GOVERNMENT OF MALAWI

MINISTRY OF AGRICULTURE, IRRIGATION AND WATER DEVELOPMENT

SHIRE VALLEY IRRIGATION PROJECT

COMMUNICATION, COMMUNITY PARTICIPATION, LAND TENURE AND RESETTLEMENT POLICY FRAMEWORK

Institutional Capacity Assessment and Development Plan

June 2017

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Definitions

Agri-business Entities	Group of farmers organised in cooperatives, associations or private companies for agricultural purposes
Client	Ministry of Agriculture, Irrigation and Water Development.
Consultant	Consultant for CCPLTRPF COWI A/S with sub-consultant CDM (Centre for Development Management).
Customary land	Means all land which is held, occupied or used under customary law but does not include public land.
Household	The term household refers to a group of people who reside together and share in the functions of production and consumption[1].
Household Head	For purposes of the census, the household head is considered to be that person among the household members who is acknowledged by other members of the household as the head and who makes most decisions concerning the welfare of the members of the household. Hence the people presented in this chapter as household heads are those males or females who were reported as heads by members of their specific dwelling units.[2]
Land holding	One or more pieces or parcels of land held under one title or land right.
Landholder or rights-holder	The person(s) in who land rights or title is vested, who make decisions about the use and any permitted dealings with the land and from who transmission or transfer of rights pass from.
Stakeholder	Stakeholders are either organisations and groups that are involved in the planning, implementation and monitoring of the project (internal stakeholder) or parties who may affected directly or indirectly by the project as well as those organisations which serve the interests of the communities (external stakeholder).

[1] Census for Housing and Population 2008. Gender Report. Section 6.1. NSO
[2] Census for Housing and Population 2008. Gender Report. Section 6.2. NSO

Abbreviations and Acronyms

ADC	Area Development Committee
ADD	Agricultural Development Division
AEC	Area Executive Committee
AEDO	Agriculture Extension Development Officer
AfDB	African Development Bank
AgDS	Agricultural Development Study
CCPLTRPF	Communication, Community Participation, Land Tenure and Resettlement Policy Framework
CDM	Centre for Development Management
CDP	Capacity Development Plan
CSO	Civil Society Organisation
DAC	District Agriculture Committee
DADO	District Agriculture Development Officer
DAHLDO	District Animal Health and Livestock Development Officer
DDP	District Development Plan
DEC	District Executive Committee
DAES	Department of Agricultural Extension Service
DAESS	District Agricultural Extension Service System
DFO	District Forest Officer
DIO	District Irrigation Officer
DLO	District Land Officer
DLRC	Department of Land Resources Conservation
DOI	Department of Irrigation
ESIA	Environmental and Social Impact Assessment
EPA	Extension Planning Area
FGD	Focus Group Discussion
GoM	Government of Malawi
GRM	Grievance Redress Mechanism
GVH	Group Village Head
HH/hh	Household
IMP	Irrigation Master Plan
KCGL	Kasinthula Cane Growers Limited
LTDACS	Land Tenure Diagnostic, Allocation and Consolidation Strategy
MFI	Micro-finance Institution
MGDS	Malawi Growth and Development Strategy

MoAIWD	Ministry of Agriculture, Irrigation and Water Development
MoFEPD	Ministry of Finance, Economy Planning and Development
MOLGRD	Ministry of Local Government and Rural Development
MoNREF	Ministry of Natural Resources, Energy and Environment
PIO	Private Irrigation Operators
PTT	Project Technical Team
PPP	Public-Private Partnership
RPF	Resettlement Policy Framework
SRBMP	Shire River Basin Management Programme
SVIP	Shire Valley Irrigation Project
SVIPIU	SVIP Implementation Unit
SWAp	Sector-Wide Approach
TA	Technical Assistant
T/A	Traditional Authority
TFS	Technical Feasibility Study
TLMA	Traditional Land Management Area
ToR	Terms of Reference
VDC	Village Development Committee
WB	World Bank
WUA	Water User Association

Executive Summary

Background

The lower Shire Valley is an area with a high agricultural potential that has so far not been realised mainly because of erratic rainfall. Realizing that lack of water is the main constraint, the Government of Malawi has for many years intended to develop irrigated agriculture in the Lower Shire Valley to increase the agricultural productivity and reduce the extreme poverty and recurrent need for urgent recovery assistance. A multi-pronged response is required to overcome both climate shocks and the challenge of weak fiscal space. A more climate-smart, diversified and connected agriculture sector is required.

The ***program development objective*** for the Shire Valley Transformation Program would be to: improve the management and utilization of natural resources in a sustainable way to increase productivity and commercialization for households in the targeted area in the Shire Valley. The SVTP-I ***Project Development Objective*** is to provide access to reliable gravity fed irrigation services, secure land tenure for smallholder farmers, and strengthen management of wetlands and protected areas in the Shire Valley. The first project under the program (SVTP-I) will initiate the process of transformation of the Shire Valley and pave the way for agricultural commercialization. The indicative objectives for the second and third phases would be to increase agricultural productivity in targeted smallholder-owned commercial farm enterprises; support value chain and value addition; extend area supported with irrigation and farm development; and continue and expand efforts to address land degradation and sustainable management of forests, wetlands and protected areas.

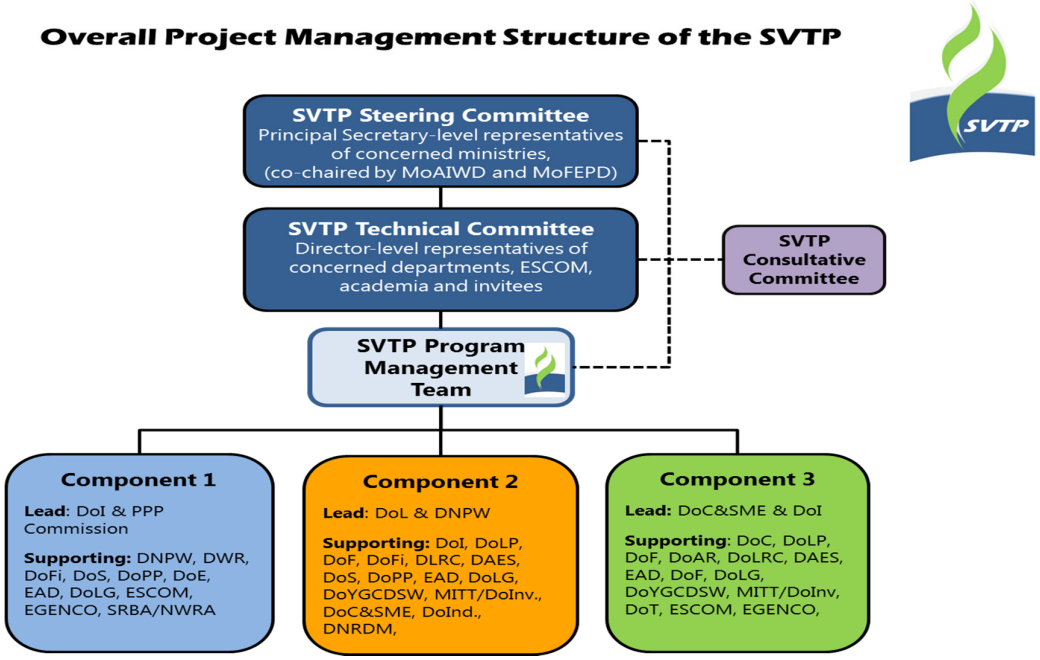
The SVTP is a 14-year program (2018-2031) structured around ***three coordinated pillars***: (i) Providing reliable, professionally managed and sustainably financed irrigation service to a large number of irrigators in a phased construction of the Shire Valley Irrigation Project scheme and providing 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. The tentative budget for SVTIP is 563 million USD, i.e. 223 million for SVTP-I, 250 million USD for SVTIP-II, and 90 million USD for SVTIP-III. For further information on the SVTP see chapter 2[3].

Organisation of the SVIP Implementation

The Program has three major implementation modalities. There is need for a robust implementation mechanism for infrastructure development, secondly, there is need for meaningful community engagement processes on land tenure and initial farmer organization, and lastly project implementation and its success will primarily rely on its market and agri-business orientation and its ability to secure land tenure for its smallholders. For irrigation development, a strong project management team and monitoring will be set up. Many implementation responsibilities in terms of agricultural development and marketing will be given to private investors and farmers organizations. By nature, this Project will be multi-sectoral and will involve a number of key government agencies, and consultation and coordination mechanisms. The main implementing agency is the Ministry of Agriculture, Water Development and Irrigation, who coordinates overall implementation with relevant Ministries and other key players. The Program will have a steering and technical committee at national level, a consultative committee and a technical team at local level, i.e. the Project Management Team. Figure 1 shows the organogram.

[3] From the Project Appraisal Document of 25 May 2017 (PAD 2241)

Figure 1 Overall Project Management Structure of the SVTP



The formation of agri-businesses by the participating farmers will be supported from the onset as it takes three to four years to establish legally registered agri-business entities to start commercial agriculture.

The economic net benefits from intensive agriculture in phase 1 in this area alone is about US$56 Million, while the overall program benefit is estimated at US$314 Million[4]. Many households will be lifted out of poverty due to significant improvements in their disposable income and livelihoods. The project also entails considerable foreign exchange earning benefits due to possible increase in exports and import substitutions. For more information refer to chapter 2 and appendix 2.

Capacity Needs Assessment

The **MoAIWD** plays a central role in the implementation of the SVIP. MAIWD covers many relevant areas for the SVIP, such as irrigation, water resources, agriculture, livestock and fisheries. Its administrative and operational structure consists of four levels, namely central, district, and for the extension work also extension planning area and section.

The MoAIWD is hampered by a high vacancy rate, high staff turnover and inadequate availability of trained personnel on the labour market making it difficult to provide their services. The low government financing and a recent government directive not to allow ministries to recruit new staff, further aggravates the situation. Weak institutional, management and operational capacities within the agriculture sector are further reinforced by inadequate or lack of operational infrastructure and equipment and ineffective policy and technical systems and procedures. Ultimately, these constraints have contributed to weak and inadequate coordination and communication mechanisms among the various actors in the sector. The MAIWD has an Agriculture HIV and Gender Strategy that is being implemented.

[4] This section reference: Agricultural Development Planning Strategy and Draft Project Appraisal Document

The Department of Agriculture Extension Service (DAES) is one of the key departments of the MoAIWD. The District Agricultural Extension Services System (DAESS) is the overarching framework for GOM's system for decentralized extension. DAESS utilizes existing local government structures and adds several important elements: the District Agriculture Committee (DAC), District Agricultural Extension Coordination Committee (DAECC), and District and Area Stakeholder Panels (SP). Agriculture is not part of the service committee structure under the Local Government act of 1998 (GOM/MoAIWD, 2006). Thus, the DAC is to be established to specifically deal with agriculture issues. The DAECC, as the name suggests, is the coordinating body for agricultural extension activities at the district-level and is to, among others, set standards for service delivery, ensure that quality services are provided, register service providers, and link service providers and farmers to the District Assembly. In essence, the SPs are to serve as forums where farmer demand is to be aggregated, either responded to by stakeholders at district or area level, or transferred up through the system for responses. Responses are to filter back to the SPs. The SP structure is innovative and critical to a demand-driven system.

The Malawi Forum for Agricultural Advisory Services (MFAAS) operates at the national-level with membership open to public, private, and civil society sector agricultural extension and advisory service providers. It is an information sharing body concerned with coordination, standardization, quality, capacity building, and advocacy issues. It currently is not formally linked to the DAESS structure SPs, but efforts are underway to formally include MFAAS as the national level SP. In practice, the capacity assessment has shown that many of the elements of the DAESS are not working well or are non-existent. Some districts do not have the DACs so the DAECC is attempting to undertake that function. In some districts, DAECC have insufficient funding and time allotted to meet in order to fulfil its role. Some districts do not have a District SP but they do have an Area SP. Some area SPs function better than others. While the System itself is conceptually solid and offers considerable promise, implementation is weak.

The Department of Irrigation (**DOI)** is the primary implementer of the SVIP. Capacity limitations are particularly serious within DOI. The Department has a total 469 technical staff positions of which 320 (68%) are vacant (IMP, 2015). Reasons for the staff shortages include budget limitations and un-competitive remuneration rates. The staffing shortage is most acute at district level where 72% of the 435 technical posts are vacant. Most of the district level functions, including Chikwawa and Nsanje, are performed by an Irrigation Engineer/Agronomist or assistant level staff. Staffing deficiencies are accentuated by high staff turnover and shortages of office facilities, transport, equipment and recurrent budget, which severely constrain the effectiveness and impact of the Department, particularly at district level and below. The Department does not have adequate capacity (technical and financial) to enforce environmental considerations.

At district level, a new staffing structure has been approved to deal with the increasing demand for irrigation support. The structure is intended to increase staff support at EPA level especially in Irrigation Engineering, whilst currently, technical staff is up to the district level only. The major bottleneck is that the move has come at a time government has suspended recruitment in the civil service as

part of wider austerity measures adopted by government to achieve economic recovery.

The efficiency and effectiveness of the **Land Resources Conservation Department** is hampered by numerous constraints. Firstly, at the Individual and Organisational level, there is inadequate human capacity due to deaths, retirements and resignations. The Department has a vacancy level currently standing at 48 %. The Department has thus relied on already constrained extension staff in most districts. Quality of work is further compromised by the lack of requisite training of some staff. Secondly, at institutional level, inadequate funding levels both from the Government and donor sources make the Department incapable of fully exploiting its potential and its financial resources are dwindling over the years. Thirdly, at institutional level, inadequate and obsolete equipment hampers the Department's technical capacities in areas of surveying, soil assessment and mapping. Replacement of equipment is hampered by lack of funding. Fourthly, at organisational level, escalating land degradation as land users hardly adopt the measures for arresting the problem. This may be due to the inadequacy of the unit to convey the land degradation arresting measures. Fifthly, at institutional level, limited coordination and collaboration in land resources management initiatives with other Departments in the Ministry and other sectors.

The **Department of Fisheries** is to ensure sustainable management of aquatic resources, especially fish. The Department has no staff positions within the Districts of Chikwawa and Nsanje, in spite of its high fisheries potential. At the institutional level, the Department feels that there is not much coordination and harmonisation of policies among different sectors of the Government. Other challenges include, low and declining funding, high vacancy rate and insufficient capacity constraints, lack of up-to-date fish resources and production information systems.

Research and training were described as similarly very critical to the progressive and sustainable development of the fisheries sector. The constraints include: 1) limited range of expertise to effectively support the progressive development of the sector, 2) lack of stat of the art equipment at research centres and coordination between research centres, 3) weak monitoring and evaluation system and thus hard to show results.

The **Department of Animal Health and Livestock Development** (DAHLD) promotes animal health and livestock development. Major individual and organisational capacity challenges affecting the department include low vacancy rate (about 40%). Nsanje and Chikwawa are foot and mouth disease areas yet have high potential to increase beef production and therefore need adequate staff and resources. In Nsanje the top district position has been vacant for more than five years. The department further faces the challenge of achieving efficiency in dealing with emergency disease outbreaks due to low funding levels and institutional challenges. Working through the mainstream agricultural sector affects timely reporting of critical issues/emergencies such as the foot and mouth disease.

The **National Water Resources Authority** (NRWA) is responsible for water licensing, water use information management and levy assessment. The NWRA is an autonomous government sponsored body. The capacity to enforce its mandate

has to be strengthened and reach beyond the large irrigation operators, such as Illovo.

In line with the Local Government Act, 2002, and the Decentralisation Policy, 1996, the decentralisation system allows for **districts** to operate fully in terms of planning, programme implementation and monitoring. The District Council is the hub of all district activities and development. The District Council is headed by the District Commissioner. The assembly governance system includes the Council which is comprised of local leaders. The ADC and the AEC provide linkages with Village Development Committees (at group village level) and local communities.

District Councils generally complained of dwindling and delayed financial disbursements from the central government. Similar to the central level are the high vacancy rates[5] which worsen at field extension level thereby compromising extension delivery. For example, the District Agriculture office is faced with a 65% vacancy rate in Chikwawa and 62% at Nsanje District. Overall, there are critical staff deficiencies at leadership, subject matter specialists and extension delivery level in all departments, including the agricultural extension, irrigation, fisheries and livestock departments. The situation is worse at sub-district levels especially of extension staff.

Key district level and field level key positions in agriculture are all qualified to degree level and Diploma level respectively as required by their establishments except the Department of Animal Health and Livestock Development which is significantly under-resourced in terms of qualifications. Challenging skill capacity areas included financing and contract management capacities, project development and evaluation, contract management, gender mainstreaming, establishing management entities, establishing commercial farming (transition from subsistence to commercial farming), participatory demand- and market-driven development planning, strategic management and costing.

Micro-Finance Institutions (MFI) services include savings, credit and related training to support development of the entrepreneurial culture among the farmers. While the mushrooming of MFIs has to some extent improved access to credit, two issues still stand out as bottlenecks in ensuring adequate access and utilization of the resources. Firstly, interest rates tend to be prohibitive at all levels largely due to inflation which currently is around 23% which forces formal MFIs and banks to charge interest rates close to 45% per annum, and secondly MFI's limited ability to transform their clients into entrepreneurs.

Malawi has some 38,000 smallholder schemes that are small in economic terms but can be very significant for food security of individual households. The size of smallholder gravity fed schemes average 7.6 ha, motorised schemes at 3.2 ha, treadle pumps at 1.1 ha and watering cans at 0.15 ha. **Water User Associations** (WUAs) tend to suffer management and operational deficiencies due to a number of factors, such as weak leadership, poor technical and management skills, lack of knowledge and understanding among officials and farmers about issues such as irrigation, land and water reforms. WUA membership and annual plot fees are presently very low which contributes to low WUA capacity and threatens their sustainability. Capacities at community level are hampered by the widespread poverty forcing people to focus on survival rather than development. Financial,

[5] For staffing details at the district see table 5.

irrigation scheme management, entrepreneurship, marketing and other required skills for irrigated farming and agri-business are general poor. The rate of illiteracy is high as is the prevalence of HIV/AIDS. This has caused the collapse of several WUAs. Phata solved this by hiring a professional company to manage their cooperative. Capacities of women and the poor are generally lower than those of men and richer people. Vulnerability needs to be addressed to prevent a further marginalisation of those groups.

Most **agri-business units** operating in the SVIP area, were established in collaboration with the local sugarcane companies Illovo and PressCane. Kasinthula Cane Growers Association and Phata Sugarcane Outgrowers Cooperative (Phata) are the two biggest schemes. A third outgrowers' scheme KAMA was established in 2015 and has made the first irrigation design and are now seeking funds to hopefully start operating in 2017. Other agri-business units within the area are Nchala Sugar Cane Growers Association (registered as limited company), Mwalija and Vimvi irrigation schemes. The existing agri-businesses have developed and tested models for pooling of land as a basis for transforming subsistence farming into commercial farming enterprises with the assistance of professional management.

The Phata model has been chosen as a base for developing the new agri-business units based on the results of the stakeholders' consultations. Success factors include a well organised farmer groups system with regular communication and a high degree of participation with major decisions taken at meetings of all farmers; a lean management structure of professionals mainly provided by a private company; information on finance and other issues on farm management. Little or no resettlement took place when forming the agri-business unit because existing farmers became members of the cooperative by exchanging their land for shares according to an agreed formula. Most of the land is used for commercial farming, but part also for growing food.

Private irrigation operators have added significant value to enhance production and marketing capacity of sugarcane which in return is benefiting the participating smallholder farmers significantly. Companies such as AgriCane have enabled the farmers to embrace a business approach and culture to decision making.

Capacity Development Plan

The purpose of the capacity development plan is to develop the organisational, institutional and individual capacity of players in the SVIP from the central level to community level to effectively support implementation of the SVIP. The main principles enshrined in the plan are: result oriented, complementary approaches and strategies, multi-stakeholder approach, long term planning, tailor made and sustainability.

Institutional, organisational and individual capacity[6] assessment and development has been mainstreamed throughout the implementation phase. It has been incorporated in all relevant main reports, such as the Land Tenure Diagnostic Allocation and Consolidation Strategy (LTDACS), the Grievance Redress Mechanism (GRM), the Resettlement Policy Framework (RPF), the Agricultural Development Planning Strategy, the Environment and Social Impact Assessment and Management Plan, etc. It should be mainstreamed throughout the implementation of the SVIP in all terms of reference, planning of implementation mechanisms and activities, reporting, monitoring and budgets. Capacity

[6] The division of organisational, individual and institutional capacities is taken from the TOR.

development will be provided when required in the process using various methodologies, such as action training, traditional classroom training that can be put into practice immediately or soon after the training, showing examples, etc.

The capacity development plan addresses three levels:

- The organisational/institutional level consisting of community level stakeholders (e.g. Village Development Committees (VDCs), Area Development Committees (ADCs), new agri-business units, district council and national government that will be involved in the SVIP implementation,

- Systematic level identified policy, legal, societal support, incentives, stakeholder participation and accountability aspects of capacity that need to be addressed to support implementation of the SVIP.

- Individual level identified eight thematic groups of training needs that need to be addressed at individual level to support implementation of the SVIP, namely: extension delivery; irrigation water management; Cooperative development; Agronomy; livestock development; fisheries development; wealth creation; project planning and accountability.

In addition, capacity development has been included in the; Resettlement Policy Framework, 2) Land Tenure Diagnostic, Allocation and Consolidation Strategy, 3) Grievance Redress Mechanisms, 4) Gender and Youth Strategy Study, 5) Environmental and Social Management Plan, 6) Agricultural Development Planning Strategy.

The total estimated budget for the various capacity development activities is United States Dollars six million two hundred and ninety four thousand nine hundred only. More details are provided in section 4.13 and appendixes 3, 4 and 5.

1 Background

1.1 The Shire Valley Transition Project

The lower Shire Valley is an area with a high agricultural potential that has so far not been realised mainly because of erratic rainfall. Realizing that lack of water is the main constraint, the Government of Malawi has for many years intended to develop irrigated agriculture in the Lower Shire Valley to increase the agricultural productivity and reduce the extreme poverty and recurrent need for urgent recovery assistance. A multi-pronged response is required to overcome both climate shocks and the challenge of weak fiscal space. A more climate-smart, diversified and connected agriculture sector is required. Malawi is well endowed with agricultural and water resources and its neighbours are experiencing growth, creating an enlarged demand base for its produce.

The ***program development objective*** for the Shire Valley Transformation Program would be to: improve the management and utilization of natural resources in a sustainable way to increase productivity and commercialization for households in the targeted area in the Shire Valley. The SVTP-I ***Project Development Objective*** is to provide access to reliable gravity fed irrigation services, secure land tenure for smallholder farmers, and strengthen management of wetlands and protected areas in the Shire Valley. The first project under the program (SVTP-I) will initiate the process of transformation of the Shire Valley and pave the way for agricultural commercialization. The indicative objectives for the second and third phases would be to increase agricultural productivity in targeted smallholder-owned commercial farm enterprises; support value chain and value addition; extend area supported with irrigation and farm development; and continue and expand efforts to address land degradation and sustainable management of forests, wetlands and protected areas.

The SVTP is a 14-year program (2018-2031) structured around ***three coordinated pillars***: (i) Providing reliable, professionally managed and sustainably financed irrigation service to a large number of irrigators in a phased construction of the Shire Valley Irrigation Project 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. These pillars all contribute to the overarching goals of the program, and build on each other in a phased approach. For further information on the SVTP see chapter 2[7].

1.2 Scope and Objective of the Capacity Assessment

The capacity needs assessment was intended to undertake a participatory process to assess training needs for different public, private and beneficiary stakeholders, identify different

[7] From the Project Appraisal Document of 25 May 2017 (PAD 2241)

competences required for the implementation and subsequent management of the scheme and at different zoom levels (from individual to institutional capacities), taking the current institutional landscape and proposed scheme and its proposed governance structure as a starting point. The assessment also intended to assess capacities at all relevant levels in the public sector, as well as those of local and national private service providers and training institutions, as far as service delivery to the SVTP is concerned. Importantly also, the study was intended to assess water user capacities at farm/scheme level, as well as capacities available in the basin in existing irrigation schemes. The output of the capacity needs assessment is a capacity development plan, for implementation in future phases of the project, and combined identified skills gaps in all fields as the comprehensive plan for SVTP.

1.3 Institutional and Capacity Assessment & Development Plan

This report combines the support to establishing farmers' organisations together with the capacity assessment of the main players in the implementation of the SVTP and proposes ways to develop their capacities. Institutional issues, capacity assessment and development has been mainstreamed in all reports, such as the Land Tenure Diagnostic, Allocation and Consolidation Strategy, Grievance Redress Mechanism, Resettlement Policy Framework, Agricultural Strategy Development Plan, etc.

This chapter 1 provides the background to the institutional support, capacity assessment and development plan. The next chapter 2 describes the overall SVTP implementation arrangements and its main key players. Chapter 3 presents the capacity needs assessment and chapter 4 the Capacity Development Plan and budget.

1.4 Communication, Community Participation, Land Tenure and Resettlement Policy Framework (CCPLTRPF)

The objective of the CCPLTRPF is to facilitate the project preparation and implementation during the planning phase (feasibility level studies) of the project, as well as develop land development strategies. This includes; a) studying land tenure issues (Land Tenure Diagnostic and Allocation and Consolidation Study) and carrying out detailed land tenure mapping relevant for the proposed intervention; b) develop a land allocation and consolidation strategy; c) develop a Resettlement Policy Framework; d) implement a structured stakeholder consultation process and liaise with the relevant consultants, and communicate implementation mechanism issues to the relevant stakeholders; e) develop and implement a grievance redress mechanism to accompany the intervention; f) develop an updated project socio-economic baseline; g) carry out a gender and youth strategy study; and h) carry out Capacity Assessment and Development Plan.

1.5 Communication and Information

Communication will be crucial for the implementation of the SVTP. Continuous communication and provision of information on the SVTP, its processes, procedures, ways to get information and raise grievances, information on progress, etc. need to be communicated

continuously. The SVTP Implementation Unit will be overall responsible for the communication.

The purpose of the Information Office is to act as a hub for all project communication and stakeholder consultation activities. Information leaflets and maps and other information materials will be available at the centre for both internal and external stakeholders. The office will be staffed by an Information Officer.

The main issues requiring continuous communication and information are:

- SVTP Implementation, such as:
  - Implementation process and its phases.
  - Location and times construction is taken place.
  - Location and contact details of the SVTP Management Unit.
  - Functions of the SVTP Management Unit.
  - Support offered by the SVTP Management Unit, its eligibility criteria and how to apply for support.
  - Due dates for completion of establishing agri-business units.
- Resettlement, such as:
  - Dates, venues and topics of the meetings in connection with the preparation of the Resettlement Action Plans (RAPs).
  - RAPs implementation process and procedures
  - Dates and meeting points for the survey to establish the affected assets.
  - Gazetting the land required for the SVTP infrastructure and cut-off dates for establishing entitlements
  - Valuation results and payments
- Grievance Redress
  - The grievance redress mechanism, its process, procedures.
  - Grievance Redress Committees and contact details.
  - Grievances received and the status of handling each grievance for all issues pertaining the SVTP.
- Land Tenure Diagnostic, Allocation and Consolidation
- Formation and establishment of Agri-business units
- Gender, youth and vulnerable groups.
  - How these are addressed.
  - Names, location and contact details of the contact persons at the SVTP Implementation Unit and at the communities.

Communication and information will be included in all: 1) Terms of Reference; 3) Required reporting, and; 3) Indicators for monitoring progress, outcomes and results.

During the preparation phase suggestion boxes were placed at easily accessible location throughout the SVTP project area that has received many numerous inputs and feedbacks from the stakeholders. Further information material was printed and widely distributed through the SVTP Communication Office, at meetings and other gatherings. The information material contained images portraying the messages as good as possible for those who are not able to read or read well. This will be a good practice to continue in the implementation of the SVTP.

1.6 Crosscutting Issues

Crosscutting issues will be mainstreamed throughout the implementation of the SVIP and described in the various sections. The main aspects are:

- Ensuring communication materials are gender and youth sensitive and designed in such a manner that the illiterate grasp the meaning.

- An organisation will be hired to especially address gender, youth and vulnerable groups and ensure these groups will be treated equally with other groups. This organisation will be hired by the SVTP Management Unit.

- Contact persons will be identified and trained within each community who will help the illiterate in understanding the process and filling forms, etc., create gender awareness and assist both women and men in obtaining their rights, the poor and the vulnerable people to attain their rights, etc.

- Separate meetings/consultations, etc. will be organized with adult men, adult women, young men and young women to obtain their separate views. Organising separate meetings will ensure that each group is able and allowed to speak and thus their voice are heard and taken into account.

- Communication, information and training materials will include gender, youth, vulnerable groups, including the poor and include images to make the content understandable to the illiterate.

- Data will be segregated into adult men, adult women, young men and young women wherever relevant.

- Monitoring data will be gender and age disaggregated and the monitoring team will assess whether crosscutting issues are adhered to. Therefore, crosscutting issues will be included in all Terms of Reference, the required outputs and the team will include an expert in the crosscutting issues of gender, vulnerable groups, poverty and illiteracy.

For further information reference is made to the Gender and Youth Strategy Study for the SVIP.

2 Shire Valley Transitional Programme

The SVTP is a 14-year program (2018-2031) structured around ***three coordinated pillars***: (i) Providing reliable, professionally managed and sustainably financed irrigation service to a large number of irrigators in a phased construction of the Shire Valley Irrigation Project 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. These pillars all contribute to the overarching goals of the program, and build on each other in a phased approach.

2.1 Objectives

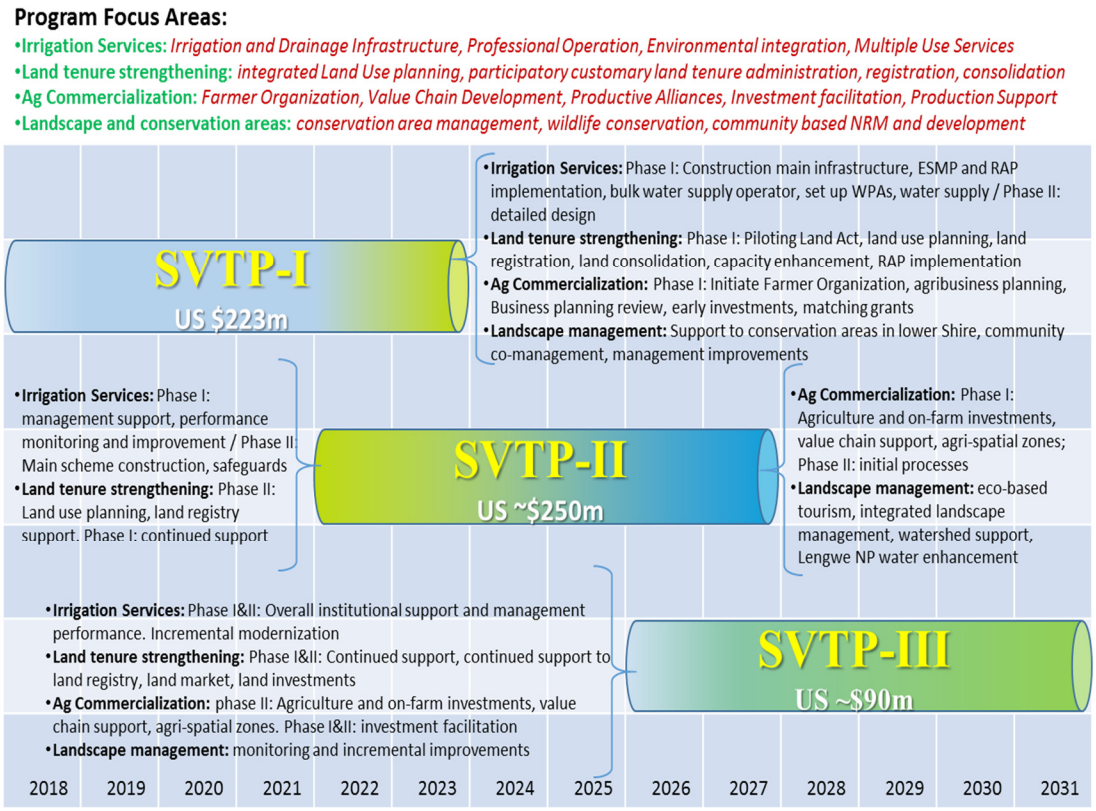
The ***program development objective*** for the Shire Valley Transformation Program would be to: improve the management and utilization of natural resources in a sustainable way to increase productivity and commercialization for households in the targeted area in the Shire Valley. The SVTP-I ***Project Development Objective*** is to provide access to reliable gravity fed irrigation services, secure land tenure for smallholder farmers, and strengthen management of wetlands and protected areas in the Shire Valley. The first project under the program (SVTP-I) will initiate the process of transformation of the Shire Valley and pave the way for agricultural commercialization. The indicative objectives for the second and third phases would be to increase agricultural productivity in targeted smallholder-owned commercial farm enterprises; support value chain and value addition; extend area supported with irrigation and farm development; and continue and expand efforts to address land degradation and sustainable management of forests, wetlands and protected areas.

