Estimate (USD): 1,500

xviii. Increase in Theft and Vandalism Cases

Cause and Comment:

Availability of farm inputs, equipment, and infrastructure (solar panels, pumps, pipes) at the irrigation block may attract thieves and vandals, leading to economic losses and potential danger to community members involved in theft (electrocution, injury).

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
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Avoid	Design infrastructure with anti-theft features (locking mechanisms, concealed wiring, tamper-proof fasteners).
Minimize	Conduct sensitization meetings with communities on consequences of theft and vandalism. Facilitate formation of community policing committees in coordination with Malawi Police Service. Install security lighting, fencing, and where feasible, cameras or alarms at critical infrastructure (pump house, solar array, Night Storage Reservoir). Engage night guards for high-value assets.
Restore	If theft or vandalism occurs, report to police immediately. Implement repairs or replacement. Use GRM to receive anonymous tips.
Offset	Not applicable.

Responsibility: Cooperative, WUA, Local Leaders, Malawi Police Service

Cost Estimate (USD): 2,000

xix. Increased Risk of Human-Wildlife Conflict – Hippopotamus and Crocodile

Cause and Comment:

The Shire River supports populations of hippopotamus (*Hippopotamus amphibius*) and Nile crocodile (*Crocodylus niloticus*). Local communities and the SVTP baseline survey have reported that hippos occasionally emerge from the river to forage on crops in fields adjacent to the floodplain, particularly at night. Crocodiles pose risks to humans, livestock, and domestic animals when accessing water points or working near riverbanks. The presence of the irrigation scheme, including the Night Storage Reservoir, canals, and irrigated crops, may increase the attractiveness of the project area to these animals, potentially elevating the frequency of human-wildlife encounters and crop raiding incidents. Risks include fatal or injurious attacks on farmers and workers, loss of livestock, destruction of crops, and psychological distress among community members.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Site the Night Storage Reservoir, pumping stations, and worker accommodation away from known hippo pathways and crocodile basking areas, based on consultation with local communities and Department of National Parks and Wildlife (DNPW). Design the reservoir with sloping sides or fencing to prevent hippo entry.

Hierarchy Level	Measure
Minimize	Install perimeter fencing (game-proof or chain-link) around the Night Storage Reservoir and critical infrastructure where feasible and cost-effective. Maintain a clear visual buffer (minimum 50 meters of cleared vegetation) around the reservoir and major canals to reduce cover for approaching animals. Install motion-activated lighting or acoustic deterrents at night around high-risk areas (reservoir, pump house). Schedule maintenance and farming activities in high-risk zones during daylight hours only. Train farmers and workers on safe behavior: avoiding the river at dawn/dusk, traveling in groups, maintaining distance from wildlife, and reporting sightings.
Restore	Establish a community-based wildlife reporting and rapid response system linked to DNPW and local police. Coordinate with DNPW on any translocation or management interventions; no unauthorized killing or harming of protected species shall occur. Develop a compensation or insurance mechanism for verified crop losses or livestock predation attributable to hippo or crocodile, in consultation with DNPW and the Cooperative.
Offset	Not applicable.

Responsibility: WUA, Cooperative, DNPW, PMT

Cost Estimate (USD): 2,500

xx. Increased Risk of Salinization

Cause and Comment:

Excessive use of chemical fertilizers and poor drainage can lead to increased soil salinity, acidity, and alkalinity over time. Salinization reduces soil productivity and may render land unsuitable for agriculture.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Apply fertilizers at recommended rates based on soil testing; avoid over-application. Design drainage systems to prevent waterlogging and salt accumulation.

Hierarchy Level	Measure
Minimize	Apply organic matter (compost, manure) to soils to improve structure and leach salts. Promote effective and efficient use of irrigation water (avoid over-irrigation). Regularly maintain irrigation and drainage channels for improved seepage and flow. Clear clogged channels to allow water to flow. Conduct periodic soil salinity monitoring.
Restore	If salinization is detected, implement remediation measures (leaching, application of gypsum, transition to salt-tolerant crops).
Offset	Not applicable.

Responsibility: Extension Services, Cooperative, WUA

Cost Estimate (USD): 2,000

8.1.4 Decommissioning Phase

8.1.4.1 Positive Impacts

i. Increased Aesthetic Value

Cause and Comment:

Cessation of construction activities and demolition of construction camps will lead to a cleaner environment in the project area.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Rehabilitate all borrow pits created during construction phase. Revegetate all areas stripped of vegetative cover due to construction works.
Strengthen	Remove all construction waste and dispose of in designated areas in liaison with Chikwawa District Council.
Sustain	Maintain restored areas through monitoring and follow-up planting.

Responsibility: Contractor, MEPA, District Council

Cost Estimate (USD): 2,500

ii. Reduced Noise Levels

Cause and Comment:

Cessation of construction works will lead to reduced noise levels as construction machinery will no longer operate on the site.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Service all construction machinery for use in other projects elsewhere.
Strengthen	Not applicable.
Sustain	Not applicable.

Responsibility: Contractor

Cost Estimate (USD): 1000

iii. Reduced Exposure of Workers to Public Health and Safety Risks

Cause and Comment:

Cessation of construction works will reduce exposure of workers to public health and safety risks arising from construction activities.

Enhancement Measures:

Hierarchy Level	Measure
Enable	Encourage surrounding communities to sleep under insecticide-treated mosquito nets.
Strengthen	Rehabilitate all borrow pits created during construction phase to remove drowning and vector breeding hazards.
Sustain	Not applicable.

Responsibility: Contractor, Department of Health

Cost Estimate (USD): 1,000,00

5.3.4.2 Negative Impacts

i. Loss of Employment

Cause and Comment:

After construction activities, the contractor will lay off workers. This impact will certainly occur and reduce incomes for persons who were working under the project. Shortage of incomes would contribute to food insecurity within families. Abrupt loss of income may negatively affect household welfare, particularly for low-income workers who relied on construction employment as their primary livelihood source.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Phase demobilization to allow workers time to seek alternative employment.
Minimize	Give workers adequate written notice (minimum 30 days) of termination of employment. Provide appropriate terminal benefits at the end of employment as required by the Employment Act. Pay all outstanding wages and dues to minimize disputes.
Restore	Facilitate linkages to alternative employment opportunities where possible (e.g., referral to other contractors, Cooperative for operational-phase employment). Provide basic financial planning or livelihood transition guidance to affected workers.
Offset	Not applicable.

Responsibility: Contractor, PMT

Cost Estimate (USD): 2,000

ii. Reduction of Small-Scale Businesses within the Project Area

Cause and Comment:

Cessation of construction activities will lead to termination of employment for workers, resulting in reduced incomes. This will likely lead to a decline in small-scale businesses within the project area. Local businesses that depended on construction workers as customers may experience reduced demand, leading to income losses and possible closure of informal enterprises.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Not applicable (business decline is inevitable post-construction).
Minimize	Sensitize service providers and traders on the duration of construction at the outset so they can plan accordingly (e.g., avoid taking loans they cannot repay post-construction).
Restore	Encourage diversification of income sources among local traders. Support linkages to alternative markets beyond the project area, including the operational-phase Cooperative.
Offset	Not applicable.

Responsibility: PMT, District Council

Cost Estimate (USD): 1,500

iii. Increased Generation of Solid Wastes**Cause and Comment:**

Demolition of temporary shelters and pit latrines as construction ends will result in increased generation of solid waste within the project area. Improper disposal may lead to land degradation, visual pollution, and potential health risks.

Mitigation Measures (applying mitigation hierarchy):

Hierarchy Level	Measure
Avoid	Design temporary structures for easy disassembly and material recovery.
Minimize	Allow surrounding communities to collect reusable materials (planks, iron sheets, bricks) before demolition. Segregate waste streams.
Restore	Use construction rubble to rehabilitate borrow pits. Dispose of non-recyclable waste at designated sites in liaison with Chikwawa District Council. Ensure proper site clean-up and restoration.
Offset	Not applicable.

Responsibility: Contractor, MEPA, District Council

Cost Estimate (USD): 2,500

9 THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

This chapter presents the Environmental and Social Management Plan (ESMP) and the Environmental and Social Monitoring Plan for the Kambadwe Irrigation Block project. The ESMP constitutes the primary operational instrument for the identification, management, and monitoring of all anticipated environmental and social risks and impacts arising from the implementation of the project across all four project phases: planning and design, construction, operation and maintenance, and decommissioning.

The ESMP has been developed in accordance with the requirements of the Environment Management Act (2017) of Malawi, the World Bank Environmental and Social Framework (ESF, 2018), and the African Development Bank Group's updated Integrated Safeguards System (ISS, 2023). It is designed to serve as a practical, implementable, and results-oriented action plan that: (i) identifies and summarises all significant environmental and social risks and impacts, including cumulative impacts, impacts on highly vulnerable community members, and those related to involuntary resettlement; (ii) specifies, with technical detail, each mitigation and enhancement measure and the conditions under which it is required; (iii) defines monitoring objectives, parameters, methods, frequencies, and responsibilities; (iv) establishes clear institutional arrangements, capacity development requirements, and implementation schedules; and (v) provides itemised cost estimates for all ESMP activities.

It should be noted that the ESMP is a living document. Where new or unforeseen environmental and social impacts are identified during project implementation, the ESMP will be updated accordingly and submitted to MEPA and the project financiers for review and approval. A degree of operational flexibility is therefore built into the ESMP to accommodate changes that may be necessary as project implementation progresses.

9.1 Mitigation, Compensation, and Enhancement Measures

In accordance with the mitigation hierarchy, the ESMP prioritises the avoidance of adverse environmental and social impacts in the first instance, followed by minimisation, restoration, and compensation where avoidance is not feasible. Where adverse impacts cannot be fully mitigated, residual impacts are characterised and their acceptability is assessed. The ESMP also identifies measures to maximise and enhance the positive impacts of the project.

Key principles guiding the development of mitigation and enhancement measures include:

Differentiated measures to ensure that adverse impacts do not fall disproportionately on vulnerable and marginalised groups, including women-headed households, youth, elderly persons, persons with disabilities, and persons living with HIV and AIDS;

Integration of GBV and SEA prevention and response measures as a priority cross-cutting theme throughout the construction phase;

Mainstreaming of gender equity and equal opportunity principles across all employment, training, and community engagement activities;

Coordination and consistency with other plans required for the project, including the Resettlement Action Plan (RAP), Stakeholder Engagement Plan (SEP), and Labour Management Procedure (LMP); and

Feasibility of all proposed measures under local conditions, including consideration of institutional capacity, available resources, and the recurrent costs of implementation.

The ESMP matrix presented in Table 13 below specifies for each identified impact: the mitigation or enhancement measures to be implemented; the timeframe for implementation; key performance indicators for monitoring effectiveness; the party responsible for implementation; the party responsible for monitoring; and the estimated budget. The matrix covers all project phases and is structured to clearly distinguish between positive impacts requiring enhancement and negative impacts requiring mitigation.

Table 13 below presents the ESMP matrix for the Kambadwe Irrigation Block, specifying for each identified impact the mitigation or enhancement measures to be implemented, timeframe, key performance indicators, implementation and monitoring responsibilities, and estimated budget.

Table 13: Environmental and Social Management Plan in Kambadwe Irrigation Block

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
PLANNING PHASE — POSITIVE IMPACTS						
Creation of employment through consultancies	Ensure all consultant teams include a minimum of 50% Malawian personnel to enhance local capacity building Give preference to qualified local Malawian professionals for all study roles	Planning Phase	Percentage of Malawian personnel in consultant teams (Target: $\geq 50\%$)	Contractor	District Labour Office	4700
PLANNING PHASE — NEGATIVE IMPACTS						
Community anxiety over potential land loss	Conduct comprehensive community sensitisation meetings before and throughout the planning phase	Planning Phase	Sensitisation meeting records Number of communities sensitised (Target: 100%)	SVTP	District Land Office / District Council	295

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Clearly communicate the voluntary nature of land contribution, land demarcation process, and community rights Establish GRM and make it accessible to all community members prior to any site activities Engage traditional authorities and VDCs as key communication channels		GRM established and operational before site activities commence			
CONSTRUCTION PHASE — POSITIVE IMPACTS						
Creation of direct employment (~100 workers)	Recruit minimum 80% of labour force from surrounding communities	Construction Phase	% local labour engaged (Target: $\geq 80\%$)	Contractor	District Labour Officer	10000

Impact / Risk	Mitigation / Enhancement Measures	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Pay wages at or above government stipulated rates Ensure equal employment opportunities for men and women (target: $\geq 40\%$ women) Verify national IDs and minimum age (18 years) for all recruits Include labour hiring plan in works contract		% women employed (Target: $\geq 40\%$) Wage payment records verified against minimum wage rates			
Increased local economic activity	Designate a formal trading site within the project area for local vendors Engage local communities, businesses, and	Construction Phase	Formal trading site designated and operational Evidence of local supplier engagement and procurement records	Contractor	District Council	3000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	stakeholders in project planning Maximise procurement of goods and services from local suppliers Support skills development and enterprise training for local communities					
Skills transfer to local communities	Engage at least 80% of labour force from surrounding communities Maximise employment of local unskilled workers Pair skilled and unskilled workers on all assignments Formalise on-the-job training with	Construction Phase	Employment records showing % local workers Evidence of on-the-job training programmes with learning targets	Contractor	District Labour Office	3000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	defined learning targets and performance monitoring					
Government revenue through taxes	Remit all taxes (PAYE, WHT, VAT) to Malawi Revenue Authority on time Procure all materials from tax-compliant businesses Maintain accurate financial records of all tax payments	Planning and Construction Phases	Tax payment records submitted to MRA on time Purchase records from tax-compliant suppliers	Contractor / Consultants	Malawi Revenue Authority	3000
CONSTRUCTION PHASE — NEGATIVE IMPACTS						
Loss of vegetation and habitat	Restrict all vegetation clearing to demarcated project footprint only	Construction Phase	Pre-construction vegetation inventory completed	Contractor	District Forest Officer / Environmental District Officer	2000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Conduct pre-construction vegetation inventory to document species and quantities to be cleared Collaborate with Department of Forestry and upstream blocks on Shire River catchment management Plant trees and grass in all bare areas within the scheme (target: 1,250,000 trees) Hold environmental awareness sessions with workers and communities Develop and enforce contractor		Clearing confined to demarcated footprint (verified by inspection) Number of trees planted and survived (Target: 1,250,000) Environmental rules and regulations signed by contractor			

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	environmental rules and regulations for flora and fauna protection					
Disruption of animal habitats	Restrict vegetation clearing to demarcated areas only Conduct environmental awareness sessions with workers and communities on protection of fauna Develop and enforce contractor environmental rules and regulations for biodiversity protection	Construction Phase	Sensitisation meeting records Contractor biodiversity protection rules in place and signed	Contractor	District Forest Officer / Environmental District Officer	3000
Increased dust emissions	Spray water on all unpaved surfaces	Construction Phase	Absence of visible dust nuisance to	Contractor	District Labour Office /	1000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	and access roads at regular intervals Enforce vehicle speed limits of maximum 20 km/h on unpaved roads Provide appropriate dust PPE (masks) to all construction workers Display speed limit signage at all site entry points		surrounding communities Speed limit signage displayed at all site entry points PPE use compliance verified by inspection		Environmental District Officer	
Increased soil erosion and sedimentation of Shire River	Install diversion drains and sediment fences prior to commencement of earthworks Time all earthworks to coincide with dry season where possible Restrict vegetation clearing to	Construction Phase	Sediment fences and diversion drains installed before earthworks commence (verified by inspection) Evidence of progressive revegetation	SVTP Contractor	Environmental District Officer	4000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	immediately prior to soil stripping Progressively revegetate all disturbed areas during construction Develop and enforce contractor erosion control rules and regulations		Absence of significant sedimentation in drainage channels (visual inspection)			
Increased generation of construction waste	Reuse construction waste for borrow pit backfilling where appropriate Dispose of all remaining waste at designated sites in liaison with Chikwawa District Council Train all workers on Reduce-Reuse-Recycle principles	Construction Phase	State of borrow pits backfilled with construction waste (inspection) Waste disposal records available and submitted to District Council Sensitisation records on waste management	Contractor	Environmental District Officer / District Labour Officer	Covered above

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Segregate hazardous waste and dispose of through licensed contractors					
Water and soil pollution from oil spills, cement waste, and human waste	Construct temporary toilets (separate for men and women) and enforce their use by all workers Provide concrete-lined and bunded fuelling areas for all construction vehicles Collect and store used oils in leak-proof containers for collection by licensed recyclers Sensitise all workers on good hygiene and prohibition of waste	Construction Phase	Temporary toilets available and maintained in good condition (inspection) Bunded fuelling area with concrete lining in place (inspection) Absence of oil spills or construction waste in surrounding water bodies (water quality monitoring) Sensitisation records	Contractor	MEPA / Environmental District Officer	5000

Impact / Risk	Mitigation / Enhancement Measures	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	disposal into water bodies Install temporary sedimentation ponds to capture construction site runoff Designate waste disposal sites in liaison with Chikwawa District Council					
Noise pollution (>80 dB) from construction machinery	Fit silencers to exhaust systems of all heavy machinery Service and maintain all machinery regularly to minimise noise emissions Provide ear protection (ear muffs) to all	Construction Phase	Maintenance records for all machinery % workers with ear protection provided and using it (inspection) Construction activities within permitted working hours	Contractor	District Labour Officer	1000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	workers exposed to noise levels >85 dB Restrict all construction activities to between 08:00 and 17:00 hrs		(verified by inspection)			
Social disruption and family instability from migrant worker influx	Recruit minimum 80% of labour force from surrounding communities to reduce migrant worker influx Develop comprehensive workers Code of Conduct and ensure all workers sign and understand it Establish community liaison mechanisms for early identification of social conflicts	Construction Phase	% local workers employed (Target: ≥80%) Signed copies of Code of Conduct available for all workers Community liaison meeting records	Contractor	District Social Welfare Officer	2000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Maintain active community engagement throughout construction					
Increased risk of STIs, HIV and AIDS transmission	Recruit minimum 80% of labour force locally to reduce migrant worker influx Provide free condoms to all construction workers Distribute HIV/AIDS IEC materials to workers and surrounding communities Conduct regular HIV/AIDS sensitisation sessions in coordination with	Construction Phase	% local workers employed (Target: $\geq 80\%$) Condoms available and distributed (records) IEC materials distributed (records) Sensitisation sessions conducted quarterly (records) Referral pathway to health services established and operational	Contractor	District AIDS Coordinator	1000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Chikwawa District AIDS Coordinator Establish health referral pathway for workers requiring testing and treatment Include STI/HIV awareness provisions in works contract EOHS clauses					
Increased risk of GBV and SEA	Develop zero-tolerance GBV and SEA workers Code of Conduct and enforce compliance Conduct mandatory GBV and SEA awareness training for all workers before commencement of works	Construction Phase	Signed Code of Conduct available for all workers GBV/SEA training records (Target: 100% of workers trained before works commence) Community sensitisation records	SVTP Supervising Engineer Contractor	Police Unit / District Social Welfare Officer	4000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Sensitise surrounding communities on GBV and SEA prevention Establish dedicated GBV reporting channel within project GRM Establish and operationalise GBV referral pathway to designated service providers Implement survivor-centred response protocols for all reported GBV/SEA incidents Include comprehensive GBV/SEA prevention clauses in works contract		GRM operational with dedicated GBV channel (verified) GBV referral pathway documented and known to all workers and communities			

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
Increased risk of SEA	Develop and enforce zero-tolerance workers Code of Conduct on SEA Sensitise all workers on SEA prevention before and during construction Establish community-level GRM with dedicated SEA/GBV reporting channel Establish SEA referral pathway to GBV service providers	Construction Phase	Signed Code of Conduct for all workers SEA sensitisation records (100% coverage) GRM operational with dedicated SEA channel	SVTP Supervising Engineer Contractor	Police Unit / District Social Welfare Officer	3000
Child labour engagement by contractor	Verify national ID cards for all recruited workers to	Construction Phase	Employment records showing verification of national IDs	Contractor	District Labour Officer	1000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	confirm minimum age of 18 years Display child labour prohibition signage in all strategic locations on site Develop and communicate clear employment plan to surrounding communities Include child labour prohibition in works contract EOHS clauses Conduct unannounced spot checks on workforce age compliance		Child labour prohibition signage displayed (inspection) No workers under 18 years on site (verified by inspection and records)			
Increased criminal activity from population influx	Recruit minimum 80% of labour force from surrounding communities	Construction Phase	% local workers employed (Target: ≥80%)	Contractor	Police Unit	3000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Strengthen community policing structures in the project area Sensitise communities and migrant workers against criminal activities Include criminal conduct provisions in workers Code of Conduct		Sensitisation records Community policing structures functional (verified by police records)			
Occupational health and safety hazards accidents and injuries	Provide appropriate PPE to all workers and enforce mandatory use Install warning signs and restricted entry signage in all high-risk areas Deploy flag persons and traffic guides to	Construction Phase	% Workers with PPE provided and using it (Target: 100%) Warning signage displayed at all hazardous areas (inspection) Traffic guides in place on all active	Contractor	District Labour Officer	4000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	control vehicle movement on site Progressively backfill all borrow pits to eliminate fall hazards Enforce vehicle speed limits on all site roads Maintain all machinery in good working order and prohibit use of defective equipment		construction roads Speed limit signage displayed at all site entry points Machinery maintenance records available			
COVID-19 and communicable disease transmission	Sensitise all workers and surrounding communities on COVID-19 and communicable disease prevention Provide handwashing facilities, masks,	Construction Phase	Sensitisation records available Handwashing facilities and sanitisers available on site (inspection) % Workers vaccinated	Contractor	District Environmental Health Officer	1000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	and alcohol-based sanitisers on site Enforce COVID-19 prevention protocols including social distancing Encourage all workers to obtain COVID-19 vaccination Implement screening and isolation protocols for symptomatic workers		against COVID-19 (records) Number of workers wearing masks on site (inspection)			
Exploitation of labourer's underpayment and overworking	Ensure all workers have signed employment contracts before commencing work Pay all workers at or above government minimum wage rates	Construction Phase	Signed employment contracts available for all workers Payment records showing wages at or above minimum wage	Contractor SVTP Ministry of Labour	District Labour Officer	2000

Impact / Risk	Mitigation / Enhancement Measures	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Enforce legally mandated working hours and pay overtime in accordance with Employment Act Establish worker-specific grievance mechanism independent of project GRM Conduct regular payroll audits by District Labour Officer		Records of working hours within legal limits Worker grievance mechanism operational and accessible			
DEMOBILISATION PHASE — POSITIVE IMPACTS						
Reduced noise levels following cessation of construction	Service all construction machinery before redeployment to other projects Remove all machinery and	Demobilisation Phase	All machinery removed from site within agreed timeframe Maintenance records for all machinery	Contractor	District Labour Officer	1000

Impact / Risk	Mitigation / Enhancement Measures	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	equipment from site promptly upon completion of works					
Reduced dust and sedimentation following construction	Carry out comprehensive soft and hard landscaping of all disturbed areas after construction Revegetate all bare and disturbed soils before project handover	Demobilisation Phase	Area landscaped and revegetated (hectares) — verified by inspection	Contractor	Environmental District Officer	1000
Improved environmental aesthetics from site restoration	Revegetate all areas stripped of vegetative cover during construction Remove all construction waste and dispose of at designated sites in liaison with	Demobilisation Phase	Area revegetated verified against pre-construction baseline Absence of construction waste on site (inspection)	Contractor	Environmental District Officer	4000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	Chikwawa District Council					
DEMOBILISATION PHASE — NEGATIVE IMPACTS						
Loss of employment for construction workers	Provide all workers with adequate written notice of contract termination in accordance with Employment Act Pay all terminal benefits and outstanding wages on time Provide career transition support and linkage to agricultural employment opportunities in the scheme Facilitate skills training for alternative	Demobilisation Phase	Written termination notices issued to all workers within legal timeframe Terminal benefits and wages payment records available Number of former workers transitioned to scheme employment or alternative livelihoods	Contractor	District Labour Officer	2000

Impact / Risk	Mitigation / Enhancement Measures	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	livelihoods for workers not transitioning to scheme employment					
Increased generation of solid waste from demolition	Allow surrounding communities to collect and reuse salvageable materials such as planks and iron sheets Use demolition rubble to rehabilitate borrow pits Dispose of all remaining waste at designated sites in liaison with Chikwawa District Council	Demobilisation Phase	Amount of waste collected by communities for reuse (records) Waste disposal records submitted to District Council	Contractor	Environmental District Officer	3000

Impact / Risk	Mitigation / Enhancement Measures	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
Reduction of small-scale businesses dependent on construction activity	Sensitise all traders and service providers on the construction timeline well in advance Advise traders to identify and develop alternative markets before construction ends Provide transition support to link traders to agricultural market opportunities arising from scheme operation	Demobilisation Phase	Sensitisation records available Evidence of traders identifying alternative markets before construction ends	Contractor	District Council	500
OPERATION AND MAINTENANCE PHASE — POSITIVE IMPACTS						
Increased crop production (2-3 seasons per year)	Adopt water-saving irrigation technologies and	Operation Phase	Availability and adoption of water-saving irrigation	Cooperative Farmers	District Agriculture Development Officer	1000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	enforce efficient water scheduling Promote use of improved high-yielding, short-maturing, and drought-resistant hybrid seeds Facilitate access to certified seeds and quality farm inputs for all scheme participants Provide ongoing agricultural extension support through DoI field staff		technologies (inspection) Crop yield records showing improvement over baseline % scheme participants using improved seeds			
Increased household income	Link farmers to formal markets and commercial buyers Provide starter packs of farm inputs (seeds, fertilisers,	Operation Phase	Number of farmers formally linked to markets Starter packs distributed to vulnerable	Cooperative Farmers	District Council	1500

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	pesticides) to vulnerable households Support formation of farmer cooperatives for collective marketing Facilitate access to agricultural credit and financial services		households (records) Number of cooperatives formed and operational			
Improved market linkages for farmers	Identify and formalise market linkages with commercial buyers and processors Assist farmers to form and register cooperatives Facilitate value chain development and post-harvest handling training	Operation Phase	Number of markets identified and formalised Number of cooperatives registered and operational	SVTP	District Council	2000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
Skills transfer in GAPs, water-saving technologies, and value chains	Establish farmer field schools for training on GAPs, water-saving technologies, and value chain addition Facilitate formation of WUAs for sustainable scheme management Facilitate access by agricultural schools to scheme for field learning	Operation Phase	Farmer field schools established and operational WUAs in place and functional Number of farmers trained on GAPs and water-saving technologies	DoI	DoI	1500
Improved nutrition and food security	Encourage crop diversification among scheme participants Train farmers on nutrition-sensitive agriculture and GAPs Ensure women's equal access to	Operation Phase	Variety of crops grown within scheme (inspection) Training records on GAPs and nutrition-sensitive agriculture	District Council	District Nutrition Officer	1700

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	scheme benefits and training		% women accessing scheme benefits			
Increased knowledge transfer to agriculture students	Facilitate cooperation with farmers to allow access to scheme fields for school field visits and learning	Operation Phase	Number of school visits facilitated (records) Number of cooperatives supporting school access	DoI	DoI	1200
Aquatic biodiversity conservation through environmental flows	Mimic dry-season ecological flow requirements downstream of the scheme Design penstock to automatically release minimum ecological flows Monitor downstream river health and aquatic	Operation Phase	Availability of adequate environmental flows downstream (monitoring records) Penstock automatic release mechanism functional (inspection)	SVTP Cooperative Contractor	Department of Water Resources	3300

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	biodiversity annually		Annual downstream biodiversity monitoring reports			
OPERATION AND MAINTENANCE PHASE — NEGATIVE IMPACTS						
Waterlogging and associated disease vector breeding	Design self-draining field canals to prevent waterlogging Train farmers in best irrigation practices and water scheduling Monitor soil moisture and drainage conditions regularly	Operation Phase (ongoing)	Training records on best irrigation practices Absence of persistent waterlogging in scheme fields (inspection)	District Council	DoI / SVTP	1500
Child labour in farming activities	Sensitise all farmers on dangers of engaging underage	Operation Phase (ongoing)	Employment records showing workers aged 18 and above	Contractor	District Labour Officer SVTP	900

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	people in farm labour Enforce minimum working age of 18 years for paid farm labour Develop WUA bylaws prohibiting engagement of school-age children in farming during school hours Coordinate with District Labour Office and District Education Manager on enforcement		Sensitisation records WUA bylaws on child labour prohibitions available and enforced			
Disruption of children's education by farming demands	Sensitise parents on the importance of children's education Develop WUA bylaws to deter engagement of school-going	Operation Phase (ongoing)	Sensitisation records WUA bylaws on children's education available	Contractor Communities	District Education Manager SVTP	2500

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	children in farming during school hours Coordinate with District Education Manager on monitoring attendance		School attendance records shared with WUA			
Water and soil pollution from agrochemicals and human waste	Restrict pesticide use to products approved by the Pesticides Control Board Promote Integrated Pest Management (IPM) as the preferred pest control approach Train farmers on safe agrochemical handling, dosage, and application timing Promote organic farming practices to	Operation Phase (ongoing)	Records of pesticides procured showing only PCB-approved products Training records on IPM and organic farming Scheme toilets available and maintained (inspection) Annual water quality monitoring results for Shire River	District Council	National Water Resources Authority SVTP	1500

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	reduce agrochemical dependence Construct scheme toilets for use by all workers and farmers Apply for water abstraction permit from NWRA; monitor water quality in Shire River					
Vector-borne and waterborne diseases (malaria, schistosomiasis, diarrhoea, cholera)	Design canals to prevent stagnant water accumulation Promote insecticide-treated mosquito net use among all farming households Provide PPE for work in waterlogged areas	Operation Phase (ongoing)	Absence of stagnant water in scheme canals (inspection) % farmers using PPE when working in waterlogged areas Toilets and boreholes available and	District Environmental Health Officer Contractor	SVTP	2500

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	(especially rice farming) Construct scheme toilets and boreholes for potable water supply Implement biological and environmental vector management programme Coordinate with District Environmental Health Officer on community health monitoring		maintained (inspection) Community health records showing incidence of malaria and waterborne diseases			
Increased HIV/AIDS and STI transmission risk from labour influx	Recruit farm labour predominantly from surrounding communities Provide free condoms and IEC	Operation Phase (ongoing)	Employment records showing local recruitment Condom availability and IEC material	Contractor	District AIDS Coordinator / District Environmental Health Officer	1000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	materials to scheme workers and surrounding communities Conduct regular HIV/AIDS sensitisation sessions at scheme level		distribution records Sensitisation records — minimum quarterly sessions			
COVID-19 and communicable disease transmission among farmers	Sensitise farming communities on COVID-19 and communicable disease prevention Provide handwashing facilities and sanitisers at scheme gathering points Enforce social distancing and mask-wearing during group activities	Operation Phase (ongoing)	Sensitisation records Handwashing facilities available at scheme (inspection) % farmers wearing masks during group activities	Contractor SVTP	District Environmental Health Officer	1000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
Water use conflict with downstream irrigation blocks and users	Apply for water abstraction permit from National Water Resources Authority before scheme commissioning Adopt water-saving technologies to minimise abstraction volumes Coordinate with downstream irrigation blocks on water allocation scheduling Release minimum environmental flows downstream at all times	Operation Phase (ongoing)	Water abstraction permit obtained from NWRA (records) Water-saving technology adopted and operational (inspection) Environmental flow releases documented (monitoring records)	District Council	District Irrigation Officer / NWRA	1000
Occupational injuries to maintenance	Provide appropriate PPE to all maintenance workers and farmers working in	Operation Phase (ongoing)	% workers with PPE provided and using it (inspection)	Contractor	District Labour Officer	1000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
workers and farmers	hazardous conditions Conduct safety training for all maintenance workers and farmers on proper PPE use Establish OHS protocols for all scheme maintenance activities		Training records on OHS and PPE use			
Proliferation of disease vectors (mosquitoes, bilharzia snails)	Sensitise communities on dangers of contact with stagnant water Promote insecticide-treated mosquito net use through health facilities and local shops Implement biological vector	Operation Phase (ongoing)	Sensitisation records Evidence of insecticide-treated net distribution and use Disease vector monitoring reports	District Health Office	District Fisheries Officer / District Environmental Health Officer	2000

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
	control (e.g. introduction of predatory fish for mosquito larvae control) in canals					
Farmer exposure to agrochemicals during handling and application	Train farmers on safe handling, storage, and application of all agrochemicals Restrict use to PCB-approved products Promote organic farming alternatives and IPM practices Provide appropriate PPE for all agrochemical handling activities	Operation Phase (ongoing)	Training records on safe agrochemical handling Records of pesticides used showing only PCB-approved products % farmers using PPE during agrochemical application	DoI	District Land Resources Office / District Labour Office	5000
Generation of hazardous agricultural waste (pesticide	Train farmers on safe disposal of pesticide containers	Operation Phase (ongoing)	Training records on hazardous waste disposal	Contractor	District Land Resources Office / District	300

Impact / Risk	Mitigation Enhancement Measures /	Timeframe	Key Performance Indicator	Implementation Responsibility	Monitoring Responsibility	Budget (USD)
containers, obsolete chemicals)	and agrochemical waste Restrict use to PCB-approved pesticides Coordinate disposal of hazardous waste with MEPA Promote triple-rinsing and safe disposal of all pesticide containers		Hazardous waste disposal records available Absence of pesticide container litter on scheme (inspection)		Environment Office	

Note: DoI = Department of Irrigation; SVTP = Shire Valley Transformation Programme; MEPA = Malawi Environment Protection Authority; NWRA = National Water Resources Authority; MRA = Malawi Revenue Authority; PCB = Pesticides Control Board; WUA = Water User Association; PPE = Personal Protective Equipment; IEC = Information, Education and Communication; GRM = Grievance Redress Mechanism; IPM = Integrated Pest Management; GAPs = Good Agricultural Practices.

9.2 Environmental and Social Monitoring Plan

The Environmental and Social Monitoring Plan (ESMP) is designed to ensure that the management measures specified in the ESMP are implemented as planned, and that their effectiveness in preventing, minimising, or mitigating anticipated environmental and social impacts is continuously assessed. The monitoring plan specifies monitoring objectives, parameters to be measured, methods to be used, sampling locations where applicable, frequency of monitoring, detection limits where appropriate, thresholds that will signal the need for corrective action, and the parties responsible for monitoring and reporting.

Monitoring will be conducted at two levels: (i) implementation monitoring, which tracks whether the proposed mitigation and enhancement measures are being implemented as specified; and (ii) effectiveness monitoring, which assesses whether the implemented measures are achieving their intended environmental and social outcomes. Where monitoring results indicate that mitigation measures are not achieving their intended outcomes, or that unanticipated impacts are arising, corrective actions will be identified and implemented in a timely manner.

Monitoring reports will be prepared by the implementing parties and submitted to the PIU on a quarterly basis during the construction phase and on an annual basis during the operation phase. The PIU will compile consolidated ESMP implementation and monitoring reports for submission to MEPA and the project financiers in accordance with their respective reporting requirements. Independent environmental and social audits will be conducted on an annual basis by a qualified third-party auditor, with audit reports submitted to MEPA and the project financiers.

Table 14 below presents the Environmental and Social Monitoring Plan, specifying monitoring indicators, means of verification, monitoring frequency, and responsible monitoring parties for each identified impact throughout the project cycle.

Table 14: Environmental and Social Monitoring Plan Kambadwe Irrigation Block

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means of Verification	Frequency	Monitoring Responsibility	Budget (\$)
PLANNING PHASE						
Creation of employment	Include ≥50% Malawian personnel in all consultant teams	% Malawian personnel in consultant teams	Review of consultant staffing lists and contracts	At consultant engagement	District Labour Office	1,150
Community anxiety over land loss	Community sensitisation meetings; GRM establishment	Sensitisation meeting records; GRM established	Review of records; site visits	Before any site activities	District Land Office	300
CONSTRUCTION PHASE — POSITIVE IMPACTS						
Employment creation	Recruit ≥80% locally; pay at or above minimum wage; ≥40% women	% local workers employed; % women employed; wage payment records	Review of employment records and pay slips; site inspection	Monthly	District Labour Officer	1,725
Increased economic activity	Designate trading site; support local suppliers	Trading site and designated operational	Site inspection	Monthly	District Council	875

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means of Verification	Frequency	Monitoring Responsibility	Budget (\$)
Skills transfer	Engage ≥80% local labour; pair skilled/unskilled workers; on-the-job training	Employment records; training programme documentation	Review of records	Quarterly	District Labour Office	550
Government tax revenue	Remit taxes to MRA on time; procure from tax-compliant suppliers	Tax payment records; purchase records	Review of records	Quarterly	Malawi Revenue Authority	2,025
CONSTRUCTION PHASE — NEGATIVE IMPACTS						
Loss of vegetation and habitat	Restrict clearing to footprint; reforestation programme (1,250,000 trees)	Number of trees planted and survived; vegetation inventory	Inspection; review of planting records	Monthly during construction; annually post-construction	District Forest Officer	1,625
Disruption of animal habitats	Restrict clearing to demarcated areas; environmental awareness	Sensitisation records; contractor environmental rules in place	Review of records; inspection	Monthly	District Forest Officer / Environmental District Officer	1,325
Dust emissions	Water spraying; speed limits; PPE provision	Absence of dust nuisance; speed	Inspection	Weekly	Environmental District Officer	300

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means Verification of	Frequency	Monitoring Responsibility	Budget (\$)
Soil erosion and sedimentation	Sediment fences; diversion drains; progressive revegetation	limit signage displayed; PPE use Sediment control measures installed; area revegetated	Inspection	Monthly	Environmental District Officer	575
Borrow pits	Permit obtained; progressive rehabilitation; landowner compensation	Borrow pit permit; state of rehabilitation; compensation records	Inspection; review of records	Monthly	Environmental District Officer / Land Resource Conservation Officer	300
Construction waste	Reuse for backfilling; disposal at designated sites; R-R-R training	Waste disposal records; state of borrow pits	Review of records; inspection	Monthly	Environmental District Officer	Covered above
Water and soil pollution	Toilets; bunded fuelling areas; used oil collection; waste disposal	Toilets available; bunded fuelling area; absence of pollution in water bodies	Inspection; water quality sampling of Shire River	Monthly (inspection); Quarterly (water quality)	MEPA / Environmental District Officer	575

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means Verification of	Frequency	Monitoring Responsibility	Budget (\$)
Noise pollution	Silencers; machinery maintenance; ear protection; working hours restriction	Machinery maintenance records; % workers with ear protection; working hours compliance	Review records; inspection of	Monthly	District Labour Officer	1,050
Social disruption	≥80% local recruitment; Code of Conduct; community liaison	% local workers; signed Code of Conduct copies; community liaison records	Review records; inspection of	Monthly	District Social Welfare Officer	450
HIV/AIDS and STI transmission	Local recruitment; condoms; IEC materials; sensitisation	Employment records; condom availability; IEC distribution; sensitisation records	Review records; inspection of	Quarterly	District AIDS Coordinator	575
GBV and SEA	Code of Conduct; training; GRM; referral pathway	Signed CoC; training records (100% coverage); GRM operational; referral pathway documented	Review records; inspection of	Monthly	Police Unit / District Social Welfare Officer	875

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means Verification of	Frequency	Monitoring Responsibility	Budget (\$)
SEA	Code of Conduct; sensitisation; GRM	Signed CoC; sensitisation records; GRM operational	Review of records; inspection	Monthly	Police Unit / District Social Welfare Officer	550
Child labour	ID verification; minimum age signage; employment plan	Employment records (age verified); signage displayed	Review of records; inspection	Monthly	District Labour Officer	700
Criminal activities	≥80% local recruitment; community policing; Code of Conduct	% local workers; sensitisation records; community policing active	Review of records	Monthly	Police Unit	400
OHS hazards	PPE; warning signs; traffic guides; speed limits; borrow pit backfilling	% workers with PPE; signage; traffic guides in place; speed limit signs	Inspection	Weekly	District Labour Officer	575
COVID-19	Sensitisation; handwashing; masks; vaccination	Sensitisation records; handwashing facilities; % workers masked	Review of records; inspection	Monthly	District Environmental Health Officer	575

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means of Verification	Frequency	Monitoring Responsibility	Budget (\$)
Labour exploitation	Signed contracts; minimum wage; legal working hours; worker GRM	Signed contracts; payment records; working hour records; worker GRM operational	Review of records; payroll audit	Monthly	District Labour Officer	500
DEMOBILISATION PHASE						
Reduced noise	Service machinery; remove from site	Machinery maintenance records; all equipment removed	Review of records; inspection	End of construction	District Labour Officer	575
Reduced dust	Landscaping; revegetation	Area landscaped and revegetated (ha)	Inspection	End of construction	Environmental District Officer	300
Improved aesthetics	Rehabilitate borrow pits; revegetate; remove waste	Rehabilitated borrow pits; area revegetated; absence of waste	Inspection	End of construction	Environmental District Officer	875
Loss of employment	Written notice; terminal benefits; livelihood transition support	Termination notices issued; terminal benefits paid; % workers transitioned	Review of records	End of construction	District Labour Officer	1,450

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means Verification of	Frequency	Monitoring Responsibility	Budget (\$)
Solid waste generation	Community reuse; rubble for borrow pits; designated disposal	Waste disposal records; community reuse records	Review of records; inspection	End of construction	Environmental District Officer	500
Business opportunity loss	Advance sensitisation; alternative market identification	Sensitisation records; evidence of traders identifying alternatives	Review of records	Before construction ends	District Council	350

OPERATION AND MAINTENANCE PHASE

Increased crop production	Water-saving technologies; improved seeds; extension support	Crop yield records; % farmers using improved seeds and water-saving tech	Review of records; inspection; farm surveys	Annually	District Agriculture Development Officer	750
Increased household income	Market linkages; starter packs; cooperatives; credit access	Number of farmers linked to markets; starter packs distributed; cooperatives formed	Review of records; farm surveys	Annually	District Council	875
Improved market linkages	Formalise markets; cooperatives; value chain development	Number of markets formalised; cooperatives registered	Review of records	Annually	District Council	1,150

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means Verification of	Frequency	Monitoring Responsibility	Budget (\$)
Skills transfer	Farmer field schools; WUAs; school field visits	Farmer field schools operational; WUAs in place; number of farmers trained	Review of records; inspection	Annually	DoI / SVTP	875
Improved nutrition	Crop diversification; GAPs training; women's access	Crop variety; training records; % women accessing scheme benefits	Review of farm records; surveys	Annually	District Nutrition Officer	975
Knowledge transfer to students	School access to scheme fields	Number of school visits facilitated	Review of records	Annually	SVTP / DoI	700
Aquatic biodiversity conservation	Environmental flows; penstock design; downstream monitoring	Environmental flows released downstream; downstream biodiversity monitoring results	Inspection; water flow monitoring; field surveys	Annually	Department of Water Resources	1,900
Waterlogging	Self-draining canals; irrigation training	Training records; absence of persistent waterlogging	Inspection	Quarterly	DoI / SVTP	875

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means of Verification	Frequency	Monitoring Responsibility	Budget (\$)
Child labour	Minimum age; sensitisation; WUA bylaws	Employment records; sensitisation records; WUA bylaws	Review of records	Annually	District Labour Officer	525
Disruption of education	Parental sensitisation; WUA bylaws; coordination with schools	Sensitisation records; WUA bylaws; school attendance records	Review of records	Annually	District Education Manager	1,450
Water and soil pollution from agrochemicals	PCB-approved pesticides; IPM; toilets; water quality monitoring	Pesticide procurement records; IPM training records; water quality results	Review of records; water quality sampling	Quarterly (water quality); Annually (records)	National Water Resources Authority	875
Vector-borne and waterborne diseases	Self-draining canals; mosquito nets; PPE; toilets; boreholes; vector management	Stagnant water absent; PPE use; toilets and boreholes available; disease incidence records	Inspection; health facility records	Quarterly	District Environmental Health Officer	1,450
HIV/AIDS and STI transmission	Local recruitment; condoms; IEC	Condom distribution records;	Review of records	Quarterly	District AIDS Coordinator	625

Impact / Risk	Mitigation Enhancement Measure	Monitoring Indicator	Means Verification of	Frequency	Monitoring Responsibility	Budget (\$)
	materials; sensitisation	IEC records; sensitisation records				
COVID-19	Sensitisation; handwashing; social distancing	Sensitisation records; handwashing facilities; % farmers masked	Review records; inspection of	Quarterly	District Environmental Health Officer	575
Water use conflict	NWRA permit; water-saving tech; environmental flows; coordination	Water abstraction permit; water-saving tech operational; flow monitoring records	Review records; inspection of	Annually	District Irrigation Officer / NWRA	575
Injuries to workers and farmers	PPE; safety training; OHS protocols	% workers with PPE; training records	Review records; inspection of	Quarterly	District Labour Officer	575
Disease vector proliferation	Community sensitisation; mosquito net promotion; biological vector control	Sensitisation records; net distribution records; disease vector monitoring	Review records; surveys of field	Quarterly	District Fisheries Officer / District Environmental Health Officer	1,200

Impact / Risk	Mitigation Enhancement Measure /	Monitoring Indicator	Means of Verification	Frequency	Monitoring Responsibility	Budget (\$)
Agrochemical exposure	Safety training; PCB-approved products; PPE; IPM; organic farming	Training records; pesticide records; % farmers with PPE	Review of records; inspection	Annually	District Land Resources Office / District Labour Office	300
Hazardous waste generation	Training on disposal; PCB-approved pesticides; coordination with MEPA	Training records; hazardous waste disposal records; absence of pesticide litter	Review of records; inspection	Annually	District Land Resources Office / District Environment Office	175

Note: Monitoring frequencies indicated are minimum requirements. The PIU and Supervising Engineer may increase monitoring frequency in response to non-compliance findings or emerging environmental and social risks.

9.3 Capacity Development and Training

Effective implementation of the ESMP requires adequate environmental and social management capacity among all parties with implementation and monitoring responsibilities. Based on an assessment of the institutional landscape of the project area, the following capacity development and training measures are proposed:

Contractor and Construction Workforce: All construction workers will receive induction training on the workers Code of Conduct, OHS requirements, GBV and SEA prevention, HIV/AIDS awareness, environmental protection rules, and the GRM before commencement of works. The contractor's site manager will receive targeted training on ESMP implementation, monitoring, and reporting requirements.

Supervising Engineer: The Supervising Engineer and their team will receive training on ESMP compliance monitoring, GBV and SEA response protocols, child labour identification, and environmental monitoring methodologies to enable effective enforcement of ESMP requirements during construction.

District-Level Institutions: Key district-level partner institutions including the District Labour Office, District Social Welfare Office, District Environmental Health Office, District Forest Office, District AIDS Coordination Office, and Chikwawa Police Station will be engaged and briefed on their ESMP monitoring responsibilities and reporting requirements prior to commencement of construction activities.

9.4 Implementation Schedule

The ESMP measures are phased in accordance with the project implementation schedule. Planning phase measures must be implemented prior to the commencement of any site preparation or construction activities. Construction phase measures must be in place from day one of construction. Operation phase measures will be implemented progressively as the scheme becomes operational. Decommissioning phase measures will be implemented in accordance with a Project Decommissioning Plan to be prepared by the Farmer Cooperative and approved by MEPA.