2.2 Three Sequential but Overlapping Phases

This project is the first of ***three sequential but partially overlapping phases***[8] (with different financiers entering at different times and in parallel financing arrangements). In general terms, 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 as these precede any downstream development. While not investing heavily yet in areas of agricultural commercialization and investment promotion, it incorporates the vision and principles of agricultural modernization and commercialization and prepares for downstream investments under SVTP-II, which shifts investment focus to agricultural investment, private sector and value chain support. Finally, SVTP-III is the massive scale up phase of investments to the SVIP-II area. Phases can be overlapping and there is both donor and private sector interest in investing in agricultural development within the scheme as well as associated services. The graph below shows the indicative investments in each phase.

The tentative budget for SVTIP is 563 million USD, i.e. 223 million for SVTP-I, 250 million USD for SVTIP-II, and 90 million USD for SVTIP-III.

[8] Information in this chaper is taken from the Appraisal Document of 25 May 2017 (PAD2241)



Agricultural intensification and modernization will be pursued in a ***market-led irrigated agriculture development project*** that will, at the same time be inclusive of smallholders in private sector-led value chains to help them move from subsistence farming to commercial agriculture. The overall area for the project (including villages, non-irrigable and non-agricultural land) is about 800 km^2. Irrigation will be provided over time through the phased construction of the new gravity-fed Shire Valley Irrigation Scheme which will supply over 29,000 ha of agricultural land presently under rainfed cultivation, creating agricultural development opportunities in this fertile valley, away from the risk-prone floodplain, and the existing Illovo and outgrower estates (approximately 14,000 ha), making part of their electricity requirements available for other uses in the country. The overall project area is mostly under traditional (customary) tenure. The proposed irrigation area is based on technical feasibility and is roughly equally divided between customary land and private. The customary land will be consolidated into irrigated blocks that will be exploited by the smallholder farmers with the support from selected private agribusiness enterprises in various value chains and organizational structures, with Smallholder Owned Commercial Farm Enterprises (SOCFE) as the basic building block. A performance contract arrangement will be used for the management of the bulk water infrastructure. This concentrated growth pole investment will enable significant improvement in rural livelihoods, agricultural outputs and value addition, and will both benefit farmers as well as have regional economic impact.

Component 1: Irrigation Service Provision (US$136.1 million including US$86.0 million IDA)

This component will finance the works, goods and services necessary to develop irrigation and drainage infrastructure in the SVIP-I area. This includes preparation of detailed designs, construction supervision and quality assurance, construction of the physical bulk water

conveyance and main distribution system, major drainage and service and access roads. Provisions will be made for SVIP-II area in terms of canal dimensions, right of way, and preparatory studies. In parallel, the component will support spatial planning in the wider project area to ensure the irrigation scheme is well integrated with other land uses and natural resources. Subcomponent 1.2 will support the establishment of a professional management, operation and maintenance system for the scheme.

Component 2: Preparing land-based investments and natural resources management support (US$14.29 million, including US$8.7 million IDA and US$5.59 million GEF)
The first phase in developing commercially oriented agriculture is to address security of land tenure and organize farmers for commercial production. The new legal framework for land administration, which was adopted in 2016 entails important challenges and opportunities for project design and implementation. In an effort to broaden the multisector benefits of the program and enhance environmental sustainability within the modernization program, the program will invest in natural resources management investments in Lengwe/Mwabvi protected areas, the Elephant Marshes and associated activities that will support improved natural resource management and the development of a broader land use plan for the Shire Valley. These investments will be in addition to mitigation measures identified in the project ESIA; and they will build on earlier work under the GoM's Shire River Basin Management Program, with which this component shall be closely coordinated.

Component 3: Agriculture Development and Commercialization (US$49.9 million IDA)
Financial sustainability of the SVIP irrigation investment can only be achieved through profitable agricultural production. Farms will need to be linked to Commercial Value Chains for production and sale of their produce. Such value chains are currently poorly developed due to the low level of commercial production in the area, with the exception of sugar cane. Development of commercial value chains will be needed to enable farmers to gain access to markets and commercial services; this is essential to enable viable commercial agriculture.

Component 4: Project Management and Coordination (US$22.6 million, including US$15.4 million IDA – out of which US$ 6.0 million is PPA repayment)
This component will finance the multiple coordination and management needs of a project of this scale and focus on the roll out of the communications strategy and manage grievance redress mechanisms, as well as day-to-day management of the project. The sub-component will finance project management structures that have been established and in place throughout project preparation. Fiduciary management will be with the PMT, and procurement and FM staff have been recruited and the positions need to be maintained. The project will provide funding for professional and support staff to strengthen the Technical Team and facilitate its operations, including procurement, financial management, environmental and social safeguards specialists, as well as a diverse range of short term expertise and annual external audits.

2.3 Location and Features of Phase 1 of the irrigation scheme

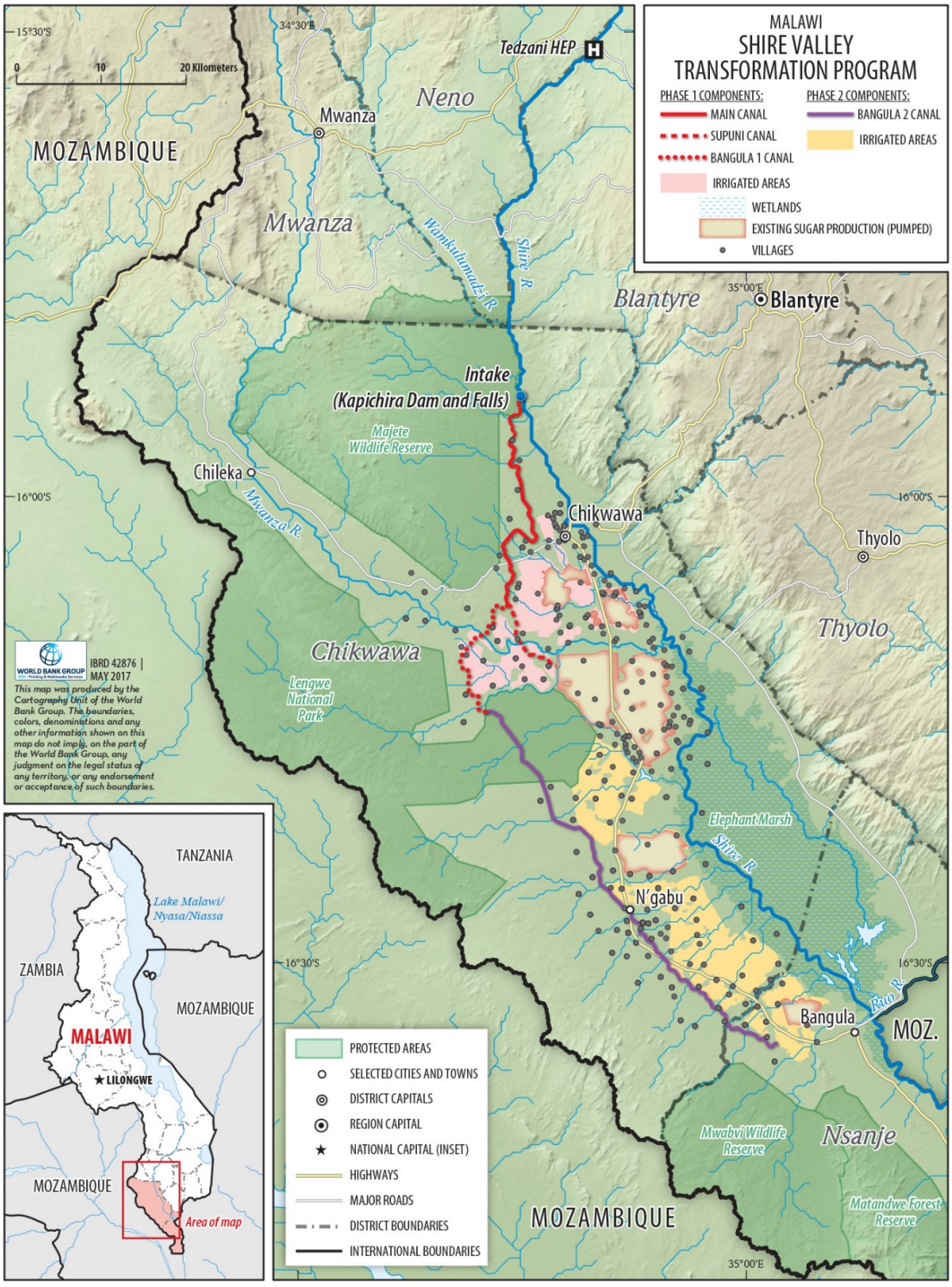
The intake structure is located on the right side of the Kapichira Reservoir. The design abstraction and maximum feeder canal conveyance capacity is 50 m3/sec. This capacity is for a command area of up to 43,370 ha, which includes 22,280 ha 21,090 ha to be developed under SVIP I and SVIP II respectively. The conveyance canal is designed for the full command area during SVTP-I. The first kilometre of the feeder canal will be constructed

within the Majete Wildlife Reserve. This section will comprise a covered siphon structure in order to minimize adverse environmental impacts and allow free movement of wild animals. The conveyance canal is almost 34 km long from the intake at Kapichira Dam to the bifurcation point where the canal splits in two. Five secondary canals supply water to the Zone I-1 (6,098 ha) and are directly connected to the Main canal 1. One of the main canals is 10.6 km long and shall supply water to an area covering 12,124 ha, including 9,995 ha belonging to Illovo Estate. The other main canal will initially have a length of 18.4 km to irrigate zone A (4,058 ha), and will be extended by about 70 km to irrigate the area to be developed during Phase 2. Secondary canals will be constructed to take water from the main canals and deliver it to the farm zones.

A number of hydraulic structures are required for the higher-order canal system. Siphons will be constructed for crossing locations where valleys, rivers, and main roads are passing. Control and offtake structures (mostly weirs) will be constructed to distribute the water and deliver it to the head of the farm zones. There will be measurement devices to measure the volume of water delivered to each farm zone. There will be road and foot bridges, animal crossing points, offtakes to water points, as required. Sediment basins and night storage reservoirs will be constructed, as required. Drainage channels and access and field roads will be incorporated into the irrigation system. The conveyance canal will be used as source of drinking water for a projected 41,000 people in Chikwawa Township.

The secondary canals will each serve a number of farm blocks where farm organizations comprising groups of farmers will practice commercial agriculture. The design of the farm blocks and the irrigation method (surface, sprinkler, drip) will be prepared in full consultation with the members of the farm organizations, supported by professional organizations that are also expected to manage the irrigation infrastructure and farm operations on behalf of the members of the farm organizations. It is expected that during Phase I about 22,280 ha of on-farm area can be equipped for irrigation, including connecting about 10,100 ha of the currently irrigated estate areas to the gravity system. The actual area will depend on the readiness of the farmers (see Component 2 and 3), progress with the construction of the higher-order canal system, and the available financing. A mix of irrigation methods, including surface and pressurized irrigation, is expected to be developed, based mostly on farmers' preferences. A mix of irrigation methods, including surface and pressurized irrigation, is expected to be developed, based mostly on farmers' preferences, crop choice, land development cost considerations (with respect to soil and topography), and water productivity considerations. Figure 2 below shows the areas included in the SVTP.

Figure 2 Map of the SVTP area



A water supply system with a design capacity of 14.4 l/s will be designed in collaboration with SRWB and installed to benefit residents within and around the Chikwawa Boma area. Applying the 2008 population growth rate, the beneficiary population is projected to be 30,619

by 2016 and 41,335 by 2026. The source of water shall be from a Feeder Canal which will be designed to include this demand over and above the irrigation water requirements.

Throughout the scheme provisions are designed for safe canal crossing for people, vehicles and animals; a variety of safety measures especially near populated areas; safe washing and playing access; livestock watering, to allow for safe multiple use of the infrastructure. These aspects will be designed in detail with the neighbouring communities and more details are provided in the Environmental and Social Management Plan (ESMP) and RPF.

Table 1 Summary of gravity-fed irrigation areas to be developed

Phase	**Irrigation area (in ha) to be developed by typology**		
	New	**Direct supply to equipped area**	**Total**
Phase I	11,535	10,745 (Illovo and outgrowers)	22,280
Phase II & II	17,515	3,575 (Illovo and outgrowers)	21,090
Total	**29,050**	**14,320**	**43,370**

The new area of lands to be included are those in the vicinity of Kasinthula, Mthumba Valley and between the Mwanza River and Lengwe National Park. During Phase I about 11,535 area of land is expected to be equipped with irrigation infrastructures. Similarly, 17,515 ha irrigable area will be equipped in Phase II. The already equipped 14,320 ha (10,745 ha and 3,575 ha) area of lands under Phase I and II respectively, will only require connecting them with the gravity water supply of SVIP.

2.4 Implementation Arrangements

The Program has three major implementation modalities. There is need for a robust implementation mechanism for infrastructure development, secondly, there is need for meaningful community engagement processes on land tenure and initial farmer organization, and lastly project implementation and its success will primarily rely on its market and agri-business orientation and its ability to secure land tenure for its smallholders. For irrigation development, a strong project management team and monitoring will be set up. Many implementation responsibilities in terms of agricultural development and marketing will be given to private investors and farmers organizations. The approach will be based on successes in Malawi and in other countries in developing value chains based on promoting coordination among private stakeholders and on delivering well targeted services to help farmers comply with markets' requirements.

By nature, this Project will be multi-sectoral and will involve a number of key government agencies, and consultation and coordination mechanisms. The main implementing agency is the Ministry of Agriculture, Water Development and Irrigation, and it coordinates overall implementation together with the Ministry of Finance, Economic Planning and Development (MoFEPD). Other agencies involved in the program are the Ministry of Natural Resources, Energy and Mining (MNREM); the Department of National Relief and Disaster Management (DNRDM); the Ministry of Lands and Housing (MLH); Ministry of Local Government and Rural Development (MLGRD); the Ministry of Transport and Public Works (MTPW); the Ministry of Tourism and Culture (MTC); Malawi Investment and Trade Centre (MITC), EGENCO; the PPP Commission; the Southern Region Water Board (SRWB); and the Shire River Basin Agency/National Water Resources Authority.

The Program will have a steering and technical committee at national level, a consultative committee and a technical team at local level. The Project Management Team (PMT) comprises of civil servants and recruited professionals for project management, coordination and monitoring. This team will be based in the Shire Valley (Chikwawa) and nearby Blantyre.

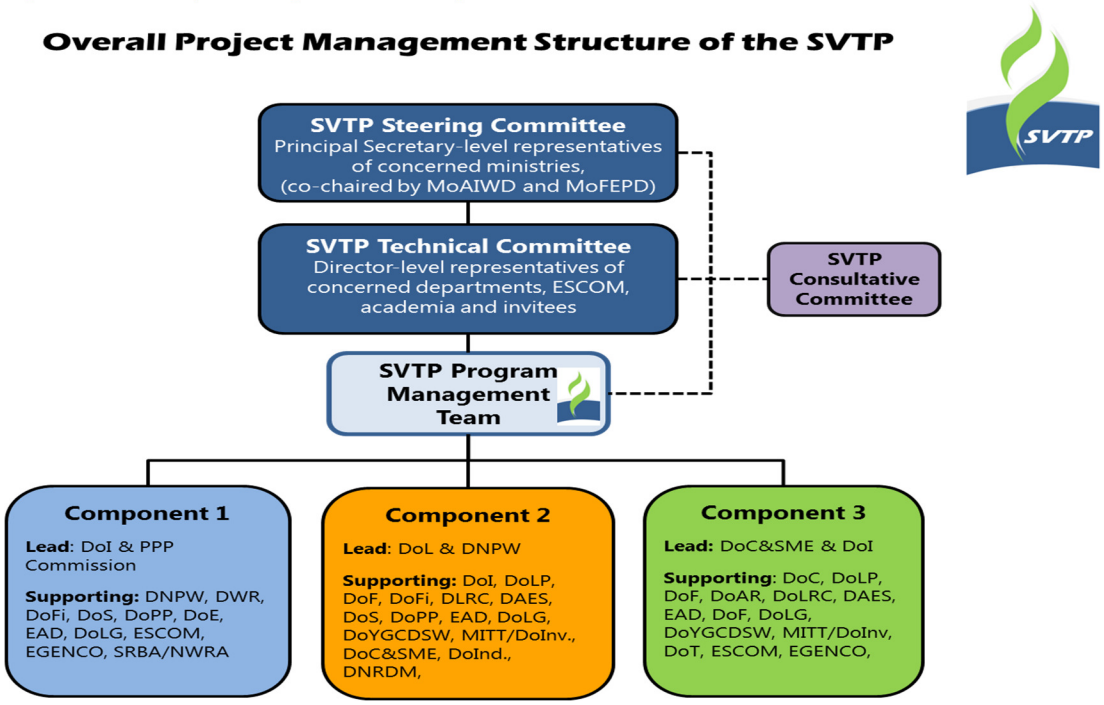
The Program has three major implementation modalities. Firstly, there is need for a robust implementation mechanism for infrastructure development, secondly there is a need to have structured stakeholder consultation and community development to organize land tenure, land use planning and community engagement, and thirdly project implementation and its success will primarily rely on its market and agri-business orientation and its ability to secure land tenure for its smallholders.

a) For irrigation development, a strong project management team and monitoring will be set up and technical services will be outsourced. For irrigation management the contract with the private operator will be based on careful commercial modelling and financial and legal structuring of the overall project. The contracting authority will be (an agency of) the Ministry, and the Water Purchase Agreements will be drawn up with all prospective water users (per block). Support to on-farm irrigation depends on farm choices and is included under c).

b) For farmer organization and community development a strong support mechanism will be set up for citizen engagement and farmer's organization support. This will include support to structured dialogue, grievance redress, and process monitoring including communities. Discussions with communities on land consolidation will employ field based modern techniques to avoid processing errors and delays.

c) In terms of the agricultural development aspects within the SOCFE's, many implementation responsibilities will be given to private investors and farmers organizations. The approach will be based on successes in Malawi and in other countries in developing value chains based on promoting coordination among private stakeholders and on delivering well targeted services to help farmers comply with markets' requirements. This approach will be developed under the program and will be based on the model of challenge funds in which private sector and marketing expertise is well represented.

Figure 3 Overall Project Management Structure of the SVTP



These choice for three distinct approaches recognizes the very different nature of each pillar of the program. They are combined within one umbrella implementation and coordination mechanism at the program level, that brings together different implementing and supporting agencies, as well as strong stakeholder and private sector representation. MoAIWD will share coordination responsibilities with the MoFEPD. A Project Steering Committee (PSC) (at principal secretary level), a Project Technical Committee (at director level), and a multisector Task Team have been established for this purpose which encompasses all these agencies. This collaboration is governed by a joint MoU. This MoU spells out objectives, specific role of each stakeholder, the requirement to mainstream and provide staff time for implementation, knowledge management and overall support.

2.5 Roles and Responsibilities

The PSC will provide programmatic and strategic guidance, direction and oversight to the program. The PSC is chaired by the PS of Agriculture, Irrigation and Water Development and co-chaired by the PS for Planning of the MoFEPD. It comprises the Ministry of Natural Resources, Energy and Environment (MoNREE); the MLH; the MLGRD; the MIT; the MTC; the DNRDM; and the PPP Commission. Composition and ToR for the PSC will be further detailed in the Project Implementation Manual (PIM). The Project Coordinator will serve as Secretary of the PSC. The PSC would meet at least twice a year and is responsible for inter-sectoral coordination and facilitation, annual programming of activities and approval of work plan and budget, monitoring implementation and results (including audits), policy guidance and recommending corrective actions that may be necessary.

The Program Technical Committee (PTC) will provide a multi-sector advisory and consultative platform to review technical reports, synthesize information and insight on program

preparation and implementation issues. The PTC is co-chaired by the Director of Irrigation Services in MoAIWD and the director of planning in MoFEPD. Members include Director-level representatives of the Departments of: Water Resources (DWR); Department of Irrigation (DoI); National Parks and Wildlife (DNPW); Department of Energy (DoE); Environmental Affairs Department (EAD); Department of Surveys (DoS); and DNRDM; as well as representatives of the ESCOM; MITC; The Shire River Basin Agency/National Water Resources Authority; Private Sector/Agribusiness Representatives, Civil Society Organizations (CSOs); academia and invitees as appropriate. The Project Coordinator will serve as Secretary of the PTC. The PTC would meet at least three times per year and be responsible for: technical guidance and oversight of program activities (including reports and studies), review and synthesize suggestions and recommendations from studies, reports and by the consultative committee and submitting these to the PSC for review and decision.

The PMT, led by the Project Coordinator from MoAIWD and based in MoAIWD, would ensure day-to-day coordination and management. Based in Chikwawa or Blantyre, the Project Coordinator would report directly to the PS and act as Secretary of the PSC and PTC. The MoU will be re-affirmed ahead of Project Effectiveness between the different concerned ministries and departments to formalize existing working arrangements and clearly define roles and reporting modalities during program implementation. The PMT is a fully integrated project team which includes professional staff from the main government agencies involved in the SVTP-I who are assigned full-time to work on this project, as well as Technical Assistance on planning, management and evaluation.

2.6 Transition to Land-Based Commercial Agri-Business

Although it will take 3-4 years for the physical infrastructure to be in place, the process of capacitating farmers to take full commercial advantage of the investment will begin immediately after the project is commenced and in parallel with the land consolidation process. The envisaged building block for commercial agriculture is a land-based agri-business partnership among smallholders. This will take the form of the participatory formation of commercial farming organizations (cooperative or company), with an expected minimum size of about 500 ha per unit. In SVIP Phase I it is anticipated that there will be about 15 of these units, partially based on expansion of existing farmer models, but primarily through introduction of new farm entities. The basis would be current owners of affected lands and people affected by the irrigation infrastructure and interested in irrigated agriculture, holding shares in this entity distributed on a pro rata basis per the amount of land that each owner ‘contributes’ to a consolidated block.

The project will recruit a specialized firm of experts in local land governance, land administration and land use planning. These experts will support the government in the development of a land registry at district level, the deployment of modern and efficient technology for the delimitation of 5 TLMAs, the identification and recording of existing household land rights, and the establishment of around 30 Group Village land committees. The project will also support a participatory process aimed at developing a regulatory framework for customary estates applications (see detail in the Land Tenure Annex). Issuance of the TLMA certificates and the constitution of the Land Committees should be achieved at an early stage of the project implementation as well. Through this localized support, the project will

also generate lessons and test methodologies for the operationalization of the new legislation in the context of large-scale land-based investments, feeding into and benefiting from parallel initiatives in the operationalization of the land laws elsewhere in the country. The specialized firm working on land local governance will work closely with the Ministry of Lands Housing and Urban Development (MoLHUD) at both national and local level to implement the legal provisions in Chikwawa district. The actual process of land consolidation itself is intertwined with community mobilization and SOCFE development

Detailed Communication and Provision of Information on the proposed SVIP investments and alternative farm models will be the first intervention providing initial orientation for potential participants. The implications, costs and potential benefits as well as the risks of irrigation farming will be presented and discussed in detail with potential participants. Issues pertaining to commercial agriculture to be discussed will include farm investment decisions, farm organization, crops, livestock, fisheries/aquaculture, potential markets, land tenure implications and cost of water. This will be undertaken by a service provider over a period of 6 months as soon as possible after project start-up. There is a strong linkage between the initial communication and organization processes and future agriculture development support under component 3, as farm decisions will influence identification of early adopters, organization of blocks and those who opt out or require additional time for decision-making.

The farmers' group will be supported in formation of its Farm Cooperative/Company/Association or Trust, with proper registration and ownership of the land tenure for the farm area. They will receive intensive support from a specialized service provider, assisted by officers from the Ministry of Lands and the Department of Co-operatives, over a two-year period to achieve this outcome. Once this building block for land consolidation and commercial farm formation is achieved, the project will provide for alternative development pathways, recognizing the need for flexibility and a demand-driven approach. All are based on the principle of commercial agriculture on consolidated land. Four possible pathways[9] with varied challenges and likelihoods of success were identified based on local and regional experience.

2.7 Envisaged Benefits of the SVTP

The rewards[10] are multiple and transformational at the regional level, and also combines benefits for smallholder farm households with benefits for agribusinesses, promising long-term viability: The economic net benefits from intensive agriculture in phase 1 in this area alone is about US$56 Million, while the overall program benefit is estimated at US$314 Million[11]. Many households will be lifted out of poverty due to significant improvements in their disposable income and livelihoods. The project also entails considerable foreign exchange earning benefits due to possible increase in exports and import substitutions. The program has a number of specificities catering to Malawian smallholder realities, including a transitional and adaptable pathway from current subsistence to commercial agriculture while

[9] See report entitled "Analysis of Land Tenure Options and Potential Land Consolidation Arrangements within the Development of the Shire Valley Irrigation Project-Malawi", S Norfolk and J Denison 2017.
[10] Information in this section and section 0 taken from the Draft Project Appraisal Document
[11] This section reference: Agricultural Development Planning Strategy and Draft Project Appraisal Document

enhancing household land rights and nutrition status. Through improved land management, diversified cropping for market and consumption, and access to water, multiple income, nutritional and health benefits are expected. The potential to provide gravity irrigation to a large expanse, and provide for livelihoods away from the hazardous floodplain people currently depend on will have strong resilience impacts. It will also have a significant net positive energy impact – since gravity irrigation will displace the need for energy-intensive pumping from the river, which in turn will free-up substantial and much-needed energy to the national grid - and make optimum use of the country's natural resources. The natural resources approach, including environmental services will support sustainable revenues from the scheme and surrounding natural resources, and help alleviate poverty driven pressures on conservation areas. Finally, the program makes a sizeable contribution to net GHG emissions reduction (through reduced pumping, improved land use, and improved carbon storage in protected areas).

The Program also contributes to ending extreme poverty and promoting shared prosperity in a sustainable manner, especially given the unique circumstances in the Valley where the predominant situation is of extreme poverty and risk, and recurrent need for urgent recovery assistance; but also with the examples of pockets of relative wealth where the underlying problems of the region have already been resolved. Through productivity increase, risk mitigation, job creation, value addition, and resource optimization, the proposed project [promotes sustainable, diversified and inclusive grouth, enhances the development of human capital and reduces vulnerabilities. The Project addresses key development questions in the water and agriculture agenda on optimizing water productivity and water use efficiency to feed a growing population with increasing climate risk.

The primary purpose of SVIP is to enhance farm income through increasing the productivity and production of irrigated crops in a predominantly drought and flood prone area of Malawi. In addition, the project implements other complementary interventions necessary for protecting the area against flood damage, diversifying income and livelihoods, and increasing access to improved domestic water supply. The project also opens the option for shifting the current pump-based irrigation system to gravity system at Illovo estate thereby reducing cost of production and stabilizing and/or enhancing the productivity of the existing irrigated sugarcane production enterprises. Thus, the project entails varieties of benefits including:

- increased income from irrigated crop production,
- increased income from livestock production,
- increased income from aquaculture production,
- avoided flood damage loss,
- increased access to improved domestic water supply,
- reduced level of illegal hunting and logging,
- reduced land degradation and soil loss,
- sustainable supply of biofuels for communities,
- increased nature-based tourism,
- reductions in GHG emissions, and
- economic multiplier effects.

Several crops were evaluated for their suitability to grow in the Lower Shire Valley based on climate and soil considerations, market potential, profitability, and readily availability of

support services[12]. The analysis identified several tropical and temperate crops that can grow well in the lower Shire Valley during summer, winter or all year-round. Six crops were-selected from the list of 22 crops evaluated[13]. The crops selected are those that are best suited to the agronomic conditions of the Shire Valley, have reasonably high gross margin, have readily available market either in Malawi or in the region, and are easily handled, transported and stored without elaborate transformation or investment in processing and storage facilities beyond those that already exist in the SVIP area. Table 2 summarizes the results of gross margin analysis.

Table 2 Gross margin estimates and ranking of six priority suitable crops

	Crop	**Average yield (kg/ha)**	**Av. Price (US$/kg)**	**Gross margin (US$/ha)**	**Include/exclude from cropping programme**
1	Sugar cane	120,300	0.07	3,320.62	**Included**
2	Beans (dry)	2,500	1.04	1,657.97	**Included**
3	Pigeon peas	2,500	0.75	1,500.50	**Included** – for rotation purposes and to meet the national aspirations
4	Cotton	4,000	0.45	1,223.43	**Included**
5	Soya beans	3,100	0.28	337.85	**Included**
6	Maize (grain, irrigated)	5,000	0.24	196.64	**Included** -food security, political and social reasons

This analysis showed that the following six crops would have highest priority for inclusion in the cropping program for the proposed SVTP during the first five years of scheme implementation: sugarcane, dry beans, pigeon peas, cotton, soya beans, and maize for grain production. Sugarcane is already the major commercial crop in the project area with a well-developed value chain and it is envisaged that the crop will retain this status for the foreseeable future. However, expansion of sugarcane under the project will be limited due to capacity constraints at both the Illovo mill and the existing manufacturers of ethanol. Dry beans, cotton, maize, pigeon peas and soya beans are well established crops in Malawi in general, and are considered easy to grow, store and market locally and in the region.

Sugarcane will continue to be grown and processed by the Illovo estate, and the outgrowers currently producing for it. The new smallholder farms will not be able to grow sugarcane because of capacity constraints at the Illovo processing facility. It is therefore proposed that the farmers will be advised to initially grow cotton, soya beans and pigeon peas in summer, and maize and dry beans in winter, until such time that value chains and market opportunities for other crops can be determined. Provision will also be made for enhanced production of livestock, using irrigated crop residues as fodder, and for aquaculture. Subsequently, after farms have gained experience in irrigated agriculture, it is proposed that a small part of the

[12] Agricultural Development Planning Strategy (Final Report)
[13] The 22 crops are: 1) tomatoes, 2) sweet corn, 3) green mealies, 4) sugarcane, 5) cassava (wet), 6) baby corn, 7) rice (polished), 8) beans (dry), 9) pigeon peas, 10) cassava (dry), 11) Cotton, 12) Chillies, 13) Rice (unpolished), 14) Groundnuts (shelled), 15) Soya beans, 16) Maize (seed, irrigated), 17) Maize (grain, irrigated), 18) sorghum, 19) groundnuts (unshelled), 20) Wheat, 21) Cowpeas, 22) Sesame

irrigated area be used for high value crops such as banana, mango and citrus, for which there are ready off-takers and markets.