The implementation schedule for all ESMP measures is integrated into the overall project implementation plan and will be tracked and reported through the quarterly and annual ESMP implementation reports submitted to the PIU, MEPA, and the project financiers

9.5 Budget for the Implementation of the ESMP

The successful implementation of the Environmental and Social Management Plan (ESMP) requires adequate allocation of financial, technical, and human resources. In line with international best practice, ESMP costs are typically estimated as a proportion of total project costs, often in the range of 2–5%, depending on project scale and risk profile. Kambadwe cooperative block irrigation scheme is relatively small, as such the budget for ESMP implementation is less than 1 % of the total project cost. For this project, a structured budgeting approach has been applied to ensure that all mitigation, monitoring, and institutional strengthening requirements are adequately resourced. The ESMP budget has been developed based on the identified mitigation measures (Table 6.1), monitoring requirements (Table 6.2), and institutional responsibilities outlined in this report. It covers costs associated with environmental and social mitigation, monitoring and reporting, capacity building, stakeholder

engagement, and implementation support. The total estimated cost for ESMP implementation is **USD 46,627.00**, inclusive of a contingency provision to address unforeseen environmental and social management requirements. Details of the ESMP budget are presented in Table 15.

Table 15: Budget for ESMP Implementation

Measures	Description	Cost (MWK)	Cost (USD)
MITIGATION			
Mitigation	Planning Phase	1,750,000	1,012
	Construction Phase	19,810,000	11,451
	Demobilisation Phase	4,865,000	2,812
	Operation Phase	19,880,000	11,491
Subtotal Mitigation		46,305,000	26,766
MONITORING			
Monitoring	Planning Phase	750,000	434
	Construction Phase	8,490,000	4,908
	Demobilisation Phase	2,085,000	1,205
	Operation Phase	8,520,000	4,925
Subtotal Monitoring		19,845,000	11,471
CAPACITY BUILDING			
Capacity Building	Training of relevant stakeholders and staff	6,615,000	3,824
Subtotal Capacity Building		6,615,000	3,824

Measures	Description	Cost (MWK)	Cost (USD)
Sum of Subtotals		72,765,000	42,061
Contingency (10%)		7,276,500	4,206
Grand Total		80,041,500	46,267

10 CONCLUSION AND RECOMMENDATIONS

The Environmental and Social Management Plan (ESMP) for the proposed Kambadwe Irrigation Block has comprehensively identified, assessed, and addressed the anticipated environmental and social risks and impacts associated with the planning, construction, operation, and decommissioning of the project. The assessment concludes that the implementation of the Kambadwe Irrigation Block will generate substantial positive environmental and social outcomes for the communities of the lower Shire Valley and for Malawi as a whole, provided that the mitigation and enhancement measures outlined in this ESMP are rigorously implemented and monitored throughout all phases of the project cycle.

The primary positive impacts of the project include significant improvements in food security and agricultural productivity through the provision of reliable irrigated water supply to smallholder farmers, enabling cultivation across two to three growing seasons per year rather than a single rain-fed season. The project is further expected to generate meaningful increases in household incomes through the commercialisation of agricultural production and the linkage of scheme participants to formal markets, thereby contributing to poverty reduction and improved living standards in one of Malawi's most economically marginalised regions. Additional positive impacts include the creation of direct and indirect employment opportunities during both the construction and operation phases; skills transfer to local communities in construction, agricultural, and water management disciplines; increased Government tax revenue; and improved nutrition and food availability for communities within and surrounding the scheme. The project also represents a significant contribution to climate change adaptation in the lower Shire Valley, reducing the vulnerability of smallholder farming communities to the increasingly erratic and unpredictable rainfall patterns attributable to climate change.

The assessment also identified a range of negative environmental and social impacts associated with the project. The most significant of these include the risk of vector-borne and waterborne disease proliferation particularly malaria and schistosomiasis arising from the presence of irrigation canals and standing water during the operation phase; the risk of water and soil pollution from the use of agrochemicals including fertilisers, herbicides, and pesticides; the risk of increased HIV and AIDS and STI transmission during the construction phase associated with the influx of migrant construction workers; the risk of Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA); and the risk of child labour during the operation phase. Cumulative impacts arising from the interaction of the Kambadwe Irrigation Block with other SVTP irrigation schemes on water resources, biodiversity, and community livelihoods in the Shire Valley have also been identified and addressed.

Critically, all identified negative impacts are assessed as mitigatable to acceptable levels through the implementation of the management measures proposed in the ESMP matrix. The benefits of implementing the project substantially outweigh the anticipated negative impacts, and on balance, the project is expected to deliver net positive social and environmental outcomes compared to the without-project baseline scenario. The ESMP has proposed enhancement measures to maximise all positive impacts and mitigation measures to eliminate, minimise, or reduce all negative impacts to acceptable levels, ensuring that the Kambadwe Irrigation Block is implemented in a manner that is

environmentally sound, socially responsible, and consistent with the sustainable development goals of the Government of Malawi and the safeguard requirements of the project's international financiers.

The ESMP further proposes a comprehensive Environmental and Social Monitoring Plan to track the implementation and effectiveness of all management measures across the project cycle. The monitoring plan specifies verifiable indicators, monitoring methods, frequencies, responsibilities, and estimated costs for all predicted impacts, providing a robust framework for ensuring accountability and adaptive management throughout project implementation. Independent environmental and social audits will be conducted on an annual basis, with findings submitted to the Malawi Environment Protection Authority (MEPA) and the project financiers to ensure transparency and compliance.

It is therefore concluded that, subject to the implementation of the mitigation, enhancement, monitoring, and institutional measures proposed in this ESMP, the proposed Kambadwe Irrigation Block should be approved for implementation by MEPA and the relevant line ministries.

RECOMMENDATIONS

On the basis of the findings and conclusions of the ESMP, the following specific recommendations are made for the effective and responsible implementation of the Kambadwe Irrigation Block project:

Water Abstraction Permit: The Department of Irrigation, through the SVTP Project Implementation Unit (PIU), must apply for a Water Abstraction Right and Permit from the National Water Resources Authority (NWRA) for the Kambadwe Irrigation Block prior to the commencement of any water abstraction activities. This is a mandatory legal requirement under the Water Resources Act (2013). The Water Abstraction Permit must be renewed annually and maintained in good standing throughout the operational life of the scheme.

ESMP Resource Allocation: The Department of Irrigation, through the SVTP, must allocate the necessary financial, human, and logistical resources for the full and timely implementation of both the ESMP and the Environmental and Social Monitoring Plan. All parties designated with implementation and monitoring responsibilities in the two plans must be formally notified of their roles and provided with the resources necessary to discharge their responsibilities effectively. Capacity-building support should be provided to all implementing parties in advance of the commencement of the relevant project phase.

Disclosure and Coordination with District Environmental Officer: A copy of the approved ESMP for the Kambadwe Irrigation Block must be formally shared with the District Environmental Officer for Chikwawa District to enable effective coordination of all environmental and social management activities at the district level. The District Environmental Officer is responsible for informing all relevant district-level stakeholders of their respective roles in the implementation of the ESMP and the Environmental and Social Monitoring Plan, and for coordinating the district-level monitoring and compliance activities specified in the monitoring plan.

Institutional Sustainability Planning for WUA, VNRMCs, and Community Committees: The Department of Irrigation, through the SVTP, must proactively support the Water User Association (WUA), Village Natural Resources Management Committees (VNRMCs), and other community-level

management committees to develop and operationalise a formal sustainability plan detailing how these institutions will maintain their activities, manage the scheme, and sustain their environmental and social management functions after the conclusion of SVTP support. This planning should commence well in advance of the SVTP's scheduled phase-out to ensure institutional continuity and long-term scheme sustainability.

GBV and SEA Prevention: The PIU and contractor must develop, implement, and enforce a comprehensive GBV and SEA prevention and response action plan prior to the commencement of construction activities, including a workers Code of Conduct, mandatory GBV and SEA awareness training for all workers, a dedicated GBV reporting channel within the project GRM, and a referral pathway to GBV service providers in Chikwawa District. Zero tolerance for GBV and SEA must be consistently enforced throughout the construction phase.

Labour Management Procedure: A formal Labour Management Procedure (LMP) must be prepared by the PIU and incorporated into all works contracts prior to the commencement of construction, covering minimum wage requirements, working hours, child labour prohibition, non-discrimination, freedom of association, a worker-specific grievance mechanism, and supply chain labour risk management, in accordance with the requirements of OS2 of the AfDB ISS (2023) and ESS2 of the World Bank ESF (2018).

Biodiversity Management near Majete Wildlife Reserve: Given the proximity of the Kambadwe Irrigation Block to the Majete Wildlife Reserve (approximately 3 km), a dedicated biodiversity assessment and Biodiversity Management Plan must be prepared prior to the commencement of construction activities, in accordance with the requirements of OS6 of the AfDB ISS (2023) and ESS6 of the World Bank ESF (2018). The assessment should include a systematic fauna survey and should specifically address potential impacts on species associated with the Majete Wildlife Reserve and its buffer zone.

Grievance Redress Mechanism: An independent, locally empowered, and accessible project-level Grievance Redress Mechanism (GRM) must be established and made fully operational prior to the commencement of any project activities. The GRM must be accessible to all community members, including women, youth, persons with disabilities, and other vulnerable groups, and must include multiple grievance submission channels to accommodate varying literacy levels and physical accessibility constraints.

Annual Independent Environmental and Social Audits: Independent environmental and social audits must be conducted on an annual basis throughout the construction and operation phases of the project by a qualified and independent third-party auditor. Audit reports must be submitted to MEPA and the project financiers within 30 days of completion of each audit, and any corrective actions identified must be addressed by the PIU within the timeframes specified in the audit report.

The successful implementation of these recommendations, in conjunction with the full execution of the ESMP and Environmental and Social Monitoring Plan presented, will ensure that the Kambadwe Irrigation Block is implemented to the highest standards of environmental and social performance and delivers its intended development benefits in a sustainable, equitable, and inclusive manner.

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12.1 APPENDIX 1: TERMS OF REFERENCE

Our Reference No: MEPA / / / /
Your Reference No:
Communications should be addressed to:
The Director General



Malawi Environment Protection Authority
P/ Bag 317
Lilongwe 3
Tel: +265 1771111

Protecting the environment, Protecting life

14th February, 2023

The Project Coordinator
Shire Valley Transformation Programme
Private Bag 379
Blantyre

Dear Sir,

**RE: DEVELOPMENT OF ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANS
FOR IRRIGATION BLOCKS IN SVTP COMMAND AREA**

Reference is made to your letter dated 4th February 2023 in which you are enquiring on the environmental requirements of the Irrigation blocks in the SVTP command area.

I write to advise that you are required to prepare site specific Environmental and Social Management Plans (ESMP) for each irrigation block prior to implementation of activities on the proposed blocks. This level of environmental assessment has been recommended because the approved Environmental and Social Impact Assessment (ESIA) report for SVTP already covered the development of irrigation blocks.

Meanwhile, find the attached Terms of Reference for preparing the ESMPs. Should you require any further information on the foregoing, please do not hesitate to contact us.

Yours Faithfully,

MALAWI ENVIRONMENT PROTECTION AUTHORITY

Tawonga Mbale-Luka
ACTING DIRECTOR GENERAL

Attd: Terms of Reference for ESMP

ESMP TERMS OF REFERENCE FOR DEVELOPMENT OF IRRIGATION BLOCKS IN SVTP COMMAND AREA

1. Provide a brief description of the nature and location of the proposed project with respect to the name of the proponent, postal address, aim and objectives of the project, the spatial location of the site with aid of appropriate topographical maps of the area (at least at a scale 1: 50,000); the estimated cost of the project, the size of land for the proposed irrigation block, the number of people to work on the project (provide a breakdown of males and females, locals and non-locals).
2. Provide a site-specific visible map of the area (scale 1: 50,000) showing the proposed site and (1:10,000) showing existing establishments in the area and surrounding areas including natural endowments like rivers and streams. A site plan for the project should be provided. All maps should be in color to portray the themes clearly and must be printed on A3 paper.
3. Provide a brief description of the existing biophysical characteristics and the socio-economic environmental status of the proposed area.
4. Briefly review the legal framework pertaining to the proposed project and indicate their impacts on the project. Reference should at least be made to Environment Management Act, Agriculture Policy, Fertilizer Policy, New Land Acts, Water Resources Act, National Water Policy, Malawi National Land Policy, Public Health Act, Occupational Safety, Health and Welfare Act, Pesticides Act, National irrigation Policy, Land Resources Management Policy and Strategy and other policies and pieces of legislations.
5. Briefly describe main activities to be undertaken for the project. In the description include nature of the project including detailed description of project component, the type of machinery to be used, type of infrastructure associated with the irrigation blocks, land acquisition and ownership, nature and estimated quantity of wastes (both solid and liquid) that will be generated, circularity to waste management i.e. state the means of reducing waste to a minimum by reusing and recycling of waste, facilities for appropriate disposal of waste that cannot be recycle or reused, including estimated costs for the activities
6. Propose an Environmental and Social Management Plan (ESMP) for the project. The ESMP should be in tabular form and should specify the predicted impacts, mitigation measures/enhancement measures. Also indicate the budget for the recommended mitigation measures, specifications of who will be responsible for these measures and the schedule when these measures will take place.

7. Propose an Environmental and Social Management and Monitoring Plan by which all mitigation measures recommended in Environmental and Social Management Plan will be monitored. The Environmental and Social Monitoring Plan should include the activities, frequency of monitoring, the key monitoring indicators, resources required and the authorities responsible for monitoring the exercises.
8. Undertake stakeholder consultations to ensure key interested and affected stakeholders are involved in coming up with the ESMP. Incorporate their views in the report and indicate a record of consultations in the appendices as part of the report.
9. Submit 5 hard copies and a soft copy of the ESMP to the Director General for MEPA. Submit a copy of the ESMP to the Chikwawa District Council.

12.2 APPENDIX 2: PUBLIC CONSULTATION

Stakeholder participation involved engaging institutions within the project impact area and selected public institutions who expressed their views about the proposed project. The stakeholder participation process tried to ensure that due consideration will be given to stakeholder values, concerns and preferences when decisions regarding the project are made.

The purpose of stakeholder involvement was to:

1. Inform the stakeholders about the proposal and its likely effects;
2. Canvass their inputs, views and concerns; and
3. Take account of the information and views of the public in the ESMP and decision making.

The key objectives of stakeholder involvement were to:

- Facilitate consideration of alternatives, mitigation measures and trade-offs (if any);
- Ensure that important impacts are not overlooked and benefits are maximized;
- Reduce chances of conflict through early identification of contentious issues;
- Provide an opportunity for the stakeholders to influence project design in a positive manner (thereby creating a sense of ownership of the proposal);
- Improve transparency and accountability of decision-making; and
- Increase public confidence in the Environmental and Social Management Plan process.

The comments stakeholders raised were collated and analysed to see which issues are of concern and should be addressed through the ESMP study and are presented in Table below

A2.1 Key Comments stakeholders raised

SN	Name of the person(s) who raised the issue	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
1	Construction Phase		
1.1	Positive Impacts		
1.1.1	Deborah Laptan Namosito Kamtsokala	Employment opportunity to the community there by reducing poverty levels	Adherence to minimum wages requirements for the government Employ mostly those from communities around the site (communities advocating for at least 50% of local people to be employed by the contractor) Involving chiefs and the WUA interim committee in recruiting capable locals from within the community and surrounding areas.
1.1.2	Deborah Laptan	Skill transfer to the local communities who might be involved	Contractor to provide skills transfer through recruitment of locals who can also gain experience in carrying out future routine maintenance of the structures,

SN	Name of the person(s) who raised the issue	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
	Grace kauze	in construction phase	Recruitment process needs to be transparent
			Some few communities to be specially trained in carrying out small maintenances of the scheme and other areas (e.g. engage communities to be trained in solar maintenances and mechanical maintenances of the pipes and other related structures)
1.1.3	Jaston Zdutchila	Opportunity for small scale business around the construction site	Loans or good payment to workers to help boost those businesses
			Provide safe business shelters for local businesses trading around the area.
			Deliberate directive/policy to buy materials from local people
1.1.4	Geogre Amos	Reduced crime rates and other unruly behaviours within the communities due to involvement in employment especially to the youth	Ensure that more community members are employed at the construction site
	Max Kumbukira		Conduct community sensitisation and produce ToRs on how the local communities will be involved in the project
1.1.5	Samson Beyari	Improvement of the infrastructure within the area	Ensure that the contractor improves the infrastructure being used during construction phase e.g. roads, availability of enough medicine at nearby health centre, and other corporate social responsibility
1.2	Negative Impacts		
1.2.1	Anne Kholophethe	Disturbance to girl child education (Dropouts, Pregnancies) due to	Contractors should have initiative to protect vulnerable people
			The contractors to have a child protection and HIV/Aids policy

SN	Name of the person(s) who raised the issue	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
		outsiders/workers who may come with money to convince girls into sexual relationships	Civic education and sensitisation to girls and community in general By-laws to protect girls Sensitize communities on a need to report cases of abuse or child labour (local chiefs and nearby police officers) Children/Pupils should not be allowed at construction site
1.2.2	Veronica Nkukomla	Spread of HIV and AIDS	Provide awareness to community Distribute condoms VDC and Chiefs to conduct awareness to families Strict laws on relationships among co-workers
1.2.3	Asleti Khumbeni	Noise from construction site	Construction works should be restricted to day time only Construction vehicles should be well serviced Minimise idling of machinery to control noise levels Isolate the construction site through construction of temporary fencing to control noise levels (in noisy places) Noisy equipment to be placed away from villages
			Equipment, machinery and other construction vehicles should well service. Choose noise free machinery to be used onsite
1.2.4	Hector Nkawiha	Clearing of trees/vegetation	Replanting trees (choose tree species suitable for the area) Planting trees around the community college area to compensate for the cleared trees. The trees will also act as wind breaks, to protect the built infrastructure, especially in areas where there will be solar panels
1.2.5	Lucius Segwa	Disturbance to school going children who may	Children should not be allowed at site

SN	Name of the person(s) who raised the issue	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
		come to see/watch construction works	
1.2.6	Samson Beyari	Dust emissions	Using water browsers to sprinkle water around construction premises
			Enforce speed limits for vehicles moving around the sites
			Cordoning off the area with fencing to trap some dust emissions.
1.2.7	Asleti Khumbeni	Generation of waste	Proper disposal as recommended by District council
1.2.8	J.D. Mvula	Injuries to workers and risks of other related accidents	Using PPE, and following engineering safety controls
			Sensitise communities in safety regarding to operation of machinery and other community safety issues
1.2.9	Jaston Zdutchila	Child labour issues	Ministry of labour should be involved during the employment procedures to regulate and police child labour issues
1.2.10	Geogre Amos	Lifestyle changes among employed locals	Educating and sensitizing employed locals on the consequences of reckless behaviour
1.2.11	Max Kumbukira	Destruction of marriages due to presence of workers	Chiefs should educate their people to stick to their partners
1.2.12	Geogre Amos	Increase in theft and vandalism	People found should be persecuted as per laws of the country
			Chiefs to sensitise their people on disadvantages of theft and vandalism
1.2.13	Elina Mkandawire	Environmental degradation due to	Prohibit the use of burnt bricks for construction works

SN	Name of the person(s) who raised the issue		Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
			the use of environmentally unfriendly materials	Use energy and water efficient building technologies
1.2.14	Namosito Kamtsokala		Disruption of local pathways /access roads due to construction of the irrigation scheme	Contractor will need to liaise with the local leaders and communities before blocking or destruction of the local routes/roads
1.2.15	Jaston Zdutchila		Charcoal production as a result of the presence of the large labour force during construction	Promotion of IGAs
				Access to microfinance institutions and reliable markets
				Sensitization meetings
				Local employment as casual labourers
	Enforcement of scheme and forestry by-laws			
2	Operation Phase			
2.1	Positive Impacts			
2.1.1	Hector Nkawiha	Best use of available land which is currently underutilised due to poor rainfall patterns in the area	Ensure that the construction works should commence quickly as the communities have been waiting for the project for over 9 years	
			Ensure that the structures to be built are of high standards to prevent frequent maintenance of the scheme	
			Form, train and empower the WUA committee in management of the scheme	
			Train farmers in production of high value crops for profitability (choose profitable value chains)	

SN	Name of the person(s) who raised the issue	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
			Link the farmers to existing markets or create new markets for the produce from farmers
			Sensitise more farmers regarding to advantages of irrigation farming
			Conduct land demarcation properly for the command area in the early stages of project to prevent land conflict issues which might arise in the future. Ensure that the copies of the demarcated land are available to the land owners
2.1.2	Jaston Zdutchila	Enhanced development and economic activity in the area	Provide for more infrastructure association with the irrigation scheme
			Provide for loan opportunities to the youth
			Link the farmers to the large scale buyers and form corporative for collective bargaining of prices
2.1.3	Namosito Kamtsokala	Reduction in crime rates	More people will be involved in irrigation farming which will enable them to be economically active hence reduced crime rates
2.1.4	Lucius Segwa	Opportunity to grow other crops which are not known to the communities	Train the communities on good value chains which are profitable
			Sensitisation on crop diversity practices to ensure that they income levels are depended on different types of crops
2.1.5	Grace kauze	Reduced cases of hunger in the community (improved food security)	Encourage more farmers to be involved in irrigation farming
2.1.6	Max Kumbukira	Reduced cases of malnutrition	Encourage more farmers to practices crop diversification to ensure

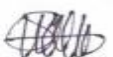
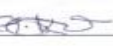
SN	Name of the person(s) who raised the issue	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
2.2	Negative Impacts-operation phase		
2.2.1	Veronica Nkukomla	Spread of STIS and HIV and AIDS	Community sensitisation
			Conduct awareness on sexually transmitted diseases
2.2.2	Hector Nkawiha	Destruction of natural resources due to clearance of land in some patches	Adopt agro-biodiversity and agro-forestry practices
			Follow sustainable land management practices during the operation of the scheme
2.2.3	J.D. Mvula	Increased cases of diseases/illness due existence of the scheme e.g. bilharzia, cholera, schistosomiasis etc.	Work hand in hand with local health centre to prevent and treat the disease cases
2.2.4	Max Kumbukira	Increased cases of theft or vandalism to equipment e.g. Solar panels, pumps	Provide more security personnel
			Construct perimeter fencing around the solar panels and also the pumping areas
2.2.5	Hector Nkawiha	Destruction /disturbance of aquatic biodiversity	Protect the aquatic biodiversity by provision of nets/mesh on the pumps to prevent fish or other aquatic animals from getting trapped in the pipes
2.2.6	Asleti Khumbeni	Cases of children and animals drowning /injuries	Night reservoir storage tanks will need to be fenced in order to prevent access to the tanks by children or animals
2.2.7	Samson Beyari	Cases of land disputes	Train the community leaders and WUA committee on handling of disputes and management of the scheme
			Ensure that land demarcation exercise is done in early stages of the project in collaboration with the communities

SN	Name of the person(s) who raised the issue	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
			A need for assurance to the communities that nobody will lose land due to irrigation development
2.2.8	Geogre Amos	Cases of crocodile attacks	Use pipes instead of canals in the main pipes from the Shire river to the tanks
			Ensure that the command areas is designed away from the Shire river to prevent the crocodiles from getting into the fields
2.2.9	Namosito Kamtsokala	Flooding of the irrigation scheme	Construction of flood protection bunds
			Provision of cut-off drainage, water outlets;
			Afforestation and re afforestation
			Planting of vertiver
2.2.10	Jaston Zdutchila	Collapsing of Water reservoir	Incorporate safety features in design and construction
2.2.11	Lucius Segwa	Formation of gullies due to field paths	Raising the footpath
			Planting of vegetative cover, star grass,
3	Decommissioning phase		
3.1	Positive impacts		
3.1.1	Kambadwe Cooperative	The communities stressed that there will not be any positive impacts due to closure of the project.	
3.2	Negative impacts		

SN	Name of the person(s) who raised the issue	Issue Raised	How document has addressed the issue (Mitigation/ Enhancement)
3.2.1	Jaston Zdutchila	Reduced income levels, livelihoods, loss of jobs	Ensure that the project should have a long life to prevent early loss of benefits to the communities

A2.2 List of stakeholders consulted

No	Name	Organization OR Village	Phone Number	Signature
1	Elis Mkeni	EDO - CK	0995107234	[Signature]
2	Humphrey Magalas	RDO - CK	0888242086	[Signature]
3	STIONA DOTT CHIEF MBEKEZA	CK - GAMESI	0777851122	[Signature]
4	Thokozani Mmbah	CK DC	0882730502	[Signature]
5	Abdullah Nkavishu	CK Forestry	0885884402	[Signature]
6	Lukia Ngomero	CK - Planning	0885155648	[Signature]
7	Dorcas Lupton	Social Welfare	0885577721	[Signature]
8	Leonard Mchumba	CK DC	0999071109	[Signature]
9	Veronica Mkhumbane	CK DSO	0999208433	[Signature]
10	Charles Saimon	CK - DZ	0888173352	[Signature]
11	J.D. Mvula	CK DAO	0999376100	[Signature]
12	F. MASTALA	CK - DAO	0999680108	[Signature]
13	P. Gamesi	CK - Env	0881810404	[Signature]
14	Thokozani Masauko	CK - ENV	0883598257	[Signature]
15	Peteron Saimon	CK - DC	0993598258	[Signature]
16	CHIEF MPANDO	MULAMBE COOPERATIVE	0884499665	[Signature]

No	Name	Organisation OR Village	Phone Number	Signature
17	George Sandason	Mlambe Coorpe	0991857661	
18	ARVIDA I. CHAUER	" "	0991056197	
19	VICTOR VITO	" "	0999245555	
20	Christopher G Nyamphete	" "	088 26 26 001 099 0 70 70 33	
21	Peter Kuseya	" "	0986584496 0882626270	
22	LUCKNESS MSHAMBIRA	" "	0995482880	MSHAMBIRA
23	RUTH NKHUMBO	" "	0991241578	R. Nkhumbi
24	Louise Tizora	" "	0884759973 0990960956	L. Tizora
25	Tamara mbaSungu	" "	0985391282	T. m
26	Namasisi Kambadwe	Kambadwe	0993373862	N. K
27	Grace Kante	" "	0966351043	
28	Jaston Dzintchila	Kambadwe	0997783035	
29	GEORGE AMOS	KAMBADWE COOP	0884788860	
30	Max Kumbukira	KAMBADWE COOP	0992444908	
31	SAMSON BEXARA	KAMBADWE COOP	0993328060	
32	Anne Kholophete	KAMBADWE COOP	0984739868	

No	Name	Organisation OR Village	Phone Number	Signature
33	ABLETI Khumbeni	Kumbadwe	0915285613	
34	Lucius Segwa	Kumbadwe C	0995702580	
35	BWAT SINTAU	MANGALANGALA	0997244518 097244518	
36	STELLA SILINO	MANGALANGALA	0993429289	
37	MELITINA ALFRED	MANGALANGALA	0992121772	
38	Grace Felix	mangalangala	0987480351	
39	CHRISTINA JINNE	MANGALANGALA	0992011409	
40	Bonface Nyawata	Mangalangala	0997239092	
41	Ismandani Tinasoni	Mangalangala	0987430363	
42	Chimombo Hacheta	Mangalangala	0777274056	
43	Stephano Masomero	Mangalangala	0985419565	
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APPENDIX 3: SUMMARY OF KEY EXPERTS

	Name	Qualifications	Area for Expert	Position
1	Bouke Bijl	MSc (Land Use and Natural Resource Management);	Environmental Management	Team Leader Environmental Specialist
2	Daniel Chirembo	MSc (Industrial Chemistry), BSc (Industrial Chemistry).	Environment, Water and Soil	Chemist
3	Francis Jiya	MSc Agribusiness Management BSc Agribusiness Management	Agribusiness	Agribusiness specialist
4	Murray Matthews	BEng Agricultural Engineering	Irrigation Engineer	Irrigation specialist
5	Evans Mwale	BSc Honors in Surveying	Surveyor	Land Expert

APPENDIX 4: DETAILS OF KEY EXPERTS

REPORT WAS WRITTEN BY O&M CONSULTANTS AS AN ESMP FOR
NJEREZA IRRIGATION BLOCK

CVs OF EXPERTS

CV FOR THE TEAM LEADER AND OTHERS

1. PERSONAL PARTICULARS:

SURNAME : Chirembo
FIRST NAME : Daniel
DATE OF BIRTH : 15th October, 1964
MARITAL STATUS : Married
SEX : Male

2. ACADEMIC QUALIFICATION:

BSc. : Majoring in Chemistry
BSc. (Hons) : Majoring in Industrial Chemistry
MSc. : Majoring in Industrial Chemistry

3. QUALIFICATION RELATING TO QUALITY MANAGEMENT AND FOOD SAFETY MANAGEMENT SYSTEMS:

- (a) Implementation of ISO 9001 Quality Management System
- (b) Internal Quality Auditor Certificate
- (c) Quality Costs Certificate
- (d) Statistical Techniques Certificate
- (e) Standardisation Techniques Certificate
- (f) Implementation of ISO 17025 up to Accreditation
- (g) Technical Assessor Certificate

- (h) Production Management
- (i) Food Hygiene
- (j) Application of HACCP
- (k) Implementation of ISO 22,000

4. GIVEN TRAINING ON THE FOLLOWING GENERAL MANAGEMENT AREAS:

- (a) Managerial Skills
- (b) Supervisory Skills
- (c) Effective Communication
- (d) Superior Customer Service
- (e) Industrial Relations

5. WORK EXPERIENCE:

- (a) Quality Assurance Manager for Malawi Pharmacies Limited (from 1992-1999)
- (b) Quality Assurance Manager for Universal Industries Limited (from 1999-2002)(c)
- Lecturer in Quality Management, Occupational Health and Safety, Food Safety Management Systems and Environmental Management Systems at The Malawi Polytechnic (from 2003 – up-to-date)

6. TRAINING/CONSULTANCY WHICH I HAVE PROVIDED TO THE PRIVATE SECTOR/PUBLIC INSTITUTIONS:

- (a) Food Hygiene
- (b) Application of HACCP
- (c) Production Management
- (d) Total Quality Management
- (e) Application of ISO 9001 Quality Management System
- (f) Internal Quality Auditor Training
- (g) Supervisory Management
- (h) KAP Survey for Chibuku Products Limited
- (i) Implementation of a Food Safety Management System according to ISO

PROFESSIONAL EXPERIENCE

Environment, Occupational Health and Safety

Dates	Company/ Organisation	Location	Position	Description
Nov-Dec, 2017	Mwaliya Irrigation Scheme	Chikwawa	Team Leader	Conducted water quality assessment and pesticide and concentration residuals
June-Aug, 2020	ILLOVO (Dwangwa Operations)	Dwangwa	Environmental Expert	Conducted ESIA for extension farming land
Yearly	ILLOVO (Nchalo Operation)	Nchalo	Environmental Expert	Conducting Environmental Compliance Audit
Jan-Apr, 2019	RAKGAS	Salima, Dedza, Mangochi and Machinga	Air Quality Expert	Conducted ESIA for gas and oil exploration
Nov-Dec, 2019	BWANJE Limestone Project	Bwanje	Air Quality Expert	Conducted ESIA for limestone mining
Jan-Feb, 2022	Pyxus Agriculture	Lilongwe	Team Leader	Conducted ESIA for the groundnut shelling factory
Yearly	Alliance One Tobacco Company	Lilongwe	Team Leader	• Conducting Occupational Health and Safety Training • Conducting hygiene Survey • Conducting Safety, Health and Environmental Compliance Audit.
Yearly	JTI Tobacco	Lilongwe	Team Leader	• Conducting Occupational Health and Safety Training • Conducting a hygiene survey
Yearly	UNITRANS Malawi	Nchalo and Dwangwa	Team Leader	• Conducting hygiene survey and training on Occupational Health and Safety
2012 to date	Total Malawi	Blantyre, Lilongwe, Dwangwa, Nchalo	Team Leader	• Producing Environmental management plans for 5 filling stations (Tsiranana, Admarc, Kristwick, Area 6 and Gateway Mall) • Carried out a contamination audit of their operations within ILLOVO

				• ESIA for Kanengo Fuel Storage Depot
Nov, 2022	Gala Macadamia	Namitete	Environmental Expert	ESMP for Macadamia factory
July to date	Shire Valley Transformation Program	Chikwawa	EHS expert	ESMPs and EHS training
Jan-April, 2019	Liverpool Welcome Trust	Blantyre	Environmental Expert	ESIA for a 5-story research and training building
Feb-Dec, 2023	Liverpool Welcome Trust	Blantyre	Occupational Health and Safety Expert	Implementing an Occupational Health and Safety Management system according to ISO 45001 Std

Position Title and No.	K1 Team Leader and Irrigation Development Specialist
Name of Expert:	BOUKE BIJL
Date of Birth:	26/2/1970
Country of Citizenship/Residence	Dutch – Permanent Resident in Malawi

Education:

MSc in Land-use and Natural Resource Management, 1994, Wageningen Agricultural University

Employment record relevant to the assignment:

Period	Employing organization and your title/position.	Country	Summary of activities performed relevant to the Assignment
2001 - present	Agricane Malawi Ltd Managing Director and Senior Consultant Ref: C.H. Matthews CEO Agricane Ltd	Malawi	Senior Consultant in Irrigation Developments, Irrigation Agronomy, Training and Extension, Team Leader on numerous assignments; Management of numerous schemes and estates in

	chris@agricane.co.za		the Lower Shire Valley (including Phata and Kasinthula)
1999-2001	Lujeri tea Estates Technical Coordinator Mulanje Malawi Ref: Jim Melrose MD LTE Jim224@lujeri.com	Malawi	Responsible for all agricultural production activities of 2,000ha's of irrigated tea production in Mulanje District
1997-1999	Sable Farming Ltd Divisional Manager	Malawi	Responsible for all agricultural production activities for 600ha of drip irrigated coffee and 400ha of macadamia nuts on Ngapani Estate in Mangochi District
1995-1997	Sugar Corporation of Malawi – Nchalo Estate Irrigation Agronomist	Malawi	Responsible for all Agronomic activities of 12,500ha irrigated sugar estate in Nchalo, Chikwawa District

Membership in Professional Associations and Publications:

Association of South African Agronomists

Language Skills (indicate only languages in which you can work):

<i>Language</i>	<i>Passive</i>	<i>Spoken</i>	<i>Written</i>
English	5	5	5
Dutch	5	5	5
Chichewa	5	5	2

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
- Smallholder Farmer Mobilisation and Sensitization - Land parcel mapping and registration process - Participatory Irrigation Designs - Topological, Hydrological and Soil Surveys - Feasibility Assessments - Detailed Irrigation Designs - Development of Business plans for smallholder cooperatives - Establishing marketing agreements with private sector agro processing or agri-business partners - Preparation, application and implementation of financing for smallholder irrigation development (grant and loan funding) - Design, development and delivery of capacity building programmes for smallholder farmers – technical, organizational development,	Kulima Technical Assistance Programme for Irrigation – October 2021 to date - Contracted as <u>Team Leader</u> to provide Technical Assistance to the Department of Irrigation in Capacity Building Activities for 6 medium scale irrigation schemes and Detailed Design Studies for 2 new large scale irrigation schemes. Funded by the European Union
	CARE Malawi – Titukulane Project - April 2021- March 2022 - Contracted as <u>Team Coordinator</u> to conduct an assessment of irrigation potential for smallholder irrigation in Zomba and Mangochi Districts under the USAID funded Titukulane Project. Conducted feasibility assessments, beneficiary surveys and provided preliminary design and cropping options.
	Palladium – Agricultural Diversification Activity Aug 2020 – to date - Contracted as <u>Team Coordinator</u> to provide technical support under the 5 year USAID funded Agricultural Diversification Activity for the Growth-pole and Resilience challenge initiative. Included mapping of all private sector agribusiness in three districts of Thyolo, Mulanje and Chikwawa, identification of irrigation potential around private sectors partners, provision of technical support in establishing agribusiness linkages between smallholder famers and private sector partners, survey, design and supervision of construction of 12 irrigation schemes, farmer mobilisation and organisational development support and capacity building in agribusiness and contract farming
	United Farmers Fund – Investment in Gala Agriculture - June 2020 – Sept 2021- Contracted as <u>Team Leader</u> to conduct a technical due diligence of proposed equity investment into Gala Agriculture Ltd at Namitete (Mchinji District) – consisting of 1,200ha of established irrigated macadamia plantations with potential to expand to 2,800ha. Work included inventory assessments, agronomic assessment, inventory of existing and future water

governance, business understanding, environmental management - Development of capacity of scheme professional staff work force - Coordination of Environmental Impact Assessments for irrigation and agricultural developments - Incorporation of environmental and social safeguards in irrigation designs and construction guidelines.	resources for irrigation, review of potential environmental and social impacts, review of financial forecasts and parameters
	World Bank FLID Short Term Consulting Assignment : Sept 2020 – Jan 2021 – Contracted as <u>Irrigation Specialist</u> to conduct Country Diagnostic for Farmer Led Irrigation Development (FLID) under World Bank Country Programme for Malawi.
	Agrivest Irrigated Macadamia Project - Jan 2020 – April 2020 - Contracted as <u>Irrigation Specialist</u> to conduct feasibility assessments and detailed irrigation designs for drip irrigation for macadamia plantations on Chitakale and Mwami estates in Mangochi District. Work included dam designs, field layouts and water filtration and storage infrastructure.
	Pyxus Agriculture Ltd - May 2019 – Jan 2022- Contracted as <u>Technical Coordinator</u> to provide technical assistance for the establishment of groundnut seed production under irrigation for smallholder cooperatives in Kasungu District– funded through UkAid MICF grant. Task included assessment and design of irrigation, mapping, mobilisation and registration of smallholder farmers, capacity building of project staff and smallholder beneficiaries in irrigation agronomy, cooperative organisational development, operational management and market/agribusiness linkage
	Thyolo Dam and integrated irrigation project. Oct 2018 – June 2019 Contracted as <u>Technical Coordinator</u> to conduct feasibility assessment, topological surveys, irrigation designs, community mobilisation, mapping and registration, organisational and institutional development and provision of cropping options. Overla objective is to enhance and diversify production of contracted tea smallholders contracted to Satemwa Tea Estates Ltd.
	Shire Valley Cane Growers Trust /Kasinthula Cane Growers Ltd - April 2019 to date - Contracted as <u>Project Director</u> to provide management and technical support to SVCGL/KCGL in the implementation of rehabilitation and turnaround strategy of 1490ha centre pivot and furrow

	irrigated sugarcane scheme funded through US\$5mln loan facility provided by Agdevco. The programme includes technical support and capacity building to field staff, capacity building for beneficiary farmers and operational management.
	Phata Sugarcane Outgrowers Cooperative Phase 2 Expansion – August 2015 – Sept 2017. As the <u>Project Director</u> - Implementation of second EU grant for expansion of Phata irrigated scheme. Expansion of cooperative area (300ha) and cooperative increased in beneficiaries to 1,100 members. Included revision of constitution, mapping and registration of new members, capacity building of new members, staff recruitment and training, expansion of governance bodies, extension of supply contract to Illovo sugar factory to 65,000t of cane per annum.
	Adam Smith International – Malawi Oil Seed Transformation Project MOST) - June 2015- September 2017 – As an <u>Irrigation Specialist</u> provided technical support to the UKaid funded MOST project in identification and facilitation of market linkages to irrigated smallholder farmers for the purpose of seed multiplication of legume and oil seed crops under contract with commercial seed companies. Work included establishing standard contracts with companies, capacity building of project staff in irrigated production and agribusiness linkages, technical support on irrigation agronomy and seed production.
	EU funded FWC Feasibility Study for Presscane and EThco – 200ha : (under the EU AMS program) – contracted as the <u>Team Leader</u> to carry out surveys and detailed designs for 2,200ha of irrigated sugarcane in Chikwawa and 2,000ha of irrigated sugarcane for smallholders in Nkhotakota District for Presscane/Ethco proposed ethanol plant expansion.
	Enhancing Community Resilience Programme (ECRP) - April 2012 – Dec 2015- Technical sub contract for the provision of technical support to UKaid ECRP Consortium Implementing Partners led by ChristianAid in small scale irrigation (SSI) and micro watershed management in 7 districts with 5 partner NGO's. Included survey, design

	and supervision of implementation and provision of capacity building to project staff and beneficiary farmers on over 30 irrigation sites. Contracted as the <u>Technical Coordinator</u>
	Irrigation and Rural Livelihoods project - Govt of Malawi 2008-20012– Contracted as the <u>Team Leader</u> to implement WB funded GoM project to rehabilitate two Govt Schemes rice schemes (Nkhate and Muona) and build 8 new small-scale irrigation schemes in the Lower Shire and Central and Southern Regions of Malawi. Follow up training to beneficiary farmers and project staff in irrigation water management, catchment conservation and sustainable agricultural practices.
	EU Delegation of the EU Malawi 10th EDF Formulation Study for the Community Based Activities and Irrigation Programme (COBASSIP). 2010 – Contracted as the <u>Irrigation Specialist</u>. The specific objective of COBASSIP is to increase national and household food security and promote agricultural-led growth, which is fully in line with the priorities outlined in the Government of Malawi's (GoM) Agricultural Sector Wide Approach (ASWAp). The programme was €95m with 4 main components: Support to GoM's farm input subsidy programme; Small scale infrastructure for rural development; Support to Irrigation; Support to Agri-business
	Green Belt Initiative - Government of Malawi - 2011-2013 - Detailed Feasibility Study, Detailed Irrigation Designs and Supervision of Construction of 530ha centre pivot irrigated pilot scheme for the GBI in Salima District Central Malawi. The scheme will be used to produce various cash crops under irrigation under different institutional arrangements ranging from organised smallholder farmers to medium sized commercial growers.
	Phata Sugarcane Outgrowers Cooperative Chikwawa Malawi– 2011- 2013 As the Project Director – responsible for the submission of Proposals to the EUD for the development of a new 300ha irrigated smallholder sugar scheme in Chikwawa District. The application included feasibility, design and economic analysis and was

	successfully awarded with a 2.4mln Euro Grant. Implementation started in January 2012.
	Irrigated Cotton Scoping Study in the Middle and Lower Shire - Great Lakes Cotton. 2013 Conducted a scoping study for the development of irrigated cotton for contract farmers in Chikwawa and Nsanje Districts.
	Irrigated Mango and Banana Plantation for Malawi Mangoes Operations Ltd – 2013 – Detailed Feasibility Study for development of irrigated mango and banana production in Salima
	Capacity Building Project for Sugar Smallholder Farmers – Concern Universal 2010 – 2012. Provision of Technical Support to the Sugar Smallholder Capacity Building Project for outgrowers in the Chikwawa and Nkotakota Districts of Malawi. Support includes development and delivery of technical training materials in irrigated sugarcane agriculture
	Illovo Sugar Malawi Ltd – Training and Management Contracts Alumenda sugar estate (2700ha) - oversee a technical, management and training contract for SUCOMA. Activities included all day to day management and operational activities of this commercial estate and comprehensive staff training and development programme
	Kasinthula Smallholder Sugarcane Scheme Chikwawa Malawi 2002-2009– Oversee 6 year technical support contract for this 800ha irrigated small grower development in Chikwawa District. Activities include TA for all day to day management and operational activities and specialised support in areas of agronomy, engineering and financial management.

Expert's contact information: (e-mail b.bijl@agricane.com, phone +265 999960481)

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the

assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Name of Expert B.C. Bijl
Date: 19/04/2022

Signature



Name of authorized B.C.Bijl
19/04/2022

Signature

Date:



Representative of the Consultant (the same who signs the Proposal)

Position Title and No.	K 2 Agribusiness Specialist
Name of Expert:	Francis Jiva
Date of Birth:	24/09/1991
Country of Citizenship/Residence	Malawi

Education

Lilongwe University of Agriculture & Natural Resources (LUANAR)- 2016-2018 Master of Science in Agribusiness Management

University of Malawi -2011-2015 Bachelor of Science in Agribusiness Management,

Short Courses / Trainings

- BSAFE Training offered by FAO
- Gender Equality Training offered by FAO
- Prevention of Harassment in workplaces- FAO
- Training on Data Analysis using STATA, R, SPSS by Aqua Fish-African Centre of Excellence of the World Bank (ACE II project). 2018
- Certificate in Project Management, Planning, Monitoring and Evaluation by Philanthropy University & FHI360. 2018
- Training on KOBO and ODK Programming for Electronic Data Collection by North Carolina University at LUANAR. 2017
- Certificate in Qualitative Research Methods by fhi360. 2016
- Certificate in Research Ethics by fhi360. 2016

Employment record relevant to the assignment

Period	Employing organization and your title/position. Contact info for references	Country	Client and Brief Description of Assignment

2021- Present:	Business Plan Development Consultant, Ministry of Agriculture (AGCOM project funded by the World Bank)- Malawi Client – Ministry of Agriculture Mrs A. Namwaza Audreynamwaza@gmail.com	Malawi	• Developing business plans for Farmer Cooperatives for grants requisition • Conducting Investment Analyses (Investment Appraisal) for crop and animal enterprise • Finding markets for produce of Farmer Organizations
2021 Oct- Dec:	Data Collections Tools Specialist, FAO Client- FAO-ROME Dr. Ana Paula DelaOCampos AnaPaula.DelaCampos@fao.org	ROME	• Designing data collection tools for FAO-ROME ESA Unit using Kobo Toolbox • Training FAO staff in data collecting using KoBo Toolbox • Producing KoBo Training manuals for enumerators supervisors and producer organizations
2019- 2022	Enterprise Development Consultant, United States Forest Service (USFS) & African Parks (AP)- Malawi Client-USFS Mr. John Kerkerling John.kerkerling@usda.gov	Malawi	• Conducting the mango Value chain analysis • Designed a demand assessment study through market research on dried Mangoes as a consumable product in Malawi • Designed study tools (in KOBO), Data collection supervision, Data analysis, Report writing • Conducted a Farmer Survey to gauge assess supply of fresh Mangoes • Data Management: Designed data tools, supervised field work data collection • Data Analysis: Conducted data analysis using STATA • Fetching for markets for dried mangoes • Facilitating training on dried mango processing for communities in Nkhota-kota

2021 (April- May):	Value Chains and Business Model Analyst, Time for SENSE/GIZ- Malawi Client- Sense Mrs. Kelly Kyute kelly@timeforsense.com	Malawi	- Conducted value chain analyses for Macadamia, Tea, Irish Potatoes & Poultry - Identified Profitable Business Models for the Value-Chains aforementioned to benefit the youth - Offered Business Development services to youth led farmer organizations
2020- 2021	Impact Evaluation Consultant, UNDP- Malawi Client- UNDP Mr. Ted Nyekanyeka ted.nyekanyeka@undp.org	Malawi	- Conducted a Farmer Survey in Malawi on Impact of PICSA on Farmers Food security, Climate Change adaptation - Designed study tools for the impact evaluation in ODK (similar with Kobo) - Data analysis using STATA (Propensity Score Matching Model) - Report writing which was accepted by client
2016- 2018:	Agribusiness Coordinator & Value chains Specialist, IARED- Malawi Client- IARED Mr. Dhumisani Msowoya dhumsowoya@gmail.com	Malawi	- Delivered business management trainings to farmer organizations - Linked farmer organizations to markets/off-takers - Helped Coops in proposal preparation for grants
2018- 2019:	Value Chains Analyst, CADECOM- Malawi Client- CADECOM Mrs Florence Nkhalamba fnkhalamba@gmail.com	Malawi	- Conducted trainings on: Value addition, Gross margin analysis, Financial and business management and Marketing - Helped Cooperatives to process Peanut Butter and Groundnut flower from Groundnuts
2018- 2019:	Business Development Consultant, GFA, Kirk Consulting, GIZ- Malawi Client- GIZ, GFA Dr. Amon Kabuli amonmw@gmail.com	Malawi	- Developed training manuals for agricultural cooperatives on Collective marketing, Business management, record keeping, group dynamics - Researcher, Wageningen University& LUANAR- Malawi - Data Analyst, Forum for Agricultural Research in Africa (FARA)- Malawi

Membership in Professional Associations and Publications:

Language Skills (indicate only languages in which you can work):

Language	Passive	Spoken	Written
English	5	5	5
Chichewa	5	5	5

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
- Obtaining information from the Agriculture Commercialisation Consultant on Technical identification of production enterprises including crops, livestock, fish farming, etc. that can possibly be grown/undertaken by a SOCFE under/with the benefit of irrigation, using expert advice from agricultural research and others as appropriate; - Identification of viable market prospects with tangible contract agreements (without initial need for processing/long storage) for the identified enterprises; - Comparative financial analysis of the enterprises through gross margin analysis and risk assessment, with ranking according to financial outcomes; and - Selection of crops/production enterprises based on the above, and combination of these into a realistic cropping/production pattern for a specific SOCFE. - .	Business Plan Development Consultant, Ministry of Agriculture (AGCOM project funded by the World Bank)- Malawi • Developing business plans for Farmer Cooperatives for grants requisition • Conducting Investment Analyses (Investment Appraisal) for crop and animal enterprise • Finding markets for produce of Farmer Organizations
	Data Collections Tools Specialist, FAO- • Designing data collection tools for FAO-ROME ESA Unit using Kobo Toolbox • Training FAO staff in data collecting using KoBo Toolbox • Producing KoBo Training manuals for enumerators and supervisors
	Enterprise Development Consultant, United States Forest Service (USFS) & African Parks (AP)- Malawi • Conducting the mango Value chain analysis • Designed a demand assessment study through market research on dried Mangoes as a consumable product in Malawi • Designed study tools (in KOBO), Data collection supervision, Data analysis, Report writing • Conducted a Farmer Survey to gauge assess supply of fresh Mangoes

	• Data Management: Designed data tools, supervised field work data collection • Data Analysis: Conducted data analysis using STATA • Fetching for markets for dried mangoes • Facilitating training on dried mango processing for communities in Nkhota-kota
	Value Chains and Business Model Analyst, Time for SENSE/GIZ- Malawi • Conducted value chain analyses for Macadamia, Tea, Irish Potatoes & Poultry • Identified Profitable Business Models for the Value-Chains aforementioned to benefit the youth Offered Business Development services to youth led farmer organizations
	Impact Evaluation Consultant, UNDP- Malawi • Conducted a Farmer Survey in Malawi on Impact of PICSA on Farmers Food security, Climate Change adaptation • Designed study tools for the impact evaluation in ODK (similar with Kobo) • Data analysis using STATA (Propensity Score Matching Model) • Report writing which was accepted by client
	Agribusiness Coordinator & Value chains Specialist, IARED- Malawi • Delivered business management trainings to farmer organizations • Linked farmer organizations to markets/off-takers • Helped Coops in proposal preparation for grants
	Value Chains Analyst, CADECOM- Malawi • Conducted trainings on: Value addition, Gross margin analysis, Financial and business management and Marketing • Helped Cooperatives to process Peanut Butter and Groundnut flower from Groundnuts
	Business Development Consultant, GFA, Kirk Consulting, GIZ- Malawi – - Developed training manuals for agricultural cooperatives on Collective marketing, Business management, record keeping, group dynamics • Researcher, Wageningen University& LUANAR- Malawi • Data Analyst, Forum for Agricultural Research in Africa (FARA)- Malawi

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Name of Expert Francis Jiva
19/04/2022



Signature Date:

Name of authorized B.C.Bijl
19/04/2022

Signature



Date:

Representative of the Consultant (the same who signs the Proposal)

CURRICULUM VITAE

Position Title and No.	K 3 Agribusiness Extension Specialist
Name of Expert:	Chanje Doreen Isabella
Date of Birth:	10/09/1964
Country of Citizenship/Residence	Malawi

Education:

Institution	Date from	Date to	Degree(s) or Diploma(s) obtained:
Eastern and Southern Africa Management Institute (ESAMI)	08/2004	12/2006	Master in Business Administration
London School of Hygiene and Tropical Medicine University of London	09/1995	09/1996	MSc Nutrition
Bunda College of Agriculture, University of Malawi	09/1982	07/1989	BSc Agriculture

Language skills: Indicate competence on a scale of 1 to 5 (1 - excellent; 5 - basic)

Language	Reading	Speaking	Writing
English	1	1	1
Chichewa	1	1	1
Swahili	4	4	4

Membership of professional bodies:	i) Deputy Chairperson of Council: Lilongwe University of Agriculture and Natural Resources (LUANAR) (2020-todate); ii) Non-Executive Director: Ecobank Malawi (2014-todate); iii) Non-Executive Director: NICO General Insurance Ltd (2016-todate); iv) Former Chairperson: Shire Valley Cane Growers Trust (2018-2020); v) Former Chairperson: Malawi Investment and Trade Centre (MITC) (2012-2014); vi) Past President: Rotary Club of Blantyre, Malawi (2012-2013); vii) Former member of National Advisory Council: Hunger Project Malawi (2011-2017); viii) Fellow of LEAD SEA (2005); ix) Former Board member: LEAD Southern and East Africa (LEAD SEA) (2013-2015); x) Former Chairperson: LEAD Malawi (Leadership for Environment and Development (2014-2016);
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	xi) Africa Representative, Fairtrade International Standards Committee (2013-2019) xii) Board Member: Fairtrade Africa (2012-2014) xiii) Former Chairperson: Southern Africa Fairtrade Network (2012-2014); xiv) Founder and Past Chairperson and Trustee: Malawi Fairtrade Network (2009-2011); xv) Former Chairperson: Sugar Network for Fairtrade Africa (2012-2013)
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Professional experience

Date	Location	Company& reference person	Position	Description
1999 – to date	Malawi, Zambia, Tanzania, Mauritius, Ghana, Mozambique	FoodSec Consulting Ltd Francis Paul fpaul865@gmail.com	Managing Director and Senior Consultant	Tender applications and negotiations, project management, organisational development, development of program/project evaluation tools, data capture instruments and data analysis protocols, report writing, training (staff and farmers), Fairtrade advisory services. Coaching, Mentoring, Monitoring and Evaluation of progress
02/2021 - 12/2023	Africa Caribbean and Pacific (ACP) Countries	COLEACP Silversquare Triomphe, 15/23 avenue Arnaud Fraiteur. B - 1050 Brussels – Belgium. expert@coleacp.org	Team Leader	Support to strengthen the competitiveness of the ACP horticulture sector and compliance with the regulatory and private requirements of national, regional and international markets through training and technical assistance in the areas of business management, and sustainable commercial and social practices
02/2021 - 12/2023	Africa Caribbean and Pacific (ACP) Countries	COLEACP Silversquare Triomphe, 15/23 avenue Arnaud Fraiteur B - 1050 Brussels – Belgium expert@coleacp.org	Team Leader	Support to strengthen the competitiveness of the ACP horticulture sector and compliance with the regulatory and private requirements of national, regional and international markets through training and technical assistance in the areas of SPS, agricultural production/processing, and environmental management
08/2020 - 08/2022	Malawi	BRL Ingénierie, Société Anonyme 1105 Avenue Pierre Mendès-France, BP 94001 – 30001 Nîmes Cedex 5 - France; christine.jullian@brl.fr	Agribusiness Expert	EU Malawi: Support evidence-based policy decisions by the European Union in Malawi in the field of sustainable agriculture and food and nutrition security
08/2019	Mozambique	Particip GmbH,	Senior Evaluator	<u>Performance of evaluation studies of international development</u>

		Merzhauserstr.18 3 79100 Freiburg i.Br Germany info@particip.de	-Value Chain Expert	<u>programmes of RVO:</u> Qualitative Evaluation and Review; DRIVE Chemba,
06/2018 -2020	Malawi	Malawi Mangoes; Commercial Services in Districts of Salima, Lilongwe, Nkhotakota and Dowa Ignatious Majamanda: ignatious@malawimangoes.com ; +265 999962274	Team Leader	<u>EU-funded Market - led Smallholder Farmer Development for Poverty Reduction in Malawi FIDP II.</u> Led the Team on Gap Analysis to identify Agribusiness Capacity Needs; Development of Agribusiness Training Materials; Training Delivery, Coaching, Mentoring, Monitoring and Evaluation of progress
10/2017 -2020	Malawi	Stichting Utz Henderson Maposa; henderson.maposa@utz.org ; +265 888178393	Team Leader	<u>Farmer Strengthening Project</u> Team leader on the assignment which focused on 'Lobby & Advocacy and Capacity Development to strengthen the capacities of 4 smallholder Tea Trusts (Agribusiness Entities) and the NSTGA (National smallholder Tea Growers Association-Umbrella Agribusiness Entity). The purpose of the assignment was to build the capacity of the Tea Agribusiness entities so that they could ably represent their members, especially female tea farmers. Another objective was to build capacity of female members to become leaders and represent female members' interests within the Trusts and NSTGA.
03/2018 - 08/2018	Malawi	Agrer-TYPSA Frederic Mertens;	Team Leader and Senior Agri-	<u>Support to the Implementation of the Agriculture Sector Wide Approach (ASWAP) and the Green Belt Initiative (GBI)</u> Programme Technical Assistance to the Department of

		fredemertens@gmail.com ; +265997564297	Business Specialist	Irrigation - EuropeAid/133-531/D/SER/MW, funded by the European Commission. Team Leader on Short-term support to “ Enhance Farmers Capacity in Agribusiness Skills and other Value Chain Aspects ” for 7 Smallholder Irrigation Schemes. Task included: Development of Gap Analysis Tools; Conducting Gap Analysis; Developing Monthly Monitoring Tools; Conducting Monthly Monitoring Visits to Coach, mentor and Monitoring Agribusiness Activities; Development of Capacity Building Materials; Conducting Capacity Building
10/2017 - 02/2018	Malawi	Malawi Mangoes Ignatious Majamanda: ignatious@malawimangoes.com ; +265 999962274	Team Leader	<u>Services for Farmer Engagement and Land Ownership Transfer for 11 (eleven) village Orchards (Agribusiness Entities) in Salima District</u> under the EU-funded Market-led Smallholder Farmer Development for Poverty Reduction in Malawi FIDP II. Led the Team to establish eleven Agribusiness entities, that would enter into Contract Farming Arrangement with a fresh Mango Offtaker. Tasks included land registration and Registration of Agribusiness entities.
12/2016 - 06/2017	Malawi	African Development Bank, IDEV Lattanzio Kibs; Silvia Cifarelli: cifarelli@lattanzio.kibs.com ; +390658300195	Agriculture Expert	<u>Country Strategy and Program Evaluation for the Republic of Malawi (2005-2016)</u> . Part of an International team and responsible for the development of Evaluation Questions; Case Study visits and Case Study Reports
12/2016 - 04/2018	Malawi	Competitive African Groundnut Initiative (CAPI) Fairmatch Support, Netherlands;	Value Chain Expert	<u>Identification of professional farms that can function as a nucleus/anchor farm</u> Value Chain Expert responsible for i) Identification of a farm to multiply certified groundnut seed; 2) Identification of processor(s) to process

		herman@fairmatc.hsupport.nl ; +31613232794		groundnuts; 3) Identification of buyers from Malawi or neighbouring countries; and 4) Identification of market outlets in Malawi or neighbouring countries.
10/2016 - 05/2017	Malawi	Rural Livelihoods Economic Enhancement Programme Manuel Mang'anya; +265991093046; manuelmanganya@gmail.com	Team Leader	Assessment of the cost-effectiveness, efficiency, and adoption of program interventions , through various approaches that the RLEEP used in reaching out to farmers in specific value chains (Legumes, Dairy, Potato) in selected districts. Led the Team to assess how these 'forms of organising smallholder farmers', have performed, with specific reference to the following parameters: adoption and outcome; cost-effectiveness; and sustainability.
07/2016 - 10/2016	Malawi	Phata Sugarcane Outgrowers' Cooperative Society Bouke Bijl: +265999960481; bcbijl@africaonline.net	Team Leader	Incorporation of new members into Sugarcane Aribusiness Cooperative. Led the Team to review and conduct Gap Analysis of existing Cooperative Constitution, Re-structuring of Cooperative Committees, Training of old and new cooperative members, and reporting to Board and Annual General Meeting. Mentoring, coaching and Monitoring Progress
04/2016 - 09/2016	Ghana	Nut Cellars/Nathan and Associates +447957881181; andrewemmott@nutcellars.com	Groundnut Value Chain and Aflatoxin Expert	Benchmark Audit of business partners working with MADE (Market Development Program for Northern Ghana) , funded by DFID. Team member responsible for identifying gaps in aflatoxin control, against recommended best practices/benchmarks. Audit carried out over 3 phases during the crop cycle (April- October 2016).
10/2015 - 12/2015	Malawi	UBALE (United in Building and Advancing Life Expectations) – James Akai; jakai@ncbaclusa.mw.org	Team Leader	Value Chain Assessment of Sesame in Blantyre Rural, Chikwawa and Nsanje Districts. Led the Team in Mapping the Value Chain and identifying challenges and opportunities.

10/2015 - 06/2016	Malawi	Ministry of Industry and Trade, Agriculture Sector Wide Approach-Support Project jkntupa@yahoo.com +265995604512	Team Leader	<u>Developing Malawi Programme for Aflatoxin Control (MAPAC) Communication & Awareness Strategy and Skills Developing Plan</u> , including a Monitoring and Evaluation Plan. Team leader in developing the Communication Strategy.
2014-date	Malawi	Stevia Growers and Exporters Elizabeth Magola; +265999336777; mwayimagola@gmail.com	Team Leader	<u>Design, Development and Management of smallholder Outgrower Programme for growing of Stevia.</u> Team leader in i) designing and delivering of training materials for Stevia production; ii) Training women farmers in Stevia production and post-harvest management; iii) Linking women farmers to sustainable markets; iv) Developing and implementing a Monitoring, learning and Evaluation Plan
08/2014 - 09/2014	Malawi	Rural Livelihoods and Economic Enhancement Programme Manuel Mang'anya; +265991093046; manuelmanganya@gmail.com	Team Leader for Private Sector Mapping	<u>Private Sector Mapping.</u> Led the Team to identify and analyse private sector partners who are already using commodities that are produced by smallholder farmers (soyabeans, pigeon peas, wheat and groundnuts) and analysing their willingness to partner with the RLEEP, in order to develop and strengthen the smallholder value chains
2012-2014	Malawi	Concern Universal/Foodsec Consulting/ Women Farmers Association/Malawi Fairtrade Network - Esther Mweso: Esther.Mweso@concernuniversal.org	Team Leader for Technical Assistance	<u>Economic Enhancement through Fairtrade Groundnuts in Malawi</u> , project supported through <u>Rural Livelihoods Economic Enhancement Program (RLEEP).</u> Led the team to develop a Fairtrade Certified groundnut value chain

2012-2014	Malawi	Fairmatch Support, Netherlands Marnix Wouters: M.Wolters@has.nl	Team Leader	<u>Value Chain Analysis and Feasibility to Develop A Groundnut Export Chain from Malawi.</u> Team Leader in establishing the Feasibility of the groundnut export value chain.
2012-2014	Malawi	Phata Sugarcane Outgrowers' Cooperative Society - Bouke Bijl: +265999960481; bcbijl@africaonline.net	Team Leader	<u>Organisational Development of a Sugarcane Cooperative for Fairtrade Certification.</u> Led the Team in conducting a pre-audit/ gap analysis using Fairtrade Standards.
09/2013 01/2011 - 09/2015 12/2012	Malawi	Concern Universal Humphrey Nxumalo +265882447029; Humphrey.nxumalo@concernuniversal.org	Team Leader	<u>Fairtrade Capacity Building for Kasinthula Cane growers Association and Lakeshore Cane growers Association.</u> Led the Team in the Provision of Fairtrade Advisory services to the Sugar Capacity Building project, establishment of Lakeshore Cane Growers Association and attainment of Fairtrade Certification. Activities included pre-audit/ gap analysis using Fairtrade Standards.
10/2010 - 09/2011	Malawi	AGEG International Consultants- John Clifton; +351-934-414092; jfclifton@yahoo.co.uk ;	Local Expert	<u>Country level Evaluation (CLE) of EU Support to Malawi (EDF 8,9 &10).</u> Member of an International Team responsible for development of Evaluation questions; Case Study visits and Case Study Reports
01/2011 - 10/2011	Malawi	Level Works Reference: Michelle Lehrer mlehrer@level-works.com	Team Leader	<u>Audit of Hybrid Maize Contract Seed Growers.</u> Led the Team in Auditing of 73 farms in Malawi and 9 estates in Zambia, using ILO and Monsanto Human Rights Standard. Farms producing seed maize for Monsanto for the 2010/2011 and 2011/12 seasons.
06/2010 - 07/2010	Malawi	CNFA/ RUMARK Reference: +2651774811	Team Member, Evaluator	<u>Final Evaluation of Malawi Agrodealer Strengthening Project (MASP).</u> Responsible for Survey Design, Implementation, Data Analysis and Report writing.

		rmaliseni@rumark.org		
2008	Tanzania	Twin & Twin Trading Reference: Hannah Davis info@twin.org.uk	Team Member	<u>Assessment of smallholder sugar supply chains from Tanzania</u> (Kilombero and Ruhembe Companies). Team member responsible for Assessing suitability of developing new supply chains for sugar from smallholder farmers in Tanzania. Tasks included visits to all the sites where smallholders were growing sugarcane and supplying to sugar mills. Focussed on agriculture production practices, production costs and net income earned by smallholder farmers.
2007-2010	Malawi, Mozambique, Zambia	Twin & Twin Trading Reference: Hannah Davis info@twin.org.uk	QMS Coach, Southern Africa	<u>Implementation of Quality Management Systems (QMS)</u> Responsible for__strengthening of membership and governance, improvement of business capacity, influence on policy and improving access to markets for groundnuts and cashew nuts.
10/2004 - 11/2004	Tanzania	WFP Tanzania	Evaluator	<u>Mid-term Review of WFP Tanzania Country Programme.</u> Program focused on Promotion and Improvement of agricultural production for vulnerable households through seed and input support, school feeding for vulnerable areas, support to HIV/AIDS affected. Team member Responsible for survey design, implementation, data analysis and report writing
05/2004 - 06/2004	Malawi	Concern Universal/ AusAid	National Consultant, Evaluator	<u>Ex-post evaluation of Kamenyagwaza Livelihoods Improvement Project Conservation and management of community-based natural resources.</u> Project focussed on Establishment of sustainable community-based seed systems, promotion of different farming systems for food security and market development, gender, youth and HIVAIDS mainstreaming, nutrition education, rural road development. Team member responsible for survey design,

				implementation, quality control, data analysis and report writing.
03/2004 -2004	Malawi	EC	National Consultant, Evaluator	<u>Country thematic evaluation of EC Food Aid Policy and Food Aid Management and Special Operations in Support of Food Security.</u> Project focussed on Seed and input support for rural farmer groups in smallscale irrigation schemes, promotion of sustainable wetland cultivation, development of rural roads (public works), rural income transfers, business and market development. Team member responsible for survey design, implementation, quality control, data analysis and report writing
12/1997 - 12/1999	Malawi	Malawi Industrial Research and Technology Development Centre (MIRTDC)	Food Technologist	Research into appropriate technologies in Food processing
11/1990 - 11/1997	Malawi	Ministry of Agriculture	Senior Agricultural Extension Officer	Smallholder extension duties, planning, management
10/1985 - 07/1987	Malawi	Dwangwa Sugar Corporation	Management Trainee	Management Trainee on General duties in sugarcane agronomy and prawn hatchery project

Other relevant information (e.g., Publications)

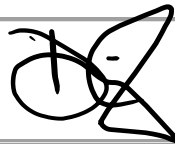
EVA 2007/geo-acp: Evaluation of EC's co-operation to the Republic of Malawi 2003-10: John Clifton (team leader), Sylviane Mènard, Andrea Queiroz de Souza, Doreen Chanje and Miriam Amine

Experts contact information : (e-mail dchanje@africa-online.net phone +265999788650

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Name of Expert Doreen Chanje



Signature Date: 20/04/2022

Name of authorized B.C.Bijl

Signature



Date: 20/04/2022

Representative of the Consultant (the same who signs the Proposal)

CURRICULUM VITAE (CV)

Position Title and No.	K4 Irrigation Engineer
Name of Expert:	MURRAY MATTHEWS
Date of Birth:	16/10/1989
Country of Citizenship/Residence	SOUTH AFRICA

Education:

HARPER ADAMS UNIVERSITY COLLEGE, UK – BEng AgEng 2012

Employment record relevant to the assignment:

Period	Employing organization and your title/position. Contact info for references	Country	Summary of activities performed relevant to the Assignment
Feb 2020 – Ongoing	Agricane Consulting Ltd Agricultural Design Engineer Client – Resilience Challenge Fund, AGDIV / USAID Mr J. Venable Jeremy.Venable@ftfagdiv.com	Malawi	<u>Feasibility designs and Implementation of multiple small-holder irrigation projects for USAID funded Feed the Future Agriculture Diversification (AgDiv) Activity.</u> Feasibility studies, designs, and implementation of multiple small-holder irrigation projects throughout Malawi. Schemes typically between 10ha and 50ha consisting of gravity (furrow) irrigation and/or drip irrigation. Designs include all water supply systems (including pump stations (solar and grid powered), pipelines, reservoirs, and canals), infield irrigation including high level of land levelling and detailed canal design for gravity schemes, road access and drainage infrastructure. To date.

			11 schemes have been investigated totalling approximately 300ha 5 schemes have been successfully commissioned and handed over 6 schemes are still in development
Jan 2019 - Ongoing	Agricane Consulting Ltd Agricultural Engineering Consultant Client – Agricane Malawi Mr C. Matthews chris@agricane.com	Malawi	<u>Ongoing agricultural engineering consulting to Agricane Malawi managed farms in the Shire Valley</u> including, but not limited to, development and management of irrigation scheduling and management systems for over 1500ha as well as continuous assessment, design, and implementation of drainage systems for 850ha. Additional non- engineering work includes ongoing assessments/interventions with the aim of improving overall environmental sustainability on all managed farms through various methods such as use of biological soil health/pesticide products.
Feb 2019 – Nov 2019	Agricane Consulting Ltd Irrigation Design Engineer Client – Integrated Water & Agricultural Development Ghana Limited (IWAD) Mr T. Durang Tom.durang@african-tiger.com	Ghana	<u>Feasibility design for IWAD XL Sugar Project.</u> Feasibility study and design of 18,000ha of irrigated sugarcane estate in Northern Ghana. Designs comprised of bulk water supply lift pumpstations and canals, centre pivot overhead irrigation and sub-surface drip irrigation systems off booster pump stations, road and cane haulage networks, drainage infrastructure and electrical reticulation. Other work completed by Agricane included extensive soil, hydrology, and topographic investigations.
Dec. 2017 – 2019	Agricane Consulting Ltd Irrigation Design Engineer Client – Dangote Sugar Refinery Mr A Kardash Abdelmoniem.kardash@dangote.com	Nigeria	<u>Feasibility and Pre-Construction design for Nasarawa Sugar Project.</u> Feasibility study and design of 24,500ha of irrigated sugarcane estate in Central Nigeria. Design and tender documentation comprising of centre pivot overhead irrigation and sub-surface drip irrigation and associated pump stations. Design and tender documentation for road networks,

			electrical reticulation, and drainage infrastructure.
Oct. 2016 - Oct. 2017	Agricane Consulting Ltd Irrigation Design Engineer Client - Sunti Golden Sugar Estate Ltd, Mr A du Pisani Apisani@fmnplc.com	Nigeria	<u>Irrigation, Drainage and Road Design and engineering support for Phase 1 & Phase 2 Sugarcane development Sunti Golden Sugar Estate Ltd Nigeria.</u> Detailed design of irrigation and drainage layouts using topographical aerial mapping, soil maps and ground verification techniques. Development of typical road specifications, cross sections, and road alignments most suitable for the haulage of sugarcane to the industrial area. Detailed project documentation including design reporting, construction drawings and BOQs.
Oct 2016 - Mar. 2018	Agricane Malawi Irrigation Design Engineer and Resident Engineer (Jun. 2017-Mar. 2018) Mr B. Bijl bcbijl@africa-online.net	Southern Malawi (Shire Valley)	<u>Kaombe Farm Bulk water Extension Project – Southern Malawi.</u> Bulk water supply works for 830ha irrigated sugarcane farm in Southern Malawi (Shire Valley). Bulk water infrastructure detailed design and tender documentation, contract management, plant management, construction management and engineering quality control for all developmental aspects including river offtake channel, pumpstation, rising pipeline, lined canal system and associated structures, termination dam, existing pumpstation connection and upgrades, drainage systems, electrical generation and reticulation and road networks.
Mar. 2014 – May. 2016	Agricane Consulting Ltd Irrigation Engineer and Resident Engineer Client – Integrated Water & Agricultural Development Ghana Limited (IWAD) Mr T. Durang Tom.durang@african-tiger.com	Northern Ghana	<u>EPCM contract for the design and implementation of the Sisili Kulpawn Irrigation Project in Northern Ghana.</u> 530ha irrigation development project including multiple irrigation types (centre pivot, drip, dragline sprinkler and furrow) and full bulk water system and storage dam. Irrigation and infrastructure design and tender documentation, contract management, construction management and Engineering quality control for all developmental aspects including bulk water systems, irrigation, drainage

			systems, electrical reticulation, and road networks.
Jul. 2014 – Sept. 2014	EcoEnergia – Ouro Verde Resident Engineer Mrs M. Branks monika@verdeazul.co.mz	Pemba, Mozambique	<u>Installation of Pumpstation and Sprinkler Irrigation Systems at Ouro Verde Farm.</u> Resident Engineer for 30ha irrigation project; supervision of construction, labour management, working to the designs and specifications and quality control. Design and construction of simple farm building
Nov. 2012 – Feb. 2014	Agricane Consulting Ltd Graduate Agricultural Engineer & Aerial Mapping and Drone Pilot Chris Matthews office@agricane.co.za	Malawi, South Africa & Mozambique	<u>Multiple agricultural engineering design and construction projects.</u> Agricultural engineering design for various irrigation projects and feasibility studies. Site engineer in Southern Malawi for various construction upgrades on an 830ha sugarcane farm. Drone aerial survey and mapping work. Design and construction of various small farm buildings, workshops, and infrastructure.

Membership in Professional Associations and Publications:

Member South African Irrigation Institute, SABI

Language Skills (indicate only languages in which you can work):

	READ	WRITE	SPEAK
ENGLISH	Excellent	Excellent	Excellent

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
• Construction supervision of all physical site works • Contract management of associated contractors • Quality control of all site works • Monitoring and management of the work program • Budget monitoring and control for all site related works • Participation in contractor site meetings and associated minutes • Participation in the compilation of site/progress reports • Interfacing between contractors and design engineers constantly to ensure clear understanding and thus quality and timeliness of deliverables • Management and guidance to site survey team on surveys required for irrigation and bulk water infrastructure. • Management and guidance to survey team on surveys required for road and drainage infrastructure. • Participation in commissioning and handover of works	Name of assignment or project: AGDIV Small-holder Irrigation Developments Year: 2020 - Ongoing Location: Malawi Client: Resilience Challenge Fund, AGDIV / USAID Main project features: Feasibility studies, design and implementation of multiple small-holder irrigation projects in Malawi. Positions held: Irrigation Design Engineer and Resident Engineer Activities performed: Detailed feasibility studies and irrigation designs for each identified block including soil, topographic and hydrology studies followed by implementation of water supply, irrigation, drainage, electrical reticulation and road designs. Name of assignment or project: Irrigation and Drainage Engineering Consultant (Agricane Malawi) Year: 2019 - Ongoing Location: Malawi – Shire Valley Client: Agricane Malawi (all managed sugar farms >2000ha) Main project features: Assessment and ongoing development of irrigation management and drainage infrastructure systems on irrigated sugarcane farms Positions held: Irrigation and Drainage Engineer Activities performed: Various engineering consulting for overall irrigation and drainage systems on sugarcane estates including, inter alia, development of irrigation scheduling and management tools (for 2000ha) and ongoing drainage planning and

	implementation of surface and sub-surface irrigation for 850ha estate. Name of assignment or project: Savannah Commercial Irrigation and Smallholder Development Project (IWAD XL) Year: 2019 Location: Ghana Client: IWAD Ghana Limited Main project features: Feasibility study for 18 000 ha of irrigated sugarcane development along the White Volta River in Northern Ghana. Positions held: Irrigation Design Engineer Activities performed: Development of irrigation, drainage, electrical generation and reticulation and road designs for detailed feasibility study. Including extensive site investigations and ground truthing. Name of assignment or project: Nasarawa Sugar Project Year: 2017 - 2019 Location: Nigeria Client: Dangote Sugar Refinery Main project features: Engineering design for irrigation, drainage, and roads Positions held: Design Engineer Activities performed: Development of irrigation, drainage, electrical generation and reticulation and road designs with tender documentation and adjudication. Name of assignment or project: Sunti Golden Sugar Estate Sugarcane Development Year: 2015-16
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	Location: Nigeria Client: SGSE Ltd Main project features: Engineering design for irrigation, drainage, and roads for 24,500ha of irrigated sugarcane Positions held: Design Engineer Activities performed: Development of irrigation, drainage, and road designs. Name of assignment or project: Kaombe Farm Bulk Water Extension Project Year: 2016 - 2018 Location: Southern Malawi Client: Agricane Malawi Main project features: Engineering design and implementation of 830ha bulk water supply system which included construction of a river offtake channel, pump station, rising supply pipelines and canal, termination dam and general upgrades and connections to the existing infrastructure. Positions held: Design Engineer and Resident/Site Engineer Activities performed: Preparation of detailed designs, bidding documents and BoQ's, Tender adjudication and review, management and supervision of all construction works, contract management and documentation, program and budget control, engineering quality control, management of handover and commissioning procedures. Name of assignment or project: Sisili Kulpawn Irrigation Project, Ghana 530ha Year: 2014 -2016 Location: Ghana
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	Client: Integrated Water & Agricultural Development Ghana Limited (IWAD) Main project features: Engineering design and implementation of 530ha irrigation project. Including multiple irrigation systems and bulk water supply works Positions held: Design Engineer and Resident/Site Engineer Activities performed: Preparation of designs, bidding documents and BoQ's, Tender adjudication and review, management, supervision, and quality control for construction of BWS system, irrigation systems, irrigation canals, roads, drainage, electrical reticulations systems, workshop buildings and service infrastructure. Contract management, program, and budget control, commissioning, and handover management.
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Expert's contact information: murray@agricane.com +27 82 547 9197

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Murray Matthews



Name of Expert
Date

Signature

20/4/2022



Name of authorized
Date

Signature

20/4/2022

Representative of the Consultant
(the same who signs the Proposal)

TECH-6 Curriculum Vitae (CV)

Position Title and No.	NKE 1.1 Topological Surveyor
Name of Expert:	Evans Mwale
Date of Birth:	24/12/1981
Country of Citizenship/Residence	Zimbabwe

Education:

University of Zimbabwe BSc Honors in Surveying 2005

Employment record relevant to the assignment:

Period	Employment organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
January 2008- present	Agricane MW LTD Engineering Surveyor For references: Country Director Mr. B Bijl +265 999 960 481 b.bijl@agricane.com Projects Engineer (ILLOVO SUGAR) Mr. F Chipagala +265 888 877 501	Malawi	• Detailed grid surveys for cane fields to produce DTMs • Detailed topographic surveys • Route surveys • Land forming (both laser and GPS) for new and existing cane fields for furrow and overhead irrigation • Setting out of center pivots • Setting out and excavation of channels, drains and canals on grade • Setting out pipelines on grade • Earth works calculations • As built surveys for infrastructure, amenities • Night storage reservoirs construction • Construction of floods protection structures • Survey staff/personnel training

	fchipagala@illovoco.za		• Establishment of ground control for aerial mapping/imaging using UAVs • Hydrographic surveys • Spirit levelling
June 2005- January 2008	Surveytec Land Surveyors For references: Director Mr. O Chikuhuhu +263 772 345 318	Zimbabwe	• Detailed topographic surveys • Cadastral/title surveys • Leveling • Setting out surveys for construction works • As built surveys for infrastructure, housing and amenities • Beacon relocations • Farm subdivisions and consolidations

Membership in Professional Associations and Publications:

- Zimbabwe Institute of Geomatics (Professional Technologist ZIG)
- Survey Institute of Zimbabwe (SIZ Engineering and Topographic Discipline)
- Survey Institute of Malawi (SIM Land Survey Chapter....membership not yet approved)

Languages Skills:

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Chichewa	Good	Fair	Fair

Adequacy for the Assignment:

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
Temporary and Permanent Bench Marks Reducing Control Ground Controls	Name of assignment or project: Lifuwu Rice Scheme Year: 2017 - 2018 Location: Salima ,Malawi Client, Funding Agency: European Union

Topological Grid Surveys Profile Surveys Setting out of Structures Level Controls UAV Surveys	Main project features: Rehabilitation of existing scheme and expanding Positions held: Engineering Surveyor Activities performed: -Topographic surveys -Setting out and excavation of canals, drains on grade -Setting out, excavation and laying the main pipeline -Night storage construction -Land forming of rice fields -Fixing and construction of benchmarks -Earth works calculations Name of assignment or project: Kholongo Irrigation scheme Year: 2018 Location: Dowa, Malawi Client, Funding Agency: Government of Malawi Main project features: Feasibility study Positions held: Senior Surveyor Activities performed: -Establishment/Fixing of ground control points for UAV (drone) imaging/mapping -Fixing and construction of benchmarks -Spirit levelling the benchmarks -Detailed strip survey of proposed canals Name of assignment or project: Topographic survey Year: 2018 Location: Lichinga, Mozambique Client, Funding Agency: Tenga Ltd Main project features: Topographic survey for proposed dam site Positions held: Site Surveyor Activities performed: -Establishment/Fixing of ground control points
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	-UAV (drone) mapping the estate to produce a digital elevation model Name of assignment or project: Proposed Hydro Power Station Year: 2017 Location: Mulanje, Malawi Client, Funding Agency: Lujeri Tea Estate Main project features: Route survey of the proposed penstock Positions held: Site Surveyor Activities performed: -Topographic survey of the proposed route -Fixing site benchmarks -Plotting of the longitudinal section of the proposed route Name of assignment or project: Land forming and drainage Year: 2015, 2016, 2018 Location: Salima, Malawi Client, Funding Agency: Malawi Mangoes (Operations) Limited Main project features: Redesigning drainage layout - Leveling of crop fields Positions held: Site Surveyor Activities performed: -Setting out and excavation of new and existing Drains -Detailed tachy surveys for existing fields -Leveling crop fields -Setting out and levelling of a new green house floor to grade -As built survey of existing and new infrastructure -Earth works calculations
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	Name of assignment or project: Installation of drip irrigation Year: 2016 Location: Ekwendeni, Malawi Client, Funding Agency: Tropha Estate Main project features: Construction of pump house and conveyance line Installation of drip irrigation Construction of factory Positions held: Site Surveyor Activities performed: -Fixing of benchmarks on site -Setting out and laying of pipelines -Setting out and construction of pump house -Setting out and construction of new access roads -Setting out and demarcations of new field boundaries -Setting out of new factory building -As built surveys of existing and new infrastructure Name of assignment or project: Phata Irrigation Scheme(Phase 1 and 2) Year: 2012 , 2016 Location: Chikwawa, Malawi Client, Funding Agency: European Union Main project features: Setting up an out grower irrigation scheme for sugar-cane that will improve rural livelihoods Positions held: Site Surveyor Activities performed: -Setting out the center pivots -Detailed tachy surveys for drainage designs -Setting out and excavation of drainage on grade -Setting out and trenching of pipelines -As built surveys of infrastructure
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	-Setting out and construction of night storage dams -Managing and monitoring all the plant on site Name of assignment or project: Rural Infrastructure Development Program Year: 2014 Location: Mulanje, Chikwawa, Zomba, Mwanza, Machinga, Dedza Malawi Client, Funding Agency: Government of Malawi, European Commission Main project features: Preparing the ground for future infrastructure development in the irrigation sector Positions held: Surveyor Activities performed: -Fixing and construction of site benchmarks -Fixing ground control points for aerial mapping/imaging using UAVs -Detailed tachy surveys for proposed offtake sites Name of assignment or project: Irrigation Rural Livelihoods and Agricultural Development Project Year: 2008, 2010 Location: Chikwawa, Nsanje, Zomba, Dedza Malawi Client, Funding Agency: Government of Malawi, World Bank Main project features: Improving rural livelihoods through sustainable irrigation Positions held: Surveyor Activities performed: -Detailed topographic surveys for irrigation designs -Detailed as built surveys for existing infrastructure for rehabilitation works -Setting out of new canals, drains and pipelines on design grade
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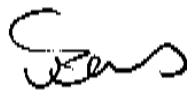
	-Setting out and construction of night storage dams -Fixing and construction of site benchmarks Name of assignment or project: Land forming Year: 2008-2014 Location: Nchalo, Malawi Client, Funding Agency: ILLOVO SUGAR MALAWI Main project features: Improving yields through improved irrigation and drainage Positions held: Estate Surveyor Activities performed: -Detailed grid surveys for existing and new cane fields for irrigation designs -Laser and GPS land forming for improved drainage -Setting out and excavation of drains, canals and channels on designed grade -Setting out of new infield infrastructure -Setting out new field boundaries and center pivots -Setting out and construction of night storage dams -As built surveys of existing and new infrastructure, amenities -Spirit Leveling and fixing of Estate benchmarks -Earth works calculations -Compiling of survey reports and records -Training of survey personnel/staff
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Expert's contact information:

(e-mail emwale2002@yahoo.com phone: +265 991 632 297)

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available, as and when necessary, to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.



Evans Mwale

31/01/2019

Name of Expert

Signature

Date



Bouke Bijl

Name of authorized

Signature

Date 20/4/2022

Representative of the Consultant

Proposed role in the project: Agricultural Engineer, GIS professional/Team Leader

Position Title and No.	NKE 1.2 GIS Specialist
Name of Expert:	Russell Longhurst
Date of Birth:	1/8/1978
Country of Citizenship/Residence	British Citizen ; resident in South Africa

Education:

Institution [Date from - Date to]	Degree(s) or Diploma(s) obtained:
Harper Adams University: 1997-2001	MEng (Honours) Agricultural Engineering

Language skills: Indicate competence on a scale of 1 to 5 (1 - excellent; 5 - basic)

Language	Reading	Speaking	Writing
English	1	1	1
Portuguese	3	2	4
Shona	5	5	5

Membership of professional bodies: Member of Commercial Unmanned Aircraft Association of South Africa (CUAASA); Member South African Irrigation Institute (SABI);

Other skills: (e.g. Computer literacy, etc.) Fully Computer Literate: **Global Mapper, Pix 4D Photogrammetry, AutoCAD, QGIS, ARC GIS**, Trimble Business Suite (TBS), **Geomatica**, Word, Excel, Access, Model Maker, Multiplane, MathCAD, Ansys Working model 2D, LSS, KY Pipe,

Designed and developed **Agri-Sense maps & Data-Sense** Mapping and Management information system and data collection tool to help farmers easily use drone imagery and GIS for precision agriculture.

Period	Employing organization and your title/position. Contact info for references	Country	Summary of activities performed relevant to the Assignment
2013 to date	Managing Director, Agri-Sense International & Agri-Sense Ltd	RSA	16 years continuous experience as an Agricultural Engineer and 12 years specific experience in the design and implementation of irrigation and

			drainage systems using GIS, Satellite image processing and photogrammetry with 6 years of experience in GPS guided drones technology. • Conducted over 110 aerial survey projects and image processing covering more than 500 000 ha in numerous countries across Africa (examples can be provided on request) to produce and manage topographic data, land use/land cover maps and field survey contours, where the majority of these projects are being used for the development of irrigation and drainage designs. • Extensive knowledge of sugar cane and the use of aerial surveys and image processing using GIS and Photogrammetry with GPS guided drones to improve drainage and crop health. • In-depth experience in Aerial survey, GIS, Photogrammetry including, Trimble RTK/PPK surveying, unmanned Aerial Vehicle (UAV) pilot, mapping, cartography, terrain mapping. • Extensive experience in 3rd world countries. Excellent team leadership and organisational abilities. Excellent analytical, and quality control skills, excellent communication, and interpersonal skills
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Professional experience:

Date from - Date to	Location	Company & reference person (name & contact details)	Position	Description
		Agri-Sense	Manging Director	
2017-2020	South Africa	SASRI (South African Sugar Research Institute) Abraham Singels Abraham.Singels@sugar.org.za	Team Leader Managing director	Partnering in research work with SASRI (South African Sugar Research Institute) researching the use of NDVI and thermal IR through drones , including bio-mass index and canopy cover / height, to estimate sugar cane yields.
2017	South Africa/ Namibia	Structured Growth insurance brokers Rick Dillon rick.dillon@structuredgrowth.co.za	Team Leader Managing director	Partnering with Structured Growth (South African Sugar Research Institute) researching the use of Satellite NDVI , including bio-mass index and canopy cover / height, to estimate sugar cane yields.
02/2019	Ghana	IWAD Tom Durang tom.durang@IWAD.com	Team Leader Managing director	36 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Including the production and management of topographic data , accurate DTM for detailed Irrigation designs on New expansion project .
12/2018	Malawi	Conforzi Bouke Bijl	Team Leader Managing director	3000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, GCPs used to geometrically correct the photogrammetric data to enable the team to generate a detailed Topographic map for Dam Design

		b.bijl@agricane.com		
11/2018	Malawi	COOPI , Rosalba Vendemia pm.echo.malawi@coopi.org	Team Leader Managing director	15 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Satellite generated DTM was used to geometrically correct the photogrammetric data to enable the team to generate a flood risk map
09/2018	Rwanda	EU / Phata Sugar Cooperative Dr Eliot Taylor C.Sci, C.Env, C.WEM Eliot.Taylor@mottmac.com	Team Leader Managing director	5000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry , with GPS guided drones, Including the production and management of topographic data , the DTM was used to quantify the slopes and terracing types as actuals vs design and also quantify the area, Data-Sense was used to capture qualitative information in the farmers and land use.
08/2018	Malawi	Kholongo Irrigation Scheme Eric Verlinden ejmj_verlinden@yahoo.fr	Team Leader Managing director	15 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Including the production and management of topographic data , accurate DTM for canal and flood Irrigation designs for small scale farmers .
02/2018	Belize	Cardno Emerging Markets European Union Mike Gutteridge Mike.Gutteridge@cardno.uk.com	Team Leader Managing director	90 000 ha Lot 1/2017/ 153_Belize, Detailed aerial topographical survey to develop drainage master plan of the Belize sugar belt Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Including the production and management of topographic data, land use/land cover maps and field surveys ., accurate DTM for conceptual drainage designs, for Drainage master plan preparation of reports.

08/ 2017	Nigeria	Sunti Golden Sugar Estate John Beverley sunti.farm@gmail.com	Team Leader Managing director	10 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Including the production and management of topographic data , accurate DTM for conceptual Irrigation designs on New out grower scheme .
05/ 2017	DRC	CSKN Ananth Arumugam ananth.agro@mail.cskn.cd	Team Leader Managing director	21 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Including the production and management of topographic data , accurate DTM for conceptual Irrigation designs on existing dryland sugar estate .
02/ 2017	Nigeria	SWASHI Pulkit jain Pjs pulkit@pajsonholding.com	Team Leader Managing director	8 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Including the production and management of topographic data , accurate DTM for conceptual Flood Irrigation designs on expansion project .
05/ 2017	DRC	CSKN Ananth Arumugam ananth.agro@mail.cskn.cd	Team Leader Managing director	21 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Including the production and management of topographic data , accurate DTM for conceptual Irrigation designs on existing dryland sugar estate .
10/2016 – 2017	South Africa	Precision Agricultural Systems , Tim Wise Tim@pacsys.co.za	Team Leader Managing director	43 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data , land use/land cover maps and field surveys , with the production and management of soil data to produce soil and contour maps NDVI, GIS digitisation of fields and integration of data into Mobile Management Information System .
11/2016	Ghana	Savannah Accelerated Development Authority ,	Team Leader Managing director	5 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones 120 000 ha of satellite image processing , Including the production and management of topographic data , land use/land cover maps and field surveys with GIS integration for town and regional planning in Tamale, Ghana.