Further information on the Economic and Financial Analysis can be found in Appendix 2.

3 Capacity Needs Assessment

This chapter describes the assessment framework and the capacity needs and assessment and the data collection tools used.

3.1 Approach

3.1.1 Capacity Assessment Framework

The capacity needs assessment framework is based on what jobs will be done by whom in the future SVIP management and governance system. The required capacities or different competences can be divided into the three areas of technical, organisational/institutional, and financial expertise.

The **institutional capacity** development aims a enhancing the capacity to plan and manage efficiently and effectively, among other, by establishing and improving institutional arrangements to coordinate or implement. Coordination and collaboration is essential to avoid fragmentation of efforts, enhance sharing of human resources and establish a culture of communication and discussion among all partners. Within a large irrigation scheme technical sustainability is of particular concern. Within the SVTP institutional capacity is required for:

- Establish water users' federation as an apex organization to discuss with the irrigation scheme operator.
- Establish mechanism to reallocate land and implement the new Land Acts (e.g. establish TLMAs, land tribunals and registering customary estates).
- Establish linkages between the irrigation project and wider agriculture, water resources and environment sectors that are relevant for the project.
- Establish and operate commercial value chains for the produce of the irrigation scheme
- Preparing, implementing, monitoring and updating land use plans
- Establishing and maintaining conservation wetlands
- Public, Private Partnership

The **organisational capacity** refers to the ability of the organisation to attain its goals. Within the context of the irrigation scheme the organisational competences include:

- Establish and maintain cost recovery and accountability mechanisms
- Mainstreaming gender, youth and vulnerable groups into all mechanisms, monitoring, evaluation and reporting systems
- Establishing communication, awareness raising and community engagement mechanisms
- Establishing Grievance redress mechanism
- Resettlement Action Plan preparation and implementation
- Regulating irrigation of the project
- Establish an result based MIS for the SVTP and for the agri-businesses
- Establish and operate agri-businesses in which farmers are engaged
- Establishing mechanisms for operating and maintaining the irrigation scheme
- Incorporating natural resource management into planning, implementation and monitoring

The **individual capacity** refers to skills and expertise required to implement the irrigation project. The technical capacity requirements include:

- Land use planning and budgeting
- Value chain management from inputs to consumption of produce
- Commercial farm organisation and management, including business management, human resource management
- Irrigation management
- Land administration and management
- Legal expertise to register agri-business whilst securing rights to land
- Communication and coordination
- Awareness raising and changing behaviour, e.g. on the safe use of the canals
- Community engagement skills
- Addressing gender, youth and vulnerable groups
- Addressing grievances
- Expertise to plan and implement resettlement action plans
- Expertise to address natural resource management
- Expertise to operate and maintain the irrigation scheme
- Transfer innovative technologies and methods to optimize the use of the land in a sustainable way and maximize profit
- Contracting and contract management
- Geospatial and mapping skills
- Result based monitoring, evaluation and reporting skills
- Skills to access capital for investment
- Financial management skills to operate the business and to share the profit

The capacity assessment was built on the stakeholder assessment which identified and prioritised the main stakeholders involved in irrigation scheme management, including an analysis of their roles, strengths and weaknesses. A simple framework was used to divide institutions in three categories by the roles they will play in the irrigation scheme management, i.e. primary, secondary or tertiary, and how they interface with each other.

Table 3 shows the conceptual framework of the responsibilities and possible identity of the types of institutions that have a role to play in the Shire Valley Irrigation Project.

Table 3 Stakeholders responsibilities and identities in the SVIP Impact Areas

Classification	Responsibility	Stakeholder Identity
Primary Responsibility	Direct established responsibilities regarding management of irrigation schemes and agricultural development (e.g. Responsible for the maintenance of the irrigation system from the main canal to field distribution points; and Responsible for planning of cropping systems).	Government departments, private sector, management of existing irrigation schemes
Secondary Responsibility	Direct responsibilities to support primary stakeholders with management of irrigation schemes and agricultural development	Line ministries, multi-lateral and bilateral agencies, local government departments, some NGOs /CSOs, farmers clubs
Tertiary Responsibility	Direct and indirect responsibilities to support long term investment in management of irrigation schemes and agricultural development	Line ministries, Bilateral agencies, NGOs, CSOs, local government departments and the public

Table 4 shows how the categories were practically determined by the functions to be performed by each stakeholder. The assessment framework was used to examine for each stakeholder category what capabilities are required to carry out the job (person specifications) and what capabilities do existing workers possess (formal and information skills analysis). The resulting differences are the gaps between existing capacities and the new requirements (learning specifications).

Data were collected using a mix of methodologies including document review, semi-structured in-depth interviews with key informants and focus group discussions. This report further includes results from assessments conducted by the other consultancy teams (e.g. Environmental and Social Assessment, Agricultural Development Planning Strategy).

Table 4 Stakeholder categories by actual function to be performed in the SVIP

Definition of function	**Categories and identities of stakeholders / Responsibility**		
	Primary	**Secondary**	**Tertiary**
Stakeholder role: **Farmer mobilisation**			
Sensitization & identification of farmers in the impact villages	SVIP, VDCs, ADCs, Apex of agri-businesses if formed	Nsanje and Chikwawa District Councils (DADO, LRCD, Lands, DCDO, DYO, DIO, CSOs)	MoAIWD (Policy Support, Guidance and Legal Liaison)
Stakeholder role: **Formation of farmers organizations**			
Identifying and forming of an institutional farmer organization model	SVTP	Nsanje and Chikwawa District Councils (DADO, DIOs)	MoAIWD (Policy Support, Guidance and Legal Liaison)
Stakeholder role: **Registration of farmers**			
Allocating land to farmers	The farmer organization & private service provider/s	SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs, DLOs) MoAIWD
Stakeholder role: **Management of grievances**			
Identification and addressing of all project related grievances	SVIP, farmer organization, Grievance Redress Committees and private service provider/s	Nsanje and Chikwawa District Councils (DADO, DIOs, DLOs)	MoAIWD, Ministry of Gender
Stakeholder role: **Resettlement**			
Identification of project affected communities and compensation	SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs, DLOs), & CSOs[14]	MoAIWD
Stakeholder role: **Farmers training and capacity building and extension services**			
Knowledge and skills in effective commercial oriented	The farmer organization &	SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs),

[14] Involved in provision of services for the resettled communities

Definition of function	Categories and identities of stakeholders / Responsibility		
	Primary	**Secondary**	**Tertiary**
agriculture production	private service provider/s		MoAIWD (Policy Support, Guidance and Legal Liaison)
Stakeholder role: **Research**			
Development of new knowledge and technology to support commercial irrigation agriculture	Department of Research, Universities	The farmer organization, private service provider/s and the SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs)
Stakeholder role: **Inputs supply and distribution**			
Procurement and distribution of inputs	Private service provider/s	Companies that market the inputs	MoAIWD
Stakeholder role: **Water resources management at scheme level**			
Allocating water to blocks within the scheme	The farmer organization & private service provider/s	SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs)
Stakeholder role: **Water resources management at the program level**			
Allocating water to users in the program	SVIP, Shire River Basin Management Program (SRBMP)	Nsanje and Chikwawa District Councils (DADO, DIOs)	Water Resources Board
Stakeholder role: **Promotion of income generating activities**			
Facilitating additional IGAs for farmers	The farmer organization & private service provider/s	SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs)
Stakeholder role: **Delivery of microfinance services**			
Facilitating access to financial inclusion amongst farmers	The farmer organization & private service provider/s	MFIs	Nsanje and Chikwawa District Councils (DCDOs)
Stakeholder role: **Management of the irrigation scheme**			
Technical, administrative and	Private service provider/s	The farmer organization and SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs)

Definition of function	Categories and identities of stakeholders / Responsibility		
	Primary	**Secondary**	**Tertiary**
financial oversight of the scheme			
Stakeholder role: **Maintenance of the irrigation scheme**			
Ensuring the scheme is all the time fully operational	Private service provider/s	The farmer organization and SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs)
Stakeholder role: **Developing management capacity for the scheme**			
Building capacity of the private service provider/s	SVIP and the private service provider/s	MoAIWD	Development partners
Stakeholder role: **Market development for irrigation products**			
Ensuring farmers have access to fair markets for their produce	Private service provider/s	SVIP	MoAIWD (facilitating access to export markets
Stakeholder role: **Management and maintenance of the main canal**			
Ensuring that the main canal is fully operational	SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs)	MoAIWD
Stakeholder role: **Mainstreaming gender and youth issues in scheme management**			
Ensuring that gender and youth issues are integrated in all program activities	SVIP, farmer organization and private service provider/s	Nsanje and Chikwawa District Councils (DADO, DIOs)	MoAIWD, Ministry of Gender
Stakeholder role: **Integration of Livestock and Fisheries in SVIP**			
Ensuring that livestock and fisheries are implemented as part of the SVIP	SVIP	Nsanje and Chikwawa District Councils (DADO, DIOs, DFOs, DLDOs, DAHOs)	MoAIWD, Department of Animal Health and Livestock Development, Department of Fisheries

3.1.2 Data Collection

Data collection used an Interview Guideline Format designed for each stakeholder category described above. Interviews were done at three levels:

- National level, with the Government Departments, Donor agencies, NGOs and private sector companies (for value chain related issues).

- District level with District environmental Subcommittees (DECs), line ministries, NGOs and private sector organizations including financial institutions, exiting water user association and irrigation management entities.

- Community level with Area Development Committees, Village Development Committees, Area Executive Committees and various Common Interest Groups and Traditional Leaders.

Focus Group Discussions, key informant and in-depth interviews methodologies were used to collect data. The information collected was used to populate the stakeholder analysis matrices. It was also used to conduct trends analysis to document major issues and trends with regard to institutions in the scheme irrigation sector. A Venn diagramming revealed institutions architecture in the basin, which indicated the main institutions available, the way the institutions interface with each other, the power relationships between such institutions and how they can better be coordinated or supported.

A semi-structured checklist was used to collected qualitative information and data from key informants at national, district and community level (checklist included in the Socio-Economic Baseline Report). The information that was collected included issues around: institutional arrangements, leadership, knowledge and accountability, qualification of key personnel in various departments and existing capacity building approaches. The checklist facilitated interviews with key informants from various organizations and government departments at national, subnational, district and community level. Appendix 1 exhibits the list of individuals and organizations covered.

A focus group discussions checklist was used to collect qualitative information and data from community representatives (Checklist included in the Socio-Economic Baseline Report). The information that was collected included issues around, poverty groups, land tenure, land allocation, agriculture and food security, access to water and sanitation, irrigation, livestock, community participation, reallocation, resettlement, irrigation scheme management, capacity and institutional assessment. Separate focus group discussions were held with adult women, adult men, young women and young men.

Mapping out stakeholders that are implementing irrigation activities was another approach for this study. This was achieved through institutional analysis. Consultations were held with a broad range of stakeholders in the implementation districts and at national level. The process of identifying stakeholders' tool two stages Firstly, the consulting team and the client listed the potential organizations and individuals to be interviewed based on their involvement in agriculture and irrigation. Secondly, the stakeholders were further identified based on the sector, location and thematic areas. In this study a stakeholder was defined as a person, group, organization or system that has an interest in the results of the capacity needs assessment study for the SVTP. Several issues such as rationale for the capacity assessment, capacity assessment for what? And for whom? Were considered. The consultations explored management structures and their link to the SVTP management. Partnerships between

agencies, capacity for programme development and implementation and evidence of coordination and collaboration were also explored. The information collected also helped to identify implementation mechanisms and gaps.

The capacity assessment study developed and adopted a sampling procedure that focused on greater participation of stakeholders who were the subject of the study whilst maintaining the independence of the consulting team. To this end, the field research employed qualitative methods of study to collect data. The main qualitative methods, that were used in the study included literature review, key informant interviews (KIIs), and focus group discussions (FGDs) with a range of management tools including analysing the strengths, weaknesses, opportunities and threats (SWOT analysis) and political, economic, social, technological, environmental and legal (PESTEL) analysis.

3.2 Ministry of Agriculture, Irrigation and Water Development

At central government level, key to the implementation of the SVIP is the Ministry of Agriculture, Irrigation and Water Development (MoAIWD), and its various departments and related organisations.

Institutional Arrangements and Linkages

The MoAIWD as a central government ministry will often play the tertiary role in the implementation of the SVIP primarily responsible for policy support, guidance and legal liaison in such aspects as farmer mobilization, formation of farmer organizations, registration of farmers, management of grievances, resettlement, farmers training, capacity building and extension services, research, inputs supply and distribution, water resources management at the program level, management of the irrigation scheme, developing management capacity for the scheme, market development for irrigation products, management and maintenance of the main canal, mainstreaming gender and youth issues in scheme management, and integration of livestock and fisheries in SVIP

In terms of mandate, the MoAIWD works to promote and facilitate agricultural productivity, ensure food security, promote irrigation, water development, and create employment opportunities through the sustainable management and utilization of natural resources. This caters very well for the tertiary role the ministry is planned to undertake in the SVIP. The MoAIWD administrative and operational structure consists of four levels, namely: National, Agriculture Development Division (ADD), District, Extension Planning Area (EPA), and Section level. At the National level, there are nine departments (Agriculture Extension Services – DAES; Animal health and livestock development – DAHLD; Land resources conservation – DLRC; Crop development – DCP; Agricultural research and technical services – DARTS; Fisheries Department; Agriculture planning services – DAPS; Department of Irrigation (DOI); Department of Water Development (DWD). Within the Department of Agricultural Extension (DAES), there are five branches: Extension Methodologies and Systems, Food and Nutrition (FN), Agribusiness Development, Agricultural Communications, and Agricultural Gender Roles Extension Support Services (AGRESS). The Departments of Irrigation and Water Department are relatively new in the ministry having come as a result of the merging of the Ministry of Irrigation and Water

Development with the Ministry of Agriculture a few years ago. On the other hand, the fact that animal health, livestock development and fisheries functions fall directly under the ministry means that integration of livestock and fisheries in the SVIP will be much easier to coordinate within its institutional framework.

To ease management, the second level within the MoAIWD structure is the Agricultural Development Division (ADD), which is divided by agro-ecological zones. There are eight ADDs in Malawi. The SVIP area falls under the jurisdiction of Shire Valley ADD. The next level, is headed by the District Agriculture Development Officer (DADO). The DADO oversees the entire district-level MoAIWD subject-matter specialists. Some of the subject matter specialists at the district level include District Agriculture Extension Officers, Irrigation Officers, Animal Health Officers, Crops Officers, Cotton Officers, Horticulture Officers, Livestock Development Officers and Nutrition Officers. Within districts there are Extension Planning Areas (EPAs), which are led by an Agriculture Extension Development Coordinator (AEDC). The frontline worker is the Agriculture Extension Development Officer (AEDO). The AEDO is a generalist that covers agriculture and livestock production, HIV, gender, agribusiness, and nutrition. The AEDO often works with village-level volunteers such as lead farmers.

Individual and Organisational Capacity

In terms of human resources capacity, the ASWAp reports that the MoAFS (before combining it with the Ministry of Irrigation and Water Development) had a total establishment of 13,408 posts in various skill levels by September, 2011. Overall, the capacity assessment revealed that the establishment suggested a top heavy and administratively bloated structure. Each head office post supported 5 posts at ADD and district levels. Similarly, in terms of skills, there were low ratios of number of technical personnel to administrative/support personnel. For instance, at head office, the ratio of administrative posts to technical was 1:1.05 implying that each technical post was matched by an administrative post. Such a low ratio was also evident at the district level. At ADD level however, things were somewhat better with the ratio of administrative to technical staff of 1:3.5.

There are also problems of vacant posts within the ministry. For example, in 2009, about 31 per cent of the establishment of the ministry was vacant. The situation has been exacerbated in the past 5 years by a recent government directive not to allow ministries to recruit new staff in an attempt to manage fiscal challenges the country has been going through especially due to withdrawal of donor support. Most of the vacancies exist at middle and operational levels of the ministry structure resulting in significant shortages of operational staff such as extension workers. This has created work over-loads and tremendous strain on existing staff which compromise on the quality of delivery of programmes and services. The ministry's policy, guidance and legal liaison role in implementation of the SVIP may be affected in this regard.

Some of the factors that have led to staff shortages include bureaucratic bottlenecks in the application of human resource policies, guidelines and procedures coupled with less attractive remuneration packages than those available in the private sector and non-governmental organizations (NGOs). Moreover, high staff turnover and inadequate

availability of trained personnel on the labour market have over the years significantly worsened the vacancy situation within the ministry and the public sector in general. In the meantime, information on capacity development needs is often anecdotal and incomplete and requests for capacity building actions remain largely unsystematic resulting in marked deficiencies in key skills within the public sector. Weak institutional, management and operational capacities within the agriculture sector are further reinforced by inadequate or lack of operational infrastructure and equipment and ineffective policy and technical systems and procedures. Ultimately, these constraints have contributed to weak and inadequate coordination and communication mechanisms among the various actors in the sector.

3.2.1 The Department of Agriculture Extension Service (DAES)

3.2.1.1 Institutional Arrangements and Linkages

The Department of Agriculture Extension Service (DAES) is one of the key departments of the MoAIWD which will often play the secondary and tertiary roles of providing training and extension services including facilitating mainstreaming of HIV, gender and youth issues in scheme management. The District Agricultural Extension Services System (DAESS) on the other hand is the overarching framework for GOM's system for decentralized extension and is articulated in the DAESS Implementation Guide (GOM/MoAIWD, 2006). DAESS is in response to the call for a demand-driven, more participatory, pluralistic extension system.

DAESS utilizes existing local government structures and adds several important elements: the District Agriculture Committee (DAC), District Agricultural Extension Coordination Committee (DAECC), and District and Area Stakeholder Panels (SP). Agriculture is not part of the service committee structure under the Local Government act of 1998 (GOM/MoAIWD, 2006). Thus, the DAC is to be established to specifically deal with agriculture issues. The DAECC, as the name suggests, is the coordinating body for agricultural extension activities at the district-level and is to, among others, set standards for service delivery, ensure that quality services are provided, register service providers, and link service providers and farmers to the District Assembly. In essence, the SPs are to serve as forums where farmer demand is to be aggregated, either responded to by stakeholders at district or area level, or transferred up through the system for responses. Responses are to filter back to the SPs. The SP structure is innovative and critical to a demand-driven system.

There is a new structure, the Malawi Forum for Agricultural Advisory Services (MFAAS). It operates at the national-level with membership open to public, private, and civil society sector agricultural extension and advisory service providers. It is an information sharing body concerned with coordination, standardization, quality, capacity building, and advocacy issues. It currently is not formally linked to the DAESS structure SPs, but efforts are underway to formally include MFAAS as the national level SP. In practice, the capacity assessment has shown that many of the elements of the DAESS are not working well or are non-existent. Some districts do not have the DACs so the DAECC is attempting to undertake that function. In some districts, DAECC have insufficient funding and time allotted to meet in order to fulfil its role. Some districts do not have a District SP but they do have an Area SP. Some area SPs function better than others. While the System itself is conceptually solid and offers considerable promise, implementation is weak.

In addition to the overarching framework, DAES as a department uses other delivery mechanisms than DAESS. DAES field-level staff are often involved in the implementation of NGO-managed projects. Thus, they are part of NGO delivery systems, several of which are further described below. Identifying and training lead farmers is reported as one of the most effective elements of DAES service delivery. The lead farmer concept is also used by many NGOs and in activities managed by the private sector. For DAES, a lead farmer is typically trained by AEDOs to master a specific technology and is willing to extend this skill/knowledge on to others in his/her community.[15] In most DAES cases, a lead farmer is "followed" by a loosely organized group of farmers. In other cases, lead farmers interact with a specific group of farmers. In addition to building the capacity of the lead and other farmers, the concept is implemented to improve extension's reach in light of the unrealistic large number of farmers an AEDO is expected to serve (over 2,000 per AEDO).

DAES uses a number of widely known extension delivery methods, such as one-on-one visits to farmers, demonstrations, field days, study tours, day training, residential training, print media, and radio to extend information and extension advice to farmers and family members. Farmer field schools are reportedly used, as are Farm Business Schools. The latter provides in-depth training for farmers in farming as a business. Clusters and mndandandas are innovative methods, and while not unique to Malawi, these do represent new ways of extension delivery. Clusters are a number of farmers clustered in the same locality and managing the same technology. Mndandandas are an area of land, typically a number of contiguous fields, where specific efforts are made by extension workers and farmers to demonstrate good agricultural practices on the different crops growing on the fields.

The approach that is designed to consolidate and unify these various methods is the Model Village. A Model Village is seen as the entry-point for all extension activity. The objective is to bring the combined expertise and resources of various service providers from various sectors (such as animal health, forestry, health, education) to bear on the development of a village, which can then be used as a teaching tool for people from other villages. The DAESS provides guidelines on the use of Participatory Rural Appraisal (PRA) techniques to be used with villagers to identify priority problems in the village and develop proposed solutions to problems identified. For issues villagers themselves cannot address, providers from the various sectors are expected to assist. The methodology is designed to move villagers and villages forward to a transformational stage where they have sufficient capacity to maintain and improve overall quality of life. This is a long-term process but DAES has some experience in its implementation. Information on the success rate of Model Villages is currently not available, although there is reportedly a success story in Salima.

With regard to mainstreaming HIV, gender, and youth in the SVIP, DAES will be guided by the comprehensive Agriculture HIV and Gender Strategy which is under use in the Ministry. Issues to do with mainstreaming youth issues will be guided by the Youth SWAp in close collaboration with the Ministry of Gender which is the host ministry of the Youth SWAp. Using a network of general extension workers at EPA level, DAES will also champion integration of animal health, livestock development and fisheries integration in the design

[15] Within non-public delivery systems, lead farmers may not be specialized in one specific technology, but will receive training to improve their capacity in several technologies.

and implementation of the SVIP in the project area guided by the Fisheries Strategy and the Livestock Development Policy which is currently under development

3.2.2 The Department of Irrigation

The DOI is the primary implementer of the SVIP. The department will play secondary and tertiary roles in such aspects as farmer mobilization, formation of farmer organizations, registration of farmers, farmers training and capacity building in irrigation management, water resources management at the scheme and program level, management of the irrigation scheme, maintenance of the irrigation scheme, developing management capacity for the scheme, and management and maintenance of the main canal.

3.2.2.1 Individual and Organisation Assessment

The assessment shows that capacity limitations are particularly serious within DOI. The Department has a total 469 technical staff positions of which 320 (68%) are vacant (IMP, 2015). Reasons for the staff shortages include budget limitations and un-competitive remuneration rates. Whilst DOI headquarters is fully staffed only three of the eight ISDs have a Chief Irrigation Officer and only one has an Irrigation Agronomist. The staffing shortage is most acute at district level where 72% of the 435 technical posts are vacant. Only four districts have a Principal Irrigation Officer, three have a Senior Irrigation Engineer and none has a Senior Irrigation Agronomist. Most of the district level functions, including Chikwawa and Nsanje which are SVIP districts, are performed by an Irrigation Engineer/Agronomist or assistant level staff.

Staffing deficiencies are accentuated by high staff turnover and shortages of office facilities, transport, equipment and recurrent budget, which severely constrain the effectiveness and impact of the Department, particularly at district level and below. The DOI structure shows the official structure of the Department at ISD, District and EPA levels but in reality most of this does not currently exist due to staffing shortages. The deficiencies of DOI in this regard are matched by similar shortcomings in the Department of Agricultural Extension Services which also has a vital role to play in irrigation development.

3.2.2.2 Institutional Arrangements and Linkages

The capacity challenge is further accentuated by the large number of small irrigation schemes in the country, the fragmented approach to irrigation development with many programmes and projects competing for the same resources, and on-going fiscal constraints which limit the ability of government to develop and retain capacity. Efforts to build capacity have also tended to focus on professional level staff in Government institutions and overlook the capacity needs of non-state actors. Since Government institutions have difficulty in recruiting and retaining well-qualified staff, capacity tends to be lost as quickly as it is developed. This suggests that the SVIP should adopt a new approach to capacity development by addressing the specific needs of all stakeholders involved with the SVIP and laying a foundation for long-term sustainability by maximising participation of non-state actors and confining the role of government to certain well-defined areas.

Further analysis shows that the DOI faces a number of other capacity related challenges. For example, the study has observed that there are number of small-scale irrigation schemes which have been implemented without any environmental impact assessments. These are mostly those implemented by CSOs. The Department does not have adequate capacity (technical and financial) to enforce environmental considerations during the establishment of irrigation schemes and the implementation of irrigation activities. It uses consultants to design and construct irrigation schemes and they may not be very aware of environmental sustainability issues. There is a need to build capacity for environmental monitoring within the irrigation sector so as not to rely on consultants.

At district level, a new staffing structure has been proposed to cope with the increasing demand for irrigation support. This structure has just been approved and is yet to be implemented. Overall, the structure is intended to increase staff support at EPA level especially in Irrigation Engineering. The current structure only provides technical staff only up to the district level only. The major bottleneck is that the move has come at a time government has suspended recruitment in the civil service as part of wider austerity measures adopted by government to achieve economic recovery. However, there is need for a waiver of this suspension in Nsanje and Chikwawa districts to accommodate the specific needs of the SVIP considering its scope and size.

3.2.3 The Land Resources Conservation Department

The Land Resources Conservation Department is scheduled to play a secondary and tertiary role in the implementation of the SVIP with a focus on such aspects as farmers training, capacity building and extension services and developing management capacity for the scheme in line with the mandate of the Department which is on managing land-based resources in a sustainable manner for socioeconomic development. This includes agricultural land (for smallholder farmers), forestry and water. The Department has mainly been addressing the problem of soil degradation caused by soil erosion through land use planning and conservation. To ensure national coverage of its activities, the Department has staff positions in all agricultural establishments from headquarters level to ADD, district to local level. These officers work with the extension staff to promote sustainable land and water conservation among the smallholder farmers.

3.2.3.1 Institutional Arrangements and Linkages

The Department has three operational units namely: Environmental Conservation and Education; Land Resources Surveys and Evaluation; and Land Management Training. The Department used to a run a Land Husbandry Training Centre in Zomba which offered technical training to both Government staff and farmers on land resources issues. This centre also served as a regional training centre for the SADC region. Due to budgetary and staffing problems the centre was closed in 2000 and there have been no concrete plans of reviving its operations in the present financial environment.

The Department's linkages with other Departments within the MoAIWD have been well maintained, reflecting the understanding that its work is directly complementary to that of other Departments. Just like for other technical Departments in the Ministry, technologies developed by it are channelled to the end users (communities) through the Department of Agricultural Extension Services (DAES). Its relationship with other Departments also

pertains to providing technical guidance on matters related to land-based resources. In order to enhance the implementation of the Departments' mandate there have been some initiatives to put in place a National Land Use and Management Board, a National Agroforestry Steering Committee and a Soil and Water Conservation Research Coordination Committee.

3.2.3.2 Capacities

The efficiency and effectiveness of the Land Resources Conservation Department in fulfilling its environmental and other mandates has however been hampered by numerous constraints.

Firstly, at the Individual and Organisational level, there is inadequate human capacity due to deaths, retirements and resignations. The Department has a vacancy level currently standing at 48 %. The Department has thus relied on already constrained extension staff in most districts which further dilutes its work and influence to deliver effective land resources conservation services. Further, some quality is compromised since some staff members lack the requisite training and this was exacerbated by the closure of the Land Husbandry Training Centre.

Secondly, at institutional level, inadequate funding levels both from the Government and donor sources make the Department incapable of fully exploiting its potential. For example, the Land Resources Department receives least Government funding in the MoAIWD. Over the years, the Department seems to have been losing influence and recognition with more emphasis being put on food security programmes involving inorganic fertiliser and irrigation.

Thirdly, at institutional level, inadequate and obsolete equipment hampers the Department's technical capacities in areas of surveying, soil assessment and mapping. Due to lack of funding the Department cannot afford the requisite equipment for its work.

Fourthly, at organisational level, escalating land degradation as land users hardly adopt the measures for arresting the problem. As people strive for quick livelihood actions, they neglect adoption of land resources management technologies, most of which have long-term effects. This may be due to the inadequacy of the unit to convey the land degradation arresting measures.

Fifthly, at institutional level, limited coordination and collaboration in land resources management initiatives with other Departments in the Ministry and other sectors. Within the Ministry of Agriculture, the Department is considered more as a technical support Department, as such it has limited policy influence compared to other Departments such as Planning and Crops. In addition, there are no formal coordination mechanisms with other sectors to facilitate its collaboration with other sectors such as lands, forestry, and water. Lastly, there is no legal instrument on land resources. This means there are no incentive and disincentive mechanisms for compliance and non-compliance respectively. The Department relies on the available legislation such as the Environmental Management Act (EMA), Land, Forestry and Water Acts which are coordinated by other Ministries.

To address some of the challenges, there is a need to support capacity building and institutional development of the Department through staff recruitment for essential positions such as Soil Engineers, Soil Conservation Specialists, Soil Survey Specialists and Agro-

Forestry Specialists, and staff training mainly through local universities as well as updating the stocks of equipment within the Department. Currently the department has 1 Soil Engineer, 1 Soil Conservation Specialist, 2 Soil Survey Specialists and no Agroforestry specialist. One challenge with staffing concerns students not willing to take mathematics based courses such as Soil Engineering because of the widespread myth that they are difficult subjects. Another concerns high attrition rate of experts due to death and movement for greener pastures.

3.2.4 The Department of Fisheries

3.2.4.1 Institutional Arrangements and Linkages

The Department of Fisheries is mainly scheduled to play a secondary and tertiary role in the implementation of the SVIP. Specific areas of involvement include integration of fisheries in the design and implementation of the SVIP including training, capacity building and provision of extension services to farmers that are involved in fisheries as a livelihood. The Department is part of the Ministry of Agriculture and Food Security since 2007. Before that the Department was part of the Ministry of Natural Resources and Environment. The mandate of the Department is to ensure sustainable management of aquatic resources especially fish. This is done through 'the protection of the existing fish resources by means of appropriate research, the collection and analysis of the relevant data and the application of appropriate control mechanisms'.

The Department has some district offices in a number of districts where fishing is an important economic activity, especially those along the lakeshore. However, despite having significant fisheries potential through the Shire River, these positions are not available in the lower shire (the SVIP districts) which has to an extent affected people's realisation of full benefits of the fishing industry in the area. However, the Department works with the other Departments of the MoAIWD (e.g. extension) and the Irrigation Department of the Ministry of Irrigation and Water Development in other districts promoting aquaculture which would have significantly benefited the lower shire area where fishing is being conducted in the Shire river.