		Nsoh Donald Akolmolga dnsogh@sadagh.org		
09/2016	Malawi	EU / Phata Sugar Cooperative Bouke Bijl b.bijl@agricane.com	Team Leader Managing director	900 ha Detailed Aerial Survey and processing using GIS and Photogrammetry , with GPS guided drones, Including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps for E.U. funded small scale farmer irrigation and drainage development and project monitoring.
06/2019	Malawi	PCI D Risk Data capture & GIS for the districts of Balaka & Machinga	Team Leader Managing director	Data capture using Data Sense , collecting data and mapping boundaries for the 73 Group Village Heads. A Team of 16 community members were trained as data collectors equipped with tablets and Data Sense was put into action. Over 1600 features were collected, which included wells, taps, evacuation centers, clinics, Rain Gauges, Hospitals, Health center, Boreholes and many other features. By using Data Sense, the data was collected and managed and interpreted over the period of 4 months.
08/2016	Mozambique	Maeva Group Charlie Strachan charliestrchan@yahoo.com	Team Leader Managing director	11 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps, conceptual irrigation and drainage designs , preparation of reports.
07/2016	Tanzania	Mulla Group Yusuf Mulla yusuf@ttb.co.tz	Processing analyst Quality Control	3 500 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones, Including the production and management of topographic data, land use/land cover maps and field surveys to produce Crop management maps for tea and forestry.
07/2016	South Africa	AgriTechnovation Erik De Vries	Team Leader Managing director	21 160 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones to produce Crop Assessment Maps for Citrus and Nuts in the Marble Hall area.

		erikdevries@agritechno vation.co.za		
03/2016	Malawi	ExAgris Farming Bouke Bijl b.bijl@agricane.com	Processing analyst Quality Control	4 850 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones Including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of soil data to produce soil and drainage maps , irrigation/ drainage design , and development planning.
8/2015 - 2016	Nigeria	Agricane Ltd Chris Mathews chris@agricane.com)	Irrigation Design Engineer	Irrigation designs and land use plan of 2000 ha and detail design and costings for 1000 ha of grain and sugarcane crops at Suntia Farms (Flour Mills of Nigeria) in Niger State. Work included all preparatory survey work, detailed irrigation designs , cost estimates and budgeting, time planning and sourcing of necessary equipment.
02/2016	Malawi	EU / Development Projects Bouke Bijl b.bijl@agricane.com	Irrigation Engineer	Irrigation Designs and Land use plan of the 8 sites across TA Katunga Maseya (3000ha) and TA Mphonde (2100ha) for sugarcane farming including a hydrological study and full costing for a feasibility study .
11- 12/2015	Malawi	EU /Agricane Malawi Bouke Bijl b.bijl@agricane.com,	Team Leader Quality Control	8 150 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones Including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , irrigation/ drainage design , for TA Katunga Maseya (3000ha) and TA Mphonde
11/2015	South Africa	AgriTechnovation Erik De Vries erikdevries@agritechno vation.co.za	Team Leader Quality Control	10 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones to produce Crop Assessment Maps and NDVI mapping for Maize in the Thabazimbe area.
09/2015	South Africa	UVS Sugar Farms	Processing analyst Quality Control	3 300 ha aerial Survey and processing using GIS and Photogrammetry , with GPS guided drones Including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and

		Warren Poustie poustiew@theuvs.co.za		management of hydrologic and soil data to produce soil and flood risk maps, and drainage design for sugar cane production by Umhlatuzi Valley Sugar Company (UVS) at Richards Bay in Zululand RSA.
08/2015	Nigeria	Coscharis Farms Shepherd Hurudza shepherdhurudza@coscharisfarms.com	Processing analyst Quality Control	2 750 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys, for irrigation/drainage design. Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , development planning on the Coscharis Rice Farms near Engu, Nigeria
07/2015	Mozambique	Mozambique Tree Farmers Iain Thompson Iain@3dmapping.co.za	Team Leader Pilot in Command	18 000ha aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys. Additionally, the production and management of soil data to produce soil maps , for irrigation designs and land use plan in Beira agricultural growth corridor.
05/2015	South Africa	South African Sugar Research Institute Alex Searle Alex.Searle@sugar.org.za	Processing analyst Quality Control	1 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys, Additionally, the production and management of hydrologic data to produce flood risk maps, using NDVI as a tool to determine the extent and severity of flooding and drainage issues in the Monzi Sugarcane growing area.
04/2015	Malawi	Agricane Malawi Bouke Bijl b.bijl@agricane.com	Pilot in Command Quality Control	1 400 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys, for various small scale farmer cooperative projects
02/2015	Malawi	Lilongwe Water Authority/ Agricane Malawi	Processing analyst Quality Control	1 700 ha Detailed Aerial Survey and processing using GIS and Photogrammetry, with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys. Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , for

		Bouke Bijl b.bijl@agricane.com		flood level analysis for the raising of the Kumuzu Dam, which is the main water supply for the city of Lilongwe
March – July 2015	Ghana	AgDevCo / Agricane Chris Mathews chris@agricane.com	Project Engineer	Irrigation & Drainage designs and land use plan for Feasibility Study for 6,000ha in Southern Ghana for various cereals under center pivot and surface irrigation off the Volta River at Babator. The study included all necessary surveys (aerial; topological; hydrological; soil) conceptual and detailed irrigation designs; Bulkwater Designs; Agronomic Assessments; Cost Estimates; Economic Modelling
01/2015	Ghana	AgDevCo / Agricane Chris Mathews chris@agricane.com	Team Leader	13 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , for irrigation/drainage design & project planning.
10-11/2014	Malawi	Agricane Malawi Bouke Bijl b.bijl@agricane.co	Team Leader Pilot in Command	9 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . for irrigation/drainage design . Additionally, the production and management of hydrologic and soil data to produce soil and Drainage maps , for Kasungu Estates and Nunyunga in Malawi.
10/2014	Malawi	Agricane Malawi Ltd Bouke Bijl b.bijl@agricane.com	Irrigation and Drainage Design Engineer	Irrigation, Rural Livelihoods and Agricultural Development Project (IRLADP) - New Irrigation Schemes Investment Framework. Provided survey and irrigation designs for 12 new gravity and pumped irrigation small-scale schemes in various parts of Malawi. Work included all preparatory survey work, detailed irrigation designs, cost estimates and budgeting, time planning and supervision of construction contractors (with 8 technical staff on sites).
09/2014	Malawi	EU / Rural Infrastructure Agricane Malawi Ltd	Pilot Quality Control	6 400 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and

		Bouke Bijl b.bijl@agricane.com		management of soil and Hydrological data to produce soil and drainage maps , for the Rural Infrastructure Development Program, an E.U. funded development initiative.
09/2014	Malawi	Agricane Malawi Ltd Bouke Bijl b.bijl@agricane.com	Team Leader Irrigation and Drainage Design Engineer	1200ha Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys and design . Additionally, the production and management of soil data to produce soil Drainage maps , for fruit (mango) orchard at Salima. Work included all preparatory survey work, detailed irrigation and drainage designs, cost estimates and budgeting, time planning and sourcing of necessary equipment
08/2014	Zambia	Agri-Sense International Ross Walters ross@agrisense.co.za	Irrigation and Drainage Design Engineer	5 540 ha aerial Survey and processing using GIS and Photogrammetry , with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys for detailed irrigation designs Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , for irrigated arable crops (center pivot) and macadamia (mcroject) production at Sinde Farms in Eastern Province of Zambia. Work included all preparatory survey work, detailed irrigation designs, cost estimates and budgeting, time planning and sourcing of necessary equipment.
07/2014	Mozambique	Tongaat Huletts / Agricane Mafambise Sugar Estate chris@agricane.com	Team Leader Processing analyst Quality Control	6 000 ha Detailed Aerial Survey and NDVI processing using GIS and Photogrammetry , with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , for the assessment of Drainage problems and crop stress on Mafambise Sugar Cane Estate.
07/2014	Malawi	Agricane Ltd Chris Mathews chris@agricane .com	Irrigation Design Engineer	Survey and detailed design of 4200ha irrigated macadamia (microjet); coffee (drip) and arable crops (center pivots) for Eastern Plantations Ltd in Kasungu. Work included all preparatory survey work, detailed irrigation designs, cost estimates and budgeting, time planning and sourcing of necessary equipment

06/2014	Malawi	Kasungu Estates / Agricane Bouke Bijl b.bijl@agricane.com	Team Leader Pilot in Command	5 600 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , for irrigation/drainage design , farm mapping
04/2014	Mozambique	Tongaats Hulett's Sugar / Agricane chris@agricane.com	Processing analyst Quality Control	600 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , for irrigation/ drainage design , project planning, for irrigated sugar cane development
02-03/2014	Nigeria	Agricane Ltd Chris Mathews chris@agricane .com	Team leader Processing analyst Quality Control	5000 & 8600 ha Detailed Aerial Survey and processing using GIS and Photogrammetry , with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , following severe flooding on the Savannah Sugar Estate in Northern Nigeria owned by Dangote Sugar Refineries. Work included, RAP, detailed flood defence designs , tender documentation and adjudication, full supervision team and supervision of implementation (5 phases); operation and maintenance training; technical training for counterpart staff
01/2014	Mozambique	EU / Illovo Sugar Alasdair Harris alsadairjohn@gmail.com	Team leader Processing analyst Quality Control	3 200 ha aerial Survey and processing using GIS and Photogrammetry , with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . for drainage designs for Maragra sugar cane smallholder scheme (Illovo) – funded under EU Accompanying Measures for Sugar Protocol Countries . Work included, surveys for detailed drainage designs for planned out grower program
2013-2015	South Africa	TSB Sugar, RCL Foods	Team leader Processing analyst	32 000 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . and NDVI mapping using drones, for

		Hestia Saaiman Hestia.Saaiman@rclfoods.com	Quality Control	sugarcane crop assessment and farm management. Integration of maps into mobile application.
12/2013	Mozambique	Ocuá Ouro Verde Chris Mathews chris@agricane.com	Processing analyst Quality Control	650 ha Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , for farm mapping and project planning of organic sugar cane farm in Northern Mozambique
11/2013	Malawi	Trophá Estates /AgDevCo Duncan McDavid dmc david@jacoma estates.com	Quality Control	1 700 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , for Irrigation and Drainage design for Macadamia Nut plantation development.
11-12/2013	Ghana	Agricane Ltd / IWAD Tom Durang tom.durang@wienco.com	Irrigation Design Engineer	Detailed irrigation design and costing for a 450 ha pilot irrigation project for Integrated Water Management & Agricultural Development Ghana Limited (IWAD GHANA Ltd.)
10/2013	Ghana	Agricane Ltd / IWAD tom.durang@wienco.com	Processing analyst Quality Control	1 200 ha Detailed Aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys . Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps , for Irrigation and Drainage development of a rice scheme near Tamale in Northern Ghana
06/2013	Malawi	Agricane Malawi Ltd Bouke Bijl	Team leader	5 535 ha detailed aerial Survey and processing using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data,

		b.bijl@agricane.com	Irrigation Design Engineer and Protect Manager	land use/land cover maps and field surveys. processing and editing of 7 irrigation sites in Salima and Nkotakota Districts for irrigation designs (subcontracted to GOPA).
06/2013	Malawi	Illovo Sugar, Nchalo Estate Keith Domleo kedomleo@illovo.co.za	Team leader Processing analyst Quality Control	13 000 ha crop assessment using NDVI for crop monitoring using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys. for sugar cane production at Nchalo (Illovo Sugar)
1/2013-6/2013	Zimbabwe	Agricane Ltd Chris Mathews chris@agricane .com	Project Engineer	Irrigation design and costing for a feasibility study for 3000 ha of small grower sugar cane production under flood irrigation at Triangle Estates in Chiredzi. The study included Aerial survey and process using GIS and Photogrammetry with GPS guided drones including the production and management of topographic data, land use/land cover maps and field surveys. Additionally, the production and management of hydrologic and soil data to produce soil and flood risk maps for the conceptual and detailed irrigation designs; Bulkwater Designs; Agronomic Assessments; Cost Estimates and Economic Modelling.
2010 - 2012	Sierra Leone	Agricane Ltd Chris Mathews chris@agricane .com	Development Manager & Resident Irrigation Engineer	ADDAX Bio-Energy Project, Makeni. Responsible for all in charge of all engineering designs and development operation on the first green fields bio-ethanol project of 10 000 ha of irrigated sugar cane. Work included detailed surveys, Image processing, GIS, RAP, detailed designs, tender documentation and adjudication, full supervision team and supervision of implementation (5 phases); operation and maintenance training; technical training for counterpart staff.
2007 - 2010	Mozambique	Agricane Ltd Chris Mathews chris@agricane .com	Agricultural Engineer, Manager	Management of all the development work and irrigation design including tender evaluation for the expansion project of 6500ha of irrigated sugar cane production at Xinavane (Tonga Hullet project). Work included aerial Survey and processing using GIS and Photogrammetry, including the production and management of topographic data, land use/land cover maps and field surveys. terrestrial surveys, Additionally, the production and management of hydrologic and soil data to

				produce soil and flood risk maps RAP, detailed designs , tender documentation and adjudication, full supervision team and supervision of implementation (5 phases); operation and maintenance training; technical training for counterpart staff.
2005 - 2007	UK	Landpac Int Simon Dix sdix@landpac.com.au	Operations Manager	Ground engineering across, using High Energy Impact response to investigate the hydrological state of various sites the UK including the production and management of hydrologic and soil data to produce soil and CIR maps , managing all operations in England, Wales, Ireland and Scotland
2003 - 2005	South Yorkshire UK	Wroot Water Systems A Hopkins info@wrootwater.com	Irrigation Engineer	Irrigation Design , Procurement, installation, and technical backup of various Drip irrigation systems across the UK,
2001 - 2003	Harare, Zimbabwe	Irrigation Design Advisory Service IDAS peter@imagenconsulting.net	Irrigation Engineer	Company management of all Design and installation of various irrigation systems across the Zimbabwe.

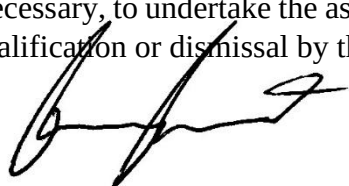
Other relevant information (e.g. Publications)

Agri-Sense has developed a Management Information System using GIS & Mapping, to aid farmers to manage crops. In conjunction with the Agri-Sense management app, we have also developed Data Sense, which is a data collection tool, used to collect any information relevant to farming or GIS. More information can be provided on request.

Expert's contact information: russell@agrisense.live; Phone +27 725373451

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available, as and when necessary, to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.



Russell Longhurst

Name of Expert

Signature

Date: 20/4/2022

A handwritten signature in black ink, consisting of a large, loopy 'B' followed by several smaller, connected loops and a final downward stroke.

Bouke Bijl

Name of authorized

Signature

Date 20/4/2022

Representative of the Consultant

APPENDIX 5: GRIEVANCE REDRESS MECHANISM MANUAL



GOVERNMENT OF MALAWI

MINISTRY OF AGRICULTURE

SHIRE VALLEY TRANSFORMATION PROGRAMME- 1 (SVTP-1)



1.0 Introduction

GRIEVANCE REDRESS MECHANISM MANUAL

Department of Irrigation,
P.O. Box 30797,
Lilongwe 3.
Tel: +265 1 752 122
Fax: +265 1 751 459

1.1 Overview of the Shire Valley Transformation Programme

The Government of Malawi with support from the World Bank, the African Development Bank (AfDB) and Organisation of Petroleum Exporting Countries (OPEC) Fund for International Development is implementing the Shire Valley Transformation Programme (SVTP). The Programme Development Objective (PDO) for the SVTP 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.

The SVTP is one of the flagship programmes being implemented in Malawi to contribute to creation of jobs and wealth as well as ensuring food security through agro-industry. Implementation progress of the SVTP is in the interest of the Malawi Government, financing institutions and all key stakeholders.

The SVTP is a 14-year program (2018-2031) which is being implemented in three sequential but partially overlapping phases. The Programme targets the development of 43,370 ha of land which will utilize water abstracted from the Shire River at Kapichira dam. The water for irrigation shall be conveyed by gravity to the irrigable areas in Chikwawa and Nsanje districts mainly through canals. SVTP has the following components:

- i. Component 1 - Irrigation Infrastructure Development and Service Provision;
- ii. Component 2 - Land Tenure and Consolidation;
- iii. Component 3 - Agriculture Development and Commercialization;
- iv. Component 4 – Strengthening Landscape and Natural Resources Management;
- v. Component 5 – Project Management and Coordination; and
- vi. Component 6 - Contingent Emergency Response.

The total SVTP-2 cost is estimated at US\$285 million, initially to be supported with an International Development Association (IDA) credit of US\$134 million from IDA. The GoM has committed to mobilize the balance of US\$91 million as counterpart financing in the first years. Government of Malawi and the AfDB have agreed that the AfDB will support SVTP-2 with US\$50 million, to be used for the construction of the main irrigation infrastructure under Component 1. Commercial financing for the development of marketing and processing facilities is estimated at US\$10 million.

1.2 Background to the GRM Manual

The Government of Malawi with funding from the World Bank is implementing The Shire Valley Transformation Programme (SVTP) in the lower Shire, covering two districts of Chikwawa and Nsanje and involving many stakeholders. Organizations and individuals with stake in this project may also include contractors, consultants and suppliers.

For a project of this magnitude, there are likely to be a number of grievances from a variety of sources with the potential to derail the project. The Government of Malawi is committed to addressing and resolving grievances, disputes and conflicts that may arise in the course of implementing this Project. For this reason, Government with the participation of stakeholders has developed this Grievance Redress Mechanism (GRM). This GRM acts as recourse for situations in which individuals and stakeholders may be aggrieved by the project activities and impacts.

It is emphasized here that this GRM is not intended to replace the judiciary or other forms of legal recourse. This GRM does not prevent aggrieved parties from pursuing their rights and interests in any other national or local grievances redress forums. In particular, grievances of criminal nature such as corruption, coercion, theft, rape, gender-based violence or systematic violations of rights and/or policies committed within the perimeters of the SVTP programme may warrant direct redress through the courts and administrative law procedures.

1.3 Objectives

This GRM is to act as recourse for situations in which individuals, communities, or stakeholders may be aggrieved by the project activities and impacts. It is also meant to allow beneficiaries and stakeholders to provide feedback regarding project delivery, operation and impacts. This GRM is specifically aimed at attaining the following objectives:

- (1) To identify grievances related to the implementation of SVTP programme;
- (2) To ensure that the grievances, disputes or conflicts arising from implementation of this project are treated separately and as matter of priority;
- (3) To ensure that project implementation timelines and overall schedules are not compromised due to delays in resolving the grievances, disputes or conflicts;
- (4) To minimize the lengthy and expensive alternative litigations that Project Affected Persons (PAPs) or Aggrieved Party might otherwise have to resort to;

- (5) To provide a system through which stakeholders can provide feedback on the operations and impacts of the project.

2.0 Methodology for developing the GRM

The GRM has been developed through a mixed methods approach and in a participatory process that involved the following activities:

- i. Review of relevant documents on grievance redress mechanisms.
- ii. Review of other GRMs in Malawi and other countries. Examples of GRM reviewed in Malawi included those developed by the Local Development Fund, the Malawi Flood Emergency Recovery Fund (MFERP), the Millennium Challenge Account and others implemented in Malawi
- iii. Stakeholder's consultations that took place in the SVTP impact area and involved key informant interviews and focus group discussions. Stakeholders consulted during the study included the Project Affected People (PAP), local village communities, Traditional Authorities (TA), Village Heads (VH), Group Village Heads (GVH), District Officials, Ward Councilors, and Are and Village Development Committees (VDC). Stakeholders' consultations were conducted in the last quarter of 2015 and results were used to draft the GRM. The draft GRM was unanimously accepted without proposed changes in the stakeholders' consultations in August 2016. This revised manual has taken into consideration some of the lessons learnt during the period the project has been under implementation.
- iv. Baseline household survey of communities living in the impact area of SVIP.

Some of the main lessons learnt from the review of documents and the consultations with stakeholders and communities, include but not limited to:

- i. A grievance redress mechanism should be accessible to the users. This is why the first level of Grievance Redress Mechanism (GRM) is at Group Village Head level, while the next or second level would be at TA or the District level.
- ii. When a grievance redress system is not able to handle an issue, the complainant is free to file for court hearing

- iii. Most projects put in place a complaints and grievances mechanism which is readily accessible to deal with complaints promptly or else in the event of failure the matter can be referred to the formal court system.
- iv. Attempts need to be made to solve grievances at the time the project affected person lodges a complaint. Negotiation and agreement by consensus between the community and affected persons will provide the first avenue to resolve grievances expressed by the individuals on resettlement issues.
- v. Permanent and open dialogue is the most suitable way of addressing any grievance expressed by PAPs

3.0 Importance of GRM in the SVTP

The implementation of the SVTP project is likely to trigger some concerns, disputes, conflicts and grievances. Below are some examples to illustrate how grievances and feedback can emerge in this project.

- i. Procurement related grievances: For example, this project involves procurement of contractors, consultants and goods, supplies and services. Some participating parties may not be satisfied with the outcome of the procurement processes and may lodge a complaint.
- ii. Payment-related grievances: Contractors, consultants and providers of goods, supplies and services may be aggrieved by delays in their payments, the manner in which payment-processing officials are handling the payment processes or any other payment related matters. They may want lodge a complaint.
- iii. Compensation related grievances: Where individuals and communities are to lose their land and other assets because of the SVTP project, they may lodge grievances related to compensation.
- iv. Gender based violence: In the project of the SVTP scope that involves many implementing agents, gender-based related grievances may emerge. Gender based violence (GBV) can be defined as any unlawful act perpetrated by a person against another person based on their sex that causes suffering on the part of the survivor and results in, among others, physical, psychological and emotional harm and economic deprivation. GBV can be a serious, sometimes life threatening, human rights, health and protection issue that violates a number of universal human rights. GBV can be manifested in different forms including:

physical violence, sexual violence, economic violence, emotional and psychological violence, verbal abuse and Violence Against Women and Girls (VAWG). The aggrieved parties may lodge a complaint whilst on the other hand engaging formal law enforcement agencies e.g. Police in cases of rape.

- v. Child protection grievances: Issues of child labour, child abuse, and child trafficking or child prostitution may emerge in the course of implementing the SVTP project. The aggrieved party, their guardian, representative or concerned party may lodge a complaint.
- vi. Cultural related grievances: Most project activities will be implemented at community level and will involve interfacing with community members. Grievances may emerge in areas such as family break-ups, inability to respect the culture, destruction of cultural heritage. The aggrieved party or community may lodge a complaint.
- vii. Land related grievances: This project involves titling of land to become private land. Grievances here may relate to encroachment of private land or boundary conflict.
- viii. Theft or abuse of project property: In the course of implementing the project, allegations may arise at all levels regarding theft or abuse of project resources. These allegations can be reported for follow up and action.
- ix. Discrimination, Corruption & nepotism: Allegations of Discrimination, Corruption & nepotism e.g., in recruitment of workers, may emerge during the implementation of the project. These can be reported for follow up and action
- x. Environmental pollution and safety issues: Concerns and complaints can emerge during this project regarding dust from construction works, water pollutions or safety. Again, these can be reported for follow up and redress. In particular, this GRM will be used in the implementation of the project's safeguards. For example, when Environmental and Social Management Plans (ESMPs) and Resettlement Action Plans (RAPs) are prepared, the GRMs that will be outlined will be exactly aligned to this project level GRM.

3.1 Project feedback

This project involves many activities. Beneficiaries and stakeholders can provide feedback regarding what is working well in this project and should be scaled up or sustained. Alternatively, they can provide feedback regarding what is not working well and should be improved or dropped outright. These are not grievances per se but useful input into the project and will be considered in improving project delivery to achieve expected project outcomes.

Therefore, besides receiving complaints and grievances, this GRM allows for any sort of feedback on the project, including feedback on design, delivery strategy and implementation elements. For the reasons and scope given above, this GRM acts as a broader framework through which all matters relating to project grievances and feedback will be reported and managed.

Having outlined the possible grievances that may arise during project implementation, it is worth noting that this manual only provides for grievance resolution of all activities

3.2 Potential Users of this GRM

The potential users of this GRM include beneficiaries, stakeholders, contractors, consultants, suppliers of goods and services, project related workers, citizens and the public.

3.3 Principles of the SVTP GRM

The SVTP GRM is designed on principles related to universal principles of human rights, gender equality and women empowerment and the respect for rule of law. The 12 principles governing this GRM are:

Principle 1: Human dignity. This principle recognizes the inherent dignity and the equal and inalienable human rights of all individuals

Principle 2: Non-discrimination. This principle ascribes to the notion that no one should be subject to discrimination of any sort or on any basis such as sex, age, health status, marital status, religion, race, political affiliation or tribe.

Principle 3: Equity and justice. This principle recognizes that the equality between individuals may require acknowledging differences between individuals, and taking positive action, including empowerment, to promote equal rights and access to productive resources and benefits for all, including women, youth and vulnerable and marginalized groups.

Principle 4: Gender equality and women empowerment. This principle compels the SVTP project to ensure that men, women and young people have equal participation, access to and control of productive resources and the benefits that accrue. This includes, specifically, putting in place strategies that promotes build capacities of women and young people to be able to achieve the desired project gender outcomes.

Principle 5: Accountability. This principle holds individuals, leaders and decision makers/duty bearers responsible for their actions and decisions according to the principles of the rule of law.

Principle 6: Accessibility. This principle guarantees that the GRM will be accessible to everybody who would like to submit a complaint and will provide assistance to those who face barriers such as language, illiteracy, lack of awareness, cost, or fear of reprisal. The GRM has been designed in such a way that it is readily available and closest to the project affected persons (PAPs) or Aggrieved Party to ensure that their concerns, disputes or conflicts are managed with speed.

Principle 7: Predictability. This principle ensures that the GRM offers a clear procedure with time frames for each stage and clarity on the types of results it can and cannot deliver.

Principle 8: Fairness: This principle ensures GRM procedures that are as impartial, objective or unbiased as possible, especially in terms of access to information and opportunities for meaningful participation in the final decision.

Principle 9: Rule of Law. This Principle ensures that the outcomes of the GRM are consistent with the Malawi Constitution, laws and international standards on human rights. This GRM does not restrict access to other redress mechanisms that the aggrieved parties may have access to.

Principle 10: Transparency. This principle guarantees that the GRM's procedures and outcomes will be widely publicized and available in applicable languages and formats accessible to and understood by, all.

Principle 11: Capability. This principle compels the SVTP project to build appropriate capacities in the areas of technical knowledge and skills, human resources and financial resources to be able to manage an effective GRM that achieves the intended purpose.

Principle 12: Feedback. This principle recognizes the importance of individuals, communities and stakeholders providing feedback on project related issues in order to improve project delivery and outcome for the benefit of Malawians.

4.0. Implementation Mechanism of the GRM

4.1 Implementation Structure

This GRM will adopt a cascade model in which grievances will be managed, successively, through grievances redress committees. The committees are the National Project Grievance Redress Committee (NPGRC), the District Grievance Redress Committee (DGRC) and the Community Grievance Redress Committee (CGRC). There will also be a Workers Grievance Redress Committee (WGRC) for work/labour related grievances.

A notion of multiple-entry points for a grievance is encouraged in this GRM. For example, a grievance can be lodged at WGRC, CGRC, DGRC or NPGRC depending on where/committee level the grievance has emerged. It is nevertheless emphasized here that the same grievance cannot be lodged simultaneously at different Grievances Redress Committees. A grievance can only be referred to a higher committee through an appeals process. Below is the brief description of the Committees. Annexes 1 - 5 summarise membership of the Committees and their Terms of Reference (ToRs). It is emphasized here that Two Thirds of the committee members (excluding ex-officios) shall form a quorum during meetings.

National Project Grievance Redress Committee (NPGRC) will manage grievances at national level. Chairperson of SVTP Project Technical Committee (PTC) will chair the committee while the SVTP Project Coordinator will be Secretary. Annex 1 presents the composition and Terms of Reference for this Committee.

Others that may attend will include SVTP Social Safeguards Specialist, District Commissioner, Director of Agriculture, Director of Forestry, Traditional Authority (TA), Group Village Head (GVH) or Village Head from where the grievance originated. Where applicable, a contractor or consultant and a representative of a contractor or consultant employees will attend. Their inclusion will ensure that they are aware of the existence of the GRM platform

District Grievance Redress Committee (DGRC) will manage grievances at District level. District of Administration will chair the committee while Environmental District Officer (EDO) will be Secretary. Annex 2 presents the composition and Terms of Reference for this Committee.

A TA or Group Village Head where the grievance originated from may attend. Where applicable, a contractor or consultant and a representative of a contractor or consultant employees will attend.

Traditional Authority Grievance Redress Committee (TAGRC) will be established and manage grievances at traditional Authority level. For purposes of this GRM, a TARGC shall be

formulated in all the Traditional Authorities affected by the project. Annex 3 presents the composition and Terms of Reference for this Committee. The Committee shall be chaired by the Traditional Authority who shall facilitate election of the Committees secretary.

A Village Head where the grievance originated from shall be eligible to attend. Group Village Head will be advisor. Where applicable, a contractor or consultant and a representative of a contractor or consultant employees may also attend.

Workers Grievance Redress Committee. In the case of work-related grievance, employed workers will present their complaints or grievances to the Workers Grievance Redress Committee (WGRC).

Membership will be;

- (1) Four worker representatives,
- (2) Client representative,
- (3) Consultant representative,
- (4) Contractor representative and
- (5) District Labour Officer.

Annex 4 presents the composition and Terms of Reference for this Committee.

4.2 Management of Land Related and other Grievances

The grievances redress committees described above are for non-land related grievances. For land related grievances, stakeholders in this project are encouraged to use existing Land Tribunals established under the Customary Land Act (CLA) of Malawi. The committees under Land Tribunals are established to operate at Group Village Head, Traditional Authority (TA), District, and National levels. The committees are as follow:

Central Land Board (CLB). This manages grievances from the DLT. A magistrate presides over proceedings of the board. The other members are three Traditional Authorities, one from each region of Malawi, one of whom is a woman, two other members with good standing in the society, one of whom is a woman. Members of the CLB are appointed by the Commissioner of Lands, with the approval of the Minister.

District Land Tribunal (DLT). This manages grievances at District level. The District Commissioner responsible for the district chairs the committee. The other members are up to three Traditional Authorities, three reputable persons that come from and reside in the district, two of whom are be women. The District Land Registrar is the secretary. An appeal from a DLT is heard by to the Central Land Board.

Customary Land Tribunal (CLT). This manages grievances at Traditional Authority level. The Traditional Authority for the area chairs the committee. The other members are six members in total nominated by the Traditional Authority, and approved by the Commissioner of Lands, at least three of whom are women. A person aggrieved by a decision of a CLT may appeal to the District Land Tribunal.

Customary Land Committee (CLC). This manages grievances at level. Group Village Head for the area chairs the committee. The Land Clerk is secretary to the committee. The other members are six in total elected by and from within the community, at least three of whom are women. This is the entry point of all land disputes. A person aggrieved by a decision of a CLC may appeal to the Customary Land Tribunal.

4.3 Management of Natural Resources related cases

The project further recognizes grievances which can emanate from project related activities in protected areas. At field level expected focus is on investments in and around Lengwe National Park, Mwabvi and Majete Wildlife Reserves, Matandwe Forest Reserve and the Elephant Marshes Proposed Sustainable Use Wetland Reserve. The component responsible for natural resources management is expected to;

- i) Invest in community-level natural resource management in areas adjacent to the above conservation and irrigation areas and in wildlife corridors.
- ii) Provide targeted support to these conservation areas to strengthen conservation and community management and encourage private sector investments.
- iii) Invest in the establishment of the Elephant Marsh Community Conservation Area, with a strong emphasis on community-based natural resources management strategies, based on the wetland management plan prepared with the support of the Shire River Basin Management Program (SRBMP).
- iv) To focus on improving management of forests and woodlands.

The implementation of the component activities mainly involves stakeholders from the national and district level for technical and coordination assistance.

In the above GRM implementation structure, the natural resources management component identified committees, officers and ministries which they work with and are crucial in addressing grievances through the existing structures. Resolution of natural resource management cases shall involve representatives in the GRCs as described in Annex 1, 2, 3 and 4.

4.4 Management of Gender Based (GBV) related cases

Many cases of Gender based violence occur in the context of projects and must be addressed/managed timely and effectively if the project is to achieve its gender visions and objectives. Resolution of GBV cases shall take the survivor centered approach which focuses on the empowerment of survivors by creating a supportive environment for healing. The understanding is that survivors of GBV can regain or strengthen their sense of empowerment when accessing survivor-centered GBV services that uphold these four guiding principles:

- i) ensure the safety of survivors, including preventing and mitigating further violence;
- ii) protect the confidentiality of survivors, including their right for information about them to be shared only with their informed consent and their right to choose whether and to whom to tell their experiences;
- iii) demonstrate respect for survivors' needs and wishes and their right to make their own choices, including those that service providers may find hard to understand or disagree with; and
- iv) practice nondiscrimination, ensuring that survivors, in all their diversity, are able to access and receive appropriate services and meaningful support.

GBV is a serious, sometimes life threatening, human rights, health and protection issue that violates a number of universal human rights. GBV can be manifested in different forms but common cases that may arise from implementation of SVTP include:

- i. Sexual violence - includes acts like rape/sexual assault, sexual abuse of programme participants (beneficiaries, project affected people and/or supervisors), sexual harassment, trafficking of women and girls and forced marriage and/or prostitution occurring within a beneficiary household.
- ii. Physical violence - involves acts such as hitting or beating (or battering, strangling, suffocating, throwing things at the victim), or any physical harm of programme

participants, conducted by another beneficiary or a person in authority such as a committee member.

- iii. Economic violence - involves acts such as withholding or denial of access to resources, denying the beneficiary/participant independent decisions regarding benefitting from the programme and use of resources earned through SVTP, damaging property, and failure to comply with economic responsibilities.
- iv. Emotional and psychological violence - can take the form of provocation of the beneficiary/participant in ways that are likely to invoke an emotional reaction that can lead to other forms of GBV (e.g., physical violence) or personal harm and includes intimidation and threats, usually by persons in authority and/or non-participating community members directed at participants/beneficiaries, such as verbal abuse and psychological abuse.
- v. Verbal abuse - refers to the use of insulting or disrespectful language with the intention of undermining the beneficiaries/participants, defamation, or harassment.
- vi. Psychological abuse - can include the manipulation and isolation of the beneficiaries/participants, setting the victim up so they are over-dependent on the abuser – such as threatening to remove the victim from benefitting from the SVTP, deprivation of liberty, or denial of access to services.
- vii. Violence against women and girls (VAWG) - is any act of gender-based violence that results in, or is likely to result in, physical, sexual, or psychological harm or suffering by women or girls, including threats of such acts, coercion, or the arbitrary deprivation of liberty, occurring in the implementation of SVTP project.

To manage grievances related to GBV, a referral pathway was developed to provide guidance on how survivors can be supported. When in the process of a referral, the importance of minimizing further trauma to the survivors must be emphasized, and the efficiency of professionals who are in place to support them must be maximized. The referral pathway for child or survivors of GBV and other forms of abuse is outlined in the following steps;

- i. The first point of contact is defined as the person, in either a professional capacity or other position of responsibility/authority (Chief, Religious Leader, Elder etc.) to whom the survivor discloses details of the abuse.
- ii. Factual account of the abuse, including details of the survivor, perpetrator, and what happened (e.g. the victim was sexually assaulted by the perpetrator) should be provided

in written form by the referring agency (GRC Secretary) Malawi Police Service Victim Support Unit, and the Ministry of Gender, Disability, Children and Social Welfare.

- iii. If the survivor requires urgent medical attention, he or she should in the first instance be referred for medical treatment at the nearest health facility. Once this has been done the case should be reported to the Community Policing Committee/Police Victim Support Unit at the first available opportunity to ensure prompt investigation of the alleged abuse. In case where the One Stop centre is available, the survivor should be referred to One Stop Centre to acquire all the services.
- iv. It is important to note that there is more than one possible referral route when the survivor is first reporting the incident/seeking help. For example, although the incident needs to be reported to the Police/Victim Support Unit as quickly as possible, the survivor may require immediate medical attention/treatment. If there is incident of sexual assault e.g defilement and rape, the survivor will require PEP if is not HIV positive and ant-pregnancy pill within 72 hours.
- v. Professionals should exercise a ‘**common sense approach**’ in this regard –for instance if the survivor has an open wound, or is in considerable pain and distress, medical care should be the priority.

The referral pathway for child or survivors of GBV and other forms of abuse is noted in the following Figure 1. The diagram denotes the referral pathways to be followed at the first point of contact i.e., when the child or survivor of abuse first presents for help and/or to report an incident of abuse.

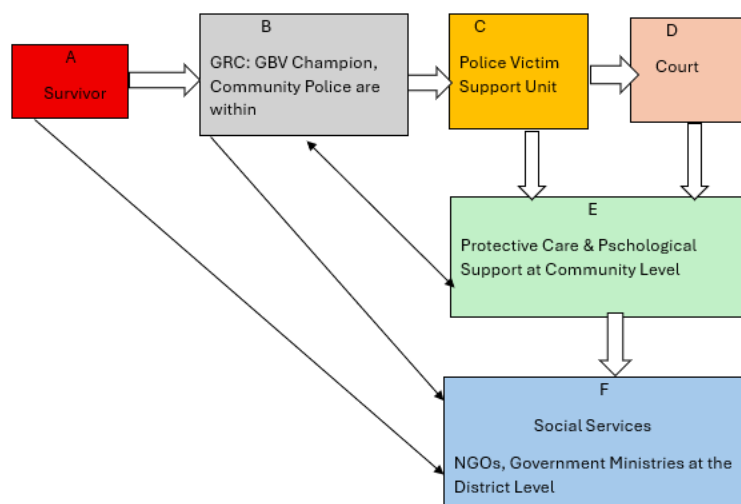


Figure 1: The Referral Pathway for GBV Survivors

- A. Medical Examination and Report Medical Treatment
- C. Investigation Prosecution Counselling
- D. Trial-Punishment of Perpetrator Protection of Survivor
- E. Protective Care, Free of Attach Discrimination and Stigmatization
- F. Counselling, Education, Skills Training, Gainful Employment

Notwithstanding the fact that SVTP has a functioning Grievances Redress Mechanism (GRM) through which these cases can be reported and addressed, Malawi Government laws, policies and strategies and other international instruments shall be adhered to when handling cases of sexual abuse and gender-based violence emanating from implementation of sub-projects under SVTP. Some of the instruments that SVTP will trigger in handling GBV cases are as in Table 1 below.

SN	ITEM	DESCRIPTION
1	International instruments	• International Covenant on Civil and Political Rights of 1966 • Convention against Torture and Other Forms of Cruel, Inhuman or Degrading Treatment or Punishment 1984 (CAT) • Convention for the Elimination of Discrimination Against Women (CEDAW) • Convention on the Rights of a Child (CRC)
2	National Legislations	• Constitution of the Republic of Malawi (especially the Bill of Rights and section 24, among others), stipulates that no person shall be discriminated against based on gender and that all persons shall be protected against any form of violence. • Gender Equality Act of 2013 • Trafficking in Persons Act of 2015 • Child Care, Protection and Justice Act 2010 • Marriage, Divorce and Family Relations Act of 2015
3	National Policies	• National Gender Policy 2015 (priority area 7)
4	National Strategy	• National Action Plan to Combat Gender Based Violence (2016–2021)

4.5 The Role of Formal Justice Systems

It is emphasized that this GRM is meant to complement, and not to replace or substitute for, formal justice systems. Whilst stakeholders are encouraged to use this GRM as the first point of seeking justice, aggrieved parties can also approach formal courts or report to police and Ant-Corruption Bureau, Office of the Ombudsman without necessarily going through the Grievances Redress Committees established under this GRM. In particular, grievances of criminal nature such as corruption, coercion, theft, rape, gender-based violence or systematic violations of rights and/or policies committed within the perimeters of the SVTP project may warrant direct redress through the courts, ACB, Police and other administrative law procedures. Workers grievances can be re-directed to Workers Unions and Labour Offices, as applicable.

5.0 Implementation Process for the SVTP GRM

5.1 The GRM Operation Process

This Section describes steps that can be followed to ensure efficiency and effectiveness of the GRM. Figure 2 summarises the GRM process.

Step 1: Contact and Dialogue between the Aggrieved Party and the ‘Respondent’. Where possible, the first step in the GRM should be contact and dialogue to reach an amicable position before it is formally lodged with a GRC. For example, an aggrieved worker and a contractor can enter into a dialogue to find an amicable solution. Or Aggrieved Party can first approach concerned implementing agency (‘Respondent’) to try and reach a negotiated position or for guidance on the matter at hand. A third party (e.g. local leaders) can be engaged to mediate the process. Regardless of the outcome, the matter will be reported to relevant committee for record purposes.

Step 2: Lodge a complaint. The Aggrieved Party should formally lodge a complaint with the relevant Grievances Redress Committee. For example, if the issue concerns a number of villagers in a village, the complaint should be lodged with Community Redress Committee. Where the complaint is against a District Council, for example, the grievances can be lodged with the National Project Grievances Redress Committee.

At each level of Grievances Redress Committee, there will be a Grievance Log and Resolution Form (see Annex 5) to record the complaint (see Annex 6 for copy of the Form). Each grievance

will be assigned a number. Secretary of the Committee will complete the Form or will help the Aggrieved Party to fill in the Form. Both the Secretary and the Aggrieved Party and their witnesses (one for the Committee and one for the Aggrieved Party) will sign the Form (Complaint section of the Form) to confirm that what has been recorded is true reflection of the grievance as reported by the Aggrieved Party. A copy of the Form shall be forwarded to the SVTP Project Implementation Unit for record purposes.

Step 3: Assessment, Response and Closure. Within 14 days of receiving a complaint, the Grievance Redress Committee will meet to consider the grievance and provide a response to the complaint. The Committee shall assess whether the complaint or grievance is related to SVTP project or not. For non-SVTP related grievances, the Committee will advise appropriate institutions with which to lodge the complaint. For SVTP complaints or grievances, the Committee shall first of all make necessary follow ups to establish the truth of the matter and to confirm that the complaint is indeed genuine. The outcome of the analysis shall be communicated to both the Aggrieved Party and the Respondent.

The Committee shall be required to complete Resolution section of the Grievance Log and Resolution Form to provide clear decision that has been arrived at in respect to the complaint. A copy of the Form shall be forwarded to the SVTP Project Management Team for record purposes.

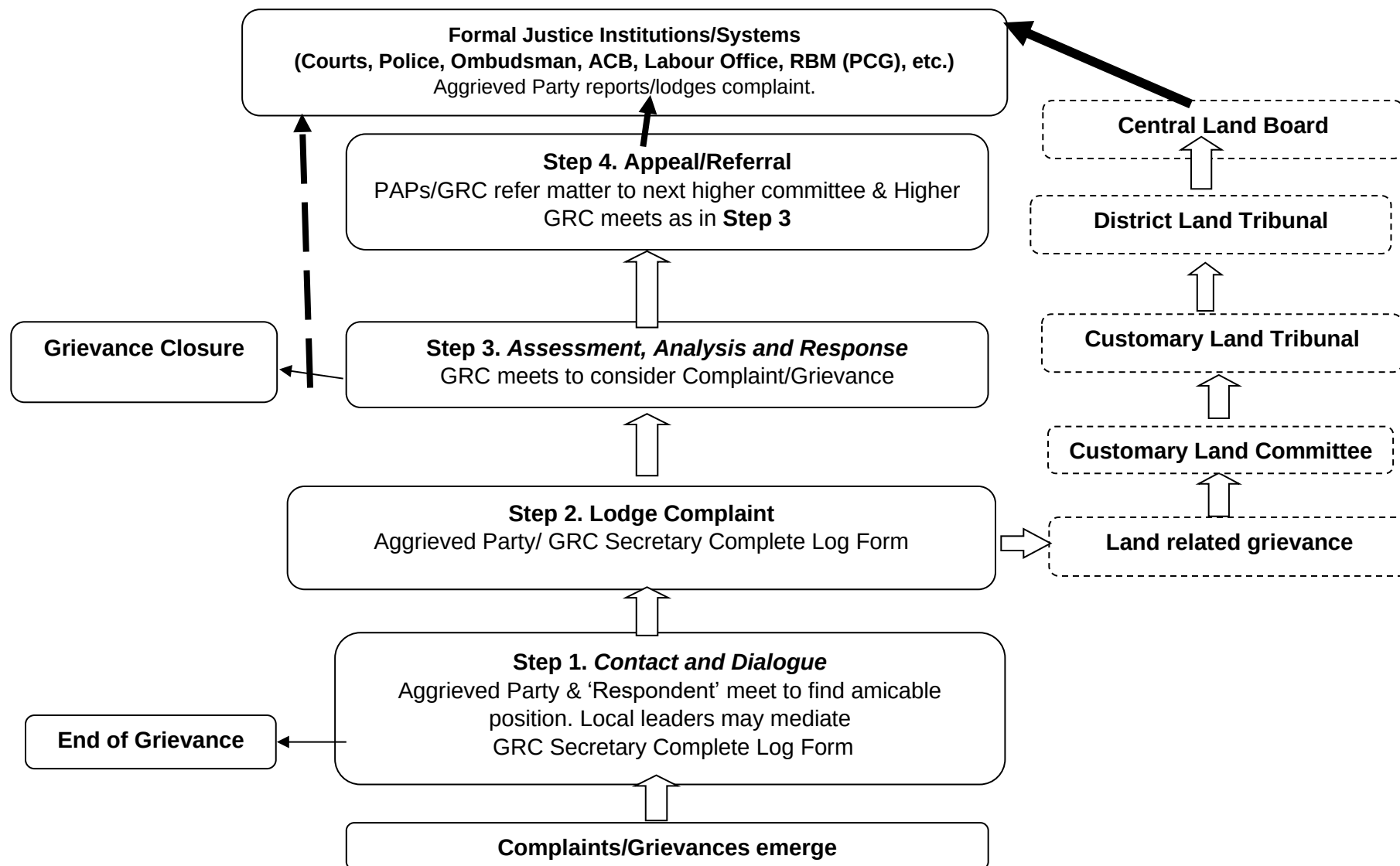
Where the grievance involves two parties (e.g., a project contractor and a worker or a community or in case of corruption allegations, etc.), a Hearing can be arranged as a matter of natural justice to accord both parties to present their side of the story. The outcome of the analysis of the Hearing by the Committee shall be communicated to both parties (the Aggrieved Party and the ‘Respondent’).

Closure within 14 days of receiving response from the Grievance Redress Committee (GRC), the Aggrieved Party shall be required to sign the Closure section of the Grievance Log and Resolution Form to confirm that the response is satisfactory and that the grievance is resolved and closed. Where the grievance involves two parties (e.g., a project contractor and a worker or a community or in case of corruption allegations), both the Aggrieved Party and the ‘Respondent’, shall be required to sign the Closure section of the Grievance Log and Resolution Form. A copy of the form shall be forwarded to the Project Implementation Unit for record purposes. An electronic database will be established for this purpose.

Step 4: Appeal. Within 14 days of receiving response from the Grievance Redress Committee, the Aggrieved Party or the ‘Respondent’, shall be required to sign the Appeals section of the Grievance Log and Resolution Form to confirm intention to appeal to the next higher Grievances Redress Committee. The Committee retains a copy while another copy is given to the Aggrieved Party to present to the appeal Committee (the next higher Committee). A copy of the Form shall be forwarded to the SVTP Project Management Team (PMT) for record purposes.

The higher Committee to which the grievance has been referred shall handle the grievance as explained in Step 3 above (Step 3: Assessment, Analysis and Response).

Figure 2: The GRM Process



5.2 Alternative Grievance and Feedback Routes

Notwithstanding the GRM process described in Steps 1-4 above, some grievances can be lodged directly with the Project Management Team (PMT). Individuals, Communities and Stakeholders are also free to report anonymously through the SVTP Project Coordinator (for the attention of the Social Safeguards Specialist). The PMT will facilitate the redress process by engaging relevant Committees and following Steps described above.

The grievances and feedback can be lodged in any major languages of Malawi and through any of the following methods/channels:

- (1) Through the GRM Committees
- (2) In Person: By visiting SVTP Project Offices located off Chilembe Road in Namiwawa. Suggestion boxes will also be placed within SVTP offices for written grievances.
- (3) Through Post Office: by sending a letter in any major language of Malawi to the following address:

The Project Coordinator,
Shire Valley Transformation Project
Private Bag 379, Blantyre.
- (4) By Email: emails can be sent to the following address: grm@svtp.gov.mw

Notwithstanding the different reporting and feedback options, SVTP advocates for the use of the established committees, where possible. It is also emphasised that it is the expectation in the SVTP GRM that all grievances are addressed and resolved within 14 days to ensure that project implementation timelines and overall schedules are not compromised due to delays in resolving the grievances.

5.3 Access to the World Bank and African Development Bank GRM

It is recalled that the SVTP project is funded by the World Bank and African Development Bank, who have their own Grievances Redress Mechanism as part of social safeguards policies. The World Bank's procedure is known as a Grievance Redress System (GRS). Aggrieved Party may also lodge their complaints directly to the Bank's independent Inspection Panel through World Bank Country Office in Malawi. Complaints can also be submitted through email address for the World Bank's GRS is malawialert@worldbank.org or grievances@worldbank.org.

The African Development Bank (AFDB) also has an Independent Recourse Mechanism (IRM) which addresses complaints from individuals, communities, workers who believe they

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have/might been affected by an AFDB financed project. Complaints can be submitted through Email IRM@afdb.org or by telephone +225 27 20 26 29 00 (IRM Front Office).

The PMT will conduct public sensitizations on the World Bank GRS and AFDB IRM. The Government of Malawi through the SVTP Project will therefore ensure that stakeholders, communities and individuals are aware of these available systems.

6. Managing an effective GRM

Managing effective GRM demands that the GRM is well understood by potential users and implementers of the GRM. There must be good coordination of the GRM, and that the GRM has to be well resourced.

6.1 Public Awareness of the GRM

The GRM will occupy a central place in the SVTP Communication strategy to create public awareness of the GRM. The information, education and communication activities to publicise the GRM will include TV/Radio advertisements, public sensitization meetings at national, district and community levels, distribution of SVTP GRM brochures in public places. Part of the public awareness to make the GRM accessible will involve translating the English version of the GRM and the accompanying Forms into Chichewa, a local language many can read and write.

6.2 Resourcing the GRM

The Government of Malawi is committed to implementing an effective SVTP GRM that serves the purpose. For this reason, the Government through the Project is committed to providing adequate resources for the GRM processes. Relevant Forms will be made available at each GRC level (National, District, and Community). Additional stationery will also be provided at these levels to facilitate the GRM processes. Step 3 in the GRM process demands that the Committee meets to consider the grievance. Part of the meeting will involve conducting assessment and verification of the grievance. The Committee is also mandated to provide the PMT with copy of the Grievance Log and Resolution Form. Some costs may be incurred in undertaking these activities (e.g., refreshments, transportation, and communication). The PMT is committed to providing adequate resources to all the Grievance Redress Committees (GRCs) so that they are effective in the operations.

6.3 Capacity Building

The GRM Committees will be trained on the GRM process and Steps to ensure that they perform their roles effectively and with speed to the satisfaction of the aggrieved parties and project expectations.