3.2.4.2 Assessment

In terms of capacity related to the role of the Department in the SVIP, the assessment identified the lack of Fisheries staff in Chikwawa and Nsanje districts as a significant challenge to achievement of integration of fisheries in the SVIP. The fact that some people in Chikwawa and Nsanje depend on fishing as a livelihood calls for investment towards sustainable management of the fish resources. (Individual and organisational capacity)

Further, at the institutional level, the Department feels that there is not much coordination and harmonisation of policies among different sectors of the Government. These sectors include fisheries, water, irrigation, agriculture, tourism and wildlife. There are some conflicting activities between fisheries and other sectors e.g. cultivation in the river banks causing erosion and siltation results in destruction of fish breeding places and habitats – yet agricultural policies are promoting irrigation through treadle pumps. There is therefore a need for policy and legislative harmonisation.

The Fisheries Department also feels that there is weak Government capacity and coordination to implement or enforce policies and legislation concerning the environment and natural resources management. Other challenges include:

- Low and declining funding (yearly average not more than MK 40 million for the Department). This would suggest that natural resources issues are given low priority in the Government funding (Institutional Capacity);

- Low staffing (vacancy rate at about 40 %) and insufficient training due to funding constraints (Individual and Organisational Capacity); and,

- Lack of up-to-date data on fish resources and production. There is a need to strengthen information systems in the fisheries sector (Organisational Capacity).

Research and training were described as similarly very critical to the progressive and sustainable development of the fisheries sector. For this reason, it was emphasized that research and training have to keep pace with developments in the sector at all times taking cognizance of the fact that growth and development bring their own challenges that require innovative responses and interventions. Three issues in the area of research were identified. First, it was observed that there is a limited range of expertise to effectively support the progressive development of the sector. This was raised as a concern because the current portfolio of skills set in research is biased towards fish production and breeding when there is a whole range of other areas such as fish pathology, fish quality, fish taxonomy, genetic engineering, stock assessments and fishing ground surveys, technology (fishing gear and post-harvest), feed development etc. The urgency for improved research capacity in the sector was emphasized with reference to recent efforts to intensify aquaculture and the introduction of cage culture in the country's water bodies, notably, Lake Malawi. For instance, some stakeholders observed that with the intensification of aquaculture the possibility of disease outbreaks cannot be ruled out yet the sector is ill-equipped in the area of fish pathology (Individual and Organisational Capacity).

At the institutional capacity level, the capacity for research is further affected by lack of state of art equipment in laboratories in research centres. The existing stock of equipment is either outdated or in state of disrepair to facilitate innovative and progressive research work. Second, there is weak collaboration and partnership between DOF and other stakeholders in the sector. The major observation was that there is hardly any institutionalized research collaboration between DOF, universities, NGOs and the private sector in setting the research agenda for the sector. It was argued that any semblances of collaboration between or among stakeholders are hugely informal and do not often produce intended strategic outcomes. The view of most stakeholders is that with the entry of the private sector in aquaculture, DOF in collaboration with universities and research institutes should proactively engage with the private sector actors to form some kind of public private partnership arrangements (PPP) to set medium to long-term strategic research agenda for the sector. The goal should be to build capacity for research on a collective basis as a means of maximizing synergies toward the progressive growth and development of the sector.

Third, at the organisational capacity level, it was observed that research capacity is constrained by a very weak Monitoring and Evaluation (M&E) system for the sector. The weak M&E system makes it extremely difficult for DOF to accurately assess the impact of various initiatives implemented. This, in turn, makes it quite challenging to set a research agenda that accurately captures the needs of the sector especially in the socio-economic realm. The main issue raised with respect to training was the curriculum for training fisheries extension workers at Mpwepwe Training School. Most stakeholders observed that the training offered is not as strong as it used to be in the past. This was attributed to, among other things, the deterioration of infrastructure and limited experience of teaching staff as most of them are increasingly fresh graduates without any practical experience. It was, however, observed that DOF noted this weakness long time ago and embarked on curriculum review which is about to be finalized. The review has taken into account contemporary developments in the management of fisheries. Instead of just focusing almost exclusively on the biology of fisheries, the revised curriculum pays attention to the critical underlying dynamics of co-management and other related areas. In essence, the new curriculum strikes a balance between science and social sciences to produce extension officers adequately equipped to deal with the contemporary context of fisheries management. The ultimate goal is to seek accreditation of the training programme with the University of Malawi through LUANAR as a means of improving career prospects for junior professionals in the sector.

3.2.5 The Department of Animal Health & Livestock Development

3.2.5.1 Institutional Arrangements and Linkages

The Department of Animal Health and Livestock Development (DAHLD) is mainly scheduled to play a secondary and tertiary role in the implementation of the SVIP. Specific areas of involvement include integration of animal health and livestock development in the design and implementation of the SVIP including training, capacity building and provision of extension services to farmers that are involved in livestock as a livelihood. The DAHLD overall mandate involves promotion of animal health and livestock development. In terms of structure, the department operates through the ADD structures down through the DAO and the EPAs. It comprises three departments, namely: Animal Health, Livestock Development Research & Investment.

The department runs veterinary laboratories at ADD level with one at Shire Valley ADD in Chikwawa which is one of the SVIP districts. LUANAR and Mikolongwe Veterinary College are the main training institutions of staff absorbed by the department, with LUANAR producing up to degree level and above while Mikolongwe college producing up to diploma level. However, LUANAR is only able to produce animal production experts but does not train them in the medicine part of livestock production (veterinary). Mikolongwe College on the other hand is considered the best in veterinary medicine, unfortunately it is only able to train up to diploma level which has resulted in some degree level established posts being occupied by diploma level trained staff especially at district level which tends to weaken the prominence of the department's influence in councils.

3.2.5.2 Assessment

Major individual and organisational capacity challenges affecting the department include low vacancy rate (about 40%) which has resulted in Assistant Veterinary Officers at EPA level

covering about 2-3 dip tanks/veterinary stations per person, a situation that has tended to stretch human resources and generally compromised extension services. Nsanje and Chikwawa are foot and mouth disease areas yet have high potential to increase beef production. As such they need more animal health and animal production staff who are not there at the moment. In Nsanje for example, the top district post in the department has been vacant for over five years now. The districts also need a robust beef production system which remains significantly underexploited. For example, it is actually surprising that molasses from sugar, which are the best energy for animals, are thrown away when animals are starving, all because of knowledge limitation. This provides an integration potential with the SVIP especially with regard to sugarcane production and robust beef production systems.

The assessment has also noted that the transition from government operated dip tanks to farmer operated dip tanks has generally registered limited success with most dip tanks turning into white elephants across the country including the two lower shire districts. Dip tanks are considered centres for animal husbandry and are established to control east coast fever and ticks. In general, farmers and District Councils indicated that they could not sustain the dip tanks because they are generally expensive to operate especially now when farmers have found alternative methods of treating their livestock with the coming in of the body spray technology.

The department further faces the challenge of achieving efficiency in dealing with emergency disease outbreaks due to low funding levels and institutional challenges. Because of low funding levels, the department is unable to run regular vaccinations and does not have a website at a time websites are no longer a luxury. At operational level, the assessment found that working through the mainstream agriculture structure often affects timely reporting of disease emergences as the lead staff responsible for ADDs, DAOs and EPAs are not specialists in veterinary matters hence take their time to report emergences following the ministry hierarchy which often causes delays and undermines emergency responses.

At policy level (institutional capacity), the department has never had a breeding policy and an animal health policy since the country became independent. This has weakened efforts towards full realisation of livestock development potential over the years. Currently, the department's strategic plan and the Livestock Development Policy 2006 expired. The new strategic plan is awaiting the policy development process.

3.2.6 The National Water Board Authority

The National Water Resources Authority of the MoAIWD which has preceded the National Water Resources Board, is responsible for water licensing, water use information management and levy assessment. The NWRA is an autonomous government sponsored body. It is also responsible for providing advice on water resources policy and implementing the regulatory functions as provided for in the Water Resources Bill, 2012. In the SVIP, the NWRA primary role is to ensure that water users are legally permitted to use irrigation water resources.

The capacity assessment revealed that so far, this role has been confined largely to large scale irrigation operators such as Illovo, Phata and KCGL. Most WUAs reported that they either did not have permits or they were paid on an irregular basis by their donor support agencies.

Muona Rice Irrigation Scheme is one such example of a WUA that did not fully fulfil this obligation. This shows a prevailing weakness in enforcement capacity of the law on the part of the NWRA which is not fully functional and decentralised. This poses a sustainability risk of the water resources. Further, this shows there remains a significant knowledge and responsibility gap among WUAs to undertake this responsibility to pay their annual obligations. Considering the scale of the SVIP, it is critical for the NWRA to ensure there is full compliance in water licensing to support sustainability objectives of the SVIP in line with the national water laws and policy framework.

3.2.7 Shire Valley Catchment Management Board

The Shire Valley Management Board is a governance structure whose mandate is to facilitate integrated water management in the Shire Valley catchment area which includes the SVIP area. The board, which is operational, is responsible for providing technical guidance for integrated water management in the catchment area. The stakeholders' assessment shows that the board role in the SVIP is largely secondary, ensuring facilitation of integrated water resources management with the SVIP performing the primary role on the same. The SVIP is designated to be represented in the board which gives it a strategic voice on issues for redress. To ensure effectiveness and impact, the board will need to collaborate strongly with the SVIP secretariat as a vehicle for implementation of the SVIP. The board also requires legal authority to ensure that its role is enforceable.

3.2.8 Shire Valley Project Technical Team (Secretariat)

The Ministry of Agriculture, Irrigation and Water Development (MoAIWD) is the main implementing agency for the SVIP. The SVIP is hosted by the Ministry. Currently, the SVIP has a Project Technical Team (PTT) in place which is steering and coordinating the project take off. The team comprises seven positions, namely: The Project Coordinator; the Financial Manager; the Procurement Specialist; Office Manager; Community Development Specialist; Irrigation Specialist and two government seconded Irrigation Officers.

The PTT, and in particular the Coordinator, ensures that all reports/outputs are shared with all TF members and that they participate in briefing meetings and workshops as appropriate. It is also responsible for ensuring greater coordination between consultants, ensuring that relevant TF members provide comments on inception and periodic reports, ensuring that the various consultants work in a synergetic way, share information, and plan jointly their activities and field trips. And also ensuring that consultants go to the field with a technical officer from the relevant department for institutional grounding of the project.

Based on the stakeholders' assessment, the role of the SVIP secretariat in the SVIP is primary and secondary. Primary responsibilities include farmer mobilization, formation of farmer organizations, management of grievances, resettlement of farmers, water resources management at the program level, developing management capacity for the scheme, management and maintenance of the main canal, integration of livestock and fisheries in SVIP and facilitation of integrated water resources management. Secondary responsibilities of the SVIP secretariat include registration of farmers, farmers training and capacity building and extension services, facilitation of research, water resources management at scheme level, promotion of income generating activities, management of the irrigation scheme,

maintenance of the irrigation scheme, market development for irrigation products, water licensing, water use information management and levy assessment.

An institutional assessment of the current capacity of the secretariat shows that it was designed with a view that the SVIP would be modelled on strong private sector participation in the project, thus confining the role of the SVIP to project mobilization followed by gradual hand over to the private scheme managers while maintaining facilitation, compliance and monitoring responsibilities. One key primary responsibility that requires enhanced capacity at the SVIP secretariat concerns management and maintenance of the main canal which is quite a complicated technical responsibility. While the SVIP boasts of an Irrigation Specialist in its ranks, there is need to develop a commercially viable management and maintenance mechanism of the main canal. For financial and technical sustainability purposes, we propose involvement of the private sector in this undertaking.

Another key primary undertaking by the SVIP secretariat involves project mobilization involving mostly community sensitization and farmer mobilization. The SVIP while promising to be a rewarding investment, it has inherent sensitive issues especially those that deal with land tenure. To avoid disruption to the mobilization process, the SVIP secretariat will need a comprehensive communication and mobilization strategy which is well anchored by the legal and policy framework. At operational level, it is important that district and community based development institutions such as the DEC, the District Council, ADCs, VDCs take the lead in popularising the project. The Community Development Specialist is key in facilitating these processes with assistance from DAES.

3.3 District Level and Below

3.3.1 Institutional Arrangements

At the local government level, key to the implementation of the SVIP are the District Councils (including the relevant sectors, namely: Agriculture, Irrigation, Lands, Animal Health, Livestock Development and Fisheries); WUAs/Agri-business units, Community structures and Community beneficiaries. The analysis of capacity is guided by the stakeholders' responsibilities and identities in section 2.3.

According to the stakeholder assessment, District Councils are scheduled to play a secondary and sometimes tertiary role in implementation of the SVIP. Specific direct roles will be played in aspects such as farmer mobilization, formation of farmers organizations, registration of farmers, management of grievances, resettlement, farmers training, capacity building and extension services, promotion of income generating activities, management and maintenance of the main canal, water resources management at scheme level, mainstreaming gender and youth issues in scheme management, and integration of livestock and fisheries in SVIP. Indirect roles include water resources management at the program level, delivery of microfinance services, management of the irrigation scheme, and maintenance of the irrigation scheme. Key offices in this regard include the District Agriculture Office, District Irrigation Office, District Community Development Office, District Youth Office, District

Lands Officer, District Fisheries Officer, District Animal Health Office, and the District Livestock Development Office.

In line with the Local Government Act, 2002, and the Decentralisation Policy, 1996, the decentralisation system allows for districts to operate fully in terms of planning, programme implementation and monitoring. The District Council is the hub of all district activities and development. The District Council is headed by the District Commissioner who is assisted by the Director of Planning and Development as well as technical people from the different Departments related to different sectoral Ministries and Departments. Some Ministries have decentralised and have offices and officers at district level, while others have not yet decentralised. Those that have decentralised to district level include Agriculture, Forestry, Water, Community Services and Social Welfare, Environmental Affairs, Education and Health. The assembly governance system includes the Council which is comprised of local leaders (chiefs, elected councillors and MPs), also called the political organ. This is the supreme decision making organ at district level and is headed by a chairperson in districts and towns or Mayor in cities and municipalities.

The District Commissioner is the executive head of the District Council and operates as a secretariat for the Council. Technically the District Commissioner is guided by the District Executive Committee (DEC) comprised of technical people from the District Assembly, sectoral Departments and CSOs. This Committee provides the policy and programming guidance for the District Commissioner and the District Council. The DEC also has subcommittees for different sectoral issues such as environment and natural resources, forestry, HIV and AIDS and others. Below the district level there is an Area Development Committee (ADC) comprised of local chiefs, councillors and other local leaders) at traditional authority level. The ADC is supported by an Area Executive Committee (AEC) comprised of technical people from Government Departments and CSOs operating in those areas.

The ADC and the AEC provide linkages with Village Development Committees (at group village level) and local communities. At village level there are also committees involving communities for different issues such as natural resources committees, and village AIDS committees. The District Council through DEC produces a district socioeconomic profile every five years and this is translated into the District Development Plan. The District Environmental Officer supported by the Environment and Natural Resources Subcommittee of DEC are responsible for developing the district State of the Environment Report every two years and assessing all development programmes for compliance with environmental policies and laws.

3.3.2 Individual and Organisational Capacity

With regard to individual and organisational capacity constraints in the context of their direct and indirect roles in implementation of the SVIP, District Councils generally complained of dwindling and delayed financial disbursements from the central government which has tended to affect the quality and quantity of implementation of projects. Similar to the central level is the problem of high vacancy rates which have tended to worsen at field extension level thereby compromising extension delivery overall. For example, at the Chikwawa District Agriculture Office, the office is faced with a 65% vacancy rate (out of 124 sections

there are 43 AEDOs) among the Agriculture Extension Development Officers which is unusually quite high. And there are 2 Agriculture Extension Development Coordinators (AEDCs) who are heads of EPAs out of 6 EPAs which also represents a 67% vacancy rate.

In Nsanje District Agriculture Office on the other hand, the office is faced with a 62% vacancy rate (out of 60 sections there are only 23 AEDOs) among the Agriculture Extension Development Officers. And there are 2 Agriculture Extension Development Coordinators (AEDCs) who are heads of EPAs out of 5 EPAs which represents a 60% vacancy rate. The shortage of extension workers has resulted in some extension workers covering 2-3 sections translating into 2,000 or more farming families above the expected 600-800 farming families. This has meant that farmers are not adequately served. The shortage of staff at district level also extends to subject matter specialists and is presented in Table 5:

Table 5: Staffing levels in relevant institutions at district level in the SVIP area

#	Position	Chikwawa district			Nsanje district		
		Total in Establishment	Actual in post	Gap	Total in Establishment	Actual in post	Gap
1.	DADO	1	0	1	1	1	0
2.	Assistant DADO	1	1	0	1	0	1
3.	Extension Officers	5	5	0	5	1	4
4.	Land Conservation Officer	1	1	0	1	0	1
5.	Assistant Land Conservation Officer	1	0	1	1	1	0
6.	District Animal Health and Livestock Development Officer	1	1	0	2	0	2
7.	Assistant District Animal Health and Livestock Development Officer	1	0	1	2	2	0
8.	Crops Officer	1	1	0	1	0	1
9.	Legumes Officer	1	0	1	1	0	1
10.	Cotton Officer	1	0	1	1	0	1
11.	Tobacco Officer	1	0	1	1	0	1
12.	Cereals Officer	1	1	0	1	0	1
13.	Horticulture Officer	1	1	0	1	1	0
14.	Crops Protection Officer	1	0	1	1	1	0
15.	Accounts Officers	4	2	2	4	1	3
16.	Human Resources Officers	4	4	0	4	1	3
17.	AEDCs	6	2	4	5	2	3
18.	AEDOs	124	53	71	60	23	37

Overall, the table shows critical staff deficiencies at leadership, subject matter specialists and extension delivery level. The crops department at the DAO shows the largest deficiency in

the two districts in critical positions such as Legumes Officer, Cotton Officer, Horticulture Officer, Tobacco Officer and Crops Protection Officer falling vacant. Other critical vacant positions relevant to SVIP include Animal Health, Livestock Development as well as Land Resource Conservation Officers. The two districts do not have positions for Fisheries Officers which pose a challenge to integration efforts. At EPA level, it is clear there is a leadership gap with about 60% of the EPAs headed in acting capacity by AEDOs in the two districts.

The situation in the Irrigation Department is not as inspiring either. Apart from Irrigation Engineers and their two assistants in each of the two districts, the remainder of the staff contingent constitutes administrative and unskilled labour force. At EPA level, the DOI does not have extension personnel meaning that they rely on the AEDOs through the EPAs. The lack of specialised irrigation expertise is therefore clearly visible among the AEDOs and AEDCs. The recently approved DOI establishment proposes more irrigation staff including at EPA level. However, the structure though approved, is yet to be implemented. With the coming of the SVIP which happens to be the largest ever irrigation intervention of its kind in the country in scope and size, there will be an increasing demand of technical and extension needs by farmers. The need for a special staffing waiver to capacitate agriculture and irrigation offices at all levels in Nsanje and Chikwawa is imminent if the SVIP is to realise its expected benefits.

Availability of human resource capacity to support the SVIP was looked at from two angles, namely: number of key staff available at district level; core competences available within the government system and outside the government system. In terms of key staff availability in the Agriculture sector, the study has established worrying levels of vacancy rates across the establishments a situation that poses a threat to the SVIP implementation with regard to technical and extension support services. Related to technical and extension delivery, the situation shows critical staff deficiencies at leadership, subject matter specialists and extension delivery level. The crops department shows the largest deficiency in critical positions such as Legumes Officer, Cotton Officer, Horticulture Officer, Tobacco Officer and Crops Protection Officer falling vacant. Other critical vacant positions related to SVIP integration with livestock development include Animal Health, Livestock Development as well as Land Resource Conservation Officers.

At EPA level, it is clear there is a leadership gap with about 60% of the EPAs headed in acting capacity by AEDOs. At section level on the other hand, there is a 65.0% and 62.0% vacancy rates involving AEDOs in Chikwawa and Nsanje districts respectively which has resulted in more workload for the AEDOs. The situation in the Irrigation Department is not as inspiring either. Apart from Irrigation Engineers and their two Assistants in each of the two districts, the remainder of the staff contingent constitutes administrative and unskilled labour force. At EPA level, the DOI does not have extension personnel meaning that they rely on the AEDOs through the EPAs. The lack of specialised irrigation expertise is therefore very pronounced. The new DOI establishment proposes more irrigation staff including at field level. Unfortunately, the structure though approved, is yet to be implemented. Due to anticipated high demand for extension services with the start of the SVIP, there is need for special consideration to capacitate agriculture and irrigation offices at all levels in Nsanje and Chikwawa is imminent if the SVIP is to realise its expected benefits. The proposal for

increased involvement of private operators in direct management of the scheme is however a significant relief.

With regard to skill and knowledge capacity, the study examined academic qualifications and availability of core competences among key staff, namely: District Irrigation Officers, District Agriculture Development Officers, District Animal Health Officers, District Fisheries Officers, District Livestock Development Officers and District Lands Officers. Key competences required included participatory farmer engagement and planning capacities, demand driven extension capacities, irrigation system design capacities, construction and construction supervision capacities, irrigation water management support capacities, financing and contract management capacities, gender and youth mainstreaming, fisheries management, livestock management support capacities, project development and evaluation, including costing.

The assessment revealed that all key district level and field level key positions in agriculture are all qualified to degree level and Diploma level respectively as required by their establishments except the Department of Animal Health and Livestock Development which is significantly under resourced in terms of qualifications. In terms of competences, the DOI, DADO and the District Livestock Development Officer identified participatory farmer engagement and planning capacities, demand driven extension capacities, irrigation system design capacities, construction and construction supervision capacities, irrigation water management support capacities, livestock management support capacities, and training capacities as areas they felt more competent in. These are often traditional areas they were trained in and have been practising over the years.

Challenging skill capacity areas included financing and contract management capacities, project development and evaluation, contract management, gender mainstreaming, establishing management entities, establishing commercial farming (transition from subsistence to commercial farming), participatory demand- and market-driven development planning, strategic management and costing. Overall, the assessment shows the key officers are generally competent in their technical areas but generally lack a combination of project planning & evaluation related, commercial farming related, and marketing related competences. When asked priority training needs they would like addressed in view of the SVIP, the following competences were cited:

Table 6: Priority Training Needs to be addressed in view of the SVIP

Irrigation scheme mgmt. related	**Extension service related**	**Agronomy related**	**Business related**	**Livestock management related**
Irrigation water saving technologies	Participatory demand & market development planning	Crop nutrition	Entrepreneurship/ Investment Planning & Management	Disease surveillance and investigation

Irrigation scheme mgmt. related	Extension service related	Agronomy related	Business related	Livestock management related
Contract management	Gender mainstreaming	Soil chemistry and fertility	Transition from smallholder farming to commercial farming	How to integrate livestock with irrigation
GIS and Remote Sensing	Leadership skills		Agro-processing and value chain	Public health
Irrigation designing			Budgeting and Financial management	Beef Production
				Small stock production

3.4 Micro-Finance Institutions

According to the stakeholders' assessment, the role of MFIs in the SVIP is secondary, intended mainly to support delivery of micro finance services to drive the business enterprises which will complement the core business of the SVIP. MFI services include savings, credit and related training to support development of the entrepreneurial culture among the farmers.

Key MFIs operational in the SVIP area include Community Savings and Investment Program (COMSIP) championed by the World Bank and GOM funded Local Development Fund (LDF), Opportunity Bank (a formal bank offering micro finance), FINCA, Savings and Credit Cooperatives (SACCOs) and Village Savings and Loan (VSL) groups which are often formed by villagers themselves. All these provide savings and credit services to their clients who mostly constitute farmers who often use group collateral. SACCOs, which are formal, and VSL groups, which are informal, on the other hand promote a model of member ownership of the group, with VSL groups promoting informal weekly buying of shares as a means to generate revenue which is lent out to members also on a regular basis.

While the mushrooming of MFIs has to some extent improved access to credit, two issues still stand out as bottlenecks in ensuring adequate access and utilization of the resources. Firstly, interest rates tend to be prohibitive at all levels largely due to inflation which currently is around 23% which forces formal MFIs and banks to charge interest rates close to 45% per annum. For VSL groups, their desire to raise revenue often forces them to charge interest rates as high as 120% per annum (10% per month) which often compromises their members' ability to invest in business. However, most of the revenue made from the high interest rates for the VSL groups is often shared together with shares made at the end of the year making most of the groups unsustainable.

The second issue that often affects MFIs is their limited ability to transform their clients into entrepreneurs. Cases of high default rates coupled with lack of business growth or complete folding of businesses are often widespread which reflects lack of entrepreneurial capabilities.

Attempts to improve business capabilities have often mistakenly focused on training in business management skills which does little to develop entrepreneurship capabilities among the clients. In worse case scenarios, some MFI did not make any attempts to provide business training or counselling to their clients with their efforts only focussed on repayment of loans.

3.5 Existing Irrigation Management Entities

This section describes the irrigation sub-sector in Malawi, the existing major irrigation schemes and the private operators. Findings of the CCPLTRPF Consultant are combined with the information in the Report on Cooperatives from the PTT of January 2017.

There are several agri-business units operating in the SVIP area, all established in collaboration with the local sugarcane companies Illovo and PressCane. Kasinthula Cane Growers Association and Phata Sugarcane Outgrowers Cooperative are the two largest irrigation schemes. A third large outgrowers' scheme KAMA was established in 2015 and has made the first irrigation design and are now seeking funds to hopefully start operating in 2017. Further, several water user associations exists within the Districts of Chikwawa and Nsanje.

3.5.1 The Irrigation Sub-Sector in Malawi

The history of irrigation in Malawi dates back to the 1940s when the first commercial sugar estates and sugar mills were established (IMP, 2015). In the 1960s and 1970s, GOM with financial support from donors constructed 16 smallholder irrigation schemes with a total area of 3,600 ha to increase rice production and serve as training grounds for farmers. The first smallholder sugarcane scheme was established in 1979. The largest single block small-scale irrigation scheme is the Bwanje Valley scheme (800 ha) which was constructed in 1998. In the 1990s and early 2000s, the Government focused on promotion of treadle pump technology and rehabilitation of the deteriorating structures in the 16 schemes developed earlier. Government through the Development Partners and NGOs continued with the development of smallholder irrigation as one of the strategies to fight poverty.

Irrigation in Malawi is categorized into two; 1) estate sub-sector and 2) smallholder sub-sector. The latter, smallholder sub-sector, is further divided into; 1) government managed irrigation schemes, 2) farmer managed irrigation schemes (self-help), and 3) co-operative managed irrigation schemes. The total area of land developed for irrigation stood at 104,000 ha in 2014 of which about 46% was estates and 54% smallholder. The irrigated area has been growing steadily since 2006 at the rate of around 5% per annum. Almost all of the growth has been on smallholder schemes which have expanded by 143% since 2006. The smallholder sub-sector is characterised by an exceptionally large number of small schemes. There are some 38,000 smallholder schemes irrigating on average only 1.2 ha per scheme. Schemes irrigated by treadle pump and watering can generally have very small plots per beneficiary. Overall there are around 66,600 household beneficiaries of smallholder irrigation schemes, but these represent only around 3.3% of all rural households.

The large number of small schemes is very difficult to support. Gravity fed schemes average 7.6 ha, motorised schemes at 3.2 ha, treadle pumps at 1.1 ha and watering cans at 0.15 ha. To

irrigate 13,000 ha using treadle pumps, more than 40,000 pumps are required at 0.3 ha per pump or about 10,000 pumps if each pump is shared by four households. These are very small schemes in economic terms but can be very significant for food security of individual households. However, there is need to change the subsistence approach to a commercial approach to empower farmers to develop to more efficient irrigation methods. Moreover it is very difficult for subsistence farmers to generate the cash needed to finance operation and maintenance (O&M).

Whilst the national accounts do not record the contribution of irrigation to GDP, it is possible to make an approximation (IMP, 2015). Agriculture represents about a third of GDP (which was US$3.7 billion in 2013), of which the great majority comes from crop production. If the contribution of irrigation is proportional to the percent of agricultural households using irrigation or to the percentage of cultivated land that is irrigated then 3-4% of agricultural GDP would be attributable to irrigation. However the productivity of irrigated land is generally 2-3 times that of rain fed land. On this basis the contribution of irrigation to agricultural sector GDP would be in the range of 7-12%, and to the economy as a whole of between about 2% and 4%. This represents between US$ 80 million and US$ 140 million or between about US$ 850 and US$ 1,550 per irrigated hectare.

Existing irrigation schemes and associated infrastructure have a replacement value of well over a billion dollars in today's values. This therefore represents one of Malawi's greatest national assets. However, there is limited information available on how well the existing schemes are operating and the likely benefits of investments to rehabilitate or augment them relative to the benefits expected from investment in new schemes. The contribution of the agricultural sector to Malawi's exports is commonly around 90% of which the major items are produced under irrigation, especially tobacco, sugar and tea.

Irrigation therefore plays a crucial role in financing Malawi's imports, with the potential to play an even greater role in the future. Horticultural crops are also largely grown under irrigation although this is mainly for the domestic market at present. Smallholder irrigation is of particular significance to food and nutrition security, rural income generation and rural poverty reduction. Smallholder households with access to irrigation, even quite small areas, are protected to some extent against the vagaries of climatic variability and droughts, and also have the capacity to produce a much wider range of crops which help to improve the quality of their diets as well as generate year round income. This is of particular significance during the hungry season when food is scarce and food prices are at their highest. During this period many households dependent on rain fed farming are forced to sell assets to buy food or to sell their labour when they should planting and tending their own crops.

Why irrigation potential is under-utilized is mainly due to over dependence on rain-fed agriculture and lack of exposure to irrigation technologies by many people[16], and thereby little investment was made to the irrigation sector until recent years resulting in low level of irrigation infrastructure. As Malawi is endowed with relatively rich rainfall as compared to other most of the African countries, Malawi has long been putting emphasis on rain-fed

[16] Irrigation Sector Program, Feb. 2002" and "Agricultural and Livestock Development Strategy and Action Plan" Also often quoted by irrigation engineers in ADDs was "Lack of Irrigation Culture" when asked why irrigation had not been pursued in Malawi in the past

agriculture improvement. However, rainfall in the recent years has been erratic and unreliable, and also floods tends to take place more often than ever before due to deforestation in upper catchment areas. Predominance of the current unreliability of rainfall drives Malawi to promoting irrigation development.

3.5.2 Water User Associations (Community Management)

Water User Associations (WUAs) are voluntarily formed farmer owned registered organizations vested with the mandate to manage smallholder irrigation schemes with the aim of leveraging on land resources, extension services, production technology and access to markets for their products. Often, their goal is a combination of achieving commercial production and food security and mainly focussed on producing crops such as rice, maize and legumes. In the SVIP, WUAs have a primary responsibility of farmer mobilization, registration of farmers, grievance handling, farmers training, capacity building and extension services, water resources management at scheme level, promotion of income generating activities, delivery of microfinance services, management of the irrigation scheme, maintenance of the irrigation scheme, and mainstreaming gender and youth issues in scheme management, especially to be undertaken by the apex farmer organization which may be formed.

The move towards increasing the transfer of entire management of irrigation schemes into the hands of the beneficiary farmers through WUAs dates to the mid-1980s. A variety of economic, social and political factors contributed to this development. Several factors account for this change. The first was the economic crisis the country faced from the late 1970s (Pryor & Chipeta, 1990) resulted in Financial constraints that the government could no longer afford to finance fully its development projects, which included irrigation schemes. At the same time, the government had to seek financial support from the IMF, World Bank and other donors which demanded the adoption of structural adjustment programmes (SAP) as a pre-condition for accessing their financial resources. The situation was made worse by the withdrawal of Chinese government in the running the schemes from 1984 as their contract had come to an end. The government had to assume the responsibility of managing irrigation schemes amidst the deepening economic crisis and related donor conditions.

The other factor concerned the devolution of power from autocratic to democratic systems of government in mid-1990s. Democracy placed great emphasis on local empowerment, community participation and community-based management of natural resources. This ideology is drawn from critics of centralized projects who argue that, due to their apparent alienation from the beneficiary communities, government centred projects are unsustainable and a waste of government treasury (Gleick, 1998). Consequently, there grew interest in the empowerment of local communities through participatory approaches in the implementation and management of water related projects at community level. This was based on the assumption that community based management would instil a sense of local ownership and responsibility among farmers. Local ownership was deemed crucial for the sustainability and productivity of irrigation farming in Malawi.

At a global level, the transferring of ownership and management of irrigation schemes to the Water User Associations (WUA) or nongovernmental organisations (NGOs) constituted the major irrigation reform since the mid-1980s, (Shah, et al, 2002). The failure of most of the

small-scale irrigation schemes has been attributed to over-dependency on state support, the absence of credit, input and output markets, and insecure land tenure of the peasant farmers. By downsizing or withdrawing government role in operation and maintenance, fee collection, water management and conflict resolution, proponents of irrigation management transfer assume that this approach would instil a sense of local ownership, reduce government financial expenditure, and improve the sustainability of the schemes.

It was against this background that the Malawi government adopted the principle of handing over small-scale irrigation schemes to beneficiary farmers. Initially, handover as a tool of irrigation management transfer came to be interpreted in Malawi as the total transfer of ownership and management of irrigation schemes, including land, to the farmers. Through water user associations (WUA), farmers had to assume full responsibilities for managing and maintaining the schemes, and also for the marketing of crops. The role of the government was to be restricted to the provision of extension services for which, of course, the farmers had to demand and pay the costs (Malawi Government, 2000).

An assessment of the WUAs however revealed a number of capacity issues that have a direct bearing on the SVIP. Firstly, the assessment established that WUAs tend to suffer managerial and operational deficiencies due to a number of factors. For example, most of the WUAs tended to experience weak leadership often characterised by poor technical and management skills which often point to overwhelming technical demands associated with scheme management that do not match their levels of exposure in such areas as production, financial management and marketing. WUA membership and annual plot fees are presently very low which contributes to low WUA capacity to maintain scheme infrastructure and support capacity building of their members. Muona Rice Irrigation Scheme for example charges only K200 per year as membership fee which is well below any economic sense in comparison to the high cost of maintenance and technology acquisition.

Further, the draft Water Law states that the irrigation schemes must have water abstraction permits. The cost of the water permit itself has often been paid by donors funded projects in some cases which is intended to help farmers. It was interesting to note that Muona Irrigation Scheme is yet to start paying the water abstraction permit mainly because of government laxity to enforce this provision. In future, personnel may have to be hired to carry out at least some of the responsibilities presently assigned to irrigation staff, elected scheme committees and subcommittees, as some of these are nearly full-time tasks and others require specialized knowledge. Membership fees at the present level may not be able to pay for these. These growing costs will affect farmers differentially. Poorer ones may not be able to cope with them, particularly if the scheme marketing and credit facilities are not substantially improved. In sum, these are enormous adjustments that many farmers we interviewed were not aware of or did not feel ready to undertake, as the refrain “if government failed, how are we to succeed?” indicates.

Another key finding that emerged from the research is the lack of knowledge and understanding among officials and farmers alike about the irrigation, land, and water reforms, due in part to their recent origin. No common understanding existed among farmers concerning key issues of the SVIP such as membership requirements in the WUA; tenure status of the scheme; whether plots could be bought, sold, rented, borrowed, or inherited; and

if there would be a limit on the number of plots allowed farmers. At this point, rather than being more secure, farmers' rights to land and water resources are more uncertain than they were in the past.

Shah et al. (2002) have argued that if irrigation management transfer in Africa is to be more than a means of "getting irrigation off the back of governments," it must be part of a broader strategy to remove capital, input, and marketing constraints and to enhance economic returns to smallholder farming. Domasi and Likangala farmers identified low prices and inability to negotiate effectively with buyers as two of their greatest problems. To date, however, the farmers' associations have focused on physical repair and management of the schemes, and have not addressed these broader production and marketing issues. If farmers' organizations addressing these wider production and marketing constraints were formed, it might yet be possible for poor farmers who still form the majority of scheme plot holders to significantly improve their livelihoods and for pro-poor economic growth to take place. Such organizations could include not only irrigation scheme farmers but also smallholders from the surrounding wetland areas who face similar constraints.

3.5.3 Kasinthula Cane Growers Association

Established in 1996 from a smallholder rice scheme on land leased from government, the scheme has expanded in four phases from its initial 309 hectares and 103 farmers to 1.340 hectares and 762 farmers today cultivating mainly sugarcane but also food crops such as rice and maize.

Originally, the land was held under customary tenure, but when the rice production started on the first 96 hectares, the tenure was converted to public land, using section 27(1) of the Land Act, and then leased as a whole by the government to the trustees of the scheme. Sugarcane production needed a larger area of land that required adding adjoining customary land in new leases using a similar legal procedure. The lessee (leaseholder) is now the cane growers association rather than the trustees of the scheme, although the lease for the remaining phases have still not been granted.

The conversion to sugar cane cultivation subsumed most of the existing rice farmers and landholders in the adjoined customary lands. A small number who opposed the conversion lost their rice parcels for which they reportedly did not receive compensation "because the land was public and not theirs" but retained other fields elsewhere in the village. Each farmer in the scheme was allocated 3 hectares – half for sugarcane and half for food crops – in a single demarcated parcel. The third phase of expansion into adjoining customary lands reduced the allocations to 2 hectares "due to the high demand for land" and the fourth phase, which commenced in 2014 using an EU grant, further reduced each allocation to 1 hectare. The use of pivot irrigation systems for these last two phases means that parcels are triangular-shaped and only sugar can be cultivated.

Each expansion phase incorporated adjoining farmers on customary land, who if they were found after measurement and recording to cultivate 2 hectares but were only being allocated 1 hectare of irrigated land, were not directly compensated for their loss but instead could nominate another person to be allocated 1 hectare, which would usually be an immediate family member. Compensation has never been paid because there has never been any

resettlement and, according to members of the association, there is widespread support and demand for participation in the irrigation scheme. In these sugar-only expansion areas, land has been set aside between the pivots and other areas for food crop cultivate and livestock grazing. Many farmers continue to cultivate food crops on existing fields outside the scheme and most livestock is kept close to the homestead in the surrounding settlement areas. Not irrigated land within each expansion phase has enabled farmers to retain sufficient land for subsistence cultivation.

Although the land within the Kasinthula sugar scheme still only has a leasehold title by the cane growers association for the original 96 hectares, the traditional authorities no longer have any direct role in land-related matters within the scheme as a whole. This includes the resolution of disputes, done now by the association themselves. And with customary law diminished, the cane growers association have incorporated into their constitution and rules a provision for the compulsory nomination by members of a next of kin and heir for succession of their land. This information is held in confidence, but the nominee must be a person who is a member of the customary group, village or traditional community area. There have been inheritance disputes but the association will always transfer the land of the deceased registered member to the nominated heir notwithstanding that this may be contrary to local customary law.

According to members of the executive committee of the association, the gender balance of registered member farmers is now 60% men and 40% women. The joint holding of land, by two people such as by spouses, is not permitted by the constitution and rules of the scheme. Because each farmer is merely a member of the association and the land is held by the association under lease(s) and notwithstanding the farmers cultivate a specific and identifiable parcel, they are not legal owners of their parcels, and the farmers are requesting greater security of tenure.

Kasinthula is:

- A sugarcane growing based organisation with total reliance on the Illovo Corporation for the purchase of cane.
- A Government initiative and the Board is appointed by the Government.
- A three-tiered governance structure consisting of the Board, the Association serving the interests of the farmers and Kasinthula Cane Growers Limited Company that manages the farm.
- Is distributing land equally without regard for the size of the landholdings the members had prior to joining the association.
- Kasinthula pays dividends in advance on a monthly basis before sales and declaration of profits.

The main lesson learnt from Kasinthula is the establishment of own farm management company. This is quite innovative and if done professionally can be a model to be emulated.

The reliance on Illovo for marketing the produce, however, makes them vulnerable. The advance payment of dividends is not confirm modern business practices and has resulted in bank loans which the Corporation is struggling to pay back. Members of the association have expressed dissatisfaction with the land distribution and find it not fair. The governance structure is considered heavy and the involvement of government appears to be encouraging and reinforcing the dependency syndrome as members believe the government can always come in and rescue.

3.5.4 Phata Sugarcane Outgrowers Cooperative

The relative success of the Kasinthula irrigation scheme, prompted farmers in Phata village to develop a similar scheme. With the support of their traditional authorities, the Phata farmers decided to pool their land into a cooperative with a constitution and rules similar to Kasinthula but not the same. They also pooled their land after first measuring the size of each holding, resolving any disputes, and registering the farmer who then became a member of the scheme, but Phata did not subdivide it into separate pieces or plots but instead would cultivate it collectively as one farm using pivot irrigation systems in a cooperative (registered under the Cooperative Act of 2012).

To be a member of the scheme each farmer was initially asked to contribute a minimum of 1 hectare of land. Farmers with less that this should amalgamate or consolidate their landholdings. This proved problematic, so smaller landholdings were then allowed and given a corresponding fraction of a membership share. Each member would be allocated shares according to the size of the landholding each contributed. All the land within the irrigated area was previously cultivated, unlike Kasinthula.

Dissenters were apparently few in number and through a programme of advocacy and education, all landholders within the first phase area agreed to participate and contribute their land. Therefore there was no resettlement or compensation paid. Phase 2 is currently in the planning stage and land is measured and farmers registered; disputes are being resolved; reportedly, there is universal support for the expansion.

As in Kasinthula, farmers are required (compulsory) to nominate next of kin, not one but two successive heirs. This allows for the succession of a spouse before succession of children. In this way a surviving spouse, not local to the area, can remain a member or beneficiary of the cooperative for life whereupon the land shares would pass to heirs in accordance with local custom. Of course, nominations are restricted to family or community members, just as transfers are similarly restricted. However, subdivision of shares for transmission or transfer to multiple heirs is permitted. Individual sale of shares is not permitted and if a member wishes to dispose of their share other than to a family or community member, they can only do so to the cooperative. The share is then distributed among all remaining members.

All member farmers are expected to contribute their labour to sugar cultivation although the cooperative does employ labour who may be members or locals to the village for specialist tasks, such as cane cutting, security, for example. Members may substitute their labour by employing others. The land in between the irrigation pivots is collectively cultivated with food crops, and farmers reap what they contribute to production. There is limited grazing land within the irrigated area and farmers keep most of their livestock elsewhere or close to

their homesteads. Farmers may also have parcels elsewhere, such as close to the river, which is the typical landholding pattern in the Shire Valley.

Today, 60% of the 378 farmers are men and 40% women according to the chairperson of the executive committee. Phata and Kasinthula both benefit form EU grants for development or expansion.

Phata is a business enterprise imitated and formed by a groups of farmers. Phata was formed based on the lessons learnt from Kasinthula and includes some of the features adapted to the wishes of the farmers.

Phata is:

- A sugarcane growing business relying on Illovo for the sale of the produce.
- Has a unitary governance structure with a Board at the top and an Executive Committee made up of members below the Board. The Board is appointed by the Cooperative.
- The farm is managed by a professional company, Agricane, who sign a five year performance based contract with Phata Sugarcane Outgrowers Cooperative. The Executive Committee works with the Company of a day to day basis.
- Distribution of profits is in proportion to the landholding size/shares of the farmer. Dividends are declared at an annual general meeting (AGM) and are paid twice per year.

A good lesson learnt from Phata is the farmers self-initiative to start a farming venture through the consolidation of land. The governance structure is lean and appears to be effective and efficient. Sugarcane has a ready market, although the reliance on Illovo makes them vulnerable. Although their main product is sugarcane, Phata engages in other business, like growing fish, and can easily change to another crop if that appears to be more profitable. The good lesson learnt of engaging a professional company on a performance based contract will be useful when establishing agri-business units in the SVIP area, also when other businesses than sugarcane growing will be undertaken where production precision and market become critical. Another good lesson learnt is allocating specifically responsible for communication and the regular open and transparent communication of all issues pertaining the Phata Sugarcane Outgrowers Cooperative with its members that are organised in farmers' groups. The more equitable land distribution system has met with little dissatisfaction and the payment of dividends after the AGM has allowed Phata to make good business decisions in terms of what to do with the profits. Phata has paid of all loans and changed the lives of the member farmers drastically.

3.5.5 KAMA Cane Growers Cooperative Society Limited

KAMA is an abbreviation of the two Traditional Authorities Katunga and Maseya and was legally registered as KAMA Sugar Cane Cooperative Society Limited in September 2015.

The objective of KAMA is to obtain income for a better life and food security by addressing climate change through irrigation.

Farmers used to grow rain-fed cotton and millet, but did not produce enough due to irregular rainfall and changing temperatures (too high and/or too low). The smallholder farmers were looking for irrigation when PressCane approached first the TA and then the GVHs. Farmers have agreed to sell sugarcane to PressCane for the production of ethanol and that 10% of the irrigated land can be used for food crops.

3.5.5.1 Organisation

At the Group Village level 17 Business Units have been established consisting of the members of the Cooperative. The Business Units have been in existence for a long time and were used when growing cotton. The same land used for growing cotton is now going to be used for growing sugarcane. Each Business Unit is governed by the Business Unit Committee consisting of elected members, 50% women and 50% men.

Each of the 17 Business Units have elected one member into the Executive Committee. Each Business Unit have executives responsible for finance, communication, farm management, etc. 5 of the Executive Committee members are female and 12 male.

The KAMA Sugar Cane Cooperative was legally registered in September 2015 and the first annual meeting will be held in December 2016.

3.5.5.2 Membership and Shares

Criteria for being a member of the KAMA Sugar Cane Cooperative:

1. Being a farmer and having land within the project area
2. Paying a registration fee of MK 1000
3. Buy shares in the Kama Cooperative for MK 1000 each. One person can have a maximum of 20% of the shares only.

Shares are based on the size of the land within the project area. Land is valued at MK 5000 per hectare which equals 5 shares. Shares are registered in the name of the household head, which can be the husband or the wife based on who looks after the farm. The household head can decide to register some land to others (e.g. son, daughter) to be registered in their own right. The one in whose name the share is registered may nominate one to three persons who will inherit the shares in sequence. The shares will then be registered in the name of the person who has been identified as the one who inherits. This can be the wife, husband, son, daughter, etc. Shares are registered in one name only to avoid the negative effects of their cultural beliefs.

3.5.5.3 Establishment and Management

The total area to be irrigated within the 17 GV's is planned to be 6,000 hectares.

CODA has been engaged to conduct a survey and to design the infrastructure for 2,216 hectares for phase I using a grant from the European Union (EU) of €297,000, which PressCane has helped to obtain. Identification and GPS referencing has been concluded in the first area that is planned to be irrigated, covering 2,216 hectares in 5 planned irrigation schemes. Of the total area 2,000 hectares will be under sugarcane production and 216 hectares is set aside for food crops.

This first phase covers over 2,000 member farmers within 15 GVs. The design is made with primarily irrigation by centre pivots and with water being pumped from the Shire River, but the financing of the construction and organisation activities are not yet in place.

KAMA anticipates that each member will obtain a lease of their future parcels in accordance with the new Customary Land Acts. This will help to maintain ownership of the land and farmers are at liberty to sell land. They are working with the Ministry of Lands on how to get this organized.

KAMA plans hiring a professional manager to manage the farm and to train the members in management. Eventually, after training, farmers' members plan to do part of the management themselves. KAMA is planning to contract out the preparation of the farm, the construction of the electricity supply, the construction of the irrigation canals and infrastructure.

KAMA members will have priority in being employed by the contractors to do the work. The next priority for employment are the members of the surrounding communities.

Being employed by a contractor during the preparation phase is a mitigation measure to bridge the period between the current crop productions to income from sugarcane.

Each member of the cooperative will get a share in the food crops area and can decide for her/himself what to grow. Extension advice is expected on what crop is best to grow.

3.5.6 Difference between Kasinthula, Phata and KAMA schemes

On land issues, there are some notable differences between the out grower schemes:

- The first phase of Kasinthula is situated on public land originally leased to the rice outgrowers' association, so this small part has a lease of 96 hectares, but the later phases were established on customary land and has not yet been secured by a lease.

- Kasinthula covers around 1,800 hectares now in equal shares for each phase, while the shares of the Phata scheme are depending on the size of the original parcels of land brought into the cooperative. Phata covers around 800 hectares including the second phase.

- The KAMA scheme will be much bigger, up to 6,000 hectares when both phases are realized. The sizes of shares are not finally decided upon yet.

- Phata is established on customary land. However, to "improve their tenure security and to secure mortgage finance" Phata applied for a lease in 2012, and are considering re-

applying after their original application was lost by the Ministry of Lands, Housing and Urban Development. Notwithstanding, Phata have developed the first phase and have paid three dividends from profits made so far and are planning the next phase extension, all on customary land tenure.

› KAMA is on customary land as well, and is also planning to apply for a lease under the newly passed land laws.

› Phata and KAMA, sited on customary land retains a role for traditional authorities, not in the management of the scheme but for the customary practice of dispute resolution. Chiefs and village heads have no role in Kasinthula.

› Kasinthula did not consolidate any lands as existing holdings were retained and cultivated for sugar or other irrigated crops, whereas in Phata all existing parcels were consolidated into one large farm. The same principle as Phata is going to be used for KAMA.

› As a more recent scheme, Phata had to deal with instances where farmers had rented out all or part of their lands to landless farmers. Phata permits these rental agreements to continue and keeps a record of them, so that, for example the renter contributes labour and receives his or her portion of the dividend minus the rent. Kasinthula does not accommodate land rentals and therefore anyone renting at the inception of the scheme would lose access to the land.

3.5.7 Similarities between the Schemes

On land issues, the similarities are:

› A large majority of farmers who occupied the land that is now part of both operative schemes were and are supportive. For the KAMA scheme all farmers have expressed their interest to be part of the scheme.

› Farmer groups are well organised with high degree of participation; major decisions are taken at meetings of all farmers.

› Little if any resettlement took place, as all farmers directly affected by the scheme agreed and participated. This is planned to be carried out the same way for KAMA.

3.5.8 Other Irrigation and Outgrowers' Schemes

Nchalo Sugar Cane Grower Association

Apart from these outgrowers organizations a group called Nchalo Sugar Cane Grower Association (NSCGA) is working in the SVIP area. The group is working from a headquarter in Nchalo and have recently established an irrigation scheme of 200 hectares in Jombo, south of Nchalo in SVIP phase 2. The association is not geographically limited to a certain area, it has established a sub-group in Ndakwera in phase 1, Zone A and has plans for further irrigation throughout the Chikwawa District.

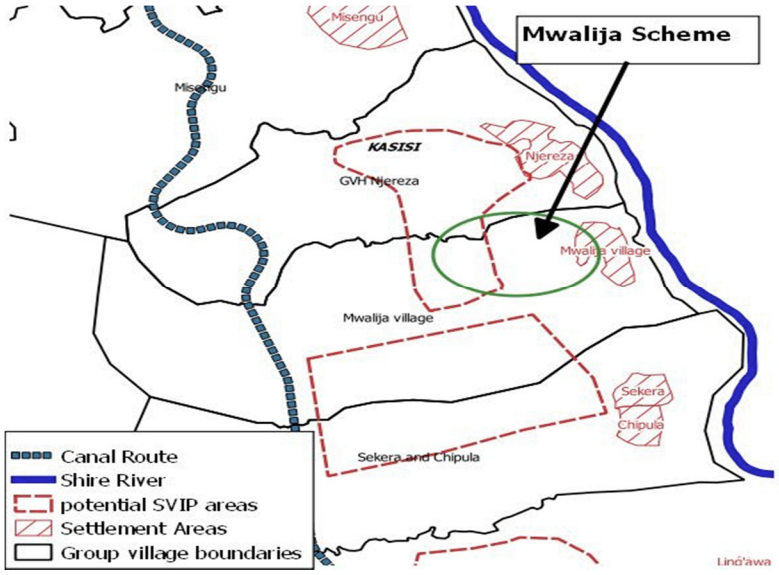
The NSCGA is registered as a company and not as an association, and among the other outgrowers the general impression is that NSCGA is more focused on making a profit for the company than helping the smallholders to better living conditions through irrigation.

Mwalija Irrigation Scheme

Mwalija Irrigation Scheme in Kasisi just south of the Majete Game Reserve was established by the help of MoAIWD in 2004 with 100 hectares, but due to lack of maintenance and capacity building the scheme quickly deteriorated and was down to 16 active members in the beginning of 2016. Recently Government with financial support from the EU funded project is planning to construct two smaller dams and a reservoir to enable 400 families in Mwalija and Njereza to irrigate 95 hectares.

The project is running until 2019 and from the map below it looks like this project will be combined with SVIP at a certain stage, since it is located close to the canal and in relation to areas that have been identified as potential additional irrigation areas for the SVIP.

Figure 4 Mwalija Scheme



3.5.9 Phata Sugar Outgrowers Cooperative as a role-model

The Phata Sugarcane Outgrowers Cooperative scheme has been chosen as a role-model for the organisation of the future agri-business organisations related to the SVIP project. There has been several reasons for this, one of the primary is a very good organisation, capacity building and internal communication. It has been important from the start to get everyone to understand the principles of working together and establish a commercial farm, which have benefitted all the shareholders. A comprehensive information and training program has been part of the scheme from the beginning, resulting in a high degree of participation and commitment from the individual shareholders.

It has been important for the District Executive Committee that Phata has not only been focused on the commercial farming. The subsistence agriculture has a high priority with

establishment of common fruit orchards, vegetable produce fields and fish ponds. The products are distributed internally at low prices to the shareholders where any excess products are sold at normal prices outside the scheme. This can both give the shareholders an additional income and help them to obtain a reasonable supply of food.

Another important parameter is the organisation of the work needed for both the commercial and the subsistence farming. The stakeholders in the Phata scheme have received shares of the total area corresponding to the size of their original parcel sizes. They no longer have a physical piece of land, which they can identify as their own, and the agricultural activities is handled centrally by a professional management. This results in an efficient and uniform agricultural production with a higher yield. The shareholders are obliged to contribute with a certain amount of work in the commercial production, but they have an option to employ others to do their share of the work. No matter what, all the participants will still be paid a proportional share of the total profit. As a whole, this agricultural organisation has raised the living conditions for the whole community.

Phata is securing the rights of the participants internally by appointment of a next of kin for each shareholder. It secures that the share will retain with the family in the case of death. The share can also be divided between several heirs within the family. The formal securement of rights has until now been done by an application for a corporative lease for the whole of Phata, since this has been the best way to do it under the old Registered Land Act. This has had the disadvantage that the individual farmer lost the right to sell his share outside the cooperative. With the new Land Acts it will be possible to register a similar organisation as a Traditional Land Management Area, and the farmers will be registered as owners of their individual shares in the same way as if they were owners of a private parcel.

3.6 Private Irrigation Operators

According to the stakeholders' assessment, private irrigation operators are scheduled to play a primary role in management of the SVIP often in close collaboration with farmers' organizations (cooperatives) that will be formed as part of scheme management structures. Specific areas of responsibility include farmer registration, management of grievances, farmers training and capacity building and extension services, inputs supply and distribution, water resources management at scheme level, promotion of income generating activities, management of the irrigation scheme, maintenance of the irrigation scheme, developing management capacity for the scheme, market development for irrigation products, mainstreaming gender and youth issues in scheme management.

There are primarily three large scale private irrigation operators in the SVIP, namely: Illovo Sugar Company Limited, Kasinthula Cane Growers Limited (KCGL) and Agricane Limited. Illovo, which is the largest private irrigation operator in the country, is involved in estate production of sugarcane and sugar milling while KCGL and Agricane are involved more in providing management services to smallholder sugar growers (out-grower schemes) in Nsanje and Chikwawa districts with a bit of direct production by Agricane. The two supply their cane to Illovo milling factory. Of recent, a fourth emerging private operator, Presscane, has commenced unrolling plans to produce sugarcane for ethanol production.

Illovo Sugar Ltd is Malawi's only sugar producer with significant agricultural, milling and refining assets at the Dwangwa sugar estate situated in the mid-central region and at the Nchalo sugar estate in the south of the country. In a normal season, combined with supplies of cane from Malawian small-holder growers, around 2.5 million tons of cane can be produced in Malawi enabling the production of approximately 330 000 tons of sugar through Illovo which directly employs 11,552 people in Malawi (including seasonal and non-permanent workers) and provides further support to an estimated 3,434 people through outgrowers (Illovo Malawi Socio-Economic Impact Assessment, 2014). Illovo occupies 13,300 ha of land at Dwangwa, in central Malawi, and 20,925 ha of land at Nchalo, in the south, irrigating using a combination of motorised pumping, drip irrigation, sprinkle and centre pivot systems.

Agricane Limited on the other hand began in 1996 as an international wing of its fledgling company, Canefields (Private) Limited based in Zimbabwe. It comprised of a group of dynamic Agricultural Engineers and Agronomists, who saw a market for genuine African experience in plantation development. During 1997 Agricane realised the need to expand its service base to include a strong land survey element and then followed this with personnel to cover Agricultural Economics and Bulk Water Engineering. In Chikwawa, Agricane has a management agreement with Phata Sugarcane Outgrowers Cooperative to provide technical and administrative support to smallholder outgrowers to produce sugarcane and market it to Illovo. The agreement is based on block production and employs overhead pivots as the main irrigation technology used.

Lastly, Kasinthula Sugar Cane Growers Scheme was initiated by local leaders and with support of Government, to alleviate poverty in tribal area of Katunga in Chikwawa. The availability of irrigation infrastructure from a collapsed government owned smallholder rice scheme at Kasinthula combined with the proximity of the Illovo Nchalo sugar estate with its large sugar processing unit and ready access to all year round water supply fro322m Shire River presented ideal conditions for an irrigated stallholder cane growing scheme. The Government of Malawi established the Shire Valley Cane Growers Trust (SVCGT) in 1998 to help manage the scheme on behalf of the farmers.

The trustees for SVCGT are drawn from the local community and relevant specialists from various disciplines. The trustees leased land from the local community for the scheme and started a farming company called Kasinthula Cane Growers Limited (KCGL) to operate the cane-growing venture. KCGL was jointly set up in 1996 by the state-run Sugar Corporation and a sugar mill later taken over by Illovo Sugar (Malawi) Ltd, part of Illovo Sugar. The project involved converting an area of largely uneconomic land to sugar cane production in order to increase the supply of raw cane to the mill and at the same time provide an income for the subsistence farmers who were barely able to grow enough food to eat. The project extends to around 1,200 hectares of land leased from the government, with individual plots of 2.5 to 3 hectares comprising 762 farmers. KCGL is 95% owned by the Trust and 5% is owned by Illovo Nchalo Estate. KCGL and Illovo have a 25 year sugar cane supply agreement.

With regard to capacity assessment, it is evident that all the private irrigation operators have added significant value to enhance production and marketing capacity of sugarcane which in

return is benefiting the participating smallholder farmers significantly. The joining of Presscane in sugarcane production has opened the market even wider. And this is in line with the National Irrigation Master Plan, 2015 which advocates for more private sector involvement in irrigation development in support of the Malawi Export Strategy and the MGDS II goal of accelerated economic growth and development.

The models used by the companies present quite some interesting lessons. Firstly, it presents Illovo as a ready market for sugarcane which is quite unprecedented as an opportunity. Further, the fact that Illovo, which exports most of its sugar to Europe, pays for sucrose tons value (using the ERS % as a conversion ratio) means that the farmers are according the opportunity to sell sugarcane at value added price. At the end of the season Illovo calculates the actual price the sugar was sold for, deducts 40% processing and marketing costs and the difference from the provision price is paid back to the management companies who then deduct production costs (approx. €133/MT) and administration costs (approx. €30MT) and management companies pay the individual members according to their production.

For sugarcane farming, this has made sugarcane growing a viable enterprise. Whether this can be replicated in other industries is a matter worth exploring. The model has also allowed farmers having been grouped in associations to benefit from the Fairtrade Premium which is part of the sugar marketing arrangement intended to encourage ethical practices in growing and production of sugar. Proceeds from Fairtrade Premium have been used to plough back into development of cane production, expanding of land under production and investing in community socio-development such as school and health infrastructure projects. Further, Illovo being a large and experienced corporation with strong systems and structures, has contributed to stable and predictable flow of income to farmers and the people in general through the sales of sugar and employment.

For Agricane and KCGL, the models are slightly different yet both focus on providing management and administrative support to small holder farmers to enhance production and marketing of sugarcane. Of the two, KCGL is the oldest and largest. According to the Memorandum of Association, KCGL is a private company limited by shares and was incorporated in 1998. KCGL manages a block of about 1,200 ha and about 762 farmers in collaboration with Kasinthula Cane Growers Association which is an independent umbrella farmers' association. The role of KCGL is managing the agronomy, harvesting, transportation and marketing of sugarcane on behalf of the farmers in return for a 15% management fee from the proceeds.

Major challenges faced by KCGL emanate from a large foreign bank scheme development loan of about Mk900m that was inherited at the start of the scheme and has been accumulating over the years because of exchange rate fluctuations and more borrowing. The result of this loan has been delayed benefits accruing to farmers over the years they have been members which has resulted in mistrust and animosity between the farmers and KCGL. Recent negotiations with the farmers has however brought some semblance of peace as they have together developed a schedule to have the loan repaid by 2017 a situation that will possibly release greater benefits to the farmers. The other challenge that faces KCGL is the involvement of farmers (those who wish to minimize their individual plot production costs) in agronomic activities on their plots which tends to compromise the quality and timelines of

delivery on production activities in line with strict production and husbandry practices. This is unlike at Phata Sugarcane Outgrowers Cooperative, where Agricane assumes total control of the agronomic activities which eases quality control and management. Lastly, weak leadership in the association and low literacy levels among the association members has meant that the association goals are not fully realised while communicating issues to farmers tends to be quite challenging for them to easily comprehend the issues while investing in entrepreneurship to grow their incomes from sugarcane to diversify their income base remains minimal. The fact that the KCGA is an association minimises the opportunity for the association to seriously pursue economic objectives as would have been the case if it was a Cooperative. The result has been farmers who are bent on maintaining their consumption behaviour and failing to bail themselves out of the poverty trap.

The case of Agricane is significantly different from KCGL. Their management fee is at 7% and land consolidation was done through direct negotiation with the farmers who underwent a lot of sensitization and training to understand the implications of offering their land for sugarcane production through a management arrangement. Agricane's investment, alongside a €2.4m EU grant, led to the installation of irrigation on land voluntarily contributed by 379 local farmers, who make up the Phata Sugarcane Outgrowers Cooperative. In addition to the sugar crop area, there are 25 ha in phase 1 with overhead irrigation for food crops such as maize and beans intended to support food security. One production cycle is set aside for a bean crop produced under contract for a commercial seed company. The Cooperative employs Agricane to provide technical and management expertise and also help members to increase capacity. Agricane undertakes all management activities on behalf of the farmers to enhance quality management and in turn increase productivity. Each Coop member is paid an annual dividend, which in 2014 averaged $550 and has been growing. Phata also secured Fairtrade certification, which secures a price premium. Members receive training in business, governance and technical matters including entrepreneurship as a strategy to address poverty.