6.4 GRM Progress Monitoring

It is recognised that the SVTP Project has a robust M & E system, which will track progress and outcomes of the GRM as part of the broader M & E framework for the project. However, on a routine basis, it will be the responsibility of the Social Safeguards Specialist for SVTP project to monitor the performance of the GRM. This will be achieved in two ways. The first way is for the Committees to submit to PMT copy of the Grievance Log and Resolution Form. The second way is for Aggrieved Party to provide direct feedback to the SVTP PMT regarding progress of their grievances, especially where the progress is slow. The PMT will also conduct review quartley review meetings with the GRCs to discuss grievances reported in that quarter and how lessons learnt can be incorporated in the process for future effectiveness of the mechanism.

6.5 Coordinating the GRM

The Social Safeguards Specialist working through the SVTP Project Coordinator will coordinate the implementation of the GRM.

GRM STRUCTURES

1. GROUP VILLAGE GRIEVANCE REDRESS COMMITTEE (GVGRC)

Where relevant this is where grievances can first be lodged. If a case at the GVGRC is not closed, the grievance shall be referred to the area grievance redress management committee (AGRC). The PAP shall be informed that his/her case was referred to the higher committee for hearing. The GVGRC shall receive and record the cases referred to it and convene a meeting to have the issues resolved. This committee shall hear the case lodged by the PAP and come up with a decision within 14 days. If the PAP is satisfied with the decision, the case will be closed. Membership of the GVGRC shall include:

a) Composition

1. Representative from Village Development Committee (VDC)
2. Representative from Child Protection
3. Representative from Women's Forum
4. Representative from Community Based Organisation (CBO)
5. Representative from Government (Secretary) – Extension worker of the area
6. Representative from Customary Land Committee (CLC), Land Clerk
7. Representative from Community Policing Forum
8. Representative from Youth Network
9. Representative from Pastors Fraternal
10. Group Village Head Ex-Official
11. Gender Based Violence (GBV) Champion
12. Traditional Authority (Should need arise and case specific)
13. Lead farmer Representative
14. Extension Workers from Parks, Forest and Fisheries
15. Fisheries Assistants
16. Zone Committee Representatives

b) Terms of Reference of the VGRMC

- Receive and address any concerns, complaints, notices of emerging conflicts, or grievances (collectively “Grievance”) alleging actual or potential harm to affected person(s) arising from Project;
- Assist in resolution of Grievances between as brought by complainants;

- Conduct itself at all times in a flexible, collaborative, fair and transparent manner aimed at problem solving and consensus building.
- In addition to resolution meetings, GVGRMC shall conduct quarterly meetings at village level among committee members to discuss lessons learnt.
- Conduct quarterly review meetings with other grievance committees

2. AREA/TRADITIONAL AUTHORITY GRIEVANCE REDRESS COMMITTEE (TAGRC)

If a case at the VGRC is not closed, the grievance shall be referred to the area grievance redress management committee (AGRMC). The PAP shall be informed that his/her case was referred to the higher committee for hearing. The AGRMC shall receive and record the cases referred to it by the VGRC. This committee shall hear the case lodged by the PAP and review the decision made by the VGRMC. If the PAP is satisfied with the decision, the case will be closed. The area development committee (ADC) will be appraised of the decision made by the AGRMC.

a) Composition

Membership of the AGRMC shall include:

1. Representative from Area Development Committee (ADC)
2. Representative from Child Protection
3. Representative from Women's Forum
4. Representative from Community Based Organisation (CBO)
5. Representative from Government (Secretary) –Extension worker of the area
6. Representative from Land Tribunal
7. Representative from Community Policing Forum
8. Representative from Youth Network
9. Representative from Pastors Fraternal
10. Traditional Authority– Ex-official
11. Group Village Head (Should need arise and case specific)
12. TA level Gender Based Violence (GBV) Champion
13. Lead farmer Representative
14. Representative from Lengwe and Elephant Wildlife Association and Elephant Marsh`
15. Forest Board

b) Terms of Reference of the AGRMC

- Receive and address any concerns, complaints, notices of emerging conflicts, or grievances (collectively “Grievance”) alleging actual or potential harm to affected person(s) arising from Project as referred from the VGRMC;
- Assist in resolution of Grievances between as brought by complainants;
- Conduct itself at all times in a flexible, collaborative, fair and transparent manner aimed at problem solving and consensus building.
- In addition to resolution meetings, TAGRMC shall conduct quartley meetings at TA level among committee members to discuss lessons learnt.
- Conduct quarterly review meetings with other grievance committees

3: DISTRICT GRIEVANCE REDRESS COMMITTEE

District level in the event that the case is not closed by the AGRMC, the case shall be referred to the district grievance redress and management committee (DGRMC). The DGRMC shall invite the affected person to the hearing of the case and review the decisions made earlier by the two lower committees. If the PAP accepts the resolution, the case is closed at this level. Membership of the DGRMC shall include:

- Director of Administration - Chair
- District Environmental Officer - Secretary
- District gender officer
- Social welfare officer
- District labor officer
- District community development officer
- District Ombudsperson
- District Forest Officer
- Judiciary representative
- CCJP Team Leader
- Victim support unit representative,
- District NGO network representative
- Officer responsible for M & E
- District irrigation Officer (Project Technical specialist)- Co-secretary
- Division Manager
- Reserve Manager: Lengwe, Mwabvi
- African Parks
- Zone Manager, South

4. PROJECT GRIEVANCE REDRESS COMMITTEE

In the event that the case is not closed by the DGRMC, the case is referred to the Project Grievance Redress management committee (PGRMC). The PGRMC shall invite the affected person to the hearing of the case and review the decisions made earlier by the three lower committees. Where need be, the PGRMC shall liaise with the project steering committee so that a resolution can be made on the case at hand. If the PAP accepts the resolution, the case is closed at this level. Membership of the NGRMC will include representatives of the key stakeholder institutions of social support programmes, including:

a) Composition

- Chairperson of SVTP Project Technical Committee (PTC) - Chairperson
- Project Coordinator - Secretary.
- Ministry of Lands, Housing and Urban Development – Director of Planning
- Ministry of Local Government - Director of Chiefs Administration
- Ministry of Justice and Constitutional Affairs – Office of the Attorney General
- Ombudsman
- Ministry of Labour – Director of occupation health and safety
- Ministry of Environment and Climate change –Director of Environmental Affairs Department
- Ministry of Tourism
- Social welfare – Director
- Forestry- Director
- Parks – Director
- Fisheries - Director

Ex-officio

- District Commissioner from where the grievance originated
- District Agriculture Development Officer (DADO) from where the grievance originated
- TA from where the grievance originated
- GVH or Village Head from where the grievance originated
- Where applicable, a representative of a contractor or consultant employees

5. WORKERS GRIEVANCE REDRESS COMMITTEE

This committee shall be constituted to provide employees with a platform to lodge their grievances regarding their welfare. To be effective, the committee shall be composed of workers' representatives, the client (SVTP), the Contractor and Consultant. The committee shall receive workers' grievances, relay them to management for redress and communicate with the workers. The chairperson and secretary shall be chosen among themselves.

Composition

1. Four worker representatives (with female representation)
2. Client representative
3. Consultant representative
4. Contractor representative
5. District Labour Officer
6. CCJP representative

APPENDIX 6: LABOUR MANAGEMENT PROCEDURES



GOVERNMENT OF MALAWI

MINISTRY OF AGRICULTURE

SHIRE VALLEY TRANSFORMATION PROGRAMME II (SVTP-2)

LABOUR MANAGEMENT PROCEDURES

June 2023

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	Village Level Action Plan

WGRMC

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.

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.

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.

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.

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

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.

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 individual¹ "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 consolidated 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

¹ 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.

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.

the Phase II project area.

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.

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.

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 STVP II as the only possible off-taker, ILLOVO has signaled that it has no capacity for additional sugarcane processing.

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 pathways², 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.

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.

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

² 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.

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.

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.

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.

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.

Component 4 –Strengthening Landscape and Natural Resources Management in The Lower Shire

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.

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.

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.

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.

Component 5 – Project Management, Coordination, and Communication

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.

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 labour, 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 chain, 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.

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 and 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.

Potential Risks**Mitigation measures**

Contractor's noncompliance with local labour laws and regulations-Lack of protection for workers

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- 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.

Increased risk of influx of migrant workers- Competition over local resources

-
- Sensitize workers on labour related issues and regulations to ensure that the contractor is compliant.
- 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.

Gender Based Violence-Suppression of women rights

-
- 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

Child labor-Disturbance of child's education, health and safety

- Sensitize surrounding communities on issues of child labour;
- Employ people that are aged 18 and above;
- Prepare and adopt a child labor policy

Risk of contracting HIV/AIDS-Risk extended to both workforce and local Community

- 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

Sexual Exploitation and Abuse-Both for workforce and local communities particular under aged girls

- 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

Discrimination and exclusion of vulnerable groups;

- Development of WGRM
- Development of deliberate policy for gender equality

Potential Risks

Mitigation measures

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.

- 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.

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, safely, 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 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 IFC Guidance Note 2: Labour and Working Conditions

Guidance Note 2 provides guidance on such areas as working conditions and terms of employment, retrenchment, grievance mechanism, workers’ accommodation and occupational health and safety (OHS) issues. Some of these requirements refer the client to the applicable national law. Where national law establishes standards that are less stringent than those in Performance Standard 2 (Labour and Working Conditions), or are silent, clients will meet the requirements of Performance Standard 2.

In the identification of labor risks and impacts, the note requires that clients should engage with workers and with representatives of workers' organizations. In order to strengthen the process of identifying risks and impacts, engagement could also include workers' organizations at a sector level and labor inspectorates. Actions identified through the risks and impacts identification process and needed to achieve compliance with national law and the requirements under Performance Standard 2 will become part of the management program outlined in Performance Standard 1 and its accompanying Guidance Note. This process will allow the client to design or update its human resources (HR), employment, contracting and purchasing policies and procedures in ways that enhance the long-term viability and success of the business while safeguarding the rights of workers.

5.8 AfDB Operational Safeguard (OS) 5 of the African Development Bank on International Labour 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.

5.9 Comparison between ESS2, OS5 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.

A. Environmental

- i) [Air Emissions and Ambient Air Quality](#)
- ii) [1.3 Wastewater and Ambient Water Quality](#)
- iii) [Water Conservation](#)
- iv) [1.5 Hazardous Materials Management](#)
- v) [Waste Management](#)
- vi) [Noise](#)

B. Occupational Health and Safety

- i) General Facility Design and Operation
- ii) Communication and Training
- iii) Physical Hazards
- iv) Chemical Hazards
- v) Biological Hazards
- vi) Radiological Hazards
- vii) Personal Protective Equipment (PPE)
- viii) Special Hazard Environments
- ix) Monitoring

C. Community Health and Safety

- i) Water Quality and Availability
- ii) Structural Safety of Project Infrastructure
- iii) Life and Fire Safety (L&FS)
- iv) Traffic Safety
- v) Transport of Hazardous Materials
- vi) Disease Prevention
- vii) Emergency Preparedness and Response

D. Construction and Decommissioning

- i) 4.1 Environment
- ii) Occupational Health and Safety
- iii) 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 24 hours 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, 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 basic principles for both African Development Bank, World Bank and all the stakeholders' requirements is that the established GRM is credible, independent and empowered, able to receive, facilitate and follow up on the resolution of affected people's grievances and concerns about the environmental and social performance of the project. The GRM shall be accessible to the stakeholders at all times during the project cycle, and all responses to grievances shall be recorded and included in project supervision formats and reports. The GRM shall be structured as below:

Mechanisms to redress grievances are a prerequisite for large infrastructure interventions where people's key economic productive assets are acquired for a public purpose. This has a likelihood of leaving the Project Affected Persons (PAPs) vulnerable to multiple risks including change of occupation, lowering of income levels and lack of support systems. Hence, it is important to integrate a grievance redress mechanism that addresses concerns of the PAPs and provides for redress effectively and in a time-bound manner within the legal framework to ensure:

- a) that the aggrieved person is satisfied; and
- b) such grievances do not become contentious issues, leading to opposition to the proposed development Programme.

Further, it is essential that grievance redress mechanisms are devised, keeping in mind the socio-cultural setting and in accordance with the provisions of the legal system.

A grievance redress mechanism is critical to effectively addressing any issues arising during the Programme implementation; and for Programme monitoring and evaluation. Grievance Redress mechanisms (see Grievance Mechanism Checklist in Annex 5), if included in the Programme design, planning and management; help to realise the Programme objectives effectively. This requires setting up appropriate channels to address individual or community concerns, prevent adverse consequences and risks, bring out Programme implementation related issues and corrupt practices if any. Such effective mechanism also brings out positive changes in people's lives as well as enhanced feeling of being important stakeholder in the Programme. Affordable and accessible procedures for settlement of disputes arising from

resettlement should include the availability of judicial recourse and community and traditional dispute settlement mechanisms.

8.1 The Aim of the grievance redress mechanism

The aim of the grievance redress mechanism is to facilitate quick and fair response, clarification and settlement; or redress to any grievances, complaints and queries; and to quickly and fairly clarify to complainants as well as stakeholders, in a manner that is acceptable to all parties. The general approach is to respond to issues and seek solutions to problems in the earliest stage and avoid taking complaints to courts for redress.

The key objectives of a grievance redress mechanism in a resettlement action plan typically include:

1. Ensuring that affected individuals or communities have easy access to the mechanism and are aware of their rights to raise grievances or complaints.
2. Establishing a transparent and accountable process that provides clear information on how grievances can be submitted, processed, and resolved.
3. Ensuring that the mechanism operates in a fair and impartial manner, treating all parties involved with respect and without bias.
4. Promoting a timely resolution of grievances, with clear timelines for acknowledgement, investigation, and response to complaints.
5. Providing appropriate remedies and compensation to address the harm or losses suffered by affected individuals or communities, in line with relevant laws, regulations, and project commitments.
6. Utilizing the mechanism to gather feedback, monitor trends, and identify systemic issues to improve future project planning and implementation.

In the implementation of the GRM for this Programme, the procedures shall ensure the following:

1. Simple, straightforward and accessible ways for raising concerns, making complaints or resolving any disputes that may arise due to the implementation of the Programme;
2. Identification and implementation of appropriate and mutually acceptable processes and actions to address complaints;
3. Feedback that is treated confidentially, assessed impartially, and handled in a transparent manner
4. Satisfaction of the complainants, with the outcomes of the corrective processes and actions;
5. Facilitate the complainants to report their grievances, queries and/or comments through the process; and
6. Avoidance of the tendency to resort to judicial proceedings.

8.11 Likely grievances

Even with adequate implementation of the RAP and appropriate compensation, involuntary resettlement inevitably gives rise to grievances among the affected population and with the developer. Usually, the grievances arise over issues ranging from rates of compensation and eligibility criteria, to disturbances and other issues during construction. The types of grievances

that could occur during Programme planning and design, RAP implementation and construction stages are indicated in table 8.1.

Table 12.1: Types of grievances

Stage	Types of grievances (indicative)
RAP Implementation followed by Construction	i) non-payment for improvements carried out to structures post survey and valuation but prior to compensation payments; ii) mode of payment of compensation and time delays; iii) not enough work during construction and dissatisfaction over wages given; iv) wrong identification of livelihood restoration schemes, their inadequacy, training support and lack of necessary assistances; v) increased cases of HIV/AIDS due to in-migration; vi) Noise and disturbance from construction activities vii) likelihood of increase in Gender Based Violence (GBV); viii) loss of access to services and sources of livelihoods; ix) restrictions or delays on access to irrigation water and farm inputs; x) loss of property due to theft allegedly by construction personnel; xi) loss or damage to crops and property by ongoing construction work; xii) inadequate support in relocating to resettlement sites/replacement structures

8.2 Composition of Grievance Redress Mechanism

A Grievance Redress Mechanism (GRM) has been set up to address various types of grievances, relocations, and entitlements associated with the Programme. The GRM operates under the oversight of the SVTP Programme Management Team (PMT). It is led by the Social Safeguard Specialist and assisted by a Communication Officer, Environmental Safeguard Specialist, and Monitoring and Evaluation Specialist, all under the supervision of the Project Coordinator.

The composition of the grievance committee at the district and lower levels remains the same as used in phase one of the project. However, for phase two, new committees have been established specifically in areas where the project will be implemented. These committees play a crucial role in ensuring the effective functioning of the Grievance Redress Mechanism and addressing grievances in a timely and appropriate manner.

In an effort to promote conflict resolution, Chikwawa and Nsanje have established Grievance Redress Committees (GRCs) at the community level. In Chikwawa, there are a total of 45 committees, with 41 located at the community level, 3 at the area level, and one at the District level. Similarly, in Nsanje, there are 18 committees, with 16 located at the community level, 1 at the area level, and one at the District level. On average, each committee has eight members. It is worth noting that most of these committees were pre-existing in the community, and the project adopted them, but in some cases, new committees were elected.

To ensure effective functioning of the Grievance Redress Committees (GRCs), a member of staff from the District Commissioner's (DC's) Office is assigned to each committee as the

secretary. The secretary is responsible for record-keeping and follow-up on cases for timely resolution. This support ensures that the committees run smoothly, and grievances are resolved in a timely and efficient manner. As of April 2023, training had already been conducted for the GRCs in Chikwawa. In Nsanje, training is still ongoing and is expected to last until the second week of May 2023. This training will further equip the committees with the necessary skills and knowledge to carry out their duties effectively.

The main responsibilities of the PMT in the GRM include overall management of the GRM, including but not limited to managing the grievance redress process and procedures; registration of complaints; capacity building of the grievance committee(s), outreach and external communications; tracking performance and monthly reporting. The SSS is the overall responsible person for implementation of the GRM, while the Communication Officer is responsible for building community capacity on handling grievances, accessing the Shire Valley Transformation Programme Grievance Redress Mechanism and creating demand for the GRM through information, education and communication activities. The field officers under the DC's office are responsible for mobilising and supporting communities (PAPs) to access and use the Grievance Redress Mechanism.

The PMT has operationalized the GRM structures at GVH, TA and District level to ensure that PAPs have easy access to legitimate, reliable, transparent, and efficient institutional mechanisms that are responsive to their complaints. As much as there are different tiers of the redress mechanism, PAPs will be free to use any facility they deem approachable and efficient to them. However, the design of the GRM is to ensure that grievances are resolved at the lowest tier and, as much as possible, avoid escalating cases to higher levels. But the decision to appeal to higher levels will solely lie in the hands of the aggrieved person. A PAP representative will sit in all the different grievance levels and where necessary the system will ensure that there is female, youth and the vulnerable representation by co-option. The proposed composition of the committees and their roles and responsibilities are presented in Table 8.2.

Table 12.2: Proposed Composition and roles and responsibilities of the Grievance Redress Committees

Grievance Redress Committee	Operational level	Members	Roles and Responsibilities
Community Grievance Redress Management Committee (CGRMC)	Group Village Headman/Woman	• Representative from Village Development Committee (VDC) • Representative from Child Protection • Representative from Women's Forum • Representative from Community Based Organisation (CBO) • Representative from Government – Extension worker (Secretary) • Representative from Customary Land Committee (CLC) • Representative from Community Policing Forum • Representative from Youth Network • Representative from Pastors Fraternal • Group Village Head/ Traditional Authority • Cooperative member Representative • One influential person who is development oriented	• Providing local oversight for the other committees and the Shire Valley Transformation Programme (SVTP) • Acting as the voice of the villagers and as a point of contact with the SVTP GRMC and the other committees. • Acts as the voice of SVTP CGRMC in communicating messages to all community members, in particular women through a female committee representative. • Overall responsibility for reporting the Programme success and grievances to SVTP CGRMC and ensuring that the grievances are addressed in a timely manner. • Recording grievances in GRM project logbooks. • Overall responsibility for communicating with the complainant regarding progress of the grievance resolution. • Acts as SVTP CGRMC local monitoring and oversight on grievance management. • Responsible for documenting community meeting minutes, where required; including taking a register of the participants. • Responsible for organising community meetings or meetings between SVTP CGRMC and the complainant, where required. • Responsible for organising VGRC meetings.
Area Grievance Redress Committee (AGRC)	Traditional Authority Level	• Representative from Area Development Committee (ADC) • Representative from Child Protection • Representative from Women's Forum	• Receiving and redressing grievances that have been referred to the Area Grievance Redress Committee by the CGRC

Grievance Committee	Redress	Operational level	Members	Roles and Responsibilities
			● Representative from Community Based Organisation (CBO) ● Representative from Government - Agriculture Extension Development Coordinator (Secretary) ● Representative from Customary Land Tribunal (CLT) ● Representative from Community Policing Forum ● Representative from Youth Network ● Representative from Pastors Fraternal ● Traditional Authority/Paramount Chief ● Cooperative member Representative ● One influential person who is development oriented	● Providing direction and advice to the CGMC committee on grievance redress procedures and practices ● Referring grievances that the committee cannot redress to the DGRC ● Acts as the voice of DGRC in communicating messages to the CGRC, in particular women through a female, youth and the vulnerable committee representatives. ● Overall responsibility for monitoring and reporting the Programme success and grievances to the DGRC and ensuring that the grievances are addressed in a timely manner. ● Responsible for documenting community meeting minutes, where required; including taking a register of the participants. ● Responsible for organising community meetings or meetings between DGRC and complainants, where required. ● Responsible for organising AGRC meetings
District Redress (DGRC)	Grievance Committee	District level	● Chair – Director of Planning and Development ● Co-Chair – Director of Administration ● Secretary – District Environmental officer ● District Gender officer ● Police representative ● Judiciary representative ● District Lands Officer ● Civil Society Organisation representative	● The District Commissioner's office acts as the main contact for SVTP GRMC in reporting and the coordination of grievances resolving. ● Acts as the Secretariat for the DGRC and as the second point of contact for SVTP GRMC. ● Consolidates grievances and support the tracking of grievances ● Responsible for reporting on land and compensation related community grievances and for tracking the resolution of grievances and communicating with the aggrieved person

Grievance Redress Committee	Operational level	Members	Roles and Responsibilities
		● District Labour Officer ● District Social Welfare Officer ● District Community Development Officer ● Non-Governmental Organisation representative.	● Responsible for reporting and tracking any planning related grievances to the SVTP GRMC and providing support in establishing a resolution, where required ● Responsible for reporting and tracking any grievances related to health, safety and security; in particular, related to sexual harassment, worker-community interaction, gender-based violence or other social welfare issues to the SVTP GRMC.
Central Grievance Redress Committee	National level	● PMT – Secretariat ● Representative of the Ministry of Natural Resources and Climate Change. ● Representative of the Ministry of Civic Education and National Unity. ● Representative of Ministry of Gender, Children, Disability and Social Welfare ● Representative of the MoA ● Representatives and Ministry of Lands, Housing and Urban Development ● Representative of the Ministry of Local Government and Rural Development	● Providing policy and direction to the DGRC and monitoring grievance redress activities at national level. ● Assisting in the resolution of grievances that cannot be addressed at the district level ● Organising meetings and workshops for reporting and giving feedback on grievance resolution activities at national level. ● Facilitating high level evaluation, monitoring and reporting on grievance management.

8.3 Grievance redress procedures

It is important to recognise that this GRM will cover grievances beyond land conflicts. At the same time, stakeholders and the GRM Committee members at all levels need to understand that, under the Customary Land Act (CLA), there is a structure established to handle land conflicts. These are the Customary Land Committees, Customary Land Tribunals, District Land Tribunals and Central Land Board which are at Group Village Head level, Traditional Authority, District, and national levels. Field officer and all the committees have been trained on this matter and have been made aware that it is crucial to ensure that these structures are recognised and used for grievances relating to land matters.

The success of the Programme will largely depend on the PAPs accepting the compensations and the successful redress of grievances. It is therefore necessary to provide an accessible and credible means for PAPs to pursue and report grievances. The institutions or persons where grievances can be reported to include the following:

- a) Community Grievance Redress Committee;
- b) Area Grievance Redress Committee;
- c) District Grievance Redress Committee;
- d) Central Grievance Redress Committee; and
- e) The Courts of Law

Channels (modes of communication) for reporting the complaints and grievances can be verbal (in person), by telephone (calling, sending an SMS or an email), letter, official webpage or social media.

The key steps for grievance redress are elaborated as follows:

Step 1: Contact and Dialogue between the Aggrieved Party and the 'Respondent'.

Where possible, the first step in the GRM should be contact and dialogue to reach an amicable position before it is formally lodged with a GRC.

Step 2 – Lodging of grievances.

As a second step, all complaints and grievances relating to any aspect of the Programme are to be lodged to either the secretary of CGRC as receivers who will hear and try to resolve the grievance. The secretary analyse the grievance and advises the complainant on the way forward. If the grievance is addressed, there will be no further action. If the complaint is not addressed and it has been analysed that it is project related, it will be referred to the Community Grievance Redress Committee or Customary Land committee (Step 3).

Step 3 – Grievance redress at the Community Grievance Redress Committee Level

Complaints that are not resolved at Step 2 are referred to the Community Grievance Redress Committee (CGRC) which shall investigate and rule within 14 days. The CGRC shall record and maintain a register of all complaints/ grievances received so that these can be kept collectively in one place. The register will be fed into the RAP Database. At this step, all cases (except land disputes, which must be referred to the Customary Land Tribunal) are to be heard by the CGRC and addressed through consultations conducted in a transparent manner; and aimed at resolving matters through consensus. Minutes of the CGRC meetings shall be kept

and if the resolution proposed by the CGRC or the Customary Land Tribunal is accepted by the PAP, the PAP will sign the grievance redress form (Annex 6) to show agreement. The grievance will subsequently be closed; otherwise, Step 4 will be followed in an appeal. A period of 14 days is provided to hear and redress the grievance. The SVTP shall facilitate the formation of the Community Grievance Redress Committee (CGRC).

Obligations of the CGRC

During the first meeting of the committee, the members shall be introduced to the chairman and elect a vice chairman and secretary from amongst themselves. The two shall serve in that capacity for one (1) year. The Committee must:

- Ensure representation of the youth, women and vulnerable groups at community meetings;
- Enforce transparency and accountability, in line with SVTP requirements at all times;
- Hold committee meetings, as follows;
 - Meet twice in a month for the first six months and ongoing during the construction phase (or more frequently if the situation demands).
 - During construction, the committee must meet monthly, or as required and agreed.
- Attend a short training session, by the Shire Valley Transformation Programme (SVTP) Grievance Redress Management Committee (GRMC), on the following;
 - Approach to the grievance process and response times;
 - Administrative framework governing the Programme, particularly the ADB and World Bank requirements;
 - Confirming the roles and responsibilities of representatives and meeting requirements.

Step 4 – Grievance redress at Area Grievance Redress Committee level

If the complainant does not receive any response from the GVGRC within 14 days of lodging the complaint, or that the complainant is not satisfied with the response, then the issue will be appealed to the Area Grievance Redress Committee (AGRC). This committee will work hand in hand with the Customary Land Tribunal which will investigate and rule within 14 days. During the appeal to the AGRC, all the necessary details will be attached, and the Complainant will be accordingly notified of the venue, date and time set for hearing and a resolution must be made within 14 days' time. If the resolution proposed by the AGRC or the Customary Land Tribunal is accepted by the PAP, the PAP will sign the grievance form to confirm agreement; and the grievance will subsequently be closed. Otherwise, the complaint will be referred to the District Grievance Redress Committee and the District Land Tribunal.

Step 5 –Grievance redress at the District Grievance Redress Committee level

If the complainant does not receive any response from the AGRC within 14 days of lodging the complaint or if the complainant is not satisfied with the response, then the issue will be appealed to the District Grievance Redress Committee (DGRC), which shall work hand in hand with the District Land Tribunal. The DGRC is to hear and pass a resolution within 14 days. If the resolution is accepted by the PAP, the PAP is to sign the grievance form to confirm

agreement; and the case will subsequently be closed; otherwise, the complaint will be referred to the Central Grievance Redress Committee (Step 6).

The DGRC will capture, and track grievances related to land, environment, development and social welfare, when such issues are reported by Project affected people or other stakeholders.

12.2.1.1.1

Obligations of the DGRC

The District Grievance Redress Committee must:

- Represent interests of affected communities and key stakeholders in the district and work together with the District Land Tribunal on land matters;
- Support SVTP in identification of affected persons, replacement land and land acquisition processes as and when required, in line with international requirements, with guidance from SVTP;
- Have representatives for reporting and tracking grievances arising from land acquisition and other Programme activities.
- Ensure transparency and accountability during property valuation surveys and compensation claims through public participation.
- Support SVTP with monitoring in relation to encroachment, health, safety and security issues.
- Prepare short monthly progress reports to SVTP and the District Executive Committee regarding grievances raised and resolutions.
- Hold meetings at least once a month for the first six months and throughout the construction period (or more frequently if the situation so demands);
- Decide on the frequency of meetings as deemed appropriate during operation.
- Attend a short training session that includes the following:
 - The approach to the grievance process and response times.
 - Administrative framework governing the Programme, particularly the IFC requirements.
 - Confirming the roles and responsibilities of representatives; and
 - Meeting requirements.

Step 6 – Grievance redress at the Central Grievance Redress Committee (Shire Valley Transformation Project Management Team or Ministry) level

If the resolution proposed by the DGRC is not accepted, the affected person will be allowed to appeal to the SVTP (GRMC) Technical Team or MoA. Further, the appeal can also be made to the Regional Lands Commissioner and the Central Government (Ministry of Lands, Housing and Urban Development, MoLHUD). The Central Grievance Redress Committee will work together with the Central Land Tribunal to hear the complaint and make a resolution within 14 days. If the resolution is accepted by the PAP, he/ she must sign the grievance form to confirm agreement; and the grievance will subsequently be closed; otherwise, legal action (Step 7) may be pursued.

The Shire Valley Transformation GRMC will primarily be responsible for capturing, logging, tracking and resolving grievances reported through the various mechanisms. It will also ultimately be responsible for ensuring that complainants and the Committees are fully informed and up-to-date with the resolution of such grievances.

8.4 Obligations of the SVTP GRMC

Obligations of the Grievance Redress Management Committee of the Shire Valley Transformation Programme include to:

- Work with the Central Land Tribunal on land matters;
- Ensure that Project affected communities are fully informed of the grievance redress process and means by which they can report grievances;
- Hold and document monthly meetings with committee members to gather feedback on the grievance process;
- Ensure that grievances are documented in the grievance form and log and that there is a paper trail regarding the resolution and close-out process;
- Ensure that the grievance process is accessible to all community representatives; and
- Ensure that the committees are fully aware of their roles and responsibilities, and that they are formalised through letters of agreement.

Step 7 – Civil courts option

If the complainant is not satisfied with the decision made at any level, he/ she will be informed of his/ her rights to take the grievance to the courts of law, which include magistrate courts, the high and supreme courts of Malawi. While the complainants will be encouraged to do this as a last resort, right from the start; they will be informed of the right to take the grievances to court at any stage of grievance redress. The complainant will also be informed that they will do so at their own expense, unless the court awards damages to them. The decision of the court of law will be final.

8.5. Grievance reporting

All grievances shall initially be documented in a grievance form for the complainant to sign (by hand or thumb print). Additionally, details of the grievance should be populated into a grievance log (Annex 7) tracking for grievances. The Shire Valley Transformation Programme is responsible for ensuring that the grievance reporting forms (Annex 6) are completed on receipt of a grievance and that the log (Annex 7) is always up to date to monitor progress of outstanding issues, in order to follow up as required.

The Grievance Redress Mechanism Process is graphically presented in figure 8.1



Figure 8.1: The Grievance Redress Mechanism Process

8.6 Timeframe

The total timeframe provided for the process, from the stage of recording of the grievances to their redress **14 days** per each stage. This entails that, if a grievance goes all the way to the Central Level before resolution, it will take a **maximum of 56 days**.

8.7 GRM Budget

The estimated budget allocated for supporting the activities of 63 GRC in two districts is MKW1,000,000,000.00. Chikwawa district will receive **MKW600,000,000.00** to support 45 committees, while Nsanje district will receive **MKW400,000,000.00** to support 18 committees. These figures were calculated based on the current monthly expenditure per committee, which amounts to **MKW80,000,000.00**. The estimated budget will cover expenses for one year.

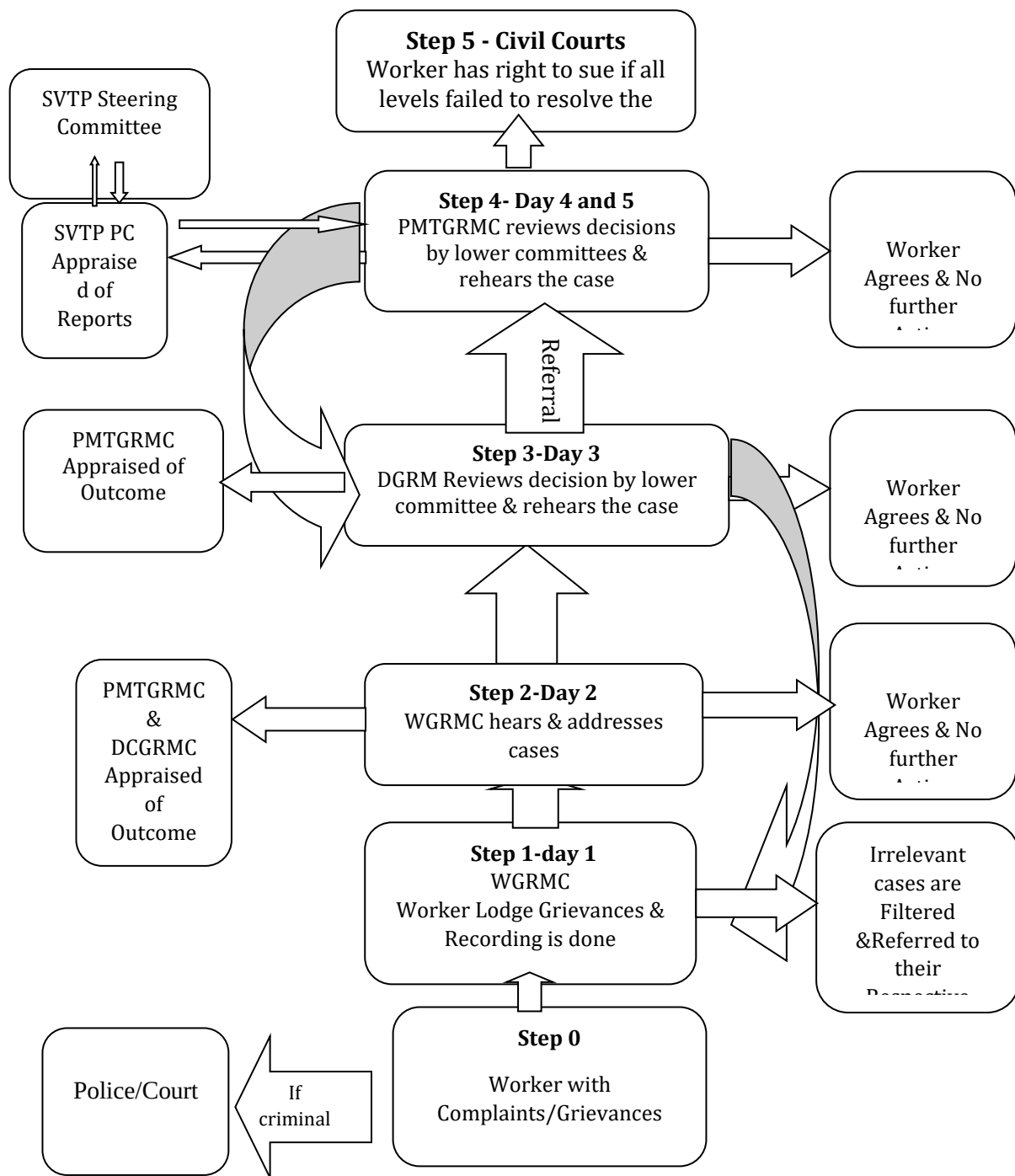


Figure 8.2: Processes and Institutional arrangement for SVTP Workplace Grievance Redress Mechanism

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.

11.0 OVERVIEW OF LABOR USE ON THE PROJECT

The Labor Management Plan (LMP) applies to project workers including full-time, part-time, temporary, migrant workers³ 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);

11.1 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.

11.2 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.

11.3 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.

11.4 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.

11.5 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

3. Separate Toilets/Washrooms
4. Separate Dressing Rooms/Locker Rooms
5. PPE Gear – suitable for both male and female workers.

11.6 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.

11.7 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.

11.8 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.

11.9 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

11.10 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.

11.11 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.

12.12 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.

12.13 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.

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 survivors 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 at household level emanating from the fact that adults are going to be preoccupied with project activities?	Sensitization of household beneficiaries on child labour
8. How will the project mitigate against sex exploitation in exchange for offer of employment including GBV?	All contractors under this project will be given code of Conduct that they will sign which will 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, MEPA, 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.

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	On-going basis
	Translation of Code of Conduct in relevant local language	
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

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 a 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.

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)

APPENDIX 7: STAKEHOLDER ENGAGEMENT PLAN

GOVERNMENT OF MALAWI

MINISTRY OF AGRICULTURE

SHIRE VALLEY TRANSFORMATION PROGRAMME II (SVTP-2)

STAKEHOLDER ENGAGEMENT PLAN



September, 2021

ABBREVIATIONS AND ACRONYMS

AEDO	Agricultural Extension Development Officers
AfDB	African Development Bank
ADC	Area Development Committee
CBO	Community Based Organization

CDA	Community Development Assistant
CSO	Civil Society Organization
DC	District Council
DEC	District Executive Committee
DFID	Department for International Development
DTF	District Task Force
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EU	European Union
FGDs	Focus Group Discussions
GEF	Global Environment Facility
GoM	Government of Malawi
GVH	Group Village Headman
GRM	Grievance Redress Mechanism
INGOs	International Organizations
MoA	Ministry of Agriculture
MoLHUD	Ministry of Lands, Housing and Urban Development
MoNREM	Ministry of Natural Resources, Energy and Mining
MoT	Ministry of Trade
MoI	Ministry of Industry
NGOs	Non-governmental organizations
PAP	Project affected persons
PDO	Programme development objectives
PMP	Pest Management Plan
PMT	Programme Management Team
PSC	Project Steering Committee
PTC	Project Technical Committee
RAP	Resettlement Action Plan
SEP	Stakeholder Engagement Plan
SMEs	Small and medium enterprises
SOCFE	Smallholder Owned Commercial Farm Enterprise
SVIP	Shire Valley Irrigation Project
SVTP	Shire Valley Transformation Programme
T/A	Traditional Authority
VDC	Village Development Committee
VH	Village Headman
WUA	Water Users Association

1. Introduction and Project Description

Introduction

Approximately 85% of the population in Malawi live in rural areas; with the majority engaged in rain-fed subsistence agriculture and livestock raising. Agricultural land is scarce in Malawi with 70% of small-scale farmers farming less than one hectare of land. Over the years, rains in Malawi have become erratic and less predictable leading to low productivity. This, in addition to adverse effects of climate change including drought, floods, and declining soil fertility have negatively affected the agriculture sector in Malawi.

In the quest to address food insecurity and to spur agriculture-led growth, the Government of Malawi has been developing irrigation schemes in the country in order to shift from smallholder to commercial agriculture. The National Irrigation Policy (2016) estimates that Malawi has 407,862 hectares of potential irrigable land. 118,604 hectares of land has been irrigated to date (Department of Irrigation 2020 Annual Report). The irrigated area has been growing steadily since 2006 at the rate of around 5 percent per annum and almost all of the growth has been on smallholder irrigation schemes.

Irrigation helps farmers to better livelihoods as efficient water management can enhance yields, crop quality and cultivation of cash crops. This leads to increased and sustainable incomes and food security at individual, household and community levels.

Project Description

The Government of Malawi is implementing the second phase of the Shire Valley Transformation Programme (SVTP-2) with financial support from the World Bank. The SVTP will irrigate 43,370 hectares of land by abstracting water from the Shire River at Kapichira Dam and conveying it by gravity to the irrigable area in Chikwawa and Nsanje Districts through canals. This will ensure a more consistent supply of water to farmlands throughout the year.

The Program Development Objective (PDO) for the Shire Valley Transformation Program is:

- i. To increase agricultural productivity and commercialization for targeted households in the Shire Valley; and to improve the sustainable management and utilization of natural resources;
- ii. To provide access to reliable gravity fed irrigation and drainage services, secure land tenure for smallholder farmers, and
- iii. Strengthen management of wetlands and protected areas in the Shire Valley.

The SVTP-2 will support the program with an IDA credit of around US\$175 million. Discussions on provision of co-financing are on-going with other Development Partners. The focus of SVTP-2 will 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 PDO of SVTP-2 is to provide access to gravity-fed irrigation services on the eastern side of the canal 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 project is comprised of the following key components:

Component 1 – Irrigation Service Provision

This component finances the construction of about 70 km of main canal, starting at the northern boundary of Lengwe National Park to the Bangula area in Nsjane District. This section of the main canal will eventually supply water to the Phase II project area, which comprises the agricultural blocks south of Lengwe National Park. The first 14 km of this section of the main canal will pass through Lengwe National Park, bisecting ‘Old Lengwe’ from ‘New Lengwe’. The design and approach to construction ensures that the canal will not hamper the restoration of the park to favourable conservation status. A separate contract will be awarded for the construction of the canal in Lengwe.

The component will also finance the construction of a number of secondary canals, the number depending on the available funds for development of agriculture blocks and secondary canals. The 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 about 11,000 ha will be under irrigation before the end of SVTP-2.

Adequate office accommodation for DoI and the Special Purpose Vehicle that will own the irrigation and drainage infrastructure will be constructed in Lilongwe.

Component 2 – Land Governance and Land Consolidation

The Customary Land Act of 2016 provides the legal basis for land registration. The Ministry of Lands, with the support of SVTP-1, has set up the local governance bodies in the Phase I project area. MoL has also demarcated and adjudicated over 23,000 plots with a total area of 13,268 ha in Phase I. SVTP-1 will continue to support this work so that the entire Phase I area will be demarcated and adjudicated by project completion. The registration of consolidated customary estates will also be carried out under SVTP-1. The registration of the demarcation and adjudication results will be evidence of land contribution by individual land parcel owners to the irrigation block. Proper and explicit registration of these “shares” is essential considering that the certificate will only be issued at block level.

SVTP-2 will continue with similar activities in the Phase II project area as implemented under SVTP-1. It will set up local governance bodies, including the Traditional Land

Management Areas, Customary Land Committee, Customary Land Tribunals at Traditional Authority (TA) level), and the Nsanje District Land Tribunal. SVTP-2 will support the development of District Physical Development Plans, and the provision of equipment and capacity strengthening at the district level institutions for land delimitation and administration. It will support the process of land consolidation and registration of customary estates through systematic demarcation and adjudication of all lands in the Phase II project area.

Component 3 – Agriculture Development and Commercialization

SVTP-1 has so far focused on sensitization meetings in 96 villages, involving 11,162 landowners, in the Phase I project area. A total of 14 consolidated pieces of land have been identified with a total area of about 11,000 ha. During the remaining SVTP-1 project duration a number of blocks will be developed for agricultural production, with the number depending on the available funds and the time required to develop the blocks. Preparatory activities for the remaining blocks in the Phase I project area will take place, so that development can take place early during SVTP-2 implementation.

SVTP-2 will continue adopting the current farmer driven approach around the smallholder owned commercial farm enterprises (SOCFE) and the productive alliance (PA) model that will farm on consolidated lands with coordinated production and collective sale of produce. Besides core agricultural production, blocks could also develop fishponds, vegetable gardens, and sustainable woodlots for charcoal production.

SVTP-2 will finance service providers (SP) with good knowledge of the approach being adopted to support SOCFEs with the development of agricultural blocks. Lessons from other projects show that: (i) considerable time and effort is needed in the social formation process of developing clusters of farmers into enterprises; (ii) the process of having clusters develop well thought-through business plans takes time and considerable support; and (iii) continued viable operation of newly formed enterprises needs considerable support, 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. SPs will be recruited at the start of SVTP-2 implementation. In addition to the remaining blocks in the Phase I project area, SVTP-2 will finance the development of a number of blocks in the Phase II project area, with the number mostly depending on the availability of funds.

As the number of agricultural blocks to be developed is expected to rapidly increase under SVTP-2, the component will put a lot of emphasis on ensuring that any matching grant is made available in a timely manner. 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 chains for their products. Thus, a three-party arrangement of commercial banks, off-takers, and SOCFEs should be the model from the outset.

During SVTP program development an Agricultural Development Planning Strategy was prepared in 2015 which laid the foundation for selection of value chains. SVTP-1 will update the strategy and work with strategic partners such as IFC on the selection of crops for which off-takers can be identified. There may be need for additional studies during SVTP-2 implementation, including regular market studies and road shows to identify additional prospective off-takers and where possible enter into pre-contractual arrangements on specific value chains. The SOCFEs owners and managers will also need to be equipped with the skills to make production and management adjustments in the light of evolving market conditions. Other crops chosen need to be technically and financially viable, fit into the developed irrigation application method, and have an appropriate position in a crop rotation.

SVTP-2 will also support industrial park development. An industrial park has the potential to be a major enabler of the value chain development and industrial enterprise multipliers. However, experience elsewhere also shows that such investments can be non-productive and non-performing if not well managed. It would therefore be essential that such investments are subjected to rigorous technical and financial analysis. Failure to effectively conduct such an analysis could mean that the investment would be a supply-driven non-performing asset.

COMPONENT 4- STRENGTHENING LANDSCAPE AND NATURAL RESOURCES MANAGEMENT IN THE LOWER SHIRE

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.

This component will promote 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.

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.

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.

Component 5 – Project Management, Coordination, and Communication

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 assist with GBV mitigation measures.

Project Location

Construction of the irrigation scheme will be done in two phases. Phase I covers the area from Chikwawa in the north to the edge of the Lengwe National Park. Phase II covers the area from south of Lengwe National Park along the Main Road to Bangula in the South.

The intake is within the Majete Wildlife Reserve. The design and construction methods are minimizing the impact on the environment as much as possible. Portions of the canal passing

through the Majete Wildlife Reserve will be underground in the form of siphons to allow animals to pass and people to access tourist sites. Where the canal is open, it will be fenced. The design is intended to maintain the environmental flow at Kapichira Dam.

The main irrigation canal for Phase II will pass through a dry area in Lengwe National Park. The design will make it possible for animals to access drinking water and to cross the canal.

Cultural heritage impact assessment was undertaken within the Phase 1 of the project where over 29 archeological sites including one active shrine were identified. Government is working at conservation of these sites. The project design has tried, as much as possible, to avoid going through graveyards.

With funding from the Global Environment Facility (GEF), the SVTP will ensure that all impacts on the environment and wildlife are mitigated at all stages of the Project in five protected areas including, Lengwe National Park, Majete Wildlife Reserve, Mwabvi Wildlife Reserve, the Elephant Marsh, and Matandwe Forest Reserve.

Below is the map of the project area:

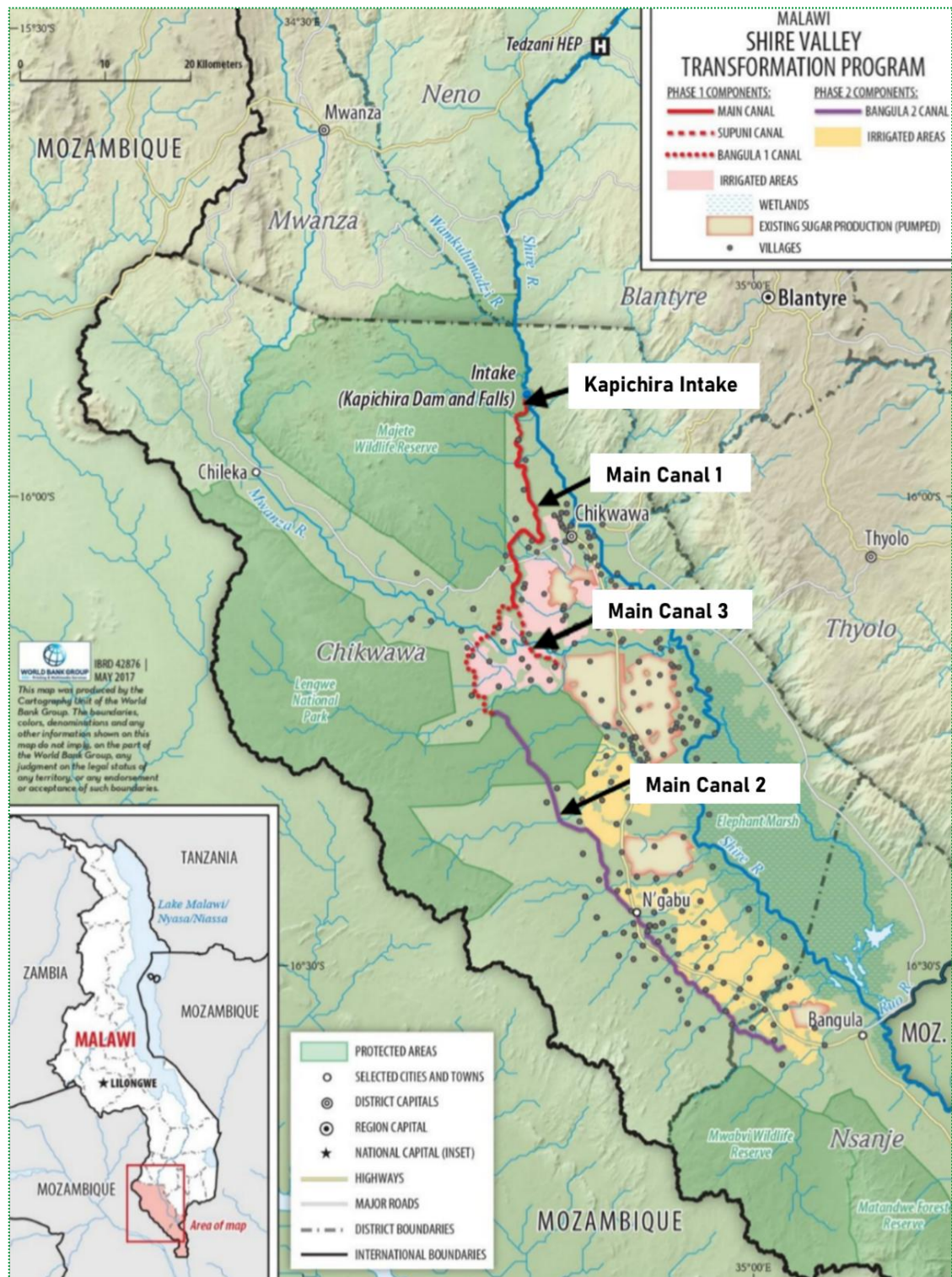


Figure 14: Map showing the SVTP Phase 1 target area including five protected areas

2. Objectives of the Stakeholder Engagement and Communications Plan

Stakeholder engagement is key to the success of the SVTP as it promotes effective collaboration between the project and local communities and helps to minimize and mitigate environmental and social risks related to the proposed project activities.

Key objectives of this Stakeholder Engagement Plan (SEP) can be summarized as follows:

- To provide a framework for stakeholder engagement including public information disclosure and consultation, throughout the entire project cycle;
- To identify key stakeholders affected by the project, interested parties and those that can influence the project and its activities;
- To develop effective strategies for raising awareness of the project to stakeholders at all levels to promote involvement in project planning, design and implementation;
- To provide a grievance redress mechanism for project-affected parties and other stakeholders to raise concerns and provide feedback on social and environmental-related issues in line with the project; and to ensure that concerns are addressed in a timely manner.

The plan will be mainstreamed throughout the project life cycle. The SEP is a live document and hence will be updated in line with emerging issues during implementation. Specific action plans will be developed to suit needs identified under each Programme component.

2. Stakeholder Engagement Activities Undertaken during SVTP-1 Implementation

Many consultations and engagement activities have been undertaken at national, district and community levels during the implementation of the SVTP-1. At national level, stakeholders including ministers and heads of different ministries and departments and development partners were engaged in the quest to gain support on the SVTP. At district level, consultative meetings have been undertaken with stakeholders at district level as owners of the project quarterly as a way of addressing identified issues and providing updates on progress. These stakeholders have also conducted monitoring visits to the site to assess progress. At community level, awareness/engagement meetings have been undertaken regularly to ensure that information is provided as much as possible and feedback is sourced for consideration by the project on areas for improvement and decision making.

These activities will be scaled up and adopted into SVTP-2 as the phases will be overlapping. While new stakeholder engagement activities will be undertaken tailored

to identified needs and situations. These needs and concerns were utilized to inform project activities.

Some of the key notable stakeholder engagement activities implemented in the first phase of the SVTP include:

- Disclosure of the ESIA/ESMP to the communities, district;
- Implementation of the Resettlement Action Plan to affected communities and the general public (awareness on the resettlement process and compensation disclosure exercise etc.);
- Land adjudication and demarcation in Chikwawa;
- Establishment of Customary Land Committees, Traditional Land Management Areas and, Traditional and District Land Tribunals within the project impact areas as platforms for the project to interact with communities on land issues;
- Preparation of the Chikwawa Physical Development and Urban Plans;
- Establishment of Smallholder Owned Commercial Farm Enterprises (SOCFEs) and SVTP approach to agriculture development and commercialization;
- Natural resource management in five protected areas focusing on issues of wildlife, forestry, fisheries and environmental management;
- Implementation of the grievance redress mechanism;
- Awareness on GBV issues to construction workers, communities, schools, religious leaders.

Table 3.1.1 provides a summary of some key stakeholder engagement activities undertaken during the implementation of the SVTP-1.

TABLE 3.1.1: SUMMARY OF KEY STAKEHOLDER ENGAGEMENT ACTIVITIES DURING SVTP-1

Level of Stakeholder Engagement	Key issues identified	Stakeholders consulted/engaged	Relevant stakeholder engagement activities undertaken	Outcome of activities
National level stakeholder engagement	Accountability for project resources and results	• Project Steering Committee • Project Technical Committee	• Consultation meetings on annual workplans and budgets • Meetings on progress in project	• Timely approval and implementation of annual workplans and budget

Level of Stakeholder Engagement	Key issues identified	Stakeholders consulted/engaged	Relevant stakeholder engagement activities undertaken	Outcome of activities
			implementation including site visits	
		Financiers and other Development Partners (World Bank, AfDB, GEF, etc.)	- Implementation support missions, site visits and community engagement meetings - Engagement meetings with heads of diplomatic missions (DFID, EU, IFAD)	- Discussions on funding modalities and project progress - Sourcing support and collaboration on issues of commodity production and marketing from the project
		Parliamentary Committees (Agriculture, Public Sector Reforms, Finance)	Engagement meetings and site visits to monitor progress	Support in approval and consideration for funding in the National Budget
		Ministry of Agriculture and other implementing partners	- Annual workplan and budget preparatory meetings - Regularly site meetings and stakeholder engagement meetings on progress and community meetings	- Approved annual workplans and budget - Improvements in implementation following input from implementing partners
		High level stakeholders including the Vice President	Engagement meetings and site visits to monitor progress	Marketing of project activities

Level of Stakeholder Engagement	Key issues identified	Stakeholders consulted/engaged	Relevant stakeholder engagement activities undertaken	Outcome of activities
		and cabinet ministers (Ministers of Agriculture, Lands and Natural Resources and Wildlife)		• Improvements in project implementation
		• Media	• Media workshop, site tour and coverage during high level visits	• Wide coverage of SVTP stories in the media
		• Private sector (meetings with suppliers and buyers in the agriculture sector)	• National and regional meetings on issues of agriculture commercialization and marketing	• Potential collaboration and agreements with farmers on input supply and markets
District level stakeholder engagement	• Support for smooth project implementation • Progress in project implementation • Issues of theft of construction materials and charcoal burning • RAP implementation • Preparation of physical and urban	• District Consultative Committee (involving chiefs, councilors, private sector and NGO representatives and the District Council) • Chikwawa District Council	• Quarterly engagement meetings and site visits to monitor progress • Targeted community meetings to address identified challenges e.g. charcoal burning, theft of construction materials, RAP implementation, land adjudication and demarcation, preparation of physical and urban	• Support in addressing identified issues e.g. theft of construction materials, charcoal burning • Greater buy-in of project activities by community members

Level of Stakeholder Engagement	Key issues identified	Stakeholders consulted/engaged	Relevant stakeholder engagement activities undertaken	Outcome of activities
	development plans • Natural resource management		development plans, natural resource conservation	
Community level stakeholder engagement	• Disclosure of the ESIA/ESMP • Implementation of the Resettlement Action Plan to affected communities and the general public • Land adjudication and demarcation • Land tenure security • Chikwawa Physical Development and Urban Plans • Establishment of Smallholder Owned Commercial Farm Enterprises (SOCFEs) and SVTP approach to agriculture development	• Chiefs • Community members • Prospective farmers • Construction workers • Schools • Religious leaders • Established committees in the areas • Project affected persons	Community engagement meetings on different issues Coverage in the media e.g. use of jingles and announcements Use of public address van	• Great buy-in and support of implemented activities among communities • Timely resolution of grievances raised through established GRM structures • Timely resolution of land issues • Strong reporting mechanisms for GBV issues

Level of Stakeholder Engagement	Key issues identified	Stakeholders consulted/engaged	Relevant stakeholder engagement activities undertaken	Outcome of activities
	and commercialization • Natural resource management in five protected areas focusing on issues of wildlife, forestry, fisheries and environmental management • Grievance redress mechanism • Awareness on GBV issues to construction workers, communities, schools, religious leaders.			

3. Stakeholder Identification and Analysis

Communication mechanisms and relations were mapped and analyzed by COWI during the preparatory phase in order to explore how existing relationships may be utilized and new ones be established where need be. Both internal and external stakeholders have own interests, agendas, and expectations in the SVTP hence need for communication activities to be formulated in line with identified needs. Stakeholder identification and analysis will be an on-going activity throughout the project life cycle looking at changes in relationships between different stakeholders that might affect the project both positively and negatively. Much emphasis will be put on parties affected or likely to be affected by the project (project affected parties); and those that may have

an interest in the project (other interested parties). Stakeholders will mostly be mapped based on power analysis (level of influence) and level of interest.

Reference to the stakeholder identification and analysis done by COWI has greatly assisted with bringing to light unresolved issues, risks and liabilities to consider for prioritization and management in relation to areas for decision making. The COWI study made an assessment of internal and external stakeholders and targeted audiences using the following criteria:

- The Role and reason for being selected as a stakeholder for the Programme.
- The level of importance specifying if they are primary, secondary or tertiary target audiences to the implementation and success of the project. Primary audiences are the most critical.
- Interest in the Programme.
- Assumptions made by the stakeholders about their participation and whether they will be able to benefit from the Programme.
- The risk the stakeholder face/see or may face/see due to implementation of the Programme. It can also be risks that the SVTP may encounter when communicating with stakeholders.

Building on the stakeholder identification and analysis done by COWI, the SVTP has during the first phase of implementation conducted stakeholder assessments based on the following check list:

- What are the various interests of project stakeholders and what level of influence they might have on the project?
- Who strongly supports or opposes the changes that the project will bring and why?
- Whose opposition could be detrimental to the success of the project?
- Who is critical to engage and why, at any point of project implementation?
- What is the optimal sequence of engagement?

The SVTP pays attention to special interest groups (as emphasized in the ESS10) to ensure that information is provided as they can positively and negatively affect the project as follows:

- Affected or likely to be affected by the project (project affected parties);
- May have an interest in the project (other interested parties); and
- Disadvantaged/vulnerable individuals/groups

4. Affected Parties

Affected parties under the SVTP include communities within the vicinity of the planned activities, community members and other groups including business entities that may be directly affected by the project both positively and negatively. Specifically, these affected parties may be subject to direct impacts of the project hence need for close engagement to

identify the impacts for decision making on mitigation and management. There is always need to provide more information on the processes taking place to the project affected parties.

During the implementation of SVTP-1, project affected persons (PAPs) were identified along the canal route. Information was provided through awareness meetings and media campaigns to ensure that issues and concerns are addressed accordingly during the implementation of the Resettlement Action Plan. Project affected persons were compensated in both cash and in-kind. Grievances and concerns from the RAP process were addressed through the Grievance Redress Mechanisms in the impact area. The project also works with communities around protected areas to ensure that there is greater buy-in and participation in project activities.

Other Interested Parties

A summary of identified internal and external stakeholders including their roles, interests, level of importance and levels of risks has been presented in Table 4.2.1.

TABLE 4.2.1: AN ANALYSIS OF IDENTIFIED INTERNAL AND EXTERNAL STAKEHOLDERS

Stakeholder Group	Target Audience	Role	Interest in SVTP	Assumption (s)	Risk (s)
Internal Stakeholders					
Development partners/Donors	World Bank (WB), African Development Bank (ADB), GEF and others	Contribute to the national poverty reduction agenda of Malawi	Increase income and reduce poverty for beneficiaries by ensuring a successful SVTP implementation	Will remain committed on financial assistance	Their position might be affected by fiduciary, social and environmental safeguard issues or political factors i.e., withholding or withdrawing funding
SVTP Management	Project Steering Committee (PSC): Comprised of Principal Secretaries of Ministries under SVTP chaired by PS, MoA	Make strategic decisions on the SVTP	Ensure successful and timely implementation of the Programme	The Committee is proactive and efficient in decision making	Delays in decision making will delay implementation and might affect funding
	Project Technical Committee (PTC): Directors of line ministries chaired by Director of Irrigation Services	Guide the Project Management Team To make technical decisions that do not need Steering Committee endorsement	To ensure successful and timely implementation of the project	The Committee is proactive and efficient in making decisions	Delays in decision making will delay implementation and might affect funding
	SVTP Project Management Team (PMT)	Day to day implementation of the Programme	Ensure successful and timely	All planned activities done on	Delays in decision making result in

			implementation of the project	time in coordination with all stakeholders	delays and increased costs
	Inter-ministerial Task Force-chaired by Project Management Coordinator	Mobilize ministries when required and provide outputs on need basis	Ensure a smooth information flow between the Programme and line Ministries	Each of the member departments shall proactively participate in the project preparation	Limited coordination within the Task Force may cause delays
	Consultative Committee	Gather main stakeholders to a forum where various interests will be discussed Inform the PTC and PMT on the position of and trade-off between stakeholders.	Ensure that consultations with communities are based on the principles of free and informed consent	The Committee will be proactive in carrying out its activities	• Delays in the implementation of the Committee's activities • Lower quality outputs because stakeholders' considerations are not sufficiently incorporated
District Local Government	District Councils, District Executive Committees and District Council staff	Advance the government agenda of implementing the project Mobilize key stakeholders in the district and solicit their input Represent stakeholders within their areas and communicate their views Make strategic decisions on issues	• Ensure that the SVTP benefits the district and local people • Successful and timely implementation of the project • Achieve national objectives	Proactive and efficient in making decisions Provide necessary support in a timely and efficient manner Finance investment Implement land re-allocation and resettlement satisfactorily	• Delays in decision making may result in project operational inefficiencies and increased costs • Limited government resources result in delays and hamper effective, efficient and fair implementation of SVTP

		concerning local people in the district		• Good governance	• Lack of opportunities and/or insufficient commitment to reach all target audiences, especially vulnerable groups, gender and youth
Below District Local Government	Area Development Committee, Area Executive Committee and the Village Development Committee	• Advance government agenda of implementing the project • Mobilize key stakeholders and solicit their input • Represent the stakeholders within their areas and communicate their views	• Ensure that the SVTP benefits their communities • Reach all relevant people and make sure their voices are heard.	• Provide necessary support in a timely and efficient manner • Capable and committed to reach target audiences, including vulnerable groups • Implement the project within their area as designed	Unable to provide information on time and in the needed quality Lack of opportunities and/or insufficient commitment to reach all target audiences, especially vulnerable group, gender and youth Favoritism of some audiences
SVTP District Consultative Committee	Members of the committee	Coordinate operational activities of the SVTP in the district	Ensure successful and timely implementation of the Programme	The Committee is proactive and efficient in making decisions	Delays and insufficient commitment to the implementation of the SVTP

External Stakeholders					
Central Government	National Government Ministries and Departments	Advance government agenda of implementing the Programme	• Successful and timely implementation of the Programme • Achieve national objectives • Increased income levels of participants in SVTP	• Provide necessary support efficiently • Finance investment • Implement land reallocation and resettlement satisfactorily • Good governance	Limited government resources result in delays and hamper effective, efficient and fair implementation of SVTP
	Political representatives: Members of Parliament and Ward Councilors	Disseminating information and messages.	Increase development in the target area	Support Programme activities	Not support activities and relay contrary messages
	National Parks and Wildlife and Forest Reserves (Majete Wildlife Reserve, Lengwe National Park, Mwabvi Wildlife Reserve, Matandwe Forest Reserve, and Elephant Marsh)	Protect game and other natural resources	• Ensure the Programme will not affect game and protected natural resources negatively • Ensure game reserves and national parks remain attractive to tourists	• Will be able to benefit from the SVTP • View the Programme positively	Parks may become less attractive to tourists during the construction period hence decrease in revenue

Farmers	Rain fed crop growers, livestock farmers, irrigation farmers, commercial and locally organized farmers	Grow crops for subsistence and commercial use Rear animals for subsistence and commercial use Protect the rights of farmers Coordinate activities of farmers	Increase in crop and animal production and livelihood Access to reliable irrigation water may increase their profits Ensure that farmers are not exploited Support to members to avoid falling victim to land speculations Ensure their farmers get support to change to irrigated farming	Will be able to benefit from the SVTP View the project positively Will be willing to participate in scheme and share experiences SVTP will be able to deliver sufficient irrigation water at the time it is required View the project as a positive development for the farmers Provide support to farmers to establish and manage irrigated farms	Non-reliable supply of irrigation water will affect their agricultural production and hence income negatively Conditions for participation in the SVTP are unfavorable and result in increased costs Gain large and/or prioritized access to irrigation water depriving other farmers
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Vulnerable groups and project affected persons (PAP)	Women and youth, people living with disabilities, people living with HIV/AIDS, PAPS mainly farmers	Protect their basic human rights	- SVTP will improve their livelihood through increased crop and livestock production - Increased fulfilment of their human basic -rights	- View the project positively - Will be able to benefit from the SVTP	Loss of land and increased poverty, e.g., through falling victim to land speculation or land/shares not registered in their name
Traditional leaders	Paramount Chief, T/As (Chiefs), Group Village Heads, Village Heads	Protect the rights of community members in all affected T/As.	- Re-allocation is done in an honest and transparent manner - Increased income and welfare in their area	Will appreciate SVTP benefits and view the project positively	Loss of authority and control, especially over land issues

Private sector	Small and medium enterprises (SMEs), Agribusinesses, transporters, marketing, processors, exporters, and other private sector stakeholders	Provide goods and services to local communities Produce and/or process and/or sale of agri-business product Provide goods and support services to agri-businesses and local communities Provide transport services Provide value adding services	Increased income in the project area will increase their business and profits Increased/new business opportunities Increased profits Increased supply of agricultural products	Will be able to benefit from the SVTP View the project positively	Land reform results in poor access to current business location Might increase their own benefits by misinforming farmers and community members, among others Low employment of local people totally and specifically in management positions resulting in reduced local income opportunities • Loss of business opportunities
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Academia	Research and educational institutions	• Provide independent advice based on research findings to the SVTP • Provide education in areas required in the SVTP area	Perform outreach functions to the SVTP Obtain funding for research Increased income from increased student numbers	• Will be open to willingly provide technical advice as need arises	• Funds for conducting research and developing new courses might be (too) low • Competition from other research and educational institutions outside the area and possibly country may take away their business
Associated consultants	Local and international consultants	• Provide technical expertise	• Ensure that the project is a success and can be used as a reference	• That the consultants can perform and deliver as agreed • Good coordination among consultants and with the technical team	• Delays in deliverables • Quality standard is not met

Other organizations	Agricultural organizations (PSOs), NGOs, INGOs, CBOs, CSOs and faith-based organisations	• Enhance the productivity of farmers and protect them from exploitation • Improve the business environment • Increase livelihoods by providing technical, financial and organizational support • Protect the rights of community/members • Protect the rights of farmers and other vulnerable groups • Implement business development programs	• How the rights of community members will be protected • Provide advice and services to irrigation farmers which might increase their income • Protect the rights of farmers and other vulnerable groups • Provide advice and services on farm management and establishing farm management entities	• Will be able to benefit from SVTP • View the project positively • SVTP will improve the opportunities for a better livelihood. • Members/target groups will have the same or increased access, control and use of their land and other resources • Increased capability for farm management of their members	• Loss of land which will increase poverty • Destabilization/ collapse of their association • Loss of membership • Loss of land by their members/target groups • Loss of access, control and use of land resources • Reduced livelihoods • Increased costs of farming that cannot be funded and affects profitability or even results in loss of income
Media	Journalists, newspapers, magazines, radio and TV	To publicize information about the SVTP	• Get newsworthy stories • Publicize information about the SVTP	View the project positively Will publicize accurate information about the SVTP	• Might take a negative angle to news stories • Might produce biased and inaccurate reports on the SVTP

Other stakeholders	Vendors, residents in the area, skilled and unskilled labour	• Offer various services • Stimulate demand for goods and services	• Produce as well as supplies of input • How they are going to be protected	Irrigation farmers will need various goods and services Project will attract new immigrants	Goods and services not available Increased pressure on goods and services
General public	Citizens of Malawi	Protect the rights of people in Malawi	How the project will benefit citizens	View the project positively	Might feel that the project will lead to loss of land and exploitation of farmers and other vulnerable groups

Disadvantaged/vulnerable individuals/groups and 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 Programme will ensure that inequalities between men and women are addressed and all unintended effects on gender dynamics for example, domestic violence are prevented.

The SVTP will ensure that there is representation and participation of women and other vulnerable groups including people living with disabilities, people living with HIV/AIDS, the youth and children in all community consultations, meetings and interactions about the Programme as these will be equally affected by the Programme. The SVTP will ensure that venues for meetings will be accessible to vulnerable groups and that information is provided in a language that is easy to understand.

All data collected by the SVTP 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 FGDs for the elderly and youth; disaggregating them into male and female.

Representation and participation of women and other vulnerable groups in different committees will be prioritized by the Programme with special emphasis given to the women to influence decisions that affect them and make their voices heard. Where need be, focus group discussions will be organized where women will be given a platform to raise their own issues and concerns in regards to the Programme as sometimes discussions can be dominated by men. Issues important to women will be given equal weight hence will be included in meeting agendas and group discussions among others.

The Programme uses services of a Gender Based Service Provider to disseminate information on issues of gender and child protection. The SP's role is to raise awareness on issues of gender-based violence and child protection in the impact area. The Programme also works with the One-Stop Centre where GBV survivors have access to support services from service providers like the hospital, police, and social welfare among others.

5. Stakeholder Engagement Plan

Stakeholder engagement plans are developed for different purposes by different organizations. Under the SVTP, the plan was developed to guide the process through which the SVTP will reach out to stakeholders in order to give stakeholders confidence, skills and power to shape and influence what the project intends to do in the project area. The plan will be mainstreamed throughout the project life cycle in all the project components. This is a live document and hence will be updated in line with emerging issues during the Implementation Phase. Specific action plans will be developed to suit needs identified under each Programme component. The SEP will create empowerment opportunities among the stakeholders. This will happen at various levels which will include:

- **Empowering:** Supporting the stakeholders (especially local communities) to take action on their own in order to bring about ownership of every aspect of the programme;
- **Partnering:** Work with the public and private sectors in each aspect of the SVTP, including the development of alternatives and the identification of the preferred solution;
- **Involving:** Acting together with the local communities and stakeholders;
- **Consulting:** Asking people what they think so in order to improve decision making; and
- **Informing:** Giving people information and knowledge so that they are informed and are able to make informed decisions.

Main objectives of a Stakeholder Engagement Plan (ESS10) are as follows:

- To establish a systemic approach for stakeholder engagement that will allow the project to identify the stakeholders and maintain a constructive relationship during the project lifecycle;
- To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and implementation;
- To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format;
- To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow the project to respond to and manage such grievances.

5.1 Community Engagement

The SVTP considers community engagement a critical aspect in Programme implementation. The Programme will strive to engage communities at each stage of implementation for greater buy-in and ownership. Community engagement is key to the SVTP because:

- Community members will be made aware of on-going consultations, negotiations and decisions affecting their lives through the project hence, promoting transparency.
- It provides a platform for communities to monitor project delivery and demand accountability.
- Community members will have an opportunity to have input into the Project through participation in public meetings.

TABLE 5.1.1: CHANNELS TO BE EMPLOYED FOR STAKEHOLDER ENGAGEMENT

Engagement activity	Objective of stakeholder activity	Target stakeholder	Engagement Channel
SVTP awareness meetings	• Solicit cooperation and acceptance • Pre-empt fears and misconceptions	Traditional Leaders	• Meetings with T/A, GVH and • Chairpersons of the ADCs within the SVTP areas • SVTP Chikwawa District Task Force meeting
		T/As Politicians	• DC meetings • Individual T/A meetings
		• Farmers • Vulnerable group • Traditional leaders • General public	Public meetings at Group Village levels
		• Private Sector • Other development partners (DPs)	• Individual meetings • Institutional meetings

		• Farmers associations	
		News Media	• Press meetings • Press kit/press releases • Media tours to cover the Programme • Production of feature stories • Media coverage (general) • Social media pages
		All	SVTP leaflet
			Via the DC, DEC, DTF, ADC and VDC meetings listed under internal stakeholders
On-going information flow and exchange	• Information and advocacy • Consensus building • Gain cooperation • Receive complaints and suggestions	All	• SVTP leaflet • SVTP website • Case stories, case studies and/or fact sheets • Social media • Mobile PA announcements • Theatrical performances • Public meetings below district level • Press releases and meetings/conferences • Radio broadcasts

5.2 Aims of the Stakeholder Engagement Plan

In order to ensure that the SVTP addresses the proposed engagement activities in a consistent and coordinated manner, the following aims have been adopted:

- To put stakeholder involvement at the centre of everything we do;
- To strive for a broader coverage of the SVTP stakeholders;

- To be honest, open and transparent in communications with the stakeholders and the general public to ensure there is easy access to relevant and clear information;
- To ensure that the views, needs, expectations and outcomes of engagement activities are used to inform decision making processes, policy development and SVTP's service planning;
- To provide clear guidance and promote consistent standards of engagement across the SVTP-1; and
- To listen to communities, stakeholders and the general public and give feedback to all involved about outcomes of engagement activities.

5.3 Community Engagement Spectrum

The above aims are understood better with the application of the community engagement spectrum. The spectrum serves to emphasize that community engagement requires the continuous involvement of communities in planning and decision-making. The International Association of Public Participation IAP2 Spectrum (see figure below) is a recognized model and provides a structured and consistent approach to community engagement.

This approach recognizes that engagement can occur at any or all levels of the spectrum to support deepening community involvement, understanding, and impact on decisions. All levels of engagement are important, depending on the objectives for engaging and the outcomes sought. The engagement spectrum recognizes that the highest level of engagement places final decision-making in the hands of communities. For some issues the SVTP acknowledges its limitations in transferring decision-making control to communities. Prior to the start of community engagement processes, we will use our spectrum as a guide to determine the most appropriate and meaningful level of participation of communities, and commit to being transparent about any identified limitations throughout the project implementation period.

TABLE 5.1.2: APPLYING COMMUNITY ENGAGEMENT SPECTRUM ⁴



		Inform	Consult	Collaborate	Transfer Decision making	Community driven/led
Goals for Community Participation	These are our goals for community participation in various areas of the spectrum	Communicate to share information, listen for understanding, and clarify information	Two-way communication to obtain feedback on existing issue(s), processes or ideas	Partner in each aspect of decision making including the development of alternatives and identification of preferred solutions	Place final decision-making in the hands of communities	Support the priorities and ideas identified and led by communities

⁴ Adapted from International Association for Public Participation (IAP2) Spectrum

Promise to Community	These are ways in which we will approach our work as PMT. In all areas of this spectrum there will be opportunities for bi-directional communication and feedback	We will provide communities with balanced and objective information to assist them in understanding SVTP issues, opportunities, alternatives, and potential solutions	We will inform communities of SVTP issue(s) or decisions that need to be made, obtain their feedback, and report back on how their input influenced decision(s)	We will establish shared decision-making roles with communities and commit to working together to identify SVTP issue(s) and solutions	We will guide and provide sufficient resources to communities so they can lead the development and implementation of agriculture commercialization and natural resources management policies and strategies	We will support community identified issues, plans, strategies, and public policies based on availability of SVTP-I resources and capacity
Example Engagement Techniques	These are examples that can be used in various areas of the spectrum These examples may be changed or elaborated as needed	- Emails - Newsletters - Press releases - Fact sheets - Yellow vans - Theatre for Development - Radio programs - Road shows - Web site - Agriculture fairs - Media tours	- Suggestion box - Focus groups - Surveys - Community meetings - Consultative committee meetings - Workshops - Parliamentary briefings	- Consultative committee meetings - Project Steering committees - Project Technical Committee - Task Force - Parliamentary briefings - Business meetings	- District Council - MoLHUD - Ministry of Tourism, Wildlife and Culture - Ministry of Natural Resources, Energy and Mining - Ministry of Trade (MIT) - Ministry of Industry (MI) - WUAs - Cooperative/ Association boards	- SVTP will support by: - Attending community meetings - Serving as advisory members - Providing funding, data, and technical assistance - Providing policy guidelines

5.4 Stakeholder Consultation

Considering the complexity and environmental and social impacts of the Programme, the SVTP will strive to undertake thorough consultations with different stakeholders throughout the project life cycle. This will help to bring about understanding of the Project and a clear picture of how external parties view the Project and its attendant risks, impacts, opportunities, and mitigation measures. Listening to stakeholder concerns and feedback will be a valuable source of information for improving project management and managing risks.

It will also form the basis for future collaboration and partnerships. Stakeholder consultations will be participatory to ensure that vulnerable groups including women, the youth, people living with disabilities, people living with HIV/AIDS participate in the Project. This will ensure consensus around possible solutions where there is need for addressing issues. Some of participatory tools to be used by the project will include community meetings, focus group discussions and joint consultative meetings, among others. The SVTP will ensure that targeted stakeholders have all requisite information packaged in an understandable language and format, and techniques used are culturally appropriate and acceptable, and gender and socially inclusive. Emphasis will therefore be on one-to-one contact. The Programme will document all consultations and key issues raised and report back to those consulted with clarity in terms of next steps. This will be an ongoing process during the Project life span.

Raising awareness on the SVTP is paramount to the project success. The content and form of awareness meetings will be tailored to the target audience. The project uses and will continue to use the established system for announcement of community meetings which uses extension workers (such as Agricultural Extension Development Officers (AEDOs), Community Development Assistants (CDAs), Veterinary Assistants, Forestry Assistants, etc.) who are resident in the communities. Announcement will be made at least two days in advance of the meetings. This is usually face to face and an accompanying letter. For more general announcements, radios and the Mobile Public Announcement (PA) system will be also be used.

Community awareness meetings will be conducted mostly in Chichewa while Sena will be used in Nsanje. This will be done frequently throughout the Programme lifespan. Meetings will be conducted by the Consultative Committees at all levels (Steering, Technical, component and even at district levels) to develop and agree on plans, monitor progress, and address other identified issues. Public awareness meetings at Group Village level. Internally the PMT will be conducting meetings to plan for activities and access progress of the Project.

5.5 Negotiations and Partnerships

The SVTP will develop strategic partnerships with different stakeholders and prioritize consultations to ensure that there is an exchange of views and information. On the other hand, negotiations will be undertaken to reach an agreement on specific issues identified with different stakeholders as a risk management measure; as any stoppages in terms of disagreements and court cases may delay Project implementation. Negotiations will assist in facilitating mutually acceptable outcomes of the Programme as there will be buy-in by all stakeholders involved, will provide assurance to communities of the Programme's commitment to ensuring that all things that

might affect them are addressed, for example, on issues of resettlement, negotiations will help in reaching a settlement outside the legal system to determine compensations. All negotiations will be transparent, will be done in a language and format understood and agreed by all parties, and participatory.

The Programme will not use intimidation, will have mutual respect and will consider culture sensitivities. Further, the Programme will be flexible and willing to compromise where need be and all outcomes from the negotiations will be documented. One main approach the SVTP will employ for negotiations is the Grievance Redress Mechanism (GRM) which will provide a platform for the PMT and communities to address concerns and grievances raised by project affected persons. Interests of both the Programme and community members will be considered hence, principles of joint problem solving and consensus will apply.

5.6 SVTP Information Disclosure

The SVTP will provide relevant information to the general public. All information will be available at the SVTP Office, Chikwawa and Nsanje District Offices and online through the website for easy access. Stakeholders at all levels including community members will be informed of the progress of the Project in detailed terms. Some of the channels for information disclosure will include advertisements, press releases, public meetings, and information presentations to different project stakeholders, distribution of leaflets and posters, brochures, and disclosure of progress on the website among others.

Further areas of disclosure will include and not limited to progress of construction works, funds utilized by the Programme, grievance redress mechanism, procurement related announcements and the implementation of the resettlement action plan among others. All other activities, from consultation and informed participation to negotiation and resolution of grievances, will be more constructive if stakeholders, including affected communities, have accurate and timely information about the project, its impacts, and any other aspects that may have an effect on their lives. Information disclosure will assist the SVTP to promote awareness about the Programme, avoid misinformation about the Programme and engendering public trust.

The Programme will ensure that all relevant information is disclosed early for communities to ably participate in the Programme in an informed manner. Information will be packaged in a format and language that is understandable and tailored to the targeted stakeholder groups. Cultural considerations, language, literacy and gender will be considered when packaging information.

Communication Goals and Principles

Communication goals

Communication efforts must support and reflect the overall objective of Malawi 2063 Agenda which seeks to transform Malawi into a wealthy and self-reliant industrialized ‘upper middle-income country’ by the year 2063. Communications efforts must also support the objectives of the SVTP. In order to achieve the set objectives, the overall communication goals are listed in Table 6.1.1.

TABLE 6.1.1: COMMUNICATION GOALS

Communication goals
1. Build awareness and knowledge of the SVTP. 2. Create a knowledge sharing and learning culture 3. Encourage dialogue and create a two-way information flow. 4. Keep key stakeholders informed on a regularly and timely basis. 5. Influence behavior through capacity building and understanding.

Communication Principles

The fundamental driving force for all communication under the SVTP is expressed in the principles in Table 6.1.2. These are essential for ensuring that the objective of the project and the communication goals are achieved in an accountable and effective way.

TABLE 6.1.2: COMMUNICATION PRINCIPLES

Integrity	• We share information in an open, transparent and accountable way; • We provide the necessary and promised communication tools; • We do what we say we do
Dialogue and responsiveness	• We attach great importance to a positive two-way dialogue; • We listen actively to all stakeholders and value their opinions; • We offer easy, accessible opportunities to provide feedback, especially for target audiences directly affected by the SVTP
Clarity	• We communicate in a clear and concise manner; • We communicate in a language and style that is easy to understand
Audience adaption	• We gain insight into the needs and perceptions of target audiences; • We tailor communication to meet the needs of target audiences;

	• We share information in a format that is easy and accessible for all target audiences
Respect	• We respect and support human rights; • We treat every person with dignity and courtesy; • We embrace diversity and fair treatment for all

5.61Key Messages

For communication to be effective, it must focus on being consistent, trustworthy and on delivering a few key messages that are repeated across different communication materials. The key messages need to be clear, short, benefit-oriented and written in a language and style that target audiences can understand and relate to.

Throughout, when addressing issues on land and resettlement, it is important to take the sensitive nature of the issues into account as well as the real and perceived risks by each target audience.

The brand message for the SVTP is: “Irrigation and Cash Crops for a Better Life”. It is defined based on the objective of the SVTP and it is supported by the key messages in Table 6.2.1, which are also part of the overall objective. Their purpose is to underpin how the brand message will be achieved, and in communication materials they will be reinforced by sub-messages that may be adjusted as the project evolves and findings are available. Both the brand messages and the key messages will be translated into Chichewa.

In Table 6.2.1, “We deliver on the brand message by” is put in front of the key messages for illustration purposes, but in SVTP’s communication each message will stand on its own. For instance, “Enhancing yields, crop quality and cultivation of cash crops” would be the key message to use on some of the posters, roll ups, articles in newsletter and as a heading in the leaflet for the SVTP. The intention is to use the brand message and key messages in communication materials promoting the SVTP. Under each key message why, how, what, who and when will be addressed and explained.

TABLE 6.2.1: SVTP BRANDING

Brand message	Irrigation and Cash Crops for a Better Life
Key messages	We deliver on the brand message by: • SVTP aims at bringing water for irrigation to all farmers • Both cash and food crops can be grown • Users pay a fee for irrigation water • SVTP is not intended to expand the estates • Hold on to your land in order to benefit • People affected by the main canals will be resettled and compensated • Get involved – your views and opinions count • Increase productivity, food security and income • Manage water catchments and the environment for sustainable irrigation farming and improved livelihoods

The starting point for defining these messages is the communication goals. Other elements to take into consideration are stakeholder identification, analysis and allocation of roles, current awareness and knowledge of the project. In some cases, the same messages can be applied towards target audiences while in others they need to be tailored.

The main interests of internal stakeholders are a successful and timely implementation of the SVTP, and a smooth flow of information. Key messages towards external stakeholders are more diverse and serve as sub messages to the brand and key messages for the Programme. These messages will be aimed at removing real or perceived risk concerns, if possible. Key messages targeting both internal and external stakeholders have been presented in Table 6.2.2. Other messages will be developed when need arises.

TABLE 6.2.2: KEY MESSAGES TOWARDS INTERNAL AND EXTERNAL STAKEHOLDERS

Target audience	Key messages
Internal Stakeholders	
	We ensure a successful and timely implementation by: • Working as a team and sharing our knowledge; • Building awareness and knowledge of the SVTP; • Listening and engaging in a two-way dialogue; • Keeping stakeholders informed on regular and timely basis; • Striving to improve livelihoods through capacity building and understanding; • Respecting human rights.
External Stakeholders	
All farmers and farmers associations	• Increased access to market through cultivation of cash crops; • Organize yourself to take on management of an irrigation block; • New partnership opportunities; • SVTP is likely to increase the value of land, so hold on to it; • SVTP respects your rights to your land; • We can achieve more by working together – men, women and youth
✓ Smallholder crop farmers; ✓ Livestock farmers; ✓ Commercial crop and livestock farmers	• Sustainable solutions to business challenges • Increase crop and livestock production
Irrigation farmers	• Jointly we can improve livelihoods • Reduced costs of pumping water from the source

Farmers Associations	• Increased crop and livestock production
Government • Ministries and Departments • Political Representatives	• Sustainable economic growth • Jointly we can improve livelihoods • Increased confidence in the Government • Different institutions working as a team
Protected Areas	• Wildlife and protected natural resources unaffected or mitigated • Project to increase visibility of the protected areas • Manage water catchments and the environment for sustainable irrigation farming and improved livelihoods
Vulnerable Groups (under all target audiences)	• Increase in gender balance improves livelihood for everyone • Lowering out-migration of youth improves livelihood for the whole community • A more promising future for the youth • Increased crop and livestock production • Increased access to markets • New partnership opportunities • SVTP respects your human rights • SVTP is likely to increase the value of land, so hold on to it
Traditional Leaders (All target audiences)	• Develop local businesses • Increased income and welfare for people • Your involvement and views are important
Private Sector	Small and Medium Enterprises (SMEs) • Increased business opportunities • New partnership opportunities
	Agri-businesses • Increased business • New business opportunities

	Increased supply of agricultural products
	Other private investors or businesses Increased access to business opportunities
Academia and associated consultants	Research and educational institutions - Increased demand for education and further research - Opportunity for advisory and consulting roles
	Local and international consultants Same key messages as for internal stakeholders
Other development partners	Agricultural PSOs Support sustainable business growth Strengthen and improve the business environment for their members
	NGOs and INGOs CBOs and CSOs Faith-based organizations - Jointly we can improve livelihoods - SVTP will benefit disadvantaged groups - Opportunities for service delivery
News media: newspapers, magazines, online, radio and television	The project brand and key messages. Other key messages will depend on a given news story and focus on ensuring that criteria for bringing news stories are met.
General Public	Primarily the Malawian public The project brand and key messages
	Public in other countries is relevant as well - Development aid benefits rural people - Development aid works and reduces poverty

5.62 Communication Activities and Channels

Achieving the set communication goals and meeting the needs and expectations of internal and external stakeholders is paramount to the SVTP. Activities and channels considered as some of

the most suitable tools for reaching the target audiences and achieving the communication goals are listed in Table 6.3.1. The impact of communication for change increases in line with personal involvement of stakeholders as it makes them more likely to take ownership and act.

TABLE 6.3.1: COMMUNICATION ACTIVITIES AND MEDIA CHANNELS

Printed media/publications	Digital media	Events/face to face communication
Newspaper articles Single sheet case stories Policy briefs Fact sheets/case studies Fast facts sheets Infographics sheets Leaflets and fliers Posters, banners, and roll ups Training and learning materials Visibility-tshirts, caps, chitenjes etc. Billboards Newspapers Magazines and newsletters Press releases	Website Social media-Facebook, Twitter, Youtube e-newsletters Radio broadcasts Mobile PA announcements including vans Television broadcasts Video documentary PowerPoint presentation SMSes blogposts	• Focus groups • Interviews • Meetings • Trainings • Seminars and workshops • Information Office • Field visits and study tours • Press briefings • Theatre plays & performances • Exhibitions • Agricultural open days and fairs

COMMUNITY SPECIFIC COMMUNICATIONS ACTIVITIES AND MEDIA CHANNELS

1. Community meetings
2. Radio broadcasts
3. Road shows
4. Mobile vans
5. Customized trainings and workshops
6. Focus group discussions
7. Theatre for development performances

5.63 Stakeholder Engagement Implementation and Communications Action Plan

Values and Principles for Stakeholder Engagement Plan

The stakeholder engagement plan is based on values and principles which aim to guide the practice of equitable and inclusive stakeholder engagement across all sub-projects of the SVTP and represent what stakeholders at all levels can expect when engaging with the SVTP team. The values are described the matrix below.

TABLE 7.1.1: VALUES AND PRINCIPLES FOR COMMUNITY ENGAGEMENT

Values	Principles
Transparency	• Communicate clearly and honestly about decisions that need to be made and what stakeholders should expect from the engagement process including goals, anticipated outcomes, roles and responsibilities, and key decision-makers; • Report the outcomes and process results of decisions and/or community engagement activities regularly and promptly.
Accountability	• Start engagement early and seek to understand how communities wish to participate in decision-making processes and/or engagement activities; • Respect community members' time and investment by communicating how their involvement affects the outcome of decisions.
Inclusion	• Remove barriers to participation in planning and decision-making for all unengaged groups and under-resourced communities; • Use bi-directional, culturally and linguistically appropriate engagement tools and strategies.
Equity	• Ensure community participation reflects the gender and socio-economic experiences and needs of those most impacted by SVTP.
Transformation	• Value communities as partners by committing to long-term relationships and ongoing dialogues beyond funding and project periods. • Monitor the effectiveness of our engagement and partnerships and be open to continuous improvement based on evaluation results and stakeholder feedback.
Sustainability	• Support a culture of mutual learning and development; • Expand the strengths and assets of communities through training, data sharing, technical assistance and other applicable resources; • Build awareness of the SVTP landscape – including key allies and resources – so communities can continue the work beyond project end dates.

Generic Stakeholder Engagement Action Plan

This SEP strategy has identified various stakeholders. The plan provides a guide to how SVTP plans to engage and communicate with each stakeholder group. The broad groups of stakeholders are as follows:

- Farmers;
- Local government and district level stakeholders;
- Central government – Task force, Project Technical Committee, Project Steering
- Parliamentary Committees, Ministers;
- Private sector;
- Development partners;

- Academia; and
- Media.

TABLE 7.2.1: GENERIC STAKEHOLDER ENGAGEMENT ACTION PLAN

STAKEHOLDER GROUP	ENGAGEMENT ACTIVITY	TIMING
Farmers	Community meetings	Continuous
	Consultations	Continuous
	Focus group discussion	As required
	Surveys	As required
	Theatre for development	As required
	Roadshows and mobile vans	As required
	Radio broadcasts	Continuous
	Newsletters	Quarterly
Local government and district level stakeholders	Consultative Committee meetings	Quarterly
	District Council briefings	Bi-annually
	District Executive Committee (DEC) meetings	As required
Central government	Task force meeting	Regularly
	Project Technical Committee meetings	As needed
	Project Steering Committee meetings	Quarterly
	Members of Parliament briefings	As needed
	Cabinet briefing	Annually
Private sector	Business fora	Quarterly
	Trade and Agricultural fairs	When they happen
Development partners	Missions	Bi-annually
	Reports	Monthly/Quarterly
	Newsletter	Quarterly
Academia	Newsletters	Quarterly
	Conferences/workshops	Annually
Media	Press releases	As needed
	Media briefings	As needed

6. Grievance Redress Mechanisms

6.1 Importance of grievance redress mechanisms

Mechanisms to redress grievances are a pre-requisite for large infrastructure interventions where people's key economic productive assets are acquired for a public purpose. This has a likelihood of leaving the Project Affected Persons (PAPs) vulnerable to multiple risks including change of occupation, lowering of income levels and lack of support systems. Hence, it is important to integrate a grievance redress mechanism that addresses concerns of the PAPs and provides for redress effectively and in a time-bound manner within the legal framework to ensure:

- that the aggrieved person is satisfied; and
- such grievances do not become contentious issues, leading to opposition to the proposed development Programme.

Further, it is essential that grievance redress mechanisms are devised, keeping in mind the socio-cultural setting and in accordance with the provisions of the legal system.

A grievance redress mechanism is critical to effectively addressing any issues arising during the Programme implementation; and for Programme monitoring and evaluation. Grievance Redress mechanisms if included in the Programme design, planning and management; help to realize the Programme objectives effectively. This requires setting up appropriate channels to address individual or community concerns, prevent adverse consequences and risks, bring out Programme implementation related issues and corrupt practices if any. Such effective mechanism also brings out positive changes in people's lives as well as enhanced feeling of being important stakeholder in the Programme. Affordable and accessible procedures for settlement of disputes arising from resettlement should include the availability of judicial recourse and community and traditional dispute settlement mechanisms

6.2 The Aim of the grievance redress mechanism

The aim of the grievance redress mechanism is to facilitate quick and fair response, clarification and settlement; or redress to any grievances, complaints and queries; and to quickly and fairly clarify to complainants as well as stakeholders, in a manner that is acceptable to all parties. The general approach is to respond to issues and seek solutions to problems in the earliest stage and avoid taking complaints to courts for redress. In the implementation of the GRM for this Programme, the procedures shall ensure the following:

1. Simple, straightforward and accessible ways for raising concerns, making complaints or resolving any disputes that may arise due to the implementation of the Programme;
2. Identification and implementation of appropriate and mutually acceptable processes and actions to address complaints;
3. Feedback that is treated confidentially, assessed impartially, and handled in a transparent manner
4. Satisfaction of the complainants, with the outcomes of the corrective processes and actions;
5. Facilitate the complainants to report their grievances, queries and/or comments through the process; and
6. Avoidance of the tendency to resort to judicial proceedings.

6.3 Grievance Redress Mechanisms on Resettlement Activities

Grievance Redress Mechanism (GRM) is required to ensure that Project Affected Persons (PAPs) have the ability and opportunity to lodge complaints or concerns, without cost, and with the assurance of a timely and satisfactory resolution of the issue. The GRM process should also ensure that the redress is effectively rendered to Project Affected Persons (PAPs). All PAPs will be informed of the grievance redress mechanism, and the procedures at the time of the preparation of investments' specific Resettlement Plans (RPs).