By engaging with farmers through a cooperative, Agricane enabled the farmers to embrace a business approach and culture to decision making. Through close collaboration with the cooperative, Agricane has been able to create a strong partnership with the cooperative thereby minimising mistrust and enhancing benefits. No wonder Phata land area is steadily expanding due to demand from new areas and there is currently about 500ha of land under development in TA Maseya. On the other hand, the mentorship programs have contributed to improved farmer capacity to invest in alternative projects to diversify their incomes. This is in sharp contrast with the KCGL model which acts more like a social service provision, with the farmers keen on getting endless advances to feed their families.

4 The Capacity Development Plan

This section presents the capacity development plan for the roll-out and sustainable management of the SVIP based on the findings of the institutional assessment and the capacity assessment. It presents a clear identification of the capacity gaps, with a tailor-made capacity and training programs based on specific recommendations on amongst others formal, informal, community, and on-the-job training, institutional and organizational improvement opportunities with sub-goals and targets as well as a budget for each element of the plan. The plan prioritizes and targets the priority gaps in an innovative and integrated way that demonstrably contributes to practical capacity gains for project implementation. The outline is sufficiently detailed to 'package' elements of the capacity development plan for each institution/group of stakeholders; for a stakeholder involvement process if necessary; and for partnerships and technical assistance assignments.

The Capacity Development Plan integrates capacity development across levels and functions as they are interlinked: e.g. establishes linkages between professional training and actual design processes. It builds on current strengths as well as on perceived weaknesses. It combines quick wins (less than one year) with medium-term initiatives (one to six years) and long-term strategies that will ensure continuity beyond the project horizon.

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The plan is closely linked to proposed project interventions. It suggests synergies between capacity development activities and actual irrigation development, while at the same time not jeopardizing project progress by not making progress solely dependent on training outcomes. It integrates capacity development across levels and functions as they are interlinked: e.g. establishes linkages between professional training and actual design processes. It builds on current strengths as well as on perceived weaknesses. It combines quick wins (less than one year) with medium-term initiatives (one to six years) and long-term strategies that will ensure continuity beyond the project horizon.

Based on the institutional and capacity assessments, capacity constraints directly or indirectly affecting the SVIP have been identified at the individual, institutional and systemic levels.

At the systemic level, capacity was taken to include:

- The "enabling environments" i.e., societal support for SVIP;
- Overall political, economic, legislative, policy, regulatory, incentive and accountability frameworks within which the SVIP will operate;

- Formal and informal communication and collaboration among organizations and individuals; and,
- Participation of all sectors of society in reaching SVIP goals, through improved awareness, education and involvement and increased government transparency and accountability.

At the institutional level, capacity was taken to include:
- Organizational structures and processes, such as mandate, mission, responsibilities, accountabilities, communications, and deployment of human resources to support the SVIP;
- Organization's performance and functioning which include effectiveness, efficiency and responsiveness to change, management, strategic planning, and implementation of programmes and projects;
- Coordination and collaboration among groups or departments within the organization;
- Relationships and synergies with the outside environment (other organizations within or outside the country); and information systems, infrastructure and equipment to support the organization's work.

At the individual level, capacity was taken to include:
- The ability of individuals to manage the SVIP, working as individuals, within organizations and within the larger society;
- Individual attitudes, knowledge, behaviour and actions, awareness, understanding and skills on relevant subjects;
- Individual performance including greater participation, ownership, motivation, incentives and morale.

4.1 Goal of the Capacity Development Plan

The capacity development plan is intended to contribute to sustainably increased commercial agricultural productivity and incomes for targeted households in the districts of Chikwawa and Nsanje in the Shire Valley.

4.2 Purpose of the Capacity Development Plan

To develop the individual, institutional and systemic capacity of players in the SVIP from the central level to community level to effectively support implementation of the SVIP.

4.3 Principles enshrined in the Capacity Development Plan

Principles of the capacity development plan are derived from the ideals of the irrigation master plan which draws on global best-practice models but is tailored to Malawi's unique social, economic, geographic, hydrological, climatic and agricultural environment. Some of the principles of the CDP are as follows:

1. ***Results oriented:*** It is results oriented with a clear indicator framework that will be used to measure the output, outcome and impacts of the capacity interventions. It recognizes

that the capacity interventions are not mere activities but responses intended to improve overall implementation of the SVIP.

2. ***Complementary approaches and strategies:*** It employs a variety of different strategies and approaches in enhancing capacity to achieve effective implementation of the SVIP, reflecting the reality that no one approach is best in all circumstances.

3. ***Multi-stakeholder approach:*** It recognizes the different roles assigned to a variety of community level, district level and national level stakeholders and how they can be networked to leverage on their collective strengths to efficiently achieve on the objectives of the SVIP.

4. ***Long term planning:*** It recognizes the need for a long-term planning horizon which recognizes that capacity development is an investment that should be intensified in the early stages of the project and carried over a longer term to achieve improved capacity.

5. ***Tailor-made:*** It is specifically tailored to respond to the individual, organizational and institutional capacity needs of players in the SVIP. Interventions are based on a comprehensive capacity assessment that was conducted at the individual, organizational and institutional level.

6. **Sustainability:** The capacity development plan has been designed to embrace best practice capacity delivery mechanisms in order to achieve long term benefits of capacity for the SVIP

4.4 Mainstreaming of Institutional Issues, Capacity Assessment and Development

Institutional and capacity assessment and development has been mainstreamed throughout the implementation phase. Sections on institutional, system and individual capacity assessments and development have been incorporated in all relevant main reports, such as the LTDACS, the GRM, the RPF, the Agricultural Development Planning Strategy, etc. It should be mainstreamed throughout the implementation of the SVIP in all terms of reference, planning of implementation mechanisms and activities, reporting, monitoring and budgets. Capacity development should be provided when required in the process using various methodologies, such as action training, traditional classroom training that can be put into practice immediately or soon after the training, showing examples, etc.

4.5 Organizational Level Capacity Development Plan

The organizational level capacity development plan (Appendix 3) identified community level, district level and national level stakeholders. Community level stakeholders included Village Development Committees (VDCs), Area Development Committees (ADCs), Water Users Associations (WUAs), Cooperatives, and Private Irrigation Operators (PIOs). Key capacity interventions targeted at the community level organizational stakeholders focused on developing their capacity to enhance their facilitation and implementation roles in the SVIP, including interventions such as undertaking SVIP sensitization, improving SVIP

accountability, improving agri-business unit production and management capacity, transitioning agri-business units into commercial farming and entrepreneurship, building the capacity of PIOs and entities/Cooperatives in integration of livestock and fisheries in irrigation farming and achieving sustainability of Cooperatives.

The only key district level organizational stakeholder identified is the District Council including its respective irrigation relevant offices, namely, the DIOs, DADOs, DAHLDOs, DFOs, DLOs, DYOs, DCDOs, DLRCOs, DAEOs, M&E Offices, including the Council as an organ, AEDCs and AEDOs at the extension delivery level. Key capacity interventions targeted at the community level stakeholders focused on developing their capacity to enhance their facilitation and implementation roles in the SVIP, including interventions such as undertaking SVIP sensitization, improving SVIP accountability, facilitate filling of key irrigation agriculture sector vacancies, review of key district planning documents, upgrading and linkage of the M&E system to SVIP and Ministry level M&E system, including strengthening of the MIS to guide management decisions

Primary national level organizational stakeholders identified included the SVIP PTT/SVIP Implementation Unit, Department of Irrigation (DOI), the Department of Agriculture Extension Services (DAES), the Department of Fisheries (DOF), the Department of Animal Health and Livestock Development (DAHLD), the Department of Land Resources Conservation (DLRC), Ministry of Lands (MOL), MoAIWD, the National Water Resources Authority (NWRA), the Shire Valley Catchment Management Board (SVCMB), Lilongwe University of Agriculture and Natural Resources (LUANAR), Natural Resources College (NRC), Mikolongwe Veterinary College, Shire Valley ADD and Micro Finance Institutions (MFIs).

Key capacity interventions targeted at the national level organizational stakeholders focused on developing their capacity to enhance their facilitation and implementation roles in the SVIP, including interventions such as improving SVIP coordination, undertaking SVIP sensitization, improving SVIP accountability, facilitate filling of key vacancies especially at district and extension delivery level, upgrading and linkage of the M&E system to SVIP and Ministry level M&E system, including strengthening of the MIS to guide management decisions, improving the capabilities of key departments in delivering on the SVIP integration approach to irrigation farming, strengthening adaptive research capacity including creation of a conducive environment to improve access to investment finance for Private Irrigation Operators and Farmer Organizations.

The major highlight of the organizational capacity assessment is the need for the MoAIWD to engage the Ministry of Finance and the Department of Human Resources Management to obtain a special waiver on the existing employment ban for civil servants in order to fill key vacant posts in Chikwawa and Nsanje to support implementation of the SVIP in view of its scope and magnitude, being the first of its size to be implemented in Malawi. This is partly in respect of the new structure of the DOI which proposes establishment of irrigation specialities at EPA level to augment the existing unified extension system which has AEDCs and AEDOs who are general agriculture extension workers. It is also partly in respect of the high vacancy rate among key subject matter specialists and the extension workers including

creation of the two inexistent positions of Fisheries Officers to support fisheries integration into the SVIP.

4.6 Institutional Level Capacity Development Plan

The institutional level capacity development plan (Appendix 4) identified policy, legal, societal support, incentives, stakeholder participation and accountability aspects of capacity that need to be addressed to support implementation of the SVIP. At policy level, the institutional level capacity development plan identified the lack of the livestock breeding policy, animal health policy and relevant bylaws to support implementation of the SVIP. The lack of livestock breeding policy and animal health policy means that livestock development in the country is significantly lacking policy guidance in aspects of breeding and animal health management. The lack of relevant supporting council bylaws has the potential to affect implementation of resettlement, compensation processes and other processes. The lack of enactment of the Land Bill was also identified as a key concern but is not specifically tackled in the plan because the law is already before parliament waiting for approval.

At legal level, the institutional level capacity development plan identified the need to facilitate development of a legal instrument on land resources to ensure stakeholders' compliance to support sustainability of the land resources in SVIP. In the absence of such a legal instrument, efforts to advance sustainable use of land resources are usually frustrated and hampered. Currently, enforcement of such land resource management practices is done through other environmental and natural resources management laws. However, there remains a significant gap in how much they can go to achieve the objectives of the Land Resources Conservation Department.

At societal support level, the institutional level capacity development plan identified two key interventions. Firstly, the need to build capacity of cooperatives and other farmer organizations in undertaking communication between management entities and farmers/ farmer groups and communities. This is intended to build information flow and transparency in the management of the SVIP. It addresses some of the current mistrust that exists between some management entities and farmers which has the potential to grow into a full scale social unrest which is a risk to commercial interests in the SVIP. Secondly, the plan commits to undertake social corporate responsibility projects to improve income, education and health of the local people in the SVIP area. This is a direct response to the prevailing high levels of poverty in the SVIP area coupled with high prevalence of HIV and AIDS prevalence, gender inequalities and gender based violence.

At the level of incentives, the institutional level capacity development plan identified three key interventions. Firstly, the need to explore opportunities to invest 18 MW of power expected to be released by Illovo in the SVIP area to support agro processing and value chain projects power needs. What is yet to be established is how this power can best benefit the same scheme, especially to support agro processing and value chain industries that are expected from the SVIP. The fact that ESCOM is currently unable to connect some of the already constructed smallholder irrigation schemes with ESCOM supplied transformers necessitates the need to explore the potential to preserve this power for use in the same area. Secondly, the plan undertakes to develop an integration plan for irrigation farming, livestock

& fisheries in the SVIP. The plan is intended to guide integration efforts to be carried out by irrigation, livestock and fisheries stakeholders in the area. Lastly, the plan undertakes to strengthen irrigation financing and provide incentives such as relief on private investment, facilitating swift land acquisition and lease by private sector investors, etc. This is especially important in view of the limiting financial situation in the country, often characterised by perennially high inflation and high interest rates.

At the stakeholders' participation level, the institutional level capacity development plan identified three key interventions. Firstly, the need to develop a communication strategy to guide awareness and mobilization efforts for the SVIP. Being the first of its kind in scope and size, the SVIP will need a lot of stakeholders' participation which can only be achieved if the project engages in adequate and strategic communication. This will help to address fears and misconceptions that have the potential to derail the process. Secondly, there is a need for the PTT to hold regular meetings with the media, academia and NGOs amongst others to clarify timeline, designs, expectations, roles and responsibilities of the project to make sure the right information is passed to the population. This will also help to increase stakeholders' contribution to the project processes. Lastly, the plan has committed to develop capacity for grievance handling at Cooperative and SVIP level. It is envisaged that the resettlement and management of the SVIP may result in grievances affecting the participation of some stakeholders. These will have to be dealt with through establishment of grievance handling committees at community, district and SVIP level as per Grievance Redress Mechanism described in a separate report.

Lastly, at the accountability level, the institutional level capacity development plan identified three key interventions. Firstly, the capacity development plan has committed to develop a GIS based M&E system for the SVIP, linked to the District Council and MoAIWD M&E systems. This is based on lessons from the Shire Basin Management Project which is currently under implementation. The advantage of a GIS based M&E system is that it is real time and enables achievement of efficient management decision making which are really crucial for the size and scope of investment that will constitute the SVIP. Secondly, the plan has committed to develop quality control standards for management and growth of farmer organizations in the SVIP area. This will enhance standards of delivery and subsequently contribute to achievement of tangible results. Lastly, the plan will support the strengthening of the MoAIWD M&E System to ensure that it is robust enough to support SVIP objectives. Key to this is the alignment and linkage of the SVIP M&E to the ASWAp M&E including enhancement of capacities in the MoAIWD M&E unit.

4.7 Individual level Capacity Development Plan

The individual level capacity development plan (Appendix 5) identified eight thematic groups of training needs that need to be addressed at individual level to support implementation of the SVIP, namely: extension delivery; irrigation water management; Cooperative development; Agronomy; livestock development; fisheries development; wealth creation; project planning and accountability. The theme that cuts across the training needs revolves around integration of livestock and fisheries in irrigation farming which is the thrust of the SVIP. The main aim of the individual level capacity development plan is to achieve improved knowledge and skills in delivering on the commercial objectives of the SVIP with

the Private Irrigation Operators and Cooperatives taking the central role as commercial entities while the other stakeholders, especially the key District Council offices such as the DADOs, DIOs, DAEOs, DFOs, DAHLDOs, DLOs, DCDOs, DYOs, AEDCs and AEDOs, playing a supportive role in capacity development. Delivery of the training needs is mainly through workshops, coaching, study tours and formal academic training. Trainers are a combination of consultants, training institutions, PIOs, and subject matter specialists depending on the type of training. Institutional Linkages between Irrigation Sub-Sector and Wider Agriculture, Water Resources, Environment & Other Sectors

The capacity development plan has identified a number of linkages between the Irrigation Sub-Sector and wider Agriculture, Water Resources, Environment and other critical sectors.

1. ***Agriculture extension:*** The MoAIWD currently maintains a unified extension system that does not provide for subject matter specialists to the EPA and section level. As such, the DOI does not have irrigation experts at that level, leaving irrigation extension delivery to non-irrigation trained extension workers. In the absence of the recently approved DOI structure which extends irrigation trained officers to the EPA level, the department will continue to rely on support from general extension workers to deliver on irrigation extension, especially where PIOs are not offering the services in the SVIP area. That will mean strong collaboration with DAES including efforts to build the capacity of the general extension workers in irrigation water management so they are able to effectively deliver the extension services

2. ***Impact assessments:*** The capacity development plan has identified the general limited capacity in the DOI to undertake environmental impact assessments especially with the mushrooming of many small irrigation projects in the two districts and over reliance on consultants for conducting EIAs for large projects which seems quite costly. Cost effectiveness of undertaking individual EIAs seems to be the primary reason for failure of EIAs on the small projects. The idea of training DOI officers to undertake EIAs seems to be technically unnecessary at this juncture considering that it is a role outside the jurisdiction of the department. As such, the department will need to enhance collaboration with the Ministry of Natural Resources and Environment to seek more assistance in this aspect. Practical solutions will also have to be sought in collaboration with NGOs involves with facilitating small scale irrigation schemes to enforce the provisions of the law on conducting EIAs in small irrigation schemes.

3. ***Water resources management:*** Water is a protected resources according to the Water Resources Act. The National Water Resources Authority (NWRA) is the responsible organization in enforcing the use of water resources nationally. To achieve this, the NWRA has established the Shire River Catchment Management Board (SRCMB) to be responsible for enforcing integrated water resources management in the southern region which includes the SVIP area. As such, the DOI will need to link very strongly with the NWRA and the SRCMB to ensure enforcement of the Water Resources Act and capacity development to achieve integrated water resources management in the SVIP

4. ***Energy:*** The SVIP will require significant energy supplies especially to supply electricity to agro processing plants and development of strong value chains to feed the export market. One of the key highlights in the area of energy is the proposal for Illovo to release 18 MW of power into the ESCOM grid when the company becomes part of the gravity fed SVIP scheme. The DOI will therefore strong collaboration with the Ministry of Energy to leverage on energy sources and opportunities to support the SVIP. One immediate task is to explore the possibility of preserving the 18 MW of the power to be released by Illovo in order to utilise it within the scheme considering that the national power generation capacity remains significantly limited.

5. ***Agriculture inputs:*** The SVIP scheme remains the largest ever in scope and size to be implemented in Malawi. As such, its agricultural inputs requirements are expected to be quite voluminous in keeping with its size yet Malawi is not an agriculture inputs manufacturing nation. With the country already plagued with the challenge of a growing agriculture inputs imports bill, what with the weight of the annual Fertilizer Inputs Subsidy Program (FISP), the needs of the SVIP scheme will significantly grow this bill which has the potential to affect the limited foreign exchange situation the country is already faced with annually. To overcome this, the DOI, in collaboration with the Private Irrigation Operators (PIOs), will have to develop a more sustainable mechanism to ensure smooth access to foreign exchange by the PIOs to support import of agriculture inputs for the scheme on an annual basis.

6. ***Financial incentives:*** Related to 5 above, is the issue of a limiting financial services situation characterised by high inflation and bank interest rates which make borrowing for investment very expensive for the PIOs. To address this, the DIO needs to engage closely with the MoAIWD and Ministry of Finance to negotiate for incentives to promote investment in the SVIP project including improved access to international finance. Attempts should also be made to ensure that the scheme identifies high value export crops that will compensate the PIOs for their investments

7. ***Land resources management:*** Studies suggest that land and soil degradation is on the increase and attempts to persuade stakeholders to adopt sustainable methods of land resources management are generally hampered by a lack of a legal framework to achieve the same. Attempts to use other related laws such as the EMA have shown that the efforts are limiting especially at law. The DIO will therefore collaborate closely with the DLRC with support from the Agriculture Ministry headquarters and the Ministry of Justice to facilitate for enactment of a law which will enable enforcement of the law to ensure compliance with required standards.

8. ***Markets and market development:*** The major crops currently grown in the SVIP are sugarcane and cotton. Sugarcane, including that sold by smallholder farmers, is largely marketed through Illovo which has a significant international market. Unfortunately, recent changes show the market prices will be affected negatively in the near future due to the removal of the EU quota for sugar imports. This will have a significant impact on the export potential and price of Malawi sugar. Cotton on the other hand is sold through a number of ginners who export it to the world market after processing the cotton.

However, like sugar, the issue of lowering international prices has not spared cotton. The DIO will therefore have to work closely with the market players, including Ministry of Industry and Trade, to identify alternative markets for sugar and cotton which lie ahead among the likely key crops to be adopted by the SVIP.

9. ***Agro processing and value chain development:*** The SVIP scheme preliminary studies show that the need for agro processing and value chain development remains a very significant aspect of the approach to scheme management with a view to add value to finished products and improve prices. This will require significant engagement with investors for various industries to encourage investment in the scheme. To do this, the DIO with support of the MoAIWD and the Ministry of Trade and Industry will ensure strong collaboration with investment platforms such as MITC, MCCCI and others to avail the investment opportunities to them through publications and consultative forums such as annual trade and investment fares.

10. ***Review of District Council Bylaws:*** Resettlement, compensation and other implementation issues in the SVIP may require review of relevant bylaws in the district councils. This will require the DOI to engage closely with the Ministry of Local Government and Rural Development including the affected District Councils. This will be done through relevant District Council structures such as District Executive Committees and sub committees where the DIOs are members

11. ***Coordination, M&E:*** The success of the SVIP is in ensuring strong multi-sectoral collaboration between stakeholders at the community, district and national level. At community level, the apex farmer organization (if formed) and the Area Agriculture Panels will be key to facilitate coordination and assume quality management roles. At district level, the District Agriculture Stakeholders Panel will be crucial in performing the coordination role. At national level, the ASWAp coordination mechanism with support from the PSC, the PTC, the Task Force and the Consultative Committee will be crucial in performing the coordination, M&E roles. That means the DOI is expected to participate actively at all levels of coordination structures to ensure the SVIP objectives are well articulated and implemented. Through the PTT, the SVIP will also benefit a lot from the coordination platforms to undertake wide sensitization of the SVIP.

4.8 Capacity Development for the Resettlement Action Plans

At present the Ministry of Lands, Housing and Urban Development is responsible for the approval of the RPFs and RAPs and the District is responsible for the implementation of the RAPs. The first phase of the SVIP is located within the District of Chikwawa, who is therefore responsible for the implementation of the resettlement process. The capacity assessment showed that staffing levels are low and individual capacities require strengthening. One of the lessons learnt with implementing RAPs in Malawi is that implementation by a professional team is faster and raises less complaints. Therefore, a professional team will be engaged that will work closely together with the District officials, the T/As, the Communities and the PAPs to prepare and implement the RAPs.

The RAPs Team will identify contact persons within each community, develop their capacity on the processes and procedures of the RAPs and GRM as well as communication and crosscutting issues. After the formal training, the RAPs team will conduct regular meetings with the contact persons to monitor their progress, provide information on the overall progress of the SVIP and the RAPs, share best practices, and address any issues arising. The latter will ensure that issues are addressed at an early stage before these become a major issue. The regular meetings will thus function as training whilst doing apart from sharing communication and information. District staff will participate in the meetings and thus be kept up to date of the progress.

Identification and valuation of the entitlements for compensation will be implemented by the RAPs team with the participation of District officials, T/As and Communities. Prior to the field investigations those conducting the identification and valuation of the entitlements for compensation will follow a training that will include communication, GRM and crosscutting issues.

Capacities will need to be developed of:

- Government staff, T/As and others involved in the preparation and implementation of the RAPs.
- Persons conducting the survey to establish and validate the entitlements to compensation.
- Contact persons within the communities, not only on resettlement, but also on land reallocation, grievance redress mechanisms and crosscutting issues (gender, illiterate, youth and vulnerable groups).
- Members of the various committees that are established to conduct the RAPs, and land reallocation.

The Terms of Reference of the RAPs Team at the SVIP Implementation Unit will include expertise in communication and information, and will addressing crosscutting issues such as gender, youth and illiteracy. In the latter the RAPs team will be assisted by the organisation that will be recruited specifically to address the crosscutting issues not only of the RAPs but also throughout the implementation of the SVIP.

4.9 Capacity Development for the Establishment of Agri-Business Units and Piloting the New Land Laws

4.9.1 Pooling Land and Establishing Agri-Business Units

The LTDACS will be implemented in close collaboration with the Ministry of Lands, Housing and Urban Development, the District of Chikwawa, the Traditional Authority and community members. The SVIP Implementation Unit will be overall responsible for management and coordination of the process as well as providing technical support and development of capacities. The land in part of the Phase I area of the SVIP is already reallocated and pooled together in agri-business units such as Kasinthula, Phata and Kama.

Within the remaining areas these agri-business units will have to be formed, land pooled together, the use of the land to be decided, and markets for the produce to be found. This process can only succeed when the required capacities are developed for communication, management and entrepreneurship.

The capacity building will use a combination of approaches and be combined with communication and information. Community capacity can be developed through:

- Engaging experts (e.g. from the existing agri-businesses in the area or a professional organisation like Agricane) to facilitation of the dialogue and decision-making processes to pool land and establish agri-business units.

- Provide training when required on issues, such as the legal aspects of registering an agri-business unit, on establishing customary estates in which land is pooled together, surveying the area and issuing shares in the entity, financial management, communication, farm management, etc.

- Provide expertise as and when required during the process to reallocate land and form agri-business.

Apart from the communities the capacity of other stakeholders need to be developed, for example of the group village and area development committees, the village heads, etc. These will require information and training on the process and procedures to reallocate land, establish agri-business units ensuring the legal rights of its members to the land brought into the unit.

4.9.2 Piloting the Establishment of New Land Acts

In September 2016 the first four new land laws, among them the Customary Land Act, were signed by the President, (the Acts are more detailed described in chapter 2.3) and although the procedures and regulations are not yet in place, the SVIP project will create a good opportunity for the MoLHUD to investigate the various issues related to the definition of the TLMA's and Land Tribunals and the establishment of Local Land Committees at Group Village level. Once these are in place the establishment of Customary Estates can be piloted, that will form the legal entities for the individual agri-business units within SVIP. Implementation of the new land laws in Chikwawa together with implementation of SVIP, will need to develop the capacities of the newly to be set up local Land Committees at Group Village Level, the Land Clerks at group village and district level, and staff of the required district level institutions in:

a. Designing and formally approving the registration forms and other forms that may be needed under the new legal framework

b. Demarcating the 5 Traditional Land Management Areas (TLMA), which will first require clarification of the methodology to be used. If registration of the TLMA lease is under the title system (Land Registration Act) then the land could be defined with general boundaries, delineated on a suitable scale map, and a detailed cadastral survey would not be necessary.

c. Obtaining from the Land Commissioner a Certificate of Customary Land for each TLMA.

d. Verification of existing land holdings through an informal survey.

e. Participatory land use plan at GV level.

f. Land holding consolidation into a customary estate (several options, tenancy in common, in form of trust).

g. Once land consolidation is completed, systematic process of registering the resulting family/household/individual parcels, outside of the commercial block but within the GV boundary, as private customary estates.

4.10 Capacity Development for the Grievance Redress Mechanisms

The objective of the SVIP grievance redress mechanism is to solve disputes at the earliest possible time, at the lowest level possible. Those seeking redress and wishing to state grievances are free to use the existing system, such as the statutory mechanisms (e.g. formal courts, Traditional Land Management Area (TLMA) and Customary Land Tribunals (CLTs), Anti-Corruption Bureau, and the Malawi Police Service), civil society organisations, family/relatives/friends, religious and political leaders. However, results from the stakeholders' consultations learn that people prefer an independent GRM system, because they often do not trust the existing redress mechanisms, such as the traditional authority and court systems. In addition, lessons learnt from other similar projects show that a separate project systems is the most efficient and acceptable to address grievance.

The first step for a projected affected person who has a complaint is to notify their Local Leader, extension worker and/or project staff. Efforts will be made to resolve the issue at that point. If the PAP is not satisfied, then the complaint will be entered into the GRM system. These will record and try to solve the case, but if this is not successful, the case will be referred to the Group Village Grievance Redress Committee (GVGRC) to determine the validity of claims. If valid, the Local Leaders will notify the complainant and s/he will be assisted. If the complainant's claim is rejected, unsolved or not resolved satisfactorily, the matter shall be brought before the Area Grievance Redress Committee (AGRC) and subsequently before the District Grievance Redress Committee for settlement. Thereafter, the case can be presented to the MoAIWD/PTT.

The capacity will need to be developed of those receiving the complaints, the Group Village Redress Committee, Area Grievance Redress Committee, District Grievance Redress Committee and members of the MoAIWD/SVIP Project Implementation Unit.

4.11 Communication and Crosscutting Issues

Communication will be crucial for the implementation of the SVIP, not only for the RPF but also the reallocation of land, establishing and developing capacity of the agri-business units, the construction process, the agricultural business opportunities, etc.

SVIP Implementation Unit will be overall responsible for the communication. An SVIP Information Office will be operational and instrumental in providing information and obtaining suggestions and grievances as well as providing information on the progress, the RPF valuations and payments, grievances and the status of handling each grievance, etc.

Crosscutting issues of gender, youth, poverty, illiteracy and vulnerable groups will be mainstreamed throughout the implementation of the SVIP and described in the various sections. The main aspects are:

- Ensuring communication materials are gender and youth sensitive and designed in such a manner that the illiterate grasp the meaning.
- Contact persons will be identified and trained within each community who will help the illiterate in understanding the process and filling forms, etc., create gender awareness and assist both genders, the poor and the vulnerable people to attain their rights, etc.
- Separate meetings/consultations, etc. will be organized with adult men, adult women, young men and young women to obtain their separate views. Organising separate meetings will ensure that each group is able and allowed to speak and thus their voice are heard and taken into account.
- Communication, information and training materials will include gender, youth, vulnerable groups, including the poor and include images to make the content understandable to the illiterate.
- Data will be segregated into adult men, adult women, young men and young women wherever relevant.
- Monitoring data will be gender and age disaggregated and the monitoring team will assess whether crosscutting issues are adhered to. Therefore, crosscutting issues will be included in all Terms of Reference, the required outputs and the team will include an expert in the crosscutting issues of gender, vulnerable groups, poverty and illiteracy.

Communication, GRM and crosscutting issues (gender, youth, illiteracy, vulnerable groups) will be mainstreamed in all training and training materials and form specific topics in the curricula. Further, communication and crosscutting issues will be included in: 1) Terms of Reference; 2) Required reporting, and; 3) Indicators for monitoring progress, outcomes and results.

4.12 Monitoring and Evaluation

The Monitoring and Evaluation function of the Capacity Development Plan is a crucial accountability framework that will contribute towards effective implementation of the SVIP. It will be developed in detail at the implementation phase of the project when the design issues are concluded. However, the general framework and process will take the following shape:

1. ***Identification of outcome and impact indicators:*** Development of the M&E framework for the Capacity Development Plan will begin with identification and agreement on indicators for capacity building with a focus on outcome and impact indicators. The indicators will have to be aligned to the SVIP design, to ensure that it speaks to the ASWAp and District Development Plan indicators for the two districts for effective M&E implementation

2. ***Baseline study:*** When the project is designed with a comprehensive M&E framework, a baseline study will be conducted to measure the indicator values which will constitute the M&E indicators for the SVIP. The Capacity Development Plan will develop its baseline indicators aligned to the SVIP M&E framework. The baseline values for the Capacity Development Plan will be drawn from the data collection process alongside the main baseline study. The baseline study will be undertaken by external consultants.

3. ***The Mid Term Evaluation:*** Alongside the main midterm evaluation for the SVIP, the evaluation of indicators for the Capacity Development Plan will also be conducted to assess performance at midterm and guide managerial decision making. The midterm evaluation study will be undertaken by external consultants.

4. ***The End of Term Evaluation:*** Alongside the main end of term evaluation for the SVIP, the evaluation of indicators for the Capacity Development Plan will also be conducted to assess performance at end of project term. The end of evaluation study will be undertaken by external consultants.

The M&E process being an accountability process will ensure wide communication of findings at various forums at community, district and national level. Regular monitoring and evaluation will be undertaken through quarterly and national review and planning forums involving SVIP and ASWAp coordination structures. An M&E unit will be created within the SVIP secretariat to facilitate monitoring and evaluation of the project and facilitate the linkages with the District Council and the MoAIWD M&E systems.

4.13 Budget

This chapter presents the budget for implementing the Capacity Development Plan and the capacity aspects of the other main implementation mechanism. More details can be found in this report and fuller details in the Resettlement Policy Framework, the Grievance Redress Mechanism, the Gender and Youth Strategy, and the Land Diagnostic, Allocation and Consolidation Strategy. The total capacity development related budget is Six Million Two Hundred and Ninety Four Thousand Nine Hundred United States Dollars.

Table 7 Overall Budget for Capacity Development

Capacity Development for:	**USD**
Organisational level	844,400
Institutional level	165,000
Individual level	150,000

Capacity Development for:	USD
Preparing and implementing the Resettlement Action Plans	103,000
Pooling land and establishing agri-business	2,636,500
Implementing Grievance Redress Mechanism	1,122,000
Communication and crosscutting issues	1,274,000
TOTAL	**6,294,900**

4.13.1 Budget and Implementation Plan for the Individual, Institutional and Organisational level Capacity Plan

Capacity development has been included in various strategies and reports designing the implementation of the SVIP together with a budget. The overview of the budget in Table 8 below provides an overview of the budget for the capacity development activities described in this report. The total estimated budget for the various capacity development activities is United States Dollars nine million four hundred and eighty nine thousand three hundred only. More details are provided in appendix 3 Organisational/institutional level capacity development, appendix 4 Systematic level capacity development and appendix 5 Individual level capacity development. These appendices provide information on the various capacity development interventions, the implementation year in which these are to take place, the gaps addressed, the targeted stakeholders, the required resources, the budget and the assumptions.

Table 8 Budget overview for five years of SVIP capacity development

	Budget	USD
1	Individual level capacity plan	844,400
2	Systematic level capacity plan	165,000
3	Organisational/institutional level capacity plan	150,000
	Total	**1,159,400**

4.13.2 Budget and Implementation Plan for the Resettlement Action Plans

The Resettlement Action Plans (RAPS) will be prepared as soon as the technical design is finalised for each of the construction contracts, and if the contracts is implemented in phases, for each of the phases of the contract requiring land over time. The implementation has to be completed before the start of construction. Only compensation for the lack of access to the farming land in the irrigated areas will be paid after the start of the construction as per separate RAP or RAPs.

The grievance redress mechanism and reallocation of land are part of the resettlement process. Separate budgets for those are included in sections 4.13.3 and 4.13.4 below.

The estimated costs of the capacity development for the RAPs is shown in

Table 9 below:

Table 9 Estimated costs for Capacity Development in relation to the RAPs

	Capacity development item	Quantity	No of months	Unit costs	Total USD
1	Establishment and training of committees to establish the value of lost and affected assets and entitlement to compensation.	1	1	15,000	15,000
2	Awareness meetings at districts and communities	10	1	2,000	20,000
3	Monthly meetings with community contact persons[17] and other stakeholders that will be used to train on common issues	3	12	500	18,000
4	Field inspections, monitoring and advisory services, bi-monthly by a team of 2-4 experts	12		10,000	50,000
	Total				**103,000**

4.13.3 Budget and Implementation Plan for Pooling Land and Establishing Agri-Business

The piloting of the new land acts, including the development of capacity, has been discussed during the pre-appraisal mission of November 2016 and a budget developed separately. The remaining budget items for implementing the pooling of land and establishment of agri-business units is shown in Table 10 below.

Table 10 Estimated Budget for Implementing the Land Tenure Diagnostic, Allocation and Implementation Strategy

		Unit	Unit rate USD	Quantity	Total USD	Comments
1	Legal Options Study	Lump sum			30,000	One national legal person for two months
2	Information and Awareness Raising Campaign on legal options, pooling of land					
	• Awareness meetings	Meeting	170	300	51,000	At District, TA, GVH and settlements

[17] The recruitment and capacity development of community contact persons is included in section 4.13.5 below.

	• Preparing and distributing printed information	Lump sum			6,500	
	• Radio programme	Lump sum			10,000	
5	Support the establishment of agri-business entities					
	• 2 national persons for 4 years	Months	12,500	96	1,200,000	
	Mapping the agri-business areas:					
	• Field team training for one week of 4 people, incl. training materials	Months	6,000	1	6,000	
	• Field team of 4 people for 2 months	Months	3,000	8	24,000	
	• Travel costs and allowances				11,000	
8	International TA Support					
	One person for 2 years fulltime and 2 years half time	Month	36	22,500	810,000	Including international travel
9	Office and field operation costs for 4 years					
	Field Allowances 3 staff	Month	300	144	43,200	
	Two cars acquisition	Lump sum			50,000	
	Two cars operation	Month	800	96	76,800	
	Office operation expenses	Month	1,000	48	48,000	includes IT, acquisition of office furniture
	Accommodation international staff	Months	3,500	36	126,000	
	Two drivers cum office staff	Months	1,500	96	144,000	Including drivers' allowances
					2,636,500	

4.13.4 Budget and Implementation Plan for the Grievance Redress Mechanism

It is internationally recommended that a GRM should have a realistic budget that will sufficiently cover the costs of its operations such as staffing, awareness campaigns, capacity-building training, infrastructure and support services, field inspections, meetings, documentation and supplies (Centre for Poverty Analysis, CEPA, 2009).

Based on this framework, it has been estimated that the GRM will require about $ 1,122,000. The cost calculations are based on operating the GRM for 5 years and include maintaining a small office in Malawi. Given that the GRM will be implemented as part of project activities, it is expected that the costs would be lower due to economies of scale. Resources to cover the operational costs of the GRM will come from the SVIP project.

The estimated budget for the grievance redress contains other items than capacity development as well.

Table 11: Estimated cost of operating the GRM

Activity	**Quantity**	**No of months**	**Unit cost**	**Total Cost ($)**
GRM Officer remuneration, for a period of 5 years, based on current markets remuneration for a 10 year above experience (MSc Holder)	1	60	4,000	240,000
GRM IEC, Admin and Finance and Officers	3	60	2,000	360,000
Field Officers	3	60	800	144,000
GRM vehicle and other capital equipment such as computers, estimated total	1	1	60,000	60,000
Office operational costs-estimates, includes fuel, teas, communication, utility based on a small office costs in Malawi etc.)	1	60	2,000	120,000
Baseline and evaluation studies, based on current costs of evaluation studies	2	1	30,000	60,000
GRM information, education and communication and learning materials, estimate lumpsum	1	1	8,000	8,000
Awareness meetings at district and community level (10 meetings in total)	10	1	1,500	15,000
Awareness meeting at national level (1 national meeting)	1	1	5,000	5,000
Training of 4 committees on GRM at national, district and community level, a total of 50 people trained	4	1	5,000	20,000
Quarterly meetings of 4 GRM Committees, total 16 meetings/year	16	5	500	40,000
Field inspections, monitoring and advisory services, twice a year by a team of 2-4 experts	2	5	2,000	20,000
National Learning Event on GRM for the Project	1	1	30,000	30,000
Total estimated cost for GRM over 5 years				**1,122,000**

4.13.5 Budget and Implementation Plan for Communication, Crosscutting Issues and Monitoring

The SVIP Information Office has to be established together with the SVIP Implementation Unit and be operational throughout the implementation that is estimated to take five years. Similarly, crosscutting issues have to be mainstreamed and addressed throughout the implementation period and expertise established within the SVIP Project Implementation

Unit as soon as this unit is established and be operational throughout the project implementation period.

The community contact persons will not only be for communication and crosscutting issues but also providing information and support on grievance redress, and resettlement.

Integrated monitoring visits will be conducted on communication, crosscutting issues, establishment of agri-business units, grievance redress, resettlement, and pooling of land. At the end of the monitoring visits the lessons learned will be disseminated.

Table 12 Estimated budget for Communication, Crosscutting Issues and Monitoring

		Quantity	**No of months**	**Unit costs**	**Total USD**
1	Establishment and training of community contact persons on communication, crosscutting issues (gender, youth, illiteracy, vulnerable groups, poverty), GRM, and resettlement.	1	1	25,000	25,000
3	Awareness meetings at districts and communities	10	1	2,000	20,000
4	Monthly meetings with community contact persons and other stakeholders that will be used to train on common issues	1	60	1000	60,000
5	Establishment and operation of a SVIP Information Office, including remuneration of the SVIP Information Officer	1	66	2,000	66,000
6	Preparation and dissemination of information materials	5		Lump sum	50,000
7	Engagement of an organisation specifically addressing crosscutting issues for five years. One of the SVIP Implementation Unit Specialists will be on crosscutting issues. Estimated at an average of 1,5 person month per month.	1	60	17,000	1,020,000
7	Field inspections, monitoring and advisory services, bi-monthly by a team of 2-4 experts for the first two years, quarterly for another two years and twice in the fifth and last year	22		15,000	33,000
	Total				**1,274,000**

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Appendix 1 – List of people interviewed

Name	Job Title	Organization	M/F	District
Duncan Magwira	District Agriculture Development Officer (DADO)	District Agricultural Office	M	Chikwawa
Micter Chaula	Extension Methodologies Officer	District Agricultural Office	M	Chikwawa
Louis Lipenga	Crops Officer, Horticulture	District Agricultural Office	M	Chikwawa
Satiya Makwinja	Agri-business Officer	District Agricultural Office	F	Chikwawa
Phillip Begue	District Animal Health and Livestock Development Officer	District Agricultural Office	M	Chikwawa
TA Maseya	Chief	District Council	M	Chikwawa
Bester Mandele	District Commissioner	District Council	M	Chikwawa
Hon. Harry Thomson	Member of Parliament, Chikwawa North	National Assembly	M	Chikwawa
Zaheer Gaffar Issa	Member of Parliament, Chikwawa Central	National Assembly	M	Chikwawa
Kumbukani Mhango	Senior Program Coordinator	Evangelical Association of Malawi (EAM)	M	Chikwawa
Connex Chilangwe	Outgrower Manager	Presscane Ltd Company		Chikwawa
Isaac Dzinza	Safety, Health, Environment, Quality and Security Manager (SHEQS)	Presscane Ltd Company	M	Chikwawa
Frank Herbert Beu	Chairperson	Chikwawa Livestock Association	M	Chikwawa
Jenason Chakuamba	Livestock commercial farmer	Chikwawa Livestock Association	M	Chikwawa
Dennis Chalera	District Irrigation Officer	District Council	M	Chikwawa
Anderson Mbozi	Chief Irrigation Officer	Ministry of Water & Irrigation	M	Lilongwe
James Banda	Deputy Director, Land Management and Training	Land Resources Conservation Department	M	Lilongwe
Getrude Kambauwa	Chief Land Management Training Officer	Land Resources Conservation Department	F	Lilongwe
Dr. Benard Chimera	Director, Animal Health and Livestock Development	Department of Animal Health	M	Lilongwe
William Chipeta	Shire River Basin Management Programme	Project Coordinator	M	Lilongwe
Atanazio Chibwana	District Commissioner	District Council	M	Nsanje

Isaac Ali	District Agriculture Development Officer (DADO)	District Agricultural Office	M	Nsanje
Edward Mkandawire	District Irrigation Officer	District Council	M	Nsanje
Laston Zammimba	Assistant District Animal Health and Livestock Development Officer	District Council	M	Nsanje
Christopher Phiri	Assistant Livestock Development Officer	District Council	M	Nsanje
Marko Molotali	President, WUA	Muona Rice Scheme	M	Nsanje
Febian Kwakwasi	Chairman	Nsanje Livestock Association	M	Nsanje
Anastazia Nthete	Member	Nsanje Livestock Association	F	Nsanje
Gwezela Banda	Treasure	Nsanje Livestock Association	M	Nsanje
MacLean Chimpeni	Chairman, Civil Society Network	Action Aid Malawi	M	Nsanje
Gift Mfune	District Land Officer	District Council	M	Nsanje
Ralph Lima	Livestock commercial farmer	Nsanje Livestock Association	M	Nsanje
Alex Nkwapatira	Liaison Officer	Kaombe Trust	M	Nsanje
Kalemba Chimamba	Administration Manager	Kaombe Trust	M	Nsanje
McFarlane Jeren	Chairman	Kaombe Trust	M	Nsanje
Martin Katha	Irrigation Controller	Illovo	M	Chikwawa

Appendix 2 – Envisaged Benefits of the SVTP – A Financial and Economic Analysis

Introduction[18]

The economic analysis was done for four alternative scenarios of configurations of the possible project costs and benefits. These are:

- **Scenario 1**: Analysis for phase I of the project considering only benefits and costs of irrigated crop production, livestock production, and aquaculture production only;
- **Scenario 2**: Analysis for phase I considering the costs and benefits of crop production, livestock production, aquaculture production, flood protection, domestic water supply, and NRM;
- **Scenario 3**: Analysis for Phase I considering all relevant benefits and costs of the project including crop production, livestock production, flood protection, domestic water supply, NRM, energy saving, and GHGs emission;
- **Scenario 4**: Analysis for Phase I and Phase II considering all relevant costs and benefits, and
- **Scenario 5:** Analysis considering only irrigation development and natural resources management costs and benefits.

The economic analysis is very conservative in that anticipated economic multiplier benefits were not included in the analysis owing to methodological difficulty in quantifying the benefits. However, several studies have confirmed that projects that raise agricultural productivity can have a significant impact on local prices, wages, and rents in addition to directly affecting farmers, especially in rural areas of Africa. Price changes, in turn, transmit project impacts to others within the local economy. For instance, an analysis of the local economy-wide impacts of rice irrigation projects in in the Morogoro region of Tanzania indicates that these irrigation projects can generate important indirect impacts within the region. Although the production of rice increases by 4.45 billion TZS, the effect of the intervention on the value of total output in the local economy, once all local general equilibrium effects are taken into account, was 7.9 billion TZS, which is 80 percent higher than the increases in rice value[19]. During 1960s and 1970s, governments heavily invested in major irrigation projects in the expectation that these investments would transform the regional economies in which the projects such as the SVIP are located. Thus, the omission of the indirect benefits of the SVIP would understate the true economic returns of the project.

Key assumptions

- Standard conversion Factor (0.96)
- Conversion Factor: Skilled Labour (1)
- Conversion Factor: Unskilled Labour (0.5)
- Discount Rate (6%)
- VAT (16.5%)
- Contingencies (7.5%)

[18] This analysis is taken from the Project Appraisal Document of 25 May 2017 (PAD2241)
[19] Mateusz Filipski. 2013. Evaluating the Local Economy-wide Impacts of Irrigation Projects. IFPRI Discussion Paper 01247.

- Project Duration: 40 years
- Phase I Implementation period: 6 years
- Disbursement build-up or implementation schedule: First year (3.3%), second year (8.1%), third year (16.2%), fourth year (23.5%), fifth year (23.4%), and sixth year (25.5%)
- Implementation of Phase II begins immediately after completion of Phase I
- O&M cost=1.5% of the direct project costs
- Without project benefits for Phase I is estimated to be US$1.49 million per year
- Without project benefits for Phase II is estimated to be US$2.57 million per year

Estimation of benefits

Crop production

Several crops were evaluated for their suitability to grow in the Lower Shire Valley based on climate and soil considerations, market potential, profitability, and readily availability of support services[20]. The analysis identified several tropical and temperate crops that can grow well in the lower Shire Valley during summer, winter or all year-round (Table 13).Table 13 summarizes the results of gross margin analysis carried out to assess the viability of the crops, which are considered suitable, from an agronomic perspective, for growing in the lower Shire Valley. The list includes several high value crops, which are capable of realizing much higher returns such as citrus, mangoes, tomatoes, baby corn, sweet corn, and chilies. However, these crops were either dropped or gradually incorporated into the cropping pattern to allow for the development of downstream industries that are required to manage the logistics related to the packaging, marketing, and, or processing of these crops. For example, the type of tomatoes proposed for the project area requires a processing factory to be established first. The same applies for the cassava crop. It is envisaged that as scheme development progresses some of these crops will be included in the cropping mix.

[20] Agricultural Development Planning Strategy (Final Report)

Table 13 Gross margin estimates and ranking of suitable crops

No.	Crop	Average yield (kg/ha)	Av. Price (US$/kg)	Gross margin (US$/ha)	Include/exclude from cropping programme
1	Tomatoes	45,000	0.28	7,683.17	To be introduced gradually after investments in processing technology
2	Sweet corn	50,000	0.15	6,493.35	To be introduced gradually after investments in packing, storage, freight facilities
3	Green mealies	45,000	0.16	6,449.76	To be introduced gradually after investments in packing, storage, freight facilities
4	Sugar cane	120,300	0.07	3,320.62	**Included**
5	Cassava (wet)	30,000	0.10	3,002.31	Excluded – needs storage and processing facilities
6	Baby corn	11000	0.30	1,983.65	To be introduced gradually after investments in packing, storage, freight facilities
7	Rice (polished)	2,500	0.75	1,871.19	Excluded –no suitable rotation crop, high water requirement
8	Beans (dry)	2,500	1.04	1,657.97	**Included**
9	Pigeon peas	2,500	0.75	1,500.50	**Included** – for rotation purposes and to meet the national aspirations
10	Cassava (dry)	10,000	0.15	1,316.19	Excluded – needs processing and storage facilities
11	Cotton	4,000	0.45	1,223.43	**Included**
12	Chillies	1,500	0.97	2,234.8	To be introduced gradually after investments in processing technology
13	Rice (unpolished)	3,500	0.45	826.41	Excluded –no suitable rotation crop, high water requirement
14	Groundnuts(shelled)	2,500	0.75	752.72	Excluded –not suited to the soils of the area
15	Soya beans	3,100	0.28	337.85	**Included**
16	Maize (seed, irrigated)	3,500	0.37	264.01	Excluded - viability of seed
17	Maize (grain, irrigated)	5,000	0.24	196.64	**Included** -food security, political and social reasons
18	Sorghum	5,000	0.18	166.20	Excluded – markets
19	Groundnuts(unshelled)	4,170	0.30	166.01	Excluded – not suited to the soils of the area
20	Wheat	4,000	0.27	108.69	Excluded - yield, quality
21	Cow peas	2,000	0.21	97.16	Excluded - marketing not clear
22	Sesame	1,100	0.27	64.16	Excluded - marketing not clear

Nine crops were-selected from the list of 22 crops evaluated. The crops selected are those that are best suited to the agronomic conditions of the Shire Valley, have reasonably high gross margin, have readily available market either in Malawi or in the region, and are easily handled, transported and stored without elaborate transformation or investment in processing and storage facilities beyond those that already exist in the SVIP area.

A representative cropping pattern (differentiated by seasons) and farm model has been developed based on the selected crops (Table 14 and Table 15). It must be emphasized that an economically optimal crop mix will emerge overtime in response to evolving market opportunities and as farmers gain the experiences and skills needed to manage complex crop enterprises.

A 500 ha-farm units shall be established in the new irrigation areas of the lower shire valley. The model allocates 25 ha to food crop production to ensure household food security (Table 15) and 475 ha for commercial crop production. The commercial crop area is managed by a 250-member cooperative, while the food production plots are managed by individual households (i.e., 0.1ha per household). The key assumptions in constructing the farm model are:

- All lands cropped in both summer and winter hence 200 percent cropping intensity
- Perennial crops introduced in Year 6
- On citrus and mango orchards intercropping with bananas for first 4 years
- Introduction of perennials achieved by reducing area planted to annual crops
- Summer crops: cotton, pigeon peas and soya beans
- Winter crops: dry beans and maize
- Perennials: bananas, citrus and mangoes

Table 14 Crop combination for the food plot area

CROP	CROP AREA BY YEAR															
	%	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SUMMER:																
Maize	100	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
WINTER:																
Dry beans	50	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Vegetables	50	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5

Source: PWC Report (2016)

Table 15 Crop combination for the commercial crop area

CROP	CROP AREA BY YEAR											
	1	2	3	4	5	6	7	8	9	10	11	12
BANANAS						47.5	47.5	47.5	33.3	19.0	19.0	19.0
CITRUS						19.0	19.0	19.0	19.0	19.0	19.0	19.0
COTTON	157.7	157.7	157.7	157.7	157.7	145.4	145.4	145.4	145.4	145.4	145.4	145.4
DRY BEANS	237.5	237.5	237.5	237.5	237.5	209.0	209.0	209.0	209.0	209.0	209.0	209.0
MAIZE	237.5	237.5	237.5	237.5	237.5	209.0	209.0	209.0	209.0	209.0	209.0	209.0
MANGOES						19.0	19.0	19.0	19.0	19.0	19.0	19.0
PIGEON PEAS	158.7	158.7	158.7	158.7	158.7	145.4	145.4	145.4	145.4	145.4	145.4	145.4
SOYA BEANS	158.7	158.7	158.7	158.7	158.7	146.3	146.3	146.3	146.3	146.3	146.3	146.3

Source: PWC Report (2016)

In addition to the new area to be developed, the project will also benefit the existing estate and out-growers sugarcane production through reducing cost of production in lieu of reduced energy and MOM costs. The project also stabilizes or enhances the productivity of sugarcane by ensuring the reliable supply of adequate irrigation water. It is assumed that following the shift from pumping based to gravity irrigation system, the yield of sugarcane increases by about 10 percent.

Livestock production

The Lower Shire Valley is one of areas in Malawi with a high livestock population (Table 16). In 2015 about 67 percent of the households kept livestock or poultry in the project area. Some of the households that do not own livestock depend on livestock keepers for wage employment, trade and service provision. The common types of livestock owned by households are cattle, goats, chickens, pigs, guinea fowl, ducks, rabbits, sheep, and pigeons. Table 16 shows a steady increase in the cattle population in the project area. In general, the growth in the major livestock species shows an upward trajectory.

Table 16 Livestock production in the lower Shire Valley

	2011	2012	2013	2014	2015
Cattle	142,805	146,235	165,859	180,512	184,914
Goats	279,765	312,534	352,612	387,533	414,661
Sheep	5,037	6,030	6,556	6,950	7,746
Pigs	95,017	104,363	120,909	132,831	135,541
Poultry	1,099,453	1,196,748	1,227,600	1,536,803	1,554,279
Others	5,609	10,405	12,046	9,191	9,997

While SVTP primarily aims at increasing the production of irrigated crops, it is envisaged that a 100-cowherd unit will be established at ten of the fifteen-500 ha cooperative farms in Phase I and 23 of the thirty-three 500 ha cooperative farms in Phase II to boost livestock production. This enables the cooperatives to utilize the huge biomass generated from irrigated crop production.

Income and expenditure analysis is performed for a prototype 100 cowherd based on 10-year herd build up and projections (Table 17). The results indicate that the investment yields a

positive gross margin within just three years of initiating the investment. According to this analysis, an average gross margin of US$8,402.4 can be realized from a 100-cowherd unit.

Table 17 Income and expenditure estimates for a 100-cowherd unit

Year	Revenues (US$)	Expenditures (US$)	Gross Margin (US$)
1	0	2,450.2	(2,450.2)
2	0	3,408.6	(3,408.6)
3	0	4,284.5	(4,284.5)
4	13,959	5,281.5	8,677.5
5	11,435	5,713.9	5,720.6
6	13,811	6,219.4	7,591.1
7	15,741	6,593.2	9,147.9
8	15,890	6,847.0	9,042.5
9	16,187	6,979.7	9,206.8
10	16,484	7,053.4	9,430.1

Source: PMC (2016)

Aquaculture production

Currently, about 10,000 fishponds exist in Malawi as a whole and are owned by 6,000 smallholder farmers.[21] Introducing a fish farm to the cooperatives provides additional protein rich food for its members in addition to a steady source of cash income for its members. An enterprise budget analysis was done for ten ponds of 1000 square meter each (Table 18). According to the PWC analysis, a gross margin per hectare of about US$23,830 is achievable.

Table 18 Enterprise budget for fish farm

Description	**Quantity**	**Unit price**	**Cost /pond**	**Number of ponds**	**Total (USD)**
Capital investment:					
Labour	45.0	30.8	1,384.7	10	13,846.5
Pipes and bends	4.0	11.5	46.2	10	461.6
Cement	4.0	9.2	36.9	10	369.2
Wheel barrows	5.0	76.9	384.6	10	3,846.0
Shovels	10.0	12.3	123.1	10	1,231.0
Harvesting net	1.0	615.4	615.4	10	6,153.8
Sub-total	**69.0**		**1,975.4**		**19,754.3**
Production costs:					
Water	3,100.0		0.0	10	0.0
Fingerlings	6,000.0	0.02	120.0	10	1,200.0
Lime	3.0	30.8	92.3	10	923.1
manure	3,000.0	0.01	30.0	10	300.0
Feed	1,000.0	0.4	380.0	10	3,800.0
Labour	6.0	30.8	184.6	10	1,846.2
Sub-total	**13,109.0**		**806.9**		**8,069.3**
Harvesting:					

[21] GoM, 2016

Description	Quantity	Unit price	Cost /pond	Number of ponds	Total (USD)
Labour	1.0	3.1	3.1	10	30.8
Ice	100.0	0.2	18.0	10	180.0
Transport	20.0	1.2	23.0	10	230.0
Sub-total	**121.0**		**44.1**		**440.8**
Revenue:					
Sales	1,400.0	2.3	3,234.0	10.0	32,340.0
Gross margin/ha					**23,829.9**

Source: PWC (2016)

Flood protection benefits

Shire Valley is prone to flooding which is largely generated by gross mismanagement of the environment in the upper catchments of the Shire River and its numerous tributaries. Thus, in addition to its vulnerability to droughts, SVIP area is also prone to flood disasters, with serious repercussions on crop production and loss of life and damage to property.

The methodology for assessing the benefits of flood alleviation combines an assessment of the hazard, in terms of the probability of future floods to be averted, and a vulnerability assessment in terms of the damage that would be caused by those floods and therefore the economic saving to be gained by their reduction. Estimation of damage or loss probability curve is a major step in any flood mitigation benefit estimation exercise. In the present case, this was achieved through the following steps.

Step1: Establishing the relationship between different flood events and inundation area. This data was obtained from the hydrological analysis presented in the technical feasibility report provided by consultants and is depicted in Figure 5 for the whole project area.

Figure 5 The relationship between flood return period and inundation area

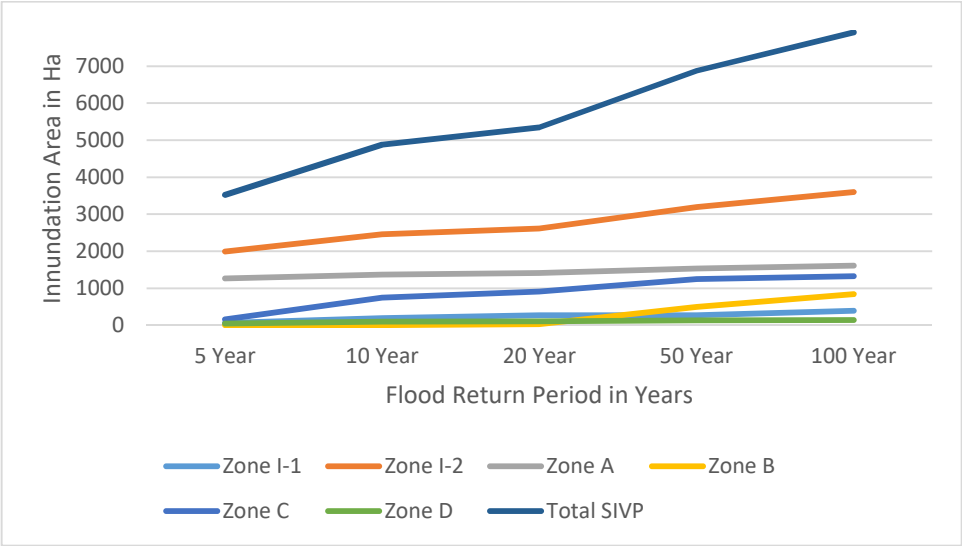
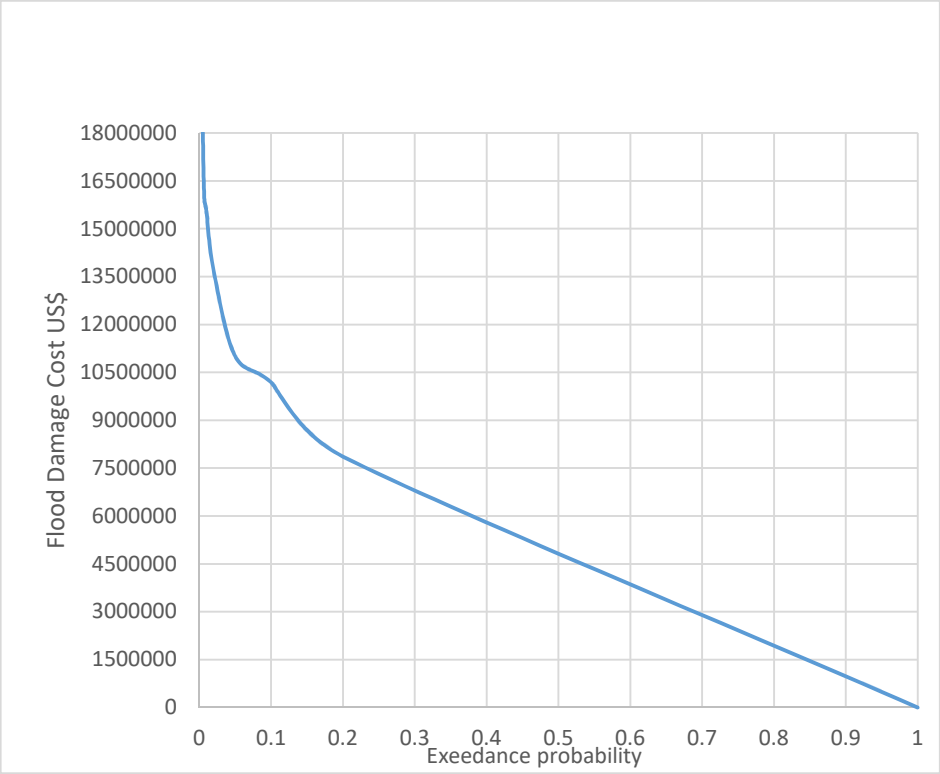


Figure 5 depicts that Zone I-2, Zone A, and Zone C are the most flood damage prone areas.

Step 2: Determination of the land use pattern of the inundated area, the economic sectors affected, and the extent of possible damage. The extent of damage for the key identified economic activities was obtained from actual losses documented in the project area for the 2015 flood event. The project area was affected by heavy floods between January and February 2015. A total of 19,060 ha of cropping area was affected. The crops that were affected include maize, millet, rice, sorghum, groundnuts, and cotton. The extent of damage to the crops ranged from 75 percent to 100 percent production loss for the affected areas. The floods also affected livestock production where a total of 450 cattle, 9,216 goats, 44 sheep, 1,639 pigs, and 69,760 chickens died among other livestock species[22]. Thus, the flood damage loss was estimated based on lost crop and livestock production. The total value of livestock lost is estimated to be US$1.65 million. The total number of households affected by the floods was 70,416.

Step 3: Involved the determination of the loss probability curve as shown in Figure 6.

Figure 6 The Loss Probability Curve



The total Annual Average Damage (AAD) cost is the area under the curve in Figure 6 above. However, the averted damage cost is a sub-set of this total, the magnitude of which is determined by the adopted design standard. In the present case the adopted design standard is chosen to be the flood return period of one in ten years with exceedance probability of 0.1. Different methods can be used to calculate the area under the loss-probability curve[23]. Here we adopted numerical integration method, which is based on the Trapezoidal Rule. The AAD cost without the project is calculated to be about US$5,266,055. Due to the project implementation,

[22] Source: 2014/2015 SVADD Third Round APES Report.
[23] According to Olsen et al. 2015(Comparing Methods of Calculating Expected Annual Damage in Urban Pluvial Flood Risk Assessments); the choice of method by which the AAD is calculated appears to be of minor importance.

this damage cost is reduced to just only US$688,176. Thus, the annual damage cost avoided due to the project is about US$4,577,880.