In order to resolve all grievances effectively, the SVTP 2 will establish Grievance Redress and Management Committees at National, District, Community and at Contractor levels. Overall, the GRM will handle all types of grievances arising from implementation of all the programs under the SVTP 2 including work-related grievances.

The implementation of SVTP 2 may generate several complaints and grievances. Some examples of possible complaints from communities and project workers may include:

- Unfair compensation;
- Objections to use of someone's land;
- Encroachment on private land;
- Delayed compensations;
- Theft of property during construction and public works etc;
- Sub-standard work by Contractors
- Unfair dismissal from work;
- Suspected corruption cases;
- low wages;
- delayed wages;
- overtime;
- Child labour;
- Gender based violence;
- Sexual exploitation and abuse;

Negotiation and agreement by consensus between the project implementing teams and affected persons will provide as the first step to resolve grievances. Nevertheless, Project Management Team (PMT) from SVTP 2 Secretariat will ensure that Grievance Management Committees are established at Community level, District, Contractor and National Levels. These committees will ensure the capturing and resolution of all issues within the prescribed timeframes. PMT shall ensure that communities and Project Affected Persons (PAPs) are sensitized to make use of the existing GRM committees. Furthermore, there will be workers GRM Committee to manage grievances that may arise from workers from construction works among, other works.

The grievance redress mechanism will be communicated to the communities, contractors and employees including all relevant stakeholders so that they are aware of its objective and how the system will be functioning.

GRM Stages

The grievance procedure for SVTP 2 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:

All the PAPs in the respective communities will present their complaints or grievances to the Community Grievance Redress Mechanism Committees (CGRMC), at Group Village Headman GVH level and Traditional Authority levels. A designated person, who is the representative of the people directly impacted by the project will be responsible for overall overseeing that all complaints have been managed. He or she will be the Chairperson of the committee. The documentation and paperwork including referral will be managed by the secretary of the committee who is the Extension worker and neither has voting powers nor contribute to the discussions of the CGRMC.

The CGRMC will record all received complaints or grievances in a Grievance Community Log and Resolution Form as attached in Annex 1. The case shall only be referred to DGRMC when it has not been resolved at the CGRMC. There could be cases where PAPs may refuse to lodge cases at the CGRMC due to proximity or misunderstanding. In such circumstances, both CGRMC and DGRMC

would agree on how to go about it, but preference will be given to CGRMC as first stage of hearing the complaints.

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 5.2. The case shall only be referred to DGRMC when it has not been resolved at 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 CGRMC/WGRMC to resolve the complaint or respond to the PAP. This is so to make sure that grievances/complaints are resolved as early as possible.

Once complaints are received, the CGRMC or 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, PAPs shall be advised to channel their complaints to the right institutions. For SVTP 2 complaints or grievances, CGRMC and 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 PAP.

Stage 3: Resolution and Closure

Where a resolution has been arrived at and the PAP accepts the resolution, the PAP shall be required to sign the resolution and closure section in either the Community Grievance Log and Resolution Form or Workers Grievance Log and Resolution Form.

Stage 4: GRM Registry

A register shall be kept at all GRM committees at all levels to ensure proper record of all complaints and their resolutions. For any case heard, closed or referred at the CGRMC, 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 PMT and another to CGRMC or WGRMC (if it involves in a workers) to notify them how the referred case was handled. This shall enable the District to keep a register (Annex 5.4), of all cases recorded 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 GRM evaluation can be undertaken alongside any other evaluation exercises for the project. This will be possible using copies of registers that Councils and SVTP 2 Secretariat will be keeping. This may assist to trace whether the GRM system was efficient and effective to respond to peoples' 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.

Processes and Institutional Arrangements

The Grievance redress system shall be established at three levels, Community Grievance Redress Management Committee (CGRMC) at community level and Workers Grievance Redress Mechanism Committee at Construction site level, District Grievances Redress Mechanism (DGRMC) at District level. Where these committees are already existing for other existing, established in SVTP 1, the SVTP 2 will maintain them. New committees will be established where they have not been established yet. Lastly, the Project Team Grievances Redress Mechanism Committee (PMTGRMC) at project facilitation level will be established to deliberate on the grievances at PMT level. It is recommended that, where possible, at least 50 percent membership should be women to ensure that women's interests are considered during implementation of the project.

Proposed composition of membership for various committees shall be as follows (all GRM committees will have a mandatory not less than 40% female composition as per Malawi gender policy):

Community Grievance Redress Management Committee (CGRMC)

- Representative of the people directly impacted by the project
- Extension Worker of the area- Secretary for the Committee and has no powers to contribute to discussions or vote
- Faith Based Representative
- An elected lady community member
- Youth Representative
- Catchment Management Committee representative
- Village Development Committee Chairperson

Workers Grievance Redress Management Committee (WGRMC)

- Two worker representatives
- Client representative
- Consultant representative
- Contractor representative

District Grievances Redress Management Committee (DGRMC)

- The District Lands Officer
- The District Community Development Officer
- Environmental District Officer
- District Labour Officer
- Land Resources Conservation Officer
- Consultants Public Liaison Personnel who shall be the Secretary for the Committee and has no powers to contribute to discussions or vote

Project Management Support Unit Grievances Redress Management Committee (PMTGRMC)

- Project Coordinator
- Social Safeguards Specialist
- Environmental Safeguards Specialist
- Project Engineer

PMT in collaboration with District Council shall establish and orient the CGRMC and WGRMC. The District Council shall be responsible for the GRCMCs. The contractor, workers and the communities shall be sensitized of the existence of CGRMC and WGRMC at this level. The committees at this level shall record, vet and hear cases as submitted to them by PAPs at community and construction site levels. When the PAPs are satisfied with the resolutions, the case will be closed.

If cases at the CGRMC and WGRMC are not closed, the grievances shall be referred to the DGRMC. The PAPs shall be communicated that their issue was referred to the upper committee for hearing. The DGRMC shall receive and record the cases as referred to them by either CGRMC and WGRMC. This committee shall hear the case from the PAP and review the decision made by either CGRMC or WGRMC. When the PAPs are satisfied with the decision, the case will be closed.

If the case was not closed at DGRMC, the case will be referred to the PMTGRC for further review and advice on the next course of action.

7. Knowledge Management

Information about the SVTP will be stored both electronically and in print to allow access by all the relevant stakeholders. Electronic documents concerning the Programme will be shared the project website. There will be need for defining what will be stored where.

E-mailing will also be used to communicate between individuals and among groups, particularly for internal stakeholders but as far as possible documents will be disseminated through a link on the project website and selected document repository, depending on the recipient. Printed copies of project documents will be shared with different audiences depending on need.

8. Risk Management

The SVTP will ensure that all sensitivities in relation to information is managed for smooth running of the Programme. For issues such as resettlement and compensation for example, the Programme will ensure that information is communicated and managed effectively. Face to face consultations with communities will be prioritized. In this way, any misinformation and immediate reactions of the affected parties will be addressed right away with facts. In preparing information to support stakeholder consultation on sensitive situations, the following measures will be undertaken;

- Tailor information to suit communities engaged
- Ensure transparency in all facts presented
- Explain uncertainties identified

- Emphasize the importance of stakeholder input and its importance in the decision-making process.
- Explain where stakeholders can source information.

9. Reporting to Stakeholders

The SVTP will strive to report back to project affected persons on commitments made and progress will be communicated to different stakeholders including government ministries and departments, respective parliamentary committees, community members and Project Funders among others. The following considerations will be made when reporting to communities:

- Information will be packaged based on what needs to be communicated, translated into a language and format easily understandable and accessible to stakeholders and communities involved e.g. using leaflets, posters, brochures, write ups, flyers etc.
- Information including progress of the Project will be disclosed to PAPs regularly.

10. Monitoring and Evaluation of the Strategy

The implementation of the Communication and Community Participation Strategy will be monitored and evaluated by the PMT to ensure effectiveness, quality and relevance – and ultimately if they have the intended impact.

Overall, the monitoring and evaluation (M&E) will follow up on whether:

- The communication goals are achieved
- The right communication is disseminated to the right target audiences through the right channels at the right time
- Communication activities are carried out within the budget
- Those directly affected by the SVTP can provide feedback and are listened to.
- Relevant stakeholders are consulted according to plan.
- Communication materials are professional, are high quality in look and feel, and messages are relevant. Audits of the materials will be performed.
- Project implementers have the needed skills to carry out communication activities.
- Project implementers communicate efficiently and cooperate on joint communication initiatives.

Stakeholder Involvement in Project Monitoring

As a tool for promoting transparency and public trust in the SVTP, the Programme will involve different stakeholders in project monitoring. The SVTP will put in place a community-based monitoring system where communities will have an opportunity to provide feedback and have an input from monitoring project activities. This type of participatory monitoring will promote ownership of activities by community members, for example, environmental management and conservations at the project affect wildlife and forest reserves, national park and the Elephant Marsh. PMT will provide requisite capacity building to PAPs to enable effective monitoring.

The project will be monitored by the District Stakeholder Consultative Committee which comprise of the District Council Secretariat, Councillors, Members of Parliament, chiefs and

representatives of NGOs. These will monitor progress and work on addressing issues as they arise at district level.

Information will be provided to stakeholders at all levels to ensure that concerns are discussed and addressed to avoid delaying project implementation. PMT will intensify physical interaction with different stakeholders including at community level. The Grievance Redress Mechanism will also be a vital tool for monitoring project activities. PMT will use community awareness meetings, stakeholder engagement meetings, GRM, the media and information products to provide information and feedback on progress of the project activities and as a way of responding to issues identified and raised by different stakeholders.

APPENDIX 8: CODE OF CONDUCT

SHIRE VALLEY TRANSFORMATION PROGRAMME

CODE OF CONDUCT

This Code of Conduct is part of our measures to deal with environmental and social risks related to the works. It applies to all our staff, laborers and other employees at the work sites or other places where the works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the works. All such persons are referred to as “**Contractor’s Personnel**” and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior that we require from all Contractor’s Personnel.

Our workplace is an environment where unsafe, offensive, abusive, or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

REQUIRED CONDUCT

Contractor’s Personnel shall:

1. Carry out his/her duties competently and diligently;
2. Comply with this Code of Conduct and all applicable laws, regulations, and other requirements, including requirements to protect the health, safety and well-being of other Contractor’s Personnel and any other person;
3. Maintain a safe working environment including by:
 - a. Ensuring that workplaces, machinery, equipment, and processes under each person’s control are safe and without risk to health;
 - b. Wearing required personal protective equipment;
 - c. Using appropriate measures relating to chemical, physical and biological substances, and agents; and
 - d. Following applicable emergency operating procedures.
4. Report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;

5. Treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers, or children.
6. Not engage in any form of Gender-Based Violence (GBV), which encompasses any harmful act perpetrated against an individual or group based on their gender or sex which results into physical, sexual or psychological harm. It is a deeply rooted issue with far-reaching consequences, affecting individuals, families, communities, and workplaces, and these acts violate a person's human rights. GBV manifests in various forms, each with its own devastating impact
 - i. Physical Violence: an intentional use of physical force or threats of violence. It includes any act that inflicts physical pain or harm, such as slapping, hitting/punching, kicking, choking, and the use of weapons;
 - ii. Sexual Violence: forcing, intimidating or tricking someone to engage in any sexual act against their will. It encompasses any sexual act committed against a person's will, including rape, sexual assault, sexual harassment, and forced marriage. Any sexual act with someone that is unable to understand what they are doing or is unable to consent because of age, illness, disability or influence of drugs or alcohol is sexual violence. Forcing a lover or spouse to engage into sexual acts is also sexual violence;
 - iii. Emotional and Psychological Violence: involves acts that cause mental or emotional harm, such as insults or verbal abuse, threats, intimidation, humiliation, stalking, and controlling what a person can and cannot do; and
 - iv. Economic Violence: refers to controlling a person's access to economic resources, such as money, property, and employment, leading to financial dependence and vulnerability. It involves denying a person access to their money, economic activity or other basic needs by either controlling their finances or stopping them from achieving their financial independence.
7. Not engage in Sexual Harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;

8. Not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power, or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially, or politically from the sexual exploitation of another;
9. Not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
10. Not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
11. Complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters and obligations, environmental requirements, Gender-based Violence (GBV), Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH), and Violence Against Children (VAC) or Child Protection (CP);
12. Report violations of this Code of Conduct;
13. Not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the grievance mechanism for Contractor's Personnel or the project's Grievance Redress Mechanism. For members of the Health and Safety and Workers' Grievance Redress Committees, their contracts should not be terminated until such a time when their services are not needed at the company or when they have committed a serious offence against the laid regulations;
14. **Maintain a respectful and professional workplace that is free from any form of physical violence or abuse.** This includes, but is not limited to, threats, intimidation, assault, and any other behavior that could cause physical or emotional harm to another person. Any Malawian or expatriate employee who will assault local employees or vice versa will meet the cost of compensation from his/ her personal account or funds because any form of assault is **NOT** tolerated by the company;
15. In accordance with section 2.4 of the OHS Plan, all new workers, supervisors, engineers, and subcontractor personnel (etc.) must complete an OHS induction.
16. Access to the site for visitors is prohibited without a prior safety induction.

17. The following PPE is mandatory at all times while on site, and additional PPE may be required depending on the specific task being performed.
- Safety helmet
 - Hard toe safety shoes
 - Safety glasses
 - Reflective vest
 - Work suits or overalls
18. Any violation of fall protection measures, including failure to anchor and wear a safety harness when working above 6 feet, will not be tolerated.
19. Work conducted without a valid Permit to Work is strictly prohibited and considered a zero-tolerance violation.
20. The employment or presence of child labor on site is absolutely forbidden and will result in immediate action.
21. The use of cell phones is restricted in all working zones, while operating vehicles or cranes, and when working at height. Personnel are encouraged not to bring mobile phones onto project premises to minimize distractions and ensure safety.
22. All project vehicles used on-site must be maintained in good operating condition in all respects to ensure the safety of operators and others.
23. Fighting anywhere on the project site is strictly forbidden and will lead to removal from the site and potential legal action. Horseplay, including running, pushing, practical jokes, and other unsafe behaviors, is not permitted on the project site, including parking areas. Gambling, intoxication, possession of alcohol or illegal drugs, and the possession of weapons are all strictly prohibited.
24. Long hair must be restrained within hard hats or clothing. Loose necklaces, dangling earrings, and bracelets are not allowed while working on site.
25. All project activities must fully comply with all applicable local and national Occupational Health and Safety (OHS) legislation. In cases of conflict, the more protective requirement will take precedence. When working on suspended scaffolds, cradles, or gondolas, all persons must wear and use appropriate fall prevention equipment at all times to protect against any potential failure of the system.

26. Only qualified personnel must be allowed to operate equipment. Qualification must be documented and filed with the Human Resource Department.
27. Maintain a good standard of housekeeping in the areas where they work
28. Never remove Signage, posters, machine guards and Anything relating to health and safety from equipment or site
29. Act positively and participate in all health and safety issues, work in safe manner to avoid harm to self or others
30. Never deploy and operate a faulty machinery or equipment on site. Report it immediately to the supervisor, site manager or safety personnel.
31. Not engage in any illegal poaching and logging of charcoal along the canal construction or participate in any activity related to violation of laws concerning killing of animals or charcoal burning, and any environmental degradation. This also includes killing or stealing of grazing flocks such as goat, sheep, pig etc. and cutting trees for firewood and any purposes; and
32. Compliance with labour legislation and regulations of the land by both employer and employees even those subcontracted by the main contractor. This includes but not limited to registration of workplaces and presence of valid workplace registration certificates, maintaining a valid Workers Compensation Policy, reporting of incidents to the Ministry of Labour and completion of compensation processes if applicable, provision of appropriate and recommended PPE, and according employees paid sick and annual leave, payment of wages as per the set minimum wages as revised by the responsible Minister from time to time, etc.

RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly.

This can be done in either of the following ways:

1. Contact the following using respective mobile numbers:
 - a) PMT Social Safeguards Specialists
 - b) CCJP (GBV/SEA Service Provider)
 - c) KRC-JV Safeguards Team
 - d) Contractor's Safeguards Team
 - e) Contractor's HR Department
 - f) District Labour Office
 - g) Workers GRC Chairpersons and Secretary

h) Health and Safety Chairpersons and Secretary

2. Put the grievance in suggestion boxes provided at strategic locations in the project area.
3. Contact any member of the Grievance Redress Committees set for the community and for workers.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration.

We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a **VIOLATION** of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

SN	Act of violation of CoC	Penalty
1.	Sexual Harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;	Disciplinary action would include the following according to the nature of act of violation: • Written warning • Suspension • Immediate dismissal • Reporting perpetrator to Police
2.	Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power, or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially, or politically from the sexual exploitation of another;	Disciplinary action would include the following according to the nature of act of violation: • Suspension • Immediate dismissal • Reporting perpetrator to Police

3.	Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;	Disciplinary action would include the following • Suspension • Immediate dismissal • Reporting perpetrator to Police
4.	Any form of sexual activity with individuals under the age of 18.	Disciplinary action would include the following: • Immediate dismissal • Reporting perpetrator to Police
5.	Discriminating or harassing other employee (local or foreigner) or any other person involved in the project on grounds of sex, tribe, religion, nationality, ethnicity, marital status, or disability.	Disciplinary action would include the following according to the nature of act of violation: • Written Warning • Suspension • Immediate dismissal
6.	Entertaining unauthorized visitations including minors on the worksite.	Disciplinary action would include the following: • Written warning • Suspension • Immediate dismissal
7.	Verbal conduct that leads to sexual harassment	Disciplinary action would include the following according to the nature of act of violation: • Written warning • Suspension • Immediate dismissal
8.	Failure of new workers, supervisors, engineers, or subcontractor personnel to complete the mandatory OHS induction as per section 2.4 of the OHS Plan.	Disciplinary action according to the severity, potentially include • Written warning. • Suspension from work until induction is completed.
9.	Visitors accessing the site without completing a prior safety induction.	• The visitor will be immediately asked to leave the site.
10.	Using a cell phone in a working zone, while operating a vehicle/crane, or at height	Disciplinary action according to the severity, potentially including: • Written warning • Suspension • Immediate dismissal.

11.	Failure to wear mandatory PPE at all times while on site	Disciplinary action according to the severity and frequency of the violation, potentially including • Written warning • Suspension from work until proper PPE is worn • Further disciplinary action for repeated offenses.
12.	Operating a project vehicle on-site that is not in good operating condition.	Disciplinary action according to the severity, potentially including: • Prohibited from operating vehicles on site. • Written warning • Suspension • Immediate dismissal.
13.	Engaging in fighting, horseplay, gambling, or being intoxicated/in possession of alcohol or illegal drugs, or possessing weapons on the project site.	Disciplinary action according to the nature of the violation, potentially including: • Written warning • Suspension • Immediate dismissal • Referral to legal authorities
14.	Not restraining long hair, wearing prohibited jewelry, or wearing contact lenses against recommendation	Disciplinary action according to the severity, potentially including: • Written warning • Suspension
15.	Failure to comply with OHS legislation or not wearing and using appropriate fall protection equipment when working on suspended scaffolds.	Disciplinary action according to the severity, potentially include: • Written warning • Suspension • Immediate dismissal • Referral to legal authorities
16	Retaliation against any person who raises a concern	Disciplinary action would include: • Written warning • Suspension • Immediate dismissal
17.	Physical Abuse of Employees, which includes any intentional act that causes or attempts to cause bodily harm or injury to another employee. This includes, but is not limited to: • Assault: Any intentional act that creates apprehension of immediate bodily harm. • Battery: Any intentional and unlawful touching of another person without their consent.	• Written Warning: For minor incidents of physical abuse. • Suspension: For more serious incidents of physical abuse; and compensation to be paid from offender's personal account or funds. • Dismissal: For severe or repeated incidents of physical abuse and

	• Threats of Violence: Verbal or non-verbal communication that conveys a serious intent to cause harm. • Intimidation: Using words, gestures, or actions to create fear or distress in another employee.	compensation to be paid from offender's personal account or funds. • Summary Dismissal: For the most serious incidents of physical abuse, such as severe assault or when employee safety is at immediate risk. • Criminal/Civil Compensation: The perpetrator may be held liable for any damages or injuries caused to the victim, through legal proceedings at the court of law.
18.	Poaching and logging for firewood and charcoal	Disciplinary action would include the following: • Suspension • Reporting the perpetrator to Forestry Department

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For Contractor's Personnel:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact Sinohydro management and officers for further explanation or inquiries.

Name of Contractor's Personnel:

Position:

Signature: Date:

Details of authorized Representative of the Contractor:

Name:

Position:

Signature: Date:

ATTACHMENT 1: Behaviors constituting Sexual Exploitation and Abuse (SEA) and behaviors constituting Sexual Harassment (SH)

The following non-exhaustive list is intended to illustrate types of prohibited behaviors:

(1) **Examples of sexual exploitation and abuse** include, but are not limited to:

- A Contractor's Personnel tells a member of the community that he/she can get them jobs related to the work site (e.g., cooking and cleaning) in exchange for sex.
- A Contractor's Personnel rapes, or otherwise sexually assaults a member of the community.
- A Contractor's Personnel denies a person access to the Site unless he/she performs a sexual favor.
- A Contractor's Personnel tells a person applying for employment under the Contract that he/she will only hire him/her if he/she has sex with him/her.

(2) **Examples of sexual harassment in a work context**

- Contractor's Personnel comment on the appearance of another Contractor's Personnel (either positive or negative) and sexual desirability.
- When a Contractor's Personnel complains about comments made by another Contractor's Personnel on his/her appearance, the other Contractor's Personnel comment that he/she is "asking for it" because of how he/she dresses.
- Unwelcome touching of a Contractor's or Employer's Personnel by another Contractor's Personnel.
- A Contractor's Personnel tells another Contractor's Personnel that he/she will get him/her a salary raise, or promotion if he/she sends him/her naked photographs of himself/herself.

ATTACHMENT 2: Behaviors Constituting Assault, Battery, Threats of Violence, and Intimidation

The following non-exhaustive list is intended to illustrate types of prohibited behaviors:

- **Examples of Assault, Battery, Threats of Violence, and Intimidation include, but are not limited to:**
 - **Assault:**
 - Any intentional act that creates a reasonable apprehension of immediate bodily harm in another person.
 - This can include threatening gestures, verbal threats, or any other act that puts another person in fear of imminent harm.
 - **Battery:**

- The unlawful and intentional touching of another person without their consent.
- This can include hitting, kicking, pushing, or any other form of physical contact that causes harm or offense.
- **Threats of Violence:**
 - Communicating an intent to cause harm to another person, either physically or through other means.
 - This can include verbal threats, written threats, or threats conveyed through electronic means.
- **Intimidation:**
 - Using words or actions to create fear or apprehension in another person.
 - This can include bullying, harassment, use of foul language, or any other behavior that creates a hostile or intimidating work environment.
- **Examples of these behaviors in a work context:**
 - A Contractor's Personnel verbally threatens another Contractor's Personnel with physical harm.
 - A Contractor's Personnel physically assaults another Contractor's Personnel by pushing them or striking them.
 - A Contractor's Personnel repeatedly makes intimidating comments or gestures towards another Contractor's Personnel.
 - A Contractor's Personnel threatens to damage another Contractor's Personnel's property or sabotage their work.

NOTE:

FOR ALL EMPLOYEES DEMOCRATICALLY ELECTED INTO THE WORKERS' GRC AND HEALTH AND SAFETY COMMITTEES, THEIR CONTRACTS SHOULD NOT BE TERMINATED ON CONDITION THAT THEIR CONTRACT PERIODS HAVE ENDED (THE CONTRACTOR SHOULD NOT REPLACE THEM BY OTHER EMPLOYEES IN THE SAME CATEGORY). RATHER, THEIR CONTRACTS SHOULD ONLY BE TERMINATED IF SUCH EMPLOYEES HAVE BEEN INVOLVED IN A GROSS MISCONDUCT SUCH AS CONTRAVENING THIS COC AND APPLICABLE MALAWI EMPLOYMENT LAWS.

APPENDIX 9: SVTP GESI SITUATION ANALYSIS REPORT



GESI SITUATION ANALYSIS REPORT

SHIRE VALLEY TRANSFORMATION PROGRAMME

FEBRUARY 2026

ACKNOWLEDGEMENTS

The SVTP acknowledges the invaluable contributions of the various experts from the Ministry of Gender, Children, Disability and Social Welfare, the Ministry of Agriculture, Irrigation and Water Development and partners in the development and finalization of this policy.

Special thanks are extended to Shire Valley Transformation Program Implementing team, with the leadership of the Project Coordinator, Ministry of Gender, Children, Disability and Social Welfare, Department of Irrigation, Project Technical Committee, and Chikwawa District Council for their valuable contributions towards this study.

Finally, we recognise the World Bank for its essential technical and financial support in the implementation of the s GESI analysis.

DEFINITION OF TERMS

Gender: Refers to the socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for men and women. It defines how labour, resources (land, inputs), and decision-making power are divided between genders, frequently creating disparities in productivity, access to technology, and control over income (<https://www.futureclimateafrica.org/wp-content/uploads/2017/04/gender-agriculture-climate-services-brief-umfula-final.pdf>)

Gender-based violence (GBV): due to unequal gender power relations. It restricts access to resources like land and tools, reducing productivity and safety for women and girls, particularly during climate-related crises or when travelling to collect resources. (<https://openknowledge.fao.org/server/api/core/bitstreams/9f67852f-d10d-444b-a62c-c1f4ad6744ba/content>)

Gender empowerment: providing women with equal access to, and control over, productive resources (land, credit, technology), decision-making power regarding production and income, and leadership roles. It aims to close gender gaps, boost productivity, and improve household food security by dismantling systemic barriers and ensuring equity in agricultural, livestock, and market-based activities. (<https://www.fao.org/gender/learning-center/thematic-areas/gender-equality-and-women-empowerment/1/en?tabInx=0#>)

Gender equality: Gender Equality refers to women and men having equal rights, access, and control over productive resources (land, finance, training), equal decision-making power, and equal opportunities in food systems. It involves overcoming systemic barriers—such as unequal access to inputs and land—to enable women to fully participate in, and benefit from, agricultural development (<https://www.futureclimateafrica.org/wp-content/uploads/2017/04/gender-agriculture-climate-services-brief-umfula-final.pdf>)

Gender equity: Gender equity is the fair treatment, equal access to resources (land, finance, technology), and shared decision-making power for both women and men in farming. It involves addressing systemic barriers that limit women's participation, ensuring they receive equal recognition for their labour, and tailoring support to meet specific needs. (https://lifestyle.sustainability-directory.com/author/sustainability_directory/)

Gender identity: Gender identity refers to the socially constructed roles, responsibilities, and expectations placed on individuals as men, women, or other identities, influencing their access to resources, labour division, and decision-making power in farming. It shapes who manages land, controls income, and performs specific tasks, often creating disparities that need addressing for sustainable development. (https://africa.unwomen.org/sites/default/files/202409/gender_mainstreaming_in_agriculture-training_of_trainers_manual_abridged_version_final.pdf)

Social inclusion: The process of ensuring marginalised groups, including women, youth, smallholder farmers, and people with disabilities, have equitable access to resources, markets, decision-making, and benefits within food systems. It aims to eliminate barriers, reduce poverty, and promote fairness in rural development. (<https://blogs.worldbank.org/en/youth-transforming-africa/how-rural-development-and-agriculture-can-support-social-inclusion#>)

Youth Inclusion: Refers to involving young people (aged 15-35) in agribusiness, technology, and decision-making, which is critical to transforming food systems, reducing unemployment, and increasing productivity. (<https://blogs.worldbank.org/en/youth-transforming-africa/how-rural-development-and-agriculture-can-support-social-inclusion#>)

Disability Inclusion: ensuring people with disabilities have equal access to agricultural resources, training, technology, and land, allowing them to participate fully and safely as farmers, workers, or entrepreneurs. (<https://www.nepad.org/blog/inclusive-pathways-enhancing-participation-of-farmers-disability-agriculture#:~:text=Finally%2C%20environmental%20barriers%20are%20characteristics,lack%20disability%2Dfriendly%20provisions.%5B>)

Social norms: the unwritten rules, shared expectations, and deeply ingrained cultural conventions that guide the behaviour, decision-making, and farming practices of individuals within rural communities. These collective beliefs dictate appropriate methods for land management, technology adoption, and resource stewardship, often based on peer approval or fear of social sanctions.

(<https://cgspace.cgiar.org/bitstreams/06af5f6a-3d6a-406c-9d90-a1cd5753978c/download#:~:text=The%20lens%20of%20social%20norms,collective%20rather%20than%20individual%20behaviors.>)

Gender Norms: are informal, often rigid rules defining appropriate farming tasks, roles, and resource access based on whether one is a man or a woman. They specifically dictate the division of labour, asset ownership (land, tools), and decision-making power between men and women. Social norms govern general community behaviours, such as how, when, or what to farm. (<https://doi.org/10.1080/14735903.2025.2492536>)

ABBREVIATIONS

GBV	Gender Based Violence
GESI	Gender Equality and Social Inclusion
PWD's	Persons with Disabilities
UN	United Nations
SVTP	Shire Valley Transformation Programme
ESIA	Environmental and Social Impact Assessment
GoM	Government of Malawi
GAP	Gender Action Plan
ESMP's	Environmental Social Management Plans
CLC	Customary Land Committees
CLT	Customary Land Tribunal
FGD	Focus Group Discussions
KII	Key Informant Interview
M&E	Monitoring and Evaluation
SOCFE	Small Holder Owned Commercial Farm Enterprise
EPA	Extension Planning Area
PMT	Project Management Team
VSL	Village Savings and Loans
IPV	Intimate Partner Violence
GRC	Grievance Redress Committee
VDC	Village Development Committees
ADC	Area Development Committees
VASP	
AASP	
HHA	Household Approach
TOT	Training of Trainers
GVH	Group Village Head
TA	Traditional Authority
TWG	Technical Working Group
PFA	Psycho-social First Aid
KRA	Key Result area

EXECUTIVE SUMMARY

This Gender Equality and Social Inclusion (GESI) study was conducted as part of the Shire Valley Transformation Program (SVTP) initiative to streamline GESI in its components.

The Shire Valley Transformation Programme (SVTP) is a long-term development initiative aimed at transforming subsistence smallholder farmers into commercial farmers through the provision of gravity-fed irrigation services and secure land tenure. This lays the foundation for increased agricultural productivity and commercialisation. The Programme aligns with the World Bank's Green, Resilient, and Inclusive Development (GRID) framework to advance development in Malawi through economic transformation and sustainable job creation. It further supports the World Bank's twin goals of reducing poverty and promoting shared prosperity in the targeted districts of Chikwawa and Nsanje.

The study employed a seven-domain conceptual framework, encompassing access and control of productive resources, patterns of power and decision making, gender roles and household division of labour, economic opportunities and income, social norms and cultural practices, empowerment and agency, community participation and representation.

The findings revealed persistent gender and social inequalities that affect access to land, income, services, and decision-making power. Although women are legally entitled to own land, cultural norms continue to limit their ownership and control; men still hold primary authority over critical economic decisions, especially those concerning land ownership, resource distribution, and financial investments.

The study further identified that women's limited access to productive assets, particularly in contexts where financial decisions are dominated by male partners, leads to significant economic vulnerability. This lack of control not only restricts their autonomy but also increases the risk of gender-based violence (GBV). The power imbalance inherent in such dynamics means that when disputes occur, women may be more susceptible to various forms of abuse, emotional, physical, and sexual.

Cultural norms play a significant role in perpetuating gender inequality by reinforcing assumptions about men's entitlement to key resources and decision-making power within households and communities. The study highlights how traditional cultural practices reinforce male dominance, particularly regarding control over land and property rights. These norms include beliefs that justify men's exclusive authority in public roles (such as participation in committee meetings) and the suppression of women who challenge these practices.

The findings further indicated that despite an increasing awareness of the potential benefits of involving women in decision-making processes at community levels (e.g., within groups like SOCFES, CLCs, and CLTs), there remain significant barriers to their participation.

In order to address these GESI issues, SVTP will promote gender-responsive programming. Key actions include supporting the strengthening of women's financial access, improving the dissemination of tailored information on gender related laws, challenging harmful gender norms through participatory approaches, and promoting women's leadership and entrepreneurship. Targeted

interventions will address GBV prevention, promoting male involvement in challenging negative gender norms, inclusive participation in key agricultural processes and reduced workload burdens for women. By integrating these strategies, SVTP aims to ensure that women, youth, PWDs, and marginalised farmers are not only reached and supported but actively empowered to shape and benefit from sustainable and resilient rural livelihoods.

1. INTRODUCTION

1.1 Brief description of the SVTP programme

The Government of Malawi, with support from the World Bank, Global Environmental Facility (GEF) and the African Development Bank (AfDB), is implementing the Shire Valley Transformation Programme (SVTP). The Programme Development Objective (PDO) for the SVTP is to increase agricultural productivity and commercialisation for targeted households in the Shire Valley, and to improve the sustainable management and utilisation of natural resources.

The SVTP is one of the flagship Programmes being implemented in Malawi, contributing to the creation of jobs and wealth as well as ensuring food security through agro-industry. The SVTP is a 14-year program (2018-2031) which is being implemented in three sequential but partially overlapping phases. The Programme targets the development of 43,370 ha of land, which will utilise water abstracted from the Shire River at Kapichira dam. The water for irrigation shall be conveyed by gravity to the irrigable areas in Chikwawa and Nsanje districts.

There are three Phases to the SVTP namely: Phase I (SVTP-I) which initiates the process on all pillars, with a major focus on irrigation infrastructure and service provision to the SVTP-I area, land tenure, farmer organization and natural resource management; Phase 2 (SVTP-II) shifts investment focus to agricultural investment, private sector and value chain support, as well as investments in bulk infrastructure for the SVTP-II area while the last phase, Phase 3 (SVTP-III). will be the scale-up phase of investments in the SVTP-II area.

The SVTP is organised into five main components, which are namely;

- a. **Component 1:** The objective of this component is to provide infrastructure and management systems that will ensure sustainable irrigation services. The component intends to provide improved irrigation services to 16,157 hectares and new irrigation services to 27,213 hectares.
- b. **Component 2:** The objective of this component is to support land tenure security and consolidation. The component intends to adjudicate, demarcate, register and consolidate land parcels into large-scale commercial irrigation farms. In Phase 1, the Component has supported the piloting of the new land legal framework in a development setting, the formation of consolidated farm blocks by smallholder farmers with secure land tenure for commercial agriculture. This is continuing in Phase 2, where the component is focusing on certification of demarcated plots, land consolidation, establishment of functional district land registries that will use the Land Information Management System (LIMS) and updating land use plans.
- c. **Component 3:** Agriculture Development and Commercialisation: This component seeks to promote a shift from smallholder subsistence to commercial agriculture through market-led, modern and mechanised agriculture. The component is also promoting the inclusion of smallholder farmers into private sector-led value chains.
- d. **Component 4:** The component objective is to strengthen landscape connectivity and management for improving livelihoods and conserving key biodiversity areas in the Lower Shire Landscape. Interventions are implemented by four Departments of Environmental Affairs, Fisheries, Forestry and National Parks and Wildlife.
- e. **Component 5:** This component supports the establishment and operationalisation of effective coordination, management, monitoring and evaluation systems in order to support

implementation of the Programme. Also included in this component are the environmental and social safeguards, which help to ensure that the project is delivered using the appropriate safeguard mechanisms and protocols.

1.2 GESI integration across land tenure and agriculture commercialisation components

SVTP is planning to incorporate gender equality and social inclusion principles across key components of its intervention. In particular, this means integrating GESI into two critical areas, land tenure and agricultural commercialisation.

Under the land tenure component, the program will ensure that both men and women have legal and customary rights to own or access land. This may involve increasing awareness on land legal frameworks so that women's names are recognised as rightful owners.

Furthermore, the program will implement procedures that account for cultural norms affecting women's participation in land transactions. For example, using community outreach to inform women of their rights or adapting documentation practices that encourage joint ownership.

Under the agriculture commercialisation component, the program will design and implement interventions that provide both men and women with equal opportunities to participate in agricultural value chains. This includes addressing barriers such as access to credit, market information, and technology.

The program will further provide targeted capacity-building efforts to improve the participation of women and socially excluded groups in the commercialisation process.

The project will promote projects that encourage shared decision-making within households and communities. This may involve building the capacity of SOCFES to give equal voice to men and women.

1.2.1 Key elements of GESI Integration

To achieve effective GESI integration, the program will embrace the following core elements in all its efforts;

- a. Transformative approach:** The project will move toward transforming gender norms, roles, decision-making and power relations to enable redistribution of power among families, households, and communities to fully improve their livelihood.
- b. Male engagement: the project** will focus on increasing men's and boys' engagement in advancing gender equality and social inclusion in families and communities
- c. Youth and disability inclusion:** The project will consider intersectional factors, including age, race, gender, disability, and geographical location, in the design and delivery of project interventions to help ensure that socially excluded and marginalised populations are actively participating in its interventions.
- d. Capacity strengthening:** the project will strengthen the capacity of government institutions, civil society organisations, and other stakeholders to mainstream GESI considerations in their programs and policies. This includes providing training, technical assistance, and resources to strengthen their ability to address GESI issues effectively.

2. Scope and Context of the Study

The SVTP GESI analysis study was conducted to define strategies and transformative approaches to ensure greater capacity and capability to mainstream gender and social inclusion considerations across the land tenure and the agriculture commercialisation components. This study was undertaken in Chikwawa within the project area.

The SVTP GESI analysis was aligned to the following key domains:

a. Access and control of productive resources

This domain examines how men and women access critical agricultural resources such as land, water, seeds, fertilisers, credit, and technology. It explores disparities in ownership rights, legal entitlements, and informal practices that might favour one gender over the other. (Ambani & Mungai, 2025)

b. Patterns of Power and Decision-Making.

Analysing decision-making power involves assessing who makes key decisions regarding crop choices, investment in agricultural inputs, land use, and income allocation within households and communities. This domain considers how traditional gender roles influence these processes and the extent to which women are involved or excluded from decision-making. (Mgalamadzi, Matita, & Chimombo, 2024)

c. Gender roles and household division of labour

This area looks at the division of labour between men and women on the farm and in related activities. It includes an analysis of who performs certain tasks, the associated workload, and the recognition (or lack thereof) of women's contributions to agriculture, which often remain undervalued or invisible.

d. Economic Opportunities and Income

The domain focuses on how income from agricultural activities is controlled and allocated within households. It examines gender disparities in accessing markets, engaging in value chains, and benefiting economically from agricultural production, as well as the impact of such inequalities on overall household welfare. In many households, men dominate the selling of produce, financial control, and expenditure decisions, which can deepen inequalities. (Covey, Rose, & sovolainen, 2025)

e. Social Norms and Cultural Practices

The influence of cultural norms and traditions on agricultural practices is a critical domain. This analysis delves into beliefs about gender roles, inheritance customs, marriage practices, and community leadership that shape the opportunities available to different genders in agriculture. Patriarchal inheritance, limited access to inputs, and traditional leadership restrict women to subsistence farming, while men control cash crops.

f. Empowerment and Agency

GESI analysis also focuses on the extent to which agricultural interventions empower women by enhancing their agency, self-confidence, and leadership capabilities. This involves assessing how

programs and projects support women's participation in decision-making processes at both household and community levels.

g. Community Participation and Representation

This area evaluates the inclusivity of agricultural planning, implementation, and monitoring processes. It looks into whether there are inclusive platforms for all genders to voice their opinions, participate in committees or cooperatives, and influence policy decisions that affect their lives and livelihoods.

Each of these domains is interconnected, and this GESI analysis for the SVTP project seeks to identify and address gender-specific barriers while promoting equitable opportunities and outcomes for both men and women.

3. LITERATURE REVIEW

3.1 Conceptual Framework for Gender Equality & Social Inclusion

Gender equality and social inclusion (GESI) are crucial components of sustainable development. For interventions like the Shire Valley Transformation Project aimed at agricultural productivity, irrigation expansion, resilience building, and economic growth in low-income rural communities, integrating GESI ensures that benefits reach marginalised populations and structural barriers are addressed. This review draws on Malawi-specific evidence to anchor the survey's conceptual framework.

Gender equality refers to equal rights, responsibilities, and opportunities across genders. Social inclusion expands this to cover groups that face structural disadvantage, such as women, youth, people with disabilities (PWDs), the elderly, and female-headed households. Effective GESI analysis in development must look at access to resources, decision-making power, voice in institutions, and norms around participation, not just numerical representation (ODI, 2021).

A policy review of GESI in Malawi highlights that persistence of harmful socio-cultural norms, limited access to central services (education, health, credit), and lack of disaggregated data all undermine meaningful inclusion. It also stresses the need to consider intra-household dynamics and intersectional vulnerabilities (e.g., combining gender with disability or age).

3.2 Women's leadership and community participation.

Evidence from Sub-Saharan Africa demonstrates persistent gaps between women's formal inclusion in project governance and their substantive leadership. It is documented that in Malawian rural development projects, women filled an average of 30% of committee seats yet contributed fewer than 15% of agenda-setting decisions, reflecting a structural dominance of male voices even where quotas existed (Mulungu and Chilimba; 2022). Similarly, Magalasi and Chikaphupha (2023) found that patriarchal community norms and women's disproportionate domestic burdens constrained their active participation in SVTP adjacent areas of the Shire Valley. At the continental level, UN Women (2023) reports that women remain underrepresented in irrigation and water governance across Africa, holding only 18% of leadership positions in water user associations despite comprising the majority of smallholder farmers.

Transformative leadership by women, however, produces measurable dividends. A study of community-based natural resource management in southern Africa by Derman and Hellum (2022) showed that female-led village resource committees achieved 28% higher rates of water infrastructure maintenance compliance and more equitable water distribution than male-dominated equivalents. These findings affirm the strategic rationale for investing in women's leadership within the SVTP.

3.3 Gender and the Shire Valley Transformation Project (SVTP)

The Environmental and Social Impact Assessment (ESIA) for the Shire Valley Irrigation Project notes clear gender imbalances in income and participation: men tend to control financial decisions, while women are active in smallholder production yet less engaged in higher-income work; female-headed households and youth are flagged as marginalised groups in the project area (GoM, 2025). The project has the potential to benefit women by improving their access to water; however, it may also increase their agricultural workload as production expands. In addition, limited access to financial services for women and youth may constrain their ability to benefit equally from opportunities arising from the operation of the irrigation system, compared to men. Likewise, landless people may be disadvantaged by the project (ESIA 2017). For this reason, the Shire Valley Transformation project initiated the process of developing the Gender Action Plan (GAP) to ensure that mitigation measures are put in place deal with negative impacts that may be associated with the project interventions.

3.4 Labour influx and associated GBV risks

Development projects that attract a significant number of external workers can inadvertently increase the risk of GBV and sexual exploitation. This risk is especially salient in rural settings where pre-existing gender inequalities and limited social services may compound vulnerability. The World Bank's internal risk assessments for SVTP classify the labour influx profile as "high" and identify GBV as a substantial risk, requiring mitigation mechanisms integrated into project planning and implementation (World Bank, 2025).

Social dynamics documented in Malawi generally demonstrate pre-existing vulnerabilities, with high rates of interpersonal violence against women and girls arising from entrenched gender norms, economic marginalisation, and limited access to justice. While not specific to SVTP, national data indicate pervasive GBV, which underscores the importance of prevention and response systems in project areas (World Bank, 2022).

3.5 Social Inclusion Beyond Gender: Youth, persons with disabilities and older persons

The SVTP project ensures representation of these groups in community engagements, consultations, and decision-making bodies, recognising that they are frequently marginalised in rural development processes. Specifically, the Environmental Social Management Plans (ESMPs) note that involving youths and Persons with disabilities (PWDs) in consultations ensures a broader perspective on potential risks and impacts of the project, allowing tailored mitigation measures to address inequalities in participation and benefits (GoM 2025).

Agricultural transformation projects like SVTP are expected to generate employment and skills development opportunities for youths in rural areas. Although explicit research on SVTP's youth

outcomes is limited, related programming linked to SVTP shows potential pathways for youth inclusion. Youth in Malawi's rural economy face barriers to land access, employment, and productive roles in agriculture and value chains. World Bank analysis emphasises that engaging youth with skills, access to resources, and digital technologies can improve productivity and resilience, but agricultural work is often unattractive due to low returns and high risk.

Baseline social studies from project preparatory phases indicate that youth (commonly defined as aged 15–35) are considered marginalised in terms of employment and economic opportunities in Chikwawa, especially outside of formal agricultural wage work. Their exclusion from lucrative work poses risks of perpetuating rural poverty cycles if SVTP does not catalyse youth involvement in meaningful ways (GoM 2024).

While explicit evidence on how SVTP impacts elderly persons is sparse, baseline social assessments for the project identify older adults as a vulnerable group alongside orphans and youth, given their limited mobility, dependence on agriculture for subsistence, and susceptibility to exclusion from formal economic programs.

Elderly individuals in rural Malawi often rely on smallholder farming for food security and income, making them potentially vulnerable to shocks and changes triggered by large projects like SVTP. Without targeted measures such as inclusion in cooperatives, social protection, and representation in decision-making, the elderly may experience marginalisation in benefit distribution.

3.6 Policy Frameworks & National Strategies

Malawi's legal and policy environment includes several instruments aimed at gender equality and inclusion. The law of the land, the Malawi constitution, talks of non-discrimination and promotion of gender equality in sections 12, 13, 22, 24 and 30. Malawi's Gender Equality Act (2013), National Gender Policy, and National Social Support Program provide the foundation for mainstreaming gender and inclusion in development projects. The National Gender Equality Act (2013) criminalises any discrimination based on sex, the National Gender Policy (2025) mainstreams gender in most of the productive sectors, including agriculture, but studies from other African countries like Malawi reveal that there are sound policies and programs for ending gender inequality, but they are poorly implemented (Filate, 2022). Other contributing factors to gender-based violence in access to and control over land as a resource are due to negative masculinity. In a bid to counter this GBV perpetration based on masculinity, Malawi developed a National Male Engagement Strategy (2024) to ensure that there is increased engagement of male counterparts in the fight against GBV. Affirmative national social protection programs targeting women and girls, including those covering districts such as Chikwawa, which aim to reduce extreme poverty and increase socio-economic empowerment, are being implemented nationwide.

The literature from national policy, project documentation, and academic evidence underscores that gender and social inclusion gaps are significant barriers to equitable agricultural transformation in Malawi. SVTP's emphasis on mainstreaming gender and youth in planning is consistent with broader evidence that targeted strategies, disaggregated data collection, and inclusive governance structures are crucial for equitable development outcomes. The survey was designed to measure not only access

to services and assets, but also decision-making influence, participation in institutions, and normative constraints that affect inclusion.

4.0 ASSESSMENT METHODOLOGY

This assessment employed a qualitative data collection method using consultatively prepared checklists for Focus Group Discussions and Key Informant Interviews.

4.1. Study Coverage

The assessment was conducted in sampled land governance committees, boards of sampled irrigations blocks, and key informant interviews in the Project impact area in Chikwawa district.

4.2. Sampling of Groups

A 2- stage sampling method was used to identify groups to be interviewed. The first consideration in selecting the groups was to target groups in the project's impact area. Again, only groups under the “Land Tenure and Consolidation” component and groups under the “Agricultural Development and Commercialisation” component were under focus. Interventions under these two components are being undertaken by communities themselves. The assessment targeted these groups to understand the gender dynamics and identify gaps in the management of gender under the Project. Key Informant Interviewees were either staff or local leaders who independently worked with the sampled groups and had the capacity to provide objective information.

Under the “Land Tenure and Consolidation” component, 5 Customary Land Committees, 3 Customary Land Tribunals and 3 key informant interviewees were sampled. Under the “Agricultural Development and Commercialisation” component, 5 Boards of the 5 Cooperatives out of 13 were sampled, as well as 3 independent Key Informant Interviewees. Table 1.0 presents the groups sampled.

Table 1: Sampled Groups in the Project Area

COMPONENT 2: Land tenure and Consolidation		
Group Name	Tool to be used	Number of individuals/groups
Customary Land Committees (CLCs)	FGD	4 CLC groups (from the first 3 irrigation blocks) and 1 CLC where project activities have not yet taken place were interviewed, and these are 1. Njereza 2. Mbenderana 3. Chikhambi 4. Fombe 5. Tomali
Customary Land Tribunals (CLTs)	FGD	1. 3 CLT groups were interviewed, Ndakwera CLT 2. Kasisi CLT 3. Maseya CLT

Land reform implementation unit (M&E)	KII	1 based in Lilongwe
District Land Registrar	KII	1 based in Chikwawa
Land Clerk	KII	1 based in Chikwawa in TA Maseya.
COMPONENT 3: Agriculture Development and Commercialisation		
Group Name	Tool to be used	
Senior District Irrigation Engineer (Stuart Chibwana)	KII	1 based in Chikwawa
District Agribusiness Officer (Lenard Chimbali)	KII	1 Based in Chikwawa
District Trade Officer (Georgina Mulande)	KII	1 based in Chikwawa
SOCFE Board	FGD	5 based in Chikwawa (Kambadwe, Nanyelere , Mwana-alirenji, Mantchombe and Chifunda)
Henry Chimpesa from Ministry of Industry and Trade (Department of Cooperatives)	KII	Based in Lilongwe
Jismon Banda, Agriculture Extension Development Officer	KII	Chikwawa, Mitole EPA

4.3 Data Collection and Analysis

4.3.1 Data Collection

Comprehensive FGD and KII guides were prepared and were used to collect data from the sampled groups and Key Informant Interviewees (Annex 1). A team of interviewers was drawn from the Project Management Team (PMT), Chikwawa District Council and Ministry of Gender, Children, Disability and Social Welfare.

Team members were divided into four groups, with two groups collecting data from either the “Land Tenure and Consolidation” component or the “Agricultural Development and Commercialisation” component using the prepared interview guides. Each team comprised five members. Data collection was done in 5 days from 20th to 26th October 2025, with one day used for training and pretesting of the interview guides.

During interviews, members divided themselves into several roles, which included facilitator, interview recorders, and interviewers. Interviews per group took a minimum of one hour, and a minimum of two interviews were done per day. Data/information being generated was either recorded into interview recorders (mostly phones) or in notepads.

4.3.2. Data Analysis

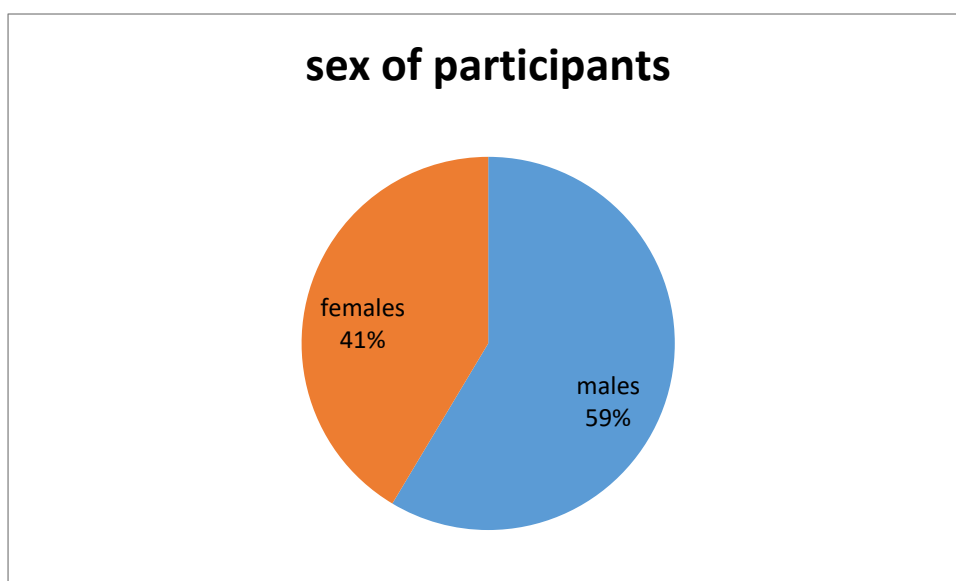
The recorded data/information was transcribed into written data, which was further analysed using thematic coding. Data analysed has been used to prepare the report.

5. GESI ANALYSIS RESULTS

5.1 Demographic characteristic of the respondents

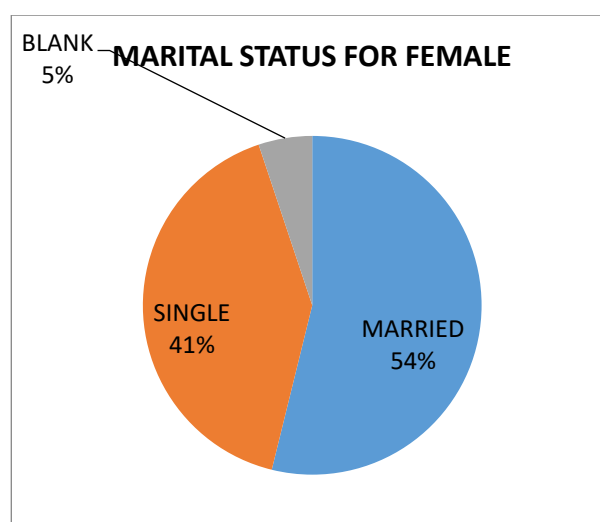
On the demographic characteristics of the respondents, the following were recorded: age, sex, marital status and educational status of the individuals. The main reason for collecting these demographic characteristics is to have a clear understanding of which sex and age category has more access and control over resources, decision making and women's participation in leadership positions at the community level.

Figure 4.1: Respondents by Gender



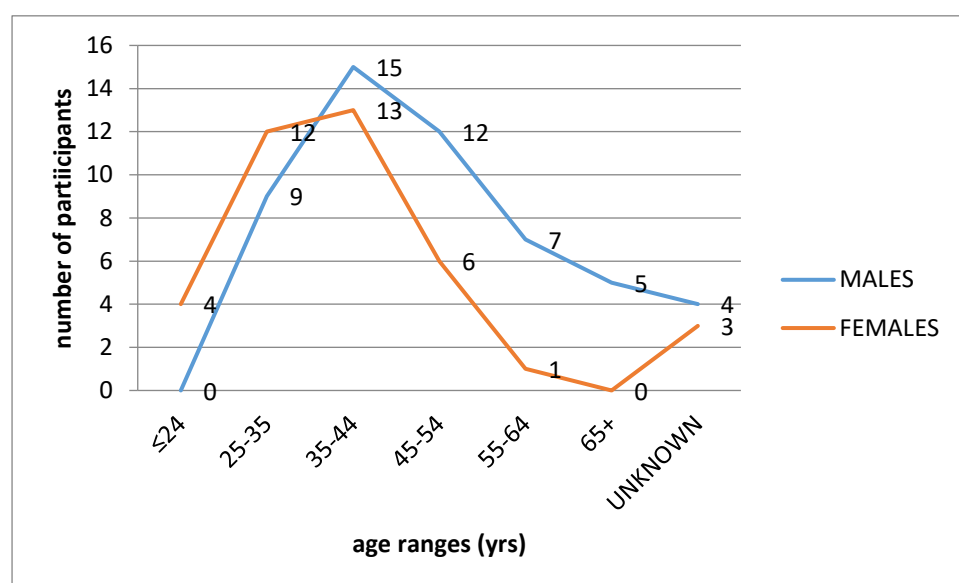
Out of 99 respondents who participated in the study, 41 were females, and 59 were males, representing 41% and 59% respectively. This includes KII respondents composed of technical people from different fields.

Figure 4.2: Marital Status of Respondents



Of the 39 females who participated in the focus group discussion during the study, 41% are single, 54% married, and 5% did not disclose their marital status (Figure 4.2). While for men, out of 52 who participated in the Focus Group Discussion, 51 were married, while 1 did not disclose his marital status.

Figure 4.3: Age Ranges of Respondents



25 respondents out of 99 were aged between 22 and 34 years, while 46 were aged between 35 and 54 years, 17 were aged 55 and above, and the remaining 7 did not disclose their age (Figure 4.3). This represents 25% youth representation in the study.

The research findings synthesised from the focus group discussions and the key informant interviews provide valuable insights into household decision-making power dynamics, particularly regarding gender roles, economic empowerment, land ownership, resource control and gender-based violence.

The research has identified the following thematic areas

4. Gendered power dynamics in decision making concerning land and income utilisation, and men's dominance over economic decisions
5. The economic vulnerability and risk factors, such as GBV, faced by women due to their limited control over productive assets
6. Cultural norms that perpetuate inequality, such as assumptions about men's entitlements.
7. Women's leadership and community participation

5.2 Gendered power dynamics in decision making concerning land and income utilisation, and men's dominance over economic decisions

The research revealed that deeply entrenched gender norms dictate that men hold primary authority over critical economic decisions, especially those concerning land ownership, resource distribution, and financial investments. Women and the youth in a household are frequently expected to comply

with the judgment of elder male family heads, even in contexts where their input might be valuable. This power imbalance has several significant consequences. The research revealed the following;

There is a deeply entrenched pattern where men dominate key decisions, especially around land ownership, resource control and financial decisions. Men often hold final authority in household decision-making, even when joint consultation occurs.

The husband makes bigger decisions like the purchase as well as the sale of land, and the wife and children are consulted; however, the husband still makes the final decision. ***“70% of men dictate on what they want to happen, and it happens”***, explained a participant during FGD with Njereza CLT.

“The husband takes himself as the head of the family; that’s why he is the decision maker, unlike the wife.” Explained a respondent during FGD with Tomali CLC.

The wife’s decisions are associated with managing the home, i.e., purchase of kitchen utensils ***“The wife may think of the current status of kitchen utensils while the husband thinks of the children.”*** Explained a participant during the focus group discussion with Njereza CLT.

Women are frequently marginalised or have their input overridden despite being involved in most households’ decision-making. Husbands influence the decisions that women make regarding their lives since they are the head of the family and also the breadwinner. However, women may appear to make decisions, but their husbands lead in most actions that they take in their daily lives.

Women usually make decisions regarding home budgeting based on available income, either sourced by the husband or herself; however, she is limited to the funds that the husband is willing to leave for the home budget. ***“If a woman makes decisions that are for men, i.e. selling land, people will say she has bewitched her husband and that the family will not be respected”***, explained a respondent during FGD with the Kambadwe SOCFE Board.

The decision-making matrix highlighted in the interviews reinforces that while discussions might be collaborative, men’s voices carry more weight.

Women expressed their concern about the dynamics of decision-making and explained that they would like more decision-making power over the finances they get from selling the crops they grow. When men dominate household decisions, it frequently results in missed opportunities and less effective outcomes. Crucially, women's valuable insights, particularly concerning family well-being and community needs, are often overlooked. This can trigger resistance to change if men aren’t willing to share power, further exacerbating gender inequality.

The consequences extend beyond the household; it reinforces harmful patriarchal norms that silence women’s voices, impacting family relationships and shaping children's understanding of gender roles.

The prevalence of GBV stems from deeply ingrained patriarchal ideologies. This ideology establishes a social structure that subordinates women by granting men authority and control over vital resources, including land, while simultaneously stripping women of ownership rights and decision-making power. (Malinganya, Mubofu, & Jesse, 2025)

This ultimately diminishes women's self-esteem and limits their ability to thrive economically. Furthermore, excluding half the population from decision-making hinders overall economic development and perpetuates cycles of discrimination.

(Nortje, Josh, EmokenwaBaa, & Mapedza, 2023) further highlighted that gender expectations and the power dynamics where women and youth are discouraged from taking initiative or making independent decisions about investments may lead to women and the youth who have limited control over financial resources, reducing their capacity to invest in personal development. Their economic participation is restricted, which can perpetuate cycles of poverty and limit household income. The continued deference to elder men in decision-making reinforces patriarchal norms, making it difficult to shift towards more inclusive practices.

These gendered power dynamics underscore the need for targeted interventions in awareness programs and a cultural shift to promote greater inclusivity in economic decision-making. By challenging traditional roles that marginalise women and youth, communities may unlock broader developmental potential and foster more equitable societies.

5.3 The economic vulnerability and risk factors, such as GBV, are faced by women due to their limited control over productive assets.

The study identifies that women's limited access to productive assets, particularly in contexts where financial decisions are dominated by male partners, leads to significant economic vulnerability. This lack of control not only restricts their autonomy but also increases the risk of gender-based violence (GBV). The power imbalance inherent in such dynamics means that when disputes occur, women may be more susceptible to various forms of abuse, emotional, physical, and sexual.

Land serves as a critical economic resource. Women's limited control over such resources increases their vulnerability to gender-based violence (GBV), where financial dependence and lack of property rights can lead to verbal abuse, physical assault or coercive actions that further marginalise women. The FGD revealed that this risk is particularly pronounced among widows who face threats of dispossession.

The husband makes most of the decisions that are to do with utilisation of funds realised from farming, including utilising funds from other sources other than those realised from farming, e.g., Village savings and loans. In most households, wives may give their opinions on household decisions related to finances; however, only the decisions made by husbands prevail. ***“Most husbands have a tendency of controlling and spending funds realised from farming, where all the farming activities were done by both the husband and wife.”*** sadly explained a participant during a focus discussion with Mwanaalirenji SOCFE Board.

The respondents defined GBV as doing something bad to either a man or a woman, and these encompass physical, emotional, economic and sexual abuse. The respondents were quick to explain that the most prevalent GBV incidents include: women being denied joining VSL groups, unequal distribution of proceeds realised from farming, husbands getting money from their wives after attending trainings. ***“Unless a woman hides a portion realised from VSL groups, the husband would take a Lion's share of those savings “,*** sadly explained a participant during FGD with Maseya CLT.

Additionally, there are dynamics where husbands might demand money from their wives to buy beer rather than household necessities, and conflicts arise where women decide to use the money and not consult their spouses.

Limited control over resources, including land and finances, drastically increases women's vulnerability to gender-based violence (GBV). When women lack influence over income generated from shared activities like farming, a favourable environment for abuse is developed. According to a 2021 discussion paper by Anna Cameron and Lindsay M. Tedds, economic vulnerability and lack of economic independence increase the risk of gender-based violence (GBV) and limit an individual's ability to exit and recover from violent situations. (Cameron & Tedds, 2021)

For instance, husbands who frequently dictate financial decisions usually take the majority of earnings despite joint efforts. This economic vulnerability exposes women to various forms of harm, including emotional, physical, and sexual violence, particularly when disputes arise. Ultimately, these patterns reinforce harmful traditional gender roles, significantly elevating the risk of GBV and perpetuating broader inequalities within families and communities.

(Hamamra, 2025) underscores economic dependence and lack of control over resources create a, enabling environment for abuse. By examining risk factors across individual, relationship, community, and societal levels, the model highlights how structural inequalities, such as economic vulnerability, directly foster gender-based violence. An important facet of gender-based violence that is frequently discussed in sociological and development studies is economic abuse or control. He further describes that when husbands exclusively manage financial decisions, it restricts women's independence, limits their mobility, and hinders their ability to escape abusive relationships. This dependence heightens their risk for physical, emotional, and sexual violence. However, the study suggests that when women have authority over their own earnings or participate in household financial decision-making, they experience a reduced likelihood of intimate partner violence (IPV).

5.4 Cultural norms that perpetuate inequality and assumptions about men's entitlements.

Cultural norms play a significant role in perpetuating gender inequality by reinforcing assumptions about men's entitlement to key resources and decision-making power within households and communities.

The study highlights how traditional cultural practices reinforce male dominance, particularly regarding control over land and property rights. These norms include beliefs that justify men's exclusive authority in public roles (such as participation in committee meetings) and the suppression of women who challenge these practices. For example, the patrilineal tradition known as **"Chitengwa,"** where a woman moves to her husband's home upon marriage, contributes to marginalising women by transferring property rights from wives if divorces occur.

Such practices severely limit female agency; for instance, women are often expected to remain silent even when experiencing abuse at the hands of their husbands or relatives.

The study further showed that if the husband inherits the land from his parents, he retains ultimate decision-making authority, while if the wife inherits the property, she is responsible for making

decisions regarding its registration process. In this way, it is argued that those who truly care for their family will use the land in a manner that benefits everyone.

When husbands inherit land from their parents and have final authority over decisions, including matters like registration. It reinforces traditional gender roles where men are seen as the primary decision-makers. This can perpetuate male dominance in both household and community settings. (Foote, 2025)

The practice of tying land registration decisions to the gender of the inheritor might influence community norms and legal frameworks regarding property rights. It can lead to situations where women's contributions or needs are overlooked during disputes or divorces, thereby exacerbating vulnerabilities. ***“The process of land registration is good; however, it becomes problematic when the husband and wife have separated. There are cases where the family wants to change the name of the owners of the land.”*** Explained a participant during a focus group discussion with Njereza CLC.

Women whose inherited property gives them control over registration may experience some empowerment; however, if most cases default to the husband's authority (due to inheritance patterns), many women remain with limited say in how land is managed or used. This imbalance restricts their economic independence and bargaining power within the household.

Cultural norms significantly contribute to the persistence of gender inequality by embedding assumptions that men are inherently entitled to control critical resources and make final decisions, especially regarding land ownership, financial management, and community leadership. Challenging these cultural norms is vital not only for enhancing women's rights but also for fostering more inclusive and just communities where decision-making power and resource control are shared equitably among men and women alike.

5.5 Women's leadership and community participation.

The findings indicate that despite an increasing awareness of the potential benefits of involving women in decision-making processes at community levels (e.g., within groups like SOCFES, CLCs, and CLTs), there remain significant barriers to their participation. Several key issues contribute to this situation.

The findings also further revealed that there is a justification for violence against women based on perceived transgressions of gender roles. ***“Most of the times women do not involve themselves in different committees because of household chores,”*** explained a respondent during FGD with Fombe SOCFE. Many women face the overwhelming burden of household chores, which limits their availability to participate actively in community groups or committees. The demands of managing daily family responsibilities leave little time for public engagement.

Even when there is recognition of the potential benefits of female participation, women often do not have control over whether they can join decision-making bodies. Their involvement frequently depends on their husbands' permission. Men tend to make decisions on behalf of their families without seeking genuine input or approval from their wives. If a husband is chosen to join a committee, he may simply inform his wife rather than seeking her input or approval.

Women also face social discouragement when attempting to engage in community roles. Campaigns for women's participation sometimes encounter scepticism regarding their qualifications or experience, reflecting broader patriarchal attitudes that undervalue women's contributions outside the domestic sphere.

“Women were not allowed to participate or join different committees because they have younger children, and others because of jealousy of men”

Women face discouragement during campaigns with questions about their qualifications or experience, reflecting deeply ingrained patriarchal attitudes.

While there is growing recognition of the potential advantages of including women in decision-making processes at community levels, these benefits remain largely unrealised due to persistent patriarchal norms. These norms not only justify violence and exclusion when women challenge traditional roles but also place practical limitations on their participation through household responsibilities and a lack of autonomy. Addressing these barriers requires both cultural shifts and policy interventions aimed at empowering women, ensuring their voices are heard, and dismantling the systemic obstacles that prevent them from fully engaging in community leadership and decision-making processes (Ajewumi, 2025).

6. KEY RECOMMENDATIONS

The Gender Equality and Social Inclusion (GESI) study in Chikwawa has identified a number of knowledge and evidence gaps for implementation and promoting GESI in the context of resilience policy and programming in Malawi. The following is a summary of recommendations, particularly for policy makers, development practitioners and researchers to advance GESI in resilience policy and programming in Malawi:

- a. Mainstream GESI and intersectional approaches across sectors to help reduce vulnerability and build resilience across sectors by developing a Gender Action Plan.
- b. Build the capacity of SVTP and its partners to effectively and efficiently integrate GESI in land tenure and agriculture commercialisation components.
- c. To raise awareness of legal, policy and strategic frameworks addressing gender inequalities in land ownership, women's economic opportunities, and community participation.
- d. Strengthen strategic partnerships to enhance and advocate for GESI integration in SVTP.
- e. Identify the enablers and constraints to women's economic empowerment in Malawi and entry points for positive change. This includes expanding the livelihood options and income-generating activities available to women and disadvantaged groups and addressing the additional barriers women face due to unpaid care work and limited access to productive resources.
- f. Promote the meaningful participation of women, youths, persons with disabilities and older persons in decision-making, community planning and leadership roles.
- g. To increase male engagement to challenge gender-powered dynamics in decision-making concerning land and income utilisation, and male dominance over economic decisions.

6.1 GENDER ACTION PLAN

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
OBJECTIVE 1				To strengthen the capacity of SVTP staff, its partners and its key stakeholders to integrate GESI in land tenure and agriculture commercialisation components by March 2029.													
1.1	Training curriculum development on GESI in SVTP	Number of curriculadeveloped	2														
1.2	Training of SVTP staff on GESI	Number of staff trained, Number of training sessions conducted															
1.3	Train partners on GESI	Number of partners trained, Number of training sessions conducted	80 (District Council 74, CCJP 5, Contractor 1)														
1.4	Train stakeholders, SOCFEs, CLTs, CLCs, GRC, Gender Champion, community leaders and	Number of stakeholders trained, Number of training sessions conducted	823 (CLC 266, CLT 5, SOCFEs 117, VDCs 190, VASP 190, ADC, 25, AASP 25)	Training of farmers - # of SOCFE trained on good agricultural practices													

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
	other structures on GESI																
1.5	Identify theatre groups within the project area	Number of theatre groups identified	3														
1.6	Train theatre groups in the GESI theatre for development	Number of theatre groups trained, Number of training sessions conducted	3														
1.7	SOCFE learning visits on HHA to farmer organisations doing well on gender issues	Number of learning visits conducted	2	Training of farmers - # of SOCFE trained on good agricultural practices													
	Objective 2			To raise awareness of legal frameworks addressing gender inequalities in land ownership, women's economic opportunities, and community participation. Indicators													

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
				% increase in women's participation in community land governance decision-making meetings. % increase in women's access to and control over land % of participants demonstrating increased knowledge of legal frameworks addressing gender inequalities in land ownership													
2.4	Develop and consolidate a gender related laws booklet on laws related to land, women's economic empowerment and gender-based violence	# of booklets developed	1														
2.5	Translate the gender related laws booklet into Chichewa	# of booklets translated into local language	1														
2.6	Training of trainers in collaboration with the judiciary on gender related laws. (SVTP, CCJP, Gender,	# of TOTs trained disaggregated by gender	50 (1 per year (3 trainings in 3years)														

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
	Lands, agriculture)																
2.7	Training & Engagement with local Leaders (GVH & T/As)	# of leaders trained disaggregated by gender. -% of participants demonstrating increased knowledge in laws	All Leaders within the project area (Bi- annual (6 in 3 years))														
2.8	Train committees such as CLC & GRC on land laws	% of participants demonstrating retention in laws	All CLC & GRCs (12 (Quarterly))														
2.9	Conduct Awareness of Legal Frameworks to community members	# of awareness meetings conducted	All Communities (12 (Quarterly))														
2.1	Development & distribution of IEC Materials	# of IEC Materials developed & distributed (Gender related laws booklet, Flyers, brochures,	10,000														

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
		billboards, banners, Jingles, T-Shirts)															
2.11	Engagement with Cooperative members	# of engagement meetings held	4 (12 (Quarterly))														
2.12	Conduct women's engagement meetings on representation in leadership	% of women's participation in leadership positions	At least 60-40 representation (12 (Quarterly))	Training of farmers - # of SOCFE trained on good agricultural practices													
2.13	Organize forums for women farmers to share experiences and best practices in leadership and governance	# of meetings conducted	Bi-annual	Training of farmers - # of SOCFE trained on good agricultural practices													
	Facilitate district level exchange visits between women	# exchange visits	Annually	Training of farmers - # of SOCFE trained on good													

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
	in agriculture leadership roles			agricultural practices													
2.14	Conduct legal clinics	# of Legal clinics conducted	12 (36 (Monthly))														
		# of people reached disaggregated by sex, age, & Disability															
	OBJECTIVE: 3			To increase male involvement to challenge gender-powered dynamics in decision making concerning land and income utilisation, and male dominance over economic decisions by March 2029													
3.1	Adapt barbershop toolkit to accommodate economic empowerment, joint land registrations and Joint household decision- making.	Number of toolkits adapted	1		1												

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
3.2	Identify male Champions	Number of Male champions identified	80 Champions		20					20					40		
3.3	Train male champions in increasing male involvement to challenge gender power imbalances in land ownership and income decision-making.	Number of Trainings conducted	237 trainings		20	20	20	20	20	20	20	20	20	20	20	20	
3.4	Conduct Dialogue sessions to challenge gender-powered dynamics in decision-making concerning land and income utilisation, and male dominance over	Number of dialogue sessions conducted	237 sessions		19	19	19	19	19	19	19	19	19	19	19	19	

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
	economic decisions.																
3.5	Conduct community awareness sessions targeting men to challenge gender-powered dynamics in decision making concerning land and income utilisation, and male dominance over economic decisions.	Number of awareness sessions conducted	95		12	12	12	12	12	12	12	12	12	12	12	12	
3.6	Conduct sharing sessions for households trained in household approach to share changes,	Number of sessions conducted	475		39	39	39	39	39	39	39	39	39	39	39	39	

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
	challenges and successes.																
3.7	Facilitate theatre for development activities (drama)	Number of theatres for development activities facilitated (Drama)	13		1	1	1	1	1	1	1	1	1	1	1	2	
3.8	Conduct learning visits on best practices for male champions	Number of learning visits conducted	2		1			1									
	OBJETIVE 4:			Strengthen strategic partnerships to enhance and advocate for GESI integration in SVTP													
4.1	Institutionalize post of gender focal point to include GESI responsibilities	Number of GESI focal point institutionalized	80% of MDAs with GESI FPs														
4.2	Joint supervision of GESI activities in Gender sector	Number of joint GESI bi-annual supervisions conducted	80% of GESI activities supervised														

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
4.3	Monthly supervision of GESI activities at council level	Objective GESI monthly supervisions conducted	80% of GESI activities supervised														
4.4	Mainstream GESI in quarterly TWG meetings at National level	GESI thematic area embedded in Gender quarterly TWG	100% of quarterly TWG meetings include GESI thematic area														
4.5	Conduct a joint GESI needs assessment	Number of GESI needs assessments conducted	3 GESI needs assessments: baseline, midline and end line														
4.6	Mainstream GESI in TWG at district level	Number of TWG meetings held regarding GESI at district council	1 TWG meeting every quarter														
4.7	Integrate GESI in departmental plans/ programmes at all levels: National, District and community levels	Number of departmental plans with GESI elements	Increased % of departmental plans with GESI elements														

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
4.8	Showcase GESI integration in programs	Number of dissemination meetings conducted during Gender related commemoration gatherings	100% of gender commemoration meetings utilised for GESI information dissemination				IWD								IRWD	16 DOGBV	
	OBJECTIVE:5			To transform negative norms, attitudes, and beliefs regarding gender dynamics in decision-making and power relations, and to promote household economic empowerment by March 2029.													
5.1	Develop and adapt a dialogue session manual on Gender Transformative Approaches for CLCs, CLTs, and Community Leaders.	Number of manuals formulated	1														
5.2	Conduct Training of Trainers of district team on the developed manual	Number of trainings conducted (this indicator will focus on number of trainings, including	2														

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
		refreshers, conducted)															
		Number of staff trained (this will show the statistics based on sex, age and disability status)	15														
5.3	Conduct dialogue sessions with community structures	Number of dialogue sessions conducted (the session will be conducted annually, with all committees breaking it into 3 sessions)	255														
5.4	Conduct Psycho-social First Aid sessions during dialogue and community awareness sessions through	Number of Psycho-social First Aid (PFA) sessions conducted (this will depend on number of people who need	450														

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
	community leaders																
5.5	Conduct Community awareness sessions on impact of negative gender norms	Number of awareness sessions conducted	150														
5.6	Review meetings with the community structures and district team on progress of activities.	Number of meetings the district team reviewed	4														
5.7	Mentorship visit with the community structures	Number of mentorship sessions conducted	85														
	Objective 6			To increase women's, youths and other vulnerable groups access to productive resources; credit, technology, information and skills development													
6.1	Design and implement apprentice and			Component 3: provide financial													

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
	mentorship programs for the youth in SOCFES			support to farmers													
6.1.1	Conduct meetings to develop a selection criteria for identifying participants for the apprenticeship program.	Number of meetings conducted	1	Component 3: provide financial support to farmers													
6.1.2	Conduct meetings to shortlist the participants for the apprenticeship program	Number of meetings conducted	1	Component 3: provide financial support to farmers													
6.1.3	Conduct interviews of the shortlisted candidates to select participants for the apprenticeship programs	Number of selected candidates for the apprenticeship program		Component 3: provide financial support to farmers													

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
6.1.4	Orient identified participants, guardians in apprenticeship program(including GBV prevention , reporting and management)	Number of orientation meetings conducted		Component 3: provide financial support to farmers													
6.1.5	Conduct trainings of the selected youths in apprenticeship programs by SANWEKA	Number of youths trained	1	Component 3: provide financial support to farmers													
6.2	Link women and youth groups in SOCFES to financial institutions			Component 3: provide financial support to farmers													
6.2.1	Train women and youth in business	Number of women and youth trained		Component 3: provide financial support to farmers													

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
6.2.2	Train women and youth in value addition skills	Number of women and youth trained		Component 3: provide financial support to farmers													
6.2.3	Conduct engagement meetings with financial institutions to provide credit to women and youth in SOCFEs	Number of women and youth accessing credit		Component 3: provide financial support to farmers													
6.2.4	Organise SOCFES in to village savings and loans groups	Number of VSL groups mobilised		Component 3: provide financial support to farmers													
6.2.5	Train VSL groups in group dynamics, financial literacy, business management and credit management	Number of VSL groups trained		Component 3: provide financial support to farmers													

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
6.3	Provide market information through different media platforms			Component 3: market linkages promoted													
6.3.1	Conduct message development workshop	Number of workshops conducted		Component 3: market linkages promoted													
6.3.2	Support the development of gingles	Number of gingles developed		Component 3: market linkages promoted													
6.3.3	Air gingles through community radios	Number of gingles aired		Component 3: market linkages promoted													
6.4	Link women to markets			Component 3: market linkages promoted													
6.4.1	Facilitate women participation in trade fairs at district and national level	Number of women participating in trade fairs		Component 3: market linkages promoted													

No	ACTIVITY	INDICATOR	TARGET	Aligned with AFDB / World bank performance indicators	YEAR 1 - 2026/2027				YEAR 2 - 2027/2028				YEAR 3 - 2028/2029				Project Budget
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
6.4.2	Conduct meetings to link women with off takers	Number of women linked		Component 3: market linkages promoted													

6.2 MONITORING AND EVALUATION FRAMEWORK

6.2.1 Purpose

This Monitoring and Evaluation (M&E) Framework provides a results-based mechanism for tracking implementation and assessing outcomes of the GESI Situation Analysis Action Plan. It focuses on measuring progress in GESI integration across land governance, agricultural commercialisation, household decision-making, and institutional strengthening up to March 2029, while supporting accountability, learning, and adaptive management.

6.2.2 M&E Approach and Data Systems

The project will apply a mixed-methods approach combining routine activity monitoring, field surveys, participatory community monitoring, and qualitative assessments. Data will be systematically disaggregated by sex, age, and vulnerability status. Monitoring will be supported by a computerised Management Information System (MIS) that consolidates quantitative and qualitative data, supports analysis, and enables timely reporting at community, district, and national levels.

6.2.3 Institutional Arrangements

The institutional framework assigns clear responsibilities across the project lifecycle. The Ministry of Agriculture through the SVTP Programme Management Team (PMT) holds overall oversight, strategic direction, and compliance enforcement authority, including the power to impose contractual penalties, suspend works, or withhold payments for non-compliance. The Contractor serves as the primary implementer of all ESMP mitigation and enhancement measures at site level and is contractually required to prepare and submit for approval site-specific management plans. The Supervision Consultant provides independent technical monitoring and verification through scheduled and unannounced site inspections. The Malawi Environment Protection Authority (MEPA) provides independent regulatory oversight, including review of ESMP approval conditions, periodic inspections and audits, and enforcement of corrective measures. The Mwana Alirenji Cooperative and Water User Associations lead operational-phase management. Other stakeholders include the Chikwawa District Council, National Water Resources Authority, Department of Forestry, Department of Health, Department of Antiquities, Department of National Parks and Wildlife, and development partners (AfDB and World Bank).

The following table summarizes the institutional roles and responsibilities:

Table 3: Institutional Arrangements

Institution	Role and Responsibility
Ministry of Agriculture (PMT)	Overall ESMP oversight; compliance enforcement (contractual penalties, suspension, withholding payments); review and approval of site-specific plans
Contractor	Primary implementer of mitigation measures; prepares CESMP, Waste Plan, OHS Plan, HIV/AIDS Policy, Code of Conduct, GRM procedures, Chance Find Procedure
Supervision Consultant	Independent monitoring and verification; monthly inspections; corrective action recommendations
MEPA	Regulatory oversight; ESMP approval; environmental clearance; audits and enforcement
Chikwawa District Council	Waste approvals; land use planning; local compliance monitoring
NWRA	Water abstraction permit; environmental flow compliance
Department of Health	Health-related mitigation (HIV/AIDS, malaria, cholera); disease surveillance
Department of Antiquities	Chance find management
DNPW	Human-wildlife conflict (hippo/crocodile) management
Mwana Alirenji Cooperative (SOCFE)	Operational-phase management; WUA coordination; community-level GRM
Local Communities and Traditional Authorities	Stakeholder engagement; land access facilitation; conflict resolution

6.3 Results Framework, Reporting, and Learning

Monitoring will be guided by a Results Framework with clearly defined indicators, baselines, targets, means of verification, and responsibilities across the project's strategic result areas. Progress will be reported quarterly and annually, complemented by baseline, midline, and endline evaluations, and relevant data collection tools will be developed. M&E findings will inform learning, risk mitigation, and adaptive management to strengthen GESI outcomes and sustainability.

Table: GESI Action Plan Monitoring Framework

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
1.0	KRA 1:	Capacity Strengthening on GESI Integration							
	Strategic Objective:	To strengthen the capacity of SVTP staff, partners, and key stakeholders to integrate GESI in land tenure and agricultural commercialisation components by March 2029.							
1.1	Training curriculum development on GESI	Number of curricula developed	Number of standardised GESI training curricula developed and approved for use by SVTP staff, partners, stakeholders, and farmers	2	0	Approved curricula, training manuals, and approval minutes	Once (upon completion)	Availability of technical expertise; timely approvals	SVTP, District Councils
1.2	Training of SVTP staff on GESI	Number of staff trained; Number of training sessions conducted	Total number of SVTP staff who completed GESI training sessions during the reporting period	All SVTP staff	0	Training reports, attendance registers (sex-disaggregated), pre/post tests	Quarterly	Staff availability: low staff turnover	SVTP, District Councils
1.3	Training partners on GESI	Number of partners trained; Number of training sessions conducted	Total number of partner staff trained on GESI concepts and application	80 (District Councils 74, CCJP 5, Contractor 1)	0	Training reports, attendance lists, partner reports	Quarterly	Partner commitment; competing institutional priorities	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
1.4	Training stakeholders and community structures on GESI (SOCFEs, CLTs, CLCs, GRC, Gender Champion and community leaders)	Number of stakeholders trained; Number of sessions conducted	Total number of community and institutional stakeholders trained on GESI	823	0	Attendance registers, training reports, and photos	Quarterly	Community leader availability; cultural resistance to GESI concepts	SVTP, District Councils
1.5	Identification of theatre groups	Number of theatre groups identified	Number of functional community theatre groups identified to support GESI awareness raising	3	0	Assessment reports, mapping lists	Once	Existence of functional theatre groups	SVTP, District Councils
1.6	Training theatre groupson GESI theatre for development	Number of theatre groups trained; Number of sessions conducted	Number of identified theatre groups trained to deliver GESI-focused Tfd activities	3	0	Training reports, attendance registers	Annual	Sustained participation of theatre groups	SVTP, District Councils
1.7	SOCFE learning visitson HHA to farmer organisations doing well on gender issues	Number of learning visits conducted	Number of learning visits conducted by SOCFEs to model farmer organisations	2	0	Visit reports, attendance lists	Annual	SOCFE interest and availability	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
No	Strategic Priority / Objective (KRA)/Activity	Indicator	Indicator Definition	Target		MoV	Frequency of Monitoring	Key Assumptions / Risks	
	KRA 2:	Legal Awareness and Women's Participation							
	Strategic Objective:	To raise awareness of legal frameworks addressing gender inequalities in land ownership, women's economic opportunities, and participation in community governance.							
2.1	Promote Women participation in land governance	% increase in women's participation	Percentage increase in women actively participating in land governance decision-making meetings	2,500 community members; $\geq 60\%$ women	TBD	Meeting minutes, attendance lists, and gender audits	Quarterly	Women feel safe to participate; supportive leadership	SVTP, District Councils
2.2	Promote access and control over land	% increase in women's access and control	Percentage increase in women reporting secure access to and control over land	To be established at baseline	TBD	Household surveys, land records, case studies	Annual	Land tenure disputes; customary resistance	SVTP, District Councils
2.3	Train communities to demonstrate increased knowledge of legal frameworks addressing gender inequalities in land ownership	% of participants with increased knowledge	Proportion of trainees demonstrating improved legal knowledge through pre/post assessments	$\geq 60\%$	TBD	Pre/post assessment reports, training reports	Quarterly	Literacy levels sufficient for comprehension	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
2.4	Develop and consolidate a gender related laws booklet on laws related to land, women's economic empowerment and gender-based violence.	Number of booklets developed	Number of consolidated legal information booklets developed	1	0	Published booklet, approval records	Once	Timely technical/legal review	SVTP, District Councils
2.5	Translate the gender related laws booklet into Chichewa	Number of booklets translated	Number of gender-related law booklets translated into Chichewa	1	0	Translated copies, distribution lists	Once	Quality of translation maintained	SVTP, District Councils
2.6	Training of trainers in collaboration with the judiciary on gender related laws. (SVTP, CCJP, Gender, Lands, agriculture)	Number of ToTs trained (sex-disaggregated)	Total number of trainers completing certified ToT sessions	50 (3 trainings over 3 years)	0	Training reports, certificates, and attendance lists	Annual	Judiciary availability and coordination	SVTP, District Councils
2.7	Training & Engagement with local Leaders (GVH & T/As)	Number of leaders trained; % knowledge increase	Total number of leaders trained and demonstrating improved knowledge	All leaders (bi-annual)	0	Training reports, attendance registers	Bi-annual	Political interference; leader turnover	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
			of land and gender laws						
2.8	Training CLCs & GRCs on land laws	% retention of knowledge	Proportion of committee members demonstrating retained legal knowledge	All CLCs & GRCs	0	Training reports, post-training assessments	Quarterly	Committee continuity	SVTP, District Councils
2.9	Conduct Awareness of Legal Frameworks to community members	Number of awareness meetings conducted	Total number of legal awareness meetings conducted at community level	12 annually	0	Awareness session reports, photos, and attendance lists	Quarterly	Community mobilization challenges	SVTP, District Councils
2.10	Development & distribution of IEC Materials	Number of IEC materials distributed	Total IEC materials produced and distributed	10,000	0	Distribution records, photos, and inventory logs	Quarterly	Logistical delays	SVTP, District Councils
2.11	Engagement with Co-operative members to raise awareness on gender related laws	Number of engagement meetings	Total engagement meetings conducted with cooperative members	12	0	Meeting minutes, attendance lists	Quarterly	Cooperative stability	SVTP, District Councils
2.12	Conduct women's engagement meetings on	% women in leadership	Proportion of women occupying leadership positions	60:40:00	0:00:00	Meeting reports, leadership rosters	Quarterly	Entrenched gender norms	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
	representation in leadership		in community structures						
2.13	Conduct legal clinics	Number of legal clinics conducted; People reached	Number of legal clinics conducted and individuals reached (disaggregated)	36 clinics	0	Clinic reports, client registers (disaggregated)	Monthly	Demand exceeds legal service capacity	SVTP, District Councils
No	Strategic Priority / Objective (KRA)/Activity	Indicator	Indicator Definition	Target	Base line	Means of Verification (MoV)	Frequency of Monitoring		Responsible Entity
	KRA 3	Male involvement to challenge gender-powered dynamics in decision-making concerning land and income utilisation							
	Strategic Objective:	To increase male involvement to challenge gender-powered dynamics in decision-making concerning land and income utilisation by March 2029							
3.1	Adapt the barbershop toolkit to include economic empowerment, joint land registration, and joint household decision-making.	Number of toolkits adapted.	Total number of barbershop toolkits revised and validated to include economic empowerment and joint decision-making content	1	0	Approved toolkit, validation reports	Once	Assumes stakeholder consensus on revised content; risk of delays in validation and approval processes.	SVTP, Ministry of Gender

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
3.2	Identify male champions	Number of male champions identified	Total number of men formally selected and registered as male champions	80 champions	0	Male champions register, selection reports	Quarterly	Assumes community acceptance of selected champions; risk of elite capture or low volunteerism.	SVTP, District Councils
3.3	Train male champions in increasing male involvement to challenge gender power imbalances in land ownership and income decision-making	Number of trainings conducted	Count of training sessions delivered to male champions	237 trainings	0	Training reports, attendance lists	Quarterly	Assumes availability and sustained participation of champions; risk of dropout due to competing livelihood activities.	SVTP, District Councils
3.4	Conduct Dialogue sessions to challenge gender-powered dynamics in decision-making concerning land and income utilisation and male dominance	Number of dialogue sessions conducted	Count of structured dialogue sessions held on gender and economic decision-making	237 sessions	0	Session reports, attendance registers	Quarterly	Assumes openness of participants to dialogue; risk of resistance due to entrenched cultural norms.	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
	over economic decisions.								
3.5	Conduct community awareness sessions targeting men to challenge gender-powered dynamics in decision-making concerning land and income utilisation and male dominance over economic decisions.	Number of awareness sessions conducted	Count of community sensitisation meetings held	95	0	Activity reports, photos, and attendance lists	Quarterly	Assumes community leaders' support; risk of low attendance during peak farming seasons	SVTP, District Councils
3.6	Conduct sharing sessions for households trained in household approach to share changes,	Number of sharing sessions conducted	Count of sessions held for households to share changes, challenges, and successes	475	0	Session reports, beneficiary lists	Quarterly	Assumes households are willing to share experiences; risk of social desirability	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
	challenges and successes.							bias in reporting.	
3.7	Facilitate theatre for development (drama)	Number of theatre activities facilitated	Count of Theatre for Development (TfD) performances conducted	13	0	Performance reports, photos/videos	Semi-annually	Assumes drama groups are available and culturally appropriate; risk of weather disruptions for outdoor performances.	SVTP, District Councils
3.8	Conduct learning visits on male champions' best practices	Number of learning visits conducted	Count of exchange visits conducted for male champions	2	0	Learning visit reports	Annually	Assumes adequate funding and logistics; risk of limited cross-district learning due to budget constraints	SVTP
No	Activity	Indicator	Indicator Definition	Target	Base line	Means of Verification	Frequency		Responsible Entity
	KRA 4:	Strategic Partnerships & Institutional Strengthening							

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
	Objective	Strengthen strategic partnerships to enhance GESI integration in SVTP.							
4.1	Institutionalize post of gender focal point to include GESI responsibilities	Number of GESI focal points institutionalised	Gender officers formally designated to handle GESI in MDAs	80% of MDAs	TBD	Appointment letters, organograms	Annually	Assumes political and administrative buy-in; risk of delayed approvals or high staff turnover	Ministry of Gender
4.2	Joint supervision of GESI activities	Number of joint bi-annual supervisions conducted	Supervisory visits conducted jointly to monitor GESI implementation	80% of activities supervised	0	Supervision reports	Bi-annually	Assumes coordinated planning among partners; risk of logistical and budget constraints.	SVTP, Government
4.3	Monthly supervision of GESI activities at council level	Number of monthly supervisions conducted	District-level monitoring visits on GESI activities	80% of activities supervised	0	Council supervision reports	Monthly	Assumes district capacity and transport availability; risk of competing priorities at council level.	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
4.4	Mainstream GESI in quarterly TWG meetings at National level	GESI agenda included in TWG	Evidence of GESI thematic area discussed in TWG meetings	100% of meetings	TBD	TWG minutes	Quarterly	Assumes sustained participation of TWG members; risk of GESI being deprioritised in meetings.	Ministry of Gender
4.5	Conduct joint GESI needs assessment	Number of assessments conducted	Formal assessments conducted at baseline, midline, and endline	3 assessments	0	Assessment reports	Project milestones	Assumes adequate funding and technical expertise; risk of delays in procurement and data collection.	SVTP, Government
4.6	Mainstream GESI in TWG at district level	Number of TWG meetings with GESI	District TWG meetings with GESI agenda	1 per quarter	TBD	Meeting minutes	Quarterly	Assumes functionality of district TWGs; risk of irregular meetings	SVTP, District Councils
4.7	Integrate GESI in departmental plans/ programmes at all levels: National,	Number of plans with GESI elements	Departmental plans that explicitly include GESI interventions	Increased %	TBD	Approved plans		Assumes planning guidelines mandate GESI; risk of tokenistic	SVTP, Government

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
	District and community levels.							inclusion without budget allocation	
4.8	Showcase GESI integration in programs	Number of dissemination meetings	Gender commemorations used for GESI messaging	100% utilised	TBD	Reports, photos		Assumes alignment with national gender events; risk of limited visibility beyond commemorative days	SVTP

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency	Key Assumptions / Risks	
	KRA 5:	Gender Norm Transformation							
	Objective	To transform negative norms, attitudes, and beliefs regarding gender dynamics in decision-making and power relations, and to promote household economic empowerment by March 2029.							
5.1	Develop and adapt a dialogue session manual on Gender Transformative Approaches for CLCs, CLTs,	Number of manuals developed	Gender Transformative Approaches manual developed and approved	1	0	Manual	Once	Cultural sensitivity of content	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
	and Community Leaders.								
5.2	Conduct Training of Trainers of district team on the developed manual	Number of trainings conducted	Trainings conducted, including refreshers	2	0	Training reports	Annually	Trainer retention	SVTP, District Councils
5.3	Train staff	Number of staff trained	Disaggregated by sex, age, and disability	15	0	Attendance lists	Annually	Staff availability	SVTP, District Councils
5.4	Conduct dialogue sessions with community structures	Number of dialogue sessions	Annual dialogues with committees (3 sessions per committee)	255	0	Session reports	Annually	Community fatigue	SVTP, District Councils
5.5	Conduct Psycho-social First Aid sessions during dialogue and community awareness sessions through community leaders	Number of PFA sessions conducted	PFA sessions delivered during dialogues and awareness sessions	450	0	PFA reports	Quarterly	Availability of qualified personnel	SVTP, District Councils

No	Strategic Priority / Objective (KRA)Activity	Indicator	Indicator Definition	Target	Base line	MoV	Frequency of Monitoring	Key Assumptions / Risks	Responsibility
5.6	Conduct Community awareness sessions on impact of negative gender norms	Number of awareness sessions	Sessions conducted on impacts of harmful gender norms	150	0	Reports	Quarterly	Backlash from conservative groups	SVTP, District Councils
5.7	Review meetings with the community structures and district team on progress of activities.	Number of review meetings	Joint progress review meetings	4	0	Meeting minutes	Bi-annually	Stakeholder coordination	SVTP, District Councils
5.8	Mentorship visit with the community structures	Number of mentorship sessions	Mentorship sessions with community structures	85	0	Mentorship reports	Quarterly	Sustained mentor engagement	SVTP, District Councils

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