Water supply benefits

The limited available public water supply systems developed by Malawian government and NGOs are malfunctioning for various reasons and are accessible to the population of the project area only to a limited extent. Seven of the 15 public water supply points were salty. Women spend about 40 minute to 2 hours to fetch water from Shire River. Others get water from one of the public taps, where waiting times were reported to be up to 6 hours, since the pressure of the tap is very low and people fetch water in large quantities at a time.

At least 15,000 people in 2,776 households are expected to benefit from the SVIP water supply scheme. A conservative estimate show that these households in total lose about 2,700 hours per day or 123,000 working days of 8 hours per year. It is assumed that this time loss can be reduced by 50 percent to 61,500 days per year due to SVIP water supply scheme. Such time savings will particularly allow girls to attend school regularly. In monetary terms, these benefits would amount to some US$30,000 per annum. The social and health benefits could be even higher. Curtailing visits to river may significantly reduce exposure to bilharzia, which appears to be a rather common disease in the area. Moreover, due to access to improved water sources, households avoid water treatment costs such application of sterilizing liquid and boiling water using expensive purchased charcoal.

Power Saving benefits

The shift from pumping based irrigation system to gravity-based system at Illovo estate and its associated out-grower schemes reduces the level of energy consumption. Currently, the peak power demand is about 23MW, whereas annual energy consumption in 2016 was about 87GWh. Of the total 23MW peak demand, 6MW is for factory, 3MW is for domestic, and 15MW is for agriculture (mainly for pumping). Out of the 15MW allocated to agriculture, about 10MW is used to boost overhead irrigation (i.e., dragline and centre pivot), which may still be required even after the implementation of the project in case water is not supplied with sufficient pressure to drive the overhead irrigation system. In this scenario, the amount of energy that may be freed due to the implementation of the SVIP is about 3.7MW during the hot season and 2.9MW during the cold season. However, if irrigation water were supplied at sufficient pressure to drive overhead irrigation systems the whole 15MW used for irrigation would be freed-up.

In this analysis, the economic value of the 15MW energy released is estimated taking into consideration the fact that Malawi has one of the most severely constrained power sectors in sub-Saharan Africa. The country is characterized by energy-deficient economy with growing demand. Therefore, it is reasonable to assume that the 15MW energy conserved due to SVIP can avoid additional generation. Thus, avoided cost of generation is the main benefit of energy conservation.

In an expanding energy sector, like that of Malawi, avoided generation depends on avoided capacity additions. Therefore, some knowledge on the most likely energy expansion plan of Malawi is critical to the accuracy of benefit estimation. The short to medium-term energy

expansion plan of Malawi differentiated by source is presented in Table 19. The vast majority of Malawi's energy development plan is hydro based. The weighted average generation cost is US$0.24/kWh, which is used to value the 15WM avoided generation capacity. Thus, the estimated annual value of avoided generation cost is US$23,202,152.5. This result serves as a justification for including Illovo Estate into the project.

Table 19 Short to medium term energy development plans of Malawi

Item	Alternative energy sources					
	Coal	Wind on-shore	Solar PV	Hydro	Geothermal	Biomass
Energy Capacity (MW)	300	150	120	910	NA	NA
Annual Energy (Million kWh)	1955.0	977.5	782.0	5930.1	NA	NA
Generation cost (Million US$/MW)	0.61	1.29	2.57	2.65	4.03	4.04
Generation cost (US$/kWh)	0.07	0.15	0.29	0.3	0.46	0.46

Source:

Benefits of Natural Resources Management

The Natural Resources Management component of the project provides multiple benefits including reduced land degradation and soil loss, biodiversity conservation, enhanced ecotourism, sustainable supply of biofuels, and reductions in GHG emissions. These benefits are difficult to quantify and value. However, it is estimated that the Natural Resources Management interventions result in total mitigation of 9.855 MtCO2-eq over 15 years period starting from the third year of project implementation, which is equivalent to total economic benefit of US$32,521,500. The average annual economic benefit is US$2,168,100.

The project is also expected to generate significant emission reduction benefits due to land use changes in the irrigation command area and switching of irrigation system from pumping based system to gravity system. These changes result in a reduction of emissions by 668,874 tCO2-eq over 60-year period[24]. This equivalent to annual emission savings of 11, 148 tCO2-eq. The economic value the emission savings is estimated to be US$736,046.7 per year.

Costs

The financial and economic costs of the project differentiated by phases are shown in Table 20. The total financial resources required to develop 29,050 ha new irrigation area and convert the irrigation system of the existing 14,320 ha from pump-based to gravity-fed irrigation system is US$589.9 million in two phases at an average cost of US$13,591 per hectare.

The total financial cost of Phase I is US$275.72 million, which will be used to develop 11,535 ha new irrigation area and supply water to 10,745 ha existing irrigation area; of which US$230.61 million is exclusively for developing irrigation. Therefore, per ha development

[24]Taken from the SVIP GHG Appraisal Draft Report

cost for phase I is US$10,351. In phase II, 17,515 ha new irrigation area will be developed and an existing 3,575ha irrigated area will be supplied with water with a total financial outlay of US$309.3 million (pre-feasibility study estimate).

The financial costs were converted to economic costs by removing taxes, duties, price contingencies; and valuing skilled and unskilled labour using their opportunity costs. The economic costs of the project are US$215.15 million, US$279.11 million, and US$494.26 million respectively for Phase I, Phase II and Phase I plus Phase II.

Table 20 Financial and economic costs for Phase I

Cost categories	Financial cost (US$ Million)			Economic Cost (US$ Million)		
	Local	Foreign	Total	Local	Foreign	Total
Irrigation Service Provision	25.48	98.36	123.84	4.70	98.36	206.13
Land tenure governance and investment	2.07	6.23	8.30	0.66	6.23	6.89
Natural Resources Management	1.09	4.04	5.12	0.16	4.04	4.19
Agricultural Development and Commercialization	18.46	65.61	84.07	4.41	65.61	70.02
Project Management and M&E	4.66	16.36	21.02	2.93	16.65	19.57
Physical contingency	2.77	10.93	13.7	0.48	10.93	11.41
Price Contingency	4.37	15.31	19.67	-	-	-
Total	58.89	216.83	275.72	13.33	201.81	215.15

The financial and economic costs of the irrigation component of phase I was calculated by excluding non-relevant costs from the estimated total cost of phase I (Table 21). The excluded costs include the costs of joint infrastructure for Phase I and Phase II such as intake structure and feeder canals. The joint costs were allocated to Phase I and Phase II based on the share of irrigation area.

Table 21 Financial and economic costs for irrigation component, Phase I

	Costs	Financial Cost US$	Economic Cost (US$)
A	Cost of safeguards for Phase II	828,142	625,200
	Detailed design for Phase II	2,868,718	2,213,416
	Baseline survey for Phase II	273,314	208,400
	Share of cost of joint infrastructure for Phase II	28,356,150	27,221,904
	Subtotal-Phase II costs included in Phase I	**32,326,324**	**30,268,920**
B	Cost of flood protection	6,329,027	4,774,689
	Cost of water supply	866,031	666,880
	Cost of Natural Resources Management	5,588,000	4,192,018

	Costs	Financial Cost US$	Economic Cost (US$)
	Sub-total-Other costs	**12,783,058**	**9,633,587**
C	**Total costs not relevant to irrigation component of Phase I (A+B)**	**45,109,382**	**39,902,507**
D	Total Cost of the Project Phase I	27572000	215,146,000
E	Cost of Phase I irrigation component (D-C)_	230,610,618	175,243,493

Results of the economic analysis

The detailed results of the economic analysis for various scenarios of project formulations are presented in Table 22. The main thrust of the project is to enhance the productivity and production of crop and livestock production through phased development of irrigated agriculture in the lower shire valley. The project also has additional components including flood protection, domestic water supply, livestock and aquaculture production. The project entails complementary benefits including energy conservation and GHG emission reduction benefits. The analysis recursively evaluated the marginal contribution of each sub-component or complementary benefits of the project.

The main conclusions of the analysis are presented as follows:

- Considering only the costs and benefits associated with irrigated crop production, the NPV is US$114.04 million with IRR of 10.21 percent (**Scenario 1**),
- When the benefits and cost of crop production, livestock production, aquaculture production, flood protection, domestic water supply, and Natural Resources Management are considered the NPV of the project substantially increases to US$170.88 million with IRR of 12.12 percent (**Scenario 2**),
- Addition of energy saving and GHGs emission reduction benefits due to land use and irrigation system change to the overall project costs and benefits significantly enhances the returns to the project. In this case, the NPV jumps to US$413.35 million with IRR of 19.12 percent (**Scenario 3**),
- When Phase I and Phase II project costs and benefits are considered, the NPV is US$478.35 million with IRR of 15.32 percent (Scenario 4), and
- When only the costs and benefits of irrigation development and natural resources management are considered, the NPV is US$128.45 million with IRR of 10.8% (Scenario 5).

Overall, the project is economically viable given the assumed discount rate of 6 percent.

Table 22 Results of the economic Analysis

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
1	(7,273,035)	(7,590,944)	(7,590,944)	(7,590,944)	(7,411,372)
2	(15,684,723)	(16,465,044)	(16,465,044)	(16,465,044)	(16,024,276)
3	(29,879,446)	(31,440,087)	(31,440,087)	(31,440,087)	(30,558,553)

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
4	(42,672,221)	(42,768,014)	(42,768,014)	(42,768,014)	(41,489,245)
5	(42,496,977)	(42,583,137)	(42,583,137)	(42,583,137)	(41,309,810)
6	(46,177,091)	(46,465,555)	(46,465,555)	(46,465,555)	(45,077,955)
7	(3,621,219)	3,154,761	27,092,960	15,312,254	(1,453,119)
8	19,627,733	26,403,713	50,341,913	25,163,815	21,795,833
9	22,320,989	29,096,969	53,035,168	5,248,972	24,489,089
10	24,478,128	31,254,108	55,192,307	(12,969,088)	26,646,228
11	24,672,557	31,448,537	55,386,736	(12,495,547)	26,840,657
12	23,997,446	30,773,425	54,711,625	(19,032,017)	26,165,546
13	19,020,432	25,796,411	49,734,611	70,729,651	21,188,532
14	26,805,109	33,581,089	57,519,288	78,514,329	28,973,209
15	26,910,123	33,686,102	57,624,302	83,200,293	29,078,223
16	26,364,576	33,140,556	57,078,755	82,654,747	28,532,676
17	25,580,887	32,356,867	56,295,066	81,806,625	27,748,987
18	26,648,274	33,424,254	57,362,453	73,416,989	28,816,374
19	27,592,887	32,200,767	56,138,966	86,858,434	27,592,887
20	28,809,253	33,417,133	57,355,332	88,276,207	28,809,253
21	29,828,385	34,436,265	58,374,465	88,259,880	29,828,385
22	30,452,847	35,060,727	58,998,927	87,397,242	30,452,847
23	31,234,897	35,842,777	59,780,976	90,196,108	31,234,897
24	31,741,722	36,349,601	60,287,801	92,487,767	31,741,722
25	32,320,949	36,928,829	60,867,029	95,365,304	32,320,949
26	32,610,563	37,218,443	61,156,643	97,580,555	32,610,563
27	32,827,774	37,435,654	61,373,853	98,977,679	32,827,774
28	32,827,774	37,435,654	61,373,853	100,455,353	32,827,774
29	32,827,774	37,435,654	61,373,853	101,412,991	32,827,774
30	32,827,774	37,435,654	61,373,853	102,507,435	32,827,774
31	32,827,774	37,435,654	61,373,853	103,054,657	32,827,774
32	32,827,774	37,435,654	61,373,853	103,465,074	32,827,774
33	33,328,421	37,936,300	61,874,500	103,965,721	33,328,421
34	33,829,067	38,436,947	62,375,147	104,466,367	33,829,067
35	34,329,714	38,937,594	62,875,793	104,967,014	34,329,714
36	34,830,361	39,438,241	63,376,440	105,467,661	34,830,361
37	35,331,008	39,938,887	63,877,087	105,968,308	35,331,008
38	35,831,654	40,439,534	64,377,734	106,468,954	35,831,654
39	36,332,301	40,940,181	64,878,380	106,969,601	36,332,301
40	36,832,948	41,440,828	65,379,027	107,470,248	36,832,948
41-46	-	-	-	42,091,221	-
NPV	114,044,124	170,882,931	413,352,296	478,349,083	128,454,297
IRR(%)	10%	12%	19%	15%	11%
B/C	1.72	2.03	3.49	2.38	1.80

Sensitivity Analysis

The sensitivity analysis was performed with a focus on Phase I and the irrigated crop production component of the project. Emphasis was given to crop production component because it comprises significant proportion of the investment cost of the project and often faced with numerous challenges. Scenario 1 was selected as the baseline scenario for the most conservative estimates as other scenarios display higher NPV, B/C and IRR. Three main factors were considered in the sensitivity analysis. These are: (i) cropping pattern or choice of crop mix, (ii) degree of realization of the planned new net irrigated area, and (iii) cropping intensity. Cropping pattern or the choice of crop mix defines whether the irrigation scheme is oriented towards smallholder food production or towards commercial production based on high value crops. In the smallholder oriented cropping pattern, predominantly maize is produced in rotation with pulses. While in the commercial production orientation scenario three crops with the highest calculated gross margins, namely tomatoes, sweet corn, and green mealies where added to the cropping mix in the baseline scenario by replacing crops with lower gross margins. Note that these crops require investments in processing technology, packaging, storage, and freight facilities. Assumptions regarding the realization of the planned net irrigated area is considered for sensitivity analysis based on the fact irrigation projects do not always fully realize the planned irrigation development area. It must be noted that in SVIP investment decisions for SVTP-II are dependent on good progress regarding connections in the SVIP-I area.

Cropping intensity is considered for analysis because one of the main rationale for investing in irrigated agriculture is to enhance land productivity through improving cropping intensity and yield. The results of the sensitivity analysis are shown in Table 23. It shows that the return to the project is highly sensitive to the degree of realization of the planned new irrigation area and the choice of crop mix.

Table 23 Results of sensitivity analysis for Phase I

Risk factors	Assumptions	Indicators		
		NPV (million US$)	B/C	IRR (%)
Cropping Intensity: (% reduction from baseline value)	37.5%	47.86	1.30	7.97%
	25%	69.92	1.44	8.88%
	12.5%	91.98	1.58	9.5%
	Baseline value	114.04	1.72	10.21%
Degree of realization of planned new net irrigated area	50% of the plan	-9.96	0.94	5.54%
	75% of the plan	52.04	1.33	8.11%
	85% of the plan	76.84	1.49	8.99%
	Baseline value	114.04	1.72	10.21%
Cropping pattern: best profitable crops	Smallholder orientation	82.29	1.52	9.14%
	Commercial Orientation	684.77	5.33	24.4%
	Baseline value	114.04	1.72	10.21%

Financial Analysis

Several crops were evaluated for their suitability to grow in lower shire valley under irrigation conditions. A comprehensive evaluation criteria including profitability criterion were used to select crop and livestock enterprises that fit irrigated farming system in the lower shire valley[25]. Summaries of the gross margins of the selected most suitable crop and livestock enterprises are presented in Table 24. Maize was included in the crop mix for food security reason despite its relative low profitability. Soya beans was also considered for crop rotation and nutrition reasons.

High value perennial crops are gradually introduced in the crop mix as farmers obtain hands-on experience in irrigated agriculture and market opportunities develop. The existing trade and market policies to contain domestic prices, exchange rate misalignment, poor price transmission between domestic and international market owing to inadequate infrastructure may depress producer prices and disincentivize irrigators.

Table 24 Enterprise gross margin summaries (US$/ha)

Year 1	Year 2	Year 3	Year 4	Year5	Year 6	Year7	Year 8	Year 9	Year10
Enterprise: **Bananas**									
-3,025.7	5,616.3	5,616.3	5,616.3	5,616.3	5,616.3	5,616.3	5,616.3	5,616.3	5,616.3
Enterprise: **Citrus**									
-1,199.3	-933.9	-923.6	1,377.9	2,564.7	3,941.5	5,597.2	8,192.6	10,657.8	12,095.8
Enterprise: **Cotton**									
1,124.9	1,173.4	1,223.4	1,223.4	1,223.4	1,223.4	1,223.4	1,223.4	1,223.4	1,223.4
Enterprise: **Dry Beans**									
815.3	1,022.7	1,230.1	1,230.1	1,230.1	1,230.1	1,230.1	1,230.1	1,230.1	1,230.1
Enterprise: **Pigeon Peas**									
1,150.7	1,329.0	1,500.5	1,500.5	1,500.5	1,500.5	1,500.5	1,500.5	1,500.5	1,500.5
Enterprise: **Maize**									
-20.0	96.4	212.7	212.7	212.7	212.7	212.7	212.7	212.7	212.7
Enterprise: **Mangoes**									
-1,207.8	-1,057.2	-765.0	-409.1	383.2	2,034.9	3,059.3	3,915.1	4,341.5	4,675.3
Enterprise: **Soya beans**									
185.1	254.7	337.9	337.9	337.9	337.9	337.9	337.9	337.9	337.9
Enterprise: **Livestock**									
-2,450.2	-3,408.6	-4,284.5	8,677.5	5,720.6	7,591.1	9,147.9	9,042.5	9,206.8	9,430.1
Enterprise: **Aquaculture**									
23,829.9	23,829.9	23,829.9	23,829.9	23,829.9	23,829.9	23,829.9	23,829.9	23,829.9	23,829.9

Source: PWC Report (2016)

To enhance the utilization of farm technologies and realize economies of scale in production, marketing and value addition activities such as processing, the farmers will be organized into a 500 ha farm Units or cooperatives. Fifteen such farm units shall be established in the first

[25] PWC Report (2016)

phase of the project. In the second phase, thirty-five 500 ha-farm units will be organized. The profitability of these farm units was assessed and the results are depicted in Table 25. These cooperatives are expected to make capital expenditure to the tune of US$387,000.

Table 25 Cash Flow and Net profit per 500 ha Farm Unit

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Net Revenues or expenses (thousand US$)										
Crops	578.2	702.1	827.3	827.3	827.3	1,127.2	1,178.1	1,243.7	1,218.6	1,172.2
Livestock	-2.5.	-3.4	-4.3	8.7	5.7	7.6	9.1	9.0	9.2	9.4
Aqua-culture	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
Depreciation	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9
Overheads	100.9	100.9	100.9	100.9	100.9	100.9	100.9	100.9	100.9	100.9
Net profits	**459.9**	**582.8**	**707.1**	**720.1**	**717.1**	**1,019.0**	**1,071.4**	**1,136.9**	**1,112.0**	**1,065.8**

The profitability analysis was performed based on the following financing assumptions:

- Bank finance for 50 percent of capital costs at 10 percent real rate of interest,
- Repayment for capital amortized over 8 years,
- Project grant contribution at 50 percent for capital equipment,
- Payment for capital loan is made from year 2 onwards,
- Bank finance for 50 percent of variable and overhead costs in year one at 12 percent real rate interest,
- Bank finance for 100 percent of variable and overhead costs in subsequent years at 12 percent real rate interest,
- Repayment for variable costs made from deduction from crop sales, and
- Crop yields reflecting gradual improvement from year one year four as farmers gain experience.

The results of the profitability analysis shows that the farm or the cooperative registers a profit of US$459,887 in its first year of operation. The profit grows to over a million dollar beginning the six year of the farms operation due to gradual improvements in crop yield and incorporation of high value perennial crops into the farm.

Analysis of impact on household income and poverty

The overarching Malawian government objective, as indeed the case for most governments of Sub-Saharan Africa, is to improve livelihoods and income, and reduce poverty; especially in rural areas[26]. The level of poverty in the target population is worse than that of the national and regional figures[27].

[26] See MGDS
[27] For details see IHS3 2011 and the Draft Socio-economic Baseline Report, 2016

Overall, 50.7 percent of the population of Malawi was poor in 2011. The corresponding estimate for target population of Phase I of the project is 81.6 percent. Poverty level is exceptionally high in all of the SVIP areas, except in specific areas[28] where Illovo Company is located. In these specific areas the incidence of poverty ranges from 42 percent to 50 percent, perhaps due to access to irrigated agriculture and the influence of Illovo estate.

In Malawi, the mean per capita expenditure was MK56,548 in 2011. Inequality in income is stark. The poorest 20 percent spend only MK15,161 per person, while the riches 20 percent spend on average about MK140,458. In the project area, the mean per capita expenditure ranges from MK14,788 to MK35,896; about 65.7 percent to 68 percent of which is spent on food.

What is the likely impact of the project on income and poverty level of the target population? The project beneficiary households are expected to earn income from the 0.1ha individual plots allotted to them and dividends from cooperatively managed farm. According to the analysis presented in the preceding sections, a household is expected to generate income in the range of US$204 to US$216 from the 0.1 ha individually operated plots and receive dividends in the range of US$1,840 to US$4,263 per annum. Conservatively, a beneficiary household earns on average about US$2,044 per year, which is equivalent to MK1,481,900[29] (see Table 26).

Table 26 Estimated income of beneficiary households with and without the project

No	Indicators	Value
1	Average income per HH per year with project (MK)	1,481,900
2	Average per capita income per year with project (MK)	344,628
3	Average income per HH per year in Phase I project area without the Project	71,164.0
4	Average income per Capita per year in Phase I project area without the project	16,550.0
5	Average per Capita income per year: Malawi (MK)	56,548.0
6	Urban Average Per capita income: Malawi (MK)	72,469.0
7	Rural Average per capita income: Malawi (MK)	33,103.0
8	Malawi poverty line (MK per Capita per year)	37,002.0
9	Average per capita income for the poorest 20% (MK)	15,161.0
10	Average per capita income for the richest 20% (MK)	140,458.0

A closer look at the information contained in Table 26 reveals the following insights:

- The project increases the level of income of beneficiary households by about 20 times from its current level,
- The mean per capita income of beneficiaries even surpasses that of the richest 20 percent, and
- The per capita income of beneficiaries is about 9 times the Malawian poverty line and is about 68.5 percent of the international poverty line of US$1.9 per day.

Thus, it can be safely concluded that the majority of the project beneficiary HHs could be lifted out of poverty.

[29] Exchange rate: US$1=MK725

Appendix 3 – Organizational Level Capacity Development Plan

Organizational/Institutional Level Capacity Development Plan														
Organization or institution	**Intervention/s to address the gaps**	**Activities to address the gaps**	**Target to achieve**	**Participants**	**Priority Ranking**	**Timeframe in years**						**Resources needed**	**Estimate Budget in USD**	**Assumptions**
					ST/MT/LT	**1**	**2**	**3**	**4**	**5**	**6**			
1. VDCs & ADCs	1.1 Strengthen the capacities of VDCs, ADCs, and District Councils for implementing the SVIP and clarifying the roles	1.1.1 Conduct workshops to create awareness of the SVIP among VDCs, ADCs and District Councils	12 ADC level; 2 DC level	200	ST							Transport Fuel Lubricants DSAs Facilitators	30,000	14 mtgs @ $2,143 each
	1.2 Strengthen the community accountability mechanisms for implementation of the SVIP	1.1.2 Conduct training in leadership and management targeting VDCs and ADCs in the SVIP area	4 ADC level, 20 VDC level	Consultants	ST							Consultant fees Training resources Transport Fuel Lubricants Upkeep	70,000	$30,000 Consultant; $40,000 for 24 sessions of 3 days each
2. District Task Force	2.1 Strengthen the capacities of the District SVIP Task Force for implementing the SVIP	1.1.2. Information and updating on the SVIP implementation process and phases, Training in RPF, GRM, Communication, Gender, Vulnerable Groups, Establishing Agri-Business, etc. (using the guidelines of 6.3)	15 per district	N	ST							Transport Fuel Lubricants Stationery Communica	10,000	5 Orientation sessions & $2,000 each

Organizational/Institutional Level Capacity Development Plan														
Organization or institution	**Intervention/s to address the gaps**	**Activities to address the gaps**	**Target to achieve**	**Participants**	**Priority Ranking**	**Timeframe in years**						**Resources needed**	**Estimate Budget in USD**	**Assumptions**
					ST/MT/LT	**1**	**2**	**3**	**4**	**5**	**6**			
												tion & DSAs		
3. SVIP Communication Network	3.1 Establish community based SVIP information centre and rural information points to disseminate information on the SVIP, irrigation farming, food security, entrepreneurship, gender and youth, GRM, RPF, Agri-Business, etc.	3.1. Continue operating the SVIP Information Centre, identify additional information points and stock them with relevant information resources on the SVIP, RPF, GRM, Agri-Businesses, Gender, Youth, Vulnerable Groups, HIV and AIDS, entrepreneurship, agro processing and value chain management, fisheries, livestock, etc.	1 SVIP Information Office and one Information Point in each T/A	NA	ST							Resource material Transport Fuel Lubricants DSAs	50,000	10 Resource Centres at $5,000 each
4. District Councils	4.1 Facilitate the creation of the position of District Fisheries Officer in Nsanje and Chikwawa districts to facilitate integration efforts in the SVIP	4.1.1 Write a position paper to the SVIP to facilitate creation of the offices of Fisheries Officers in Nsanje and Chikwawa to the Department of Fisheries and MoAIWD and other staff.	2 positions	NA	ST							District Commissioners for Nsanje and Chikwawa	200	Stationery needs
	3.2 Build the logistics and equipment capacity of District Councils in implementation and monitoring the SVIP	3.2.1 Procure vehicles, computers and supplies for the District Council key offices to facilitate and monitor SVIP implementation plus 4 years running costs.	1 for CK	District Council of Chikwawa	ST							1 vehicles, 2 Computers & Software	70,000	$55,000 for one car duty paid; 10,000 USD running Cost$5,000 PCs

Organizational/Institutional Level Capacity Development Plan														
Organization or institution	**Intervention/s to address the gaps**	**Activities to address the gaps**	**Target to achieve**	**Participants**	**Priority Ranking**	**Timeframe in years**						**Resources needed**	**Estimate Budget in USD**	**Assumptions**
					ST/MT/LT	**1**	**2**	**3**	**4**	**5**	**6**			
	3.4 Capacitate M&E to integrate SVIP	3.4.1 Update equipment, software and supplies for the M&E units of the council	2 for CK	District Council of Chikwawa,	ST							2Computers & Software	5,000	GIS based M&E system
5. SVIP	5.1 Develop the capacity of the SVIP Ministerial structures such as the PSC, the PTC, the Task Force and the Consultative Committee to become active	5.1.1 Develop and finance a comprehensive meeting plan for the PSC, PTC, the Task Force and Consultative Committee to have predictable meetings and products	1 meeting plan for PAS, PTC, TF & CC	SVIP, DAHLD, DOI, DOF, MOL, DOW, MoAIWD	ST-LT							Hall hire, Transport, DSAs, Stationery	4,000	Workshop costs
6. Establish Agri-Businesses	6.1 Legal Options Study	6.2.1 Conduct an options study on the legal options for registering agri-business with the pros, cons and process of registration with focus on securing land right of the individual farmers.	Legal options study for agri-businesses	SVIP and DOI, Dist Councils	ST							Consultant fees	50,000	USD 50,000 Consultants
	6.2 Disseminate information on legal options and agri-business formation	6.2.1 Disseminate results of legal options study and information on establishing agri-businesses in information materials, workshops, meetings, etc.		SVIP and PIO, Dist Councils	ST							Consultant fees Training resources Transport Fuel Lubricants Upkeep	70000	$30,000 Consultant; $40,000 for 24 sessions of 3 days each

Organizational/Institutional Level Capacity Development Plan														
Organization or institution	**Intervention/s to address the gaps**	**Activities to address the gaps**	**Target to achieve**	**Participants**	**Priority Ranking**	**Timeframe in years**						**Resources needed**	**Estimate Budget in USD**	**Assumptions**
					ST/MT/LT	**1**	**2**	**3**	**4**	**5**	**6**			
	6.3 Prepare Guidelines for establishing and managing agri-businesses	6.3.1 Conduct a consultancy to prepare guidelines on: Establishing agri-businesses, pooling of land, management of the agri-business (e.g. type of management options, organisation, management structures, etc.); gender, youth and vulnerable groups; communication; registering land and exchanging those for shares, if applicable; decide criteria for participations; procedures for registering land; registration of land; selecting legal option for registration; legal registration of agri-business whilst securing land rights; selecting private management company; selecting land uses,; value change management; selecting land uses (crops and other uses); etc.	1 set of guidelines	SVIP, PIO. DAES, MoAIWD	ST-MT							Consultant fees, Transport, Fuel, Lubricants, stationery, Communication, upkeep	90,000	$60,000 for Consultant; $30,000 for operational costs
	6.4 Build the capacity of Agri-Business farmers	6.4.1 Assist cooperatives with: Establishing agri-businesses, pooling of land, management of the agri-business (e.g. type of management options, organisation, management structures, etc.); gender, youth and vulnerable groups; communication; registering land and exchanging those for shares, if applicable; decide criteria for participations; procedures for registering land;												

Organizational/Institutional Level Capacity Development Plan														
Organization or institution	**Intervention/s to address the gaps**	**Activities to address the gaps**	**Target to achieve**	**Participants**	**Priority Ranking**	**Timeframe in years**						**Resources needed**	**Estimate Budget in USD**	**Assumptions**
					ST/MT/LT	**1**	**2**	**3**	**4**	**5**	**6**			
		registration of land; selecting legal option for registration; legal registration of agri-business whilst securing land rights; selecting private management company; selecting land uses,; value change management; selecting land uses (crops and other uses); etc.												
7. District based officers	7.1 Build the capacity of DAES, DOI, Gender, District Land, Communication, Gender and Vulnerable Groups, DAHLD, Fisheries Officers	7.1.1 Conduct a Consultancy to conduct training on establishing agri-business, legal options, irrigation management, value chain management, GRM, RPF, communication, gender and youth, vulnerable groups, etc. and information on the SVIP	1 session	SVIP, District Officers (see 7.1), MoAIWD	ST-MT							Consultant fees, Transport, Fuel, Lubricants, stationery, Communication, upkeep	25,000	$10,000 for Consultant; $15,000 for operational costs for one 10 day session
	7.2 Build the logistics and equipment capacity of DAES in implementation and monitoring the SVIP	7.2.1 Procure vehicles, computers to facilitate and monitor SVIP implementation, 1 vehicle for DOI, 1 vehicle for DAES, motorbikes for extension officers plus operation costs for four years.	2 for DAES	SVIP, DAES, MoAIWD	ST							2 vehicles, 3 Computers & Software	180,000	$110,000 for 2 cars duty paid; $20,000 maintenance costs; $12,000 each for 3 motorbikes and $9,000 maintenance costs; PCs

Organizational/Institutional Level Capacity Development Plan														
Organization or institution	**Intervention/s to address the gaps**	**Activities to address the gaps**	**Target to achieve**	**Participants**	**Priority Ranking**	**Timeframe in years**						**Resources needed**	**Estimate Budget in USD**	**Assumptions**
					ST/MT/LT	**1**	**2**	**3**	**4**	**5**	**6**			
	7.3 Develop entrepreneurship and investment guidelines to guide commercial farming in the SVIP	7.3.1 Conduct a consultancy to develop entrepreneurship and investment guidelines to guide irrigation; commercial agriculture, livestock and fisheries investments in the SVIP; agro processing and value chain management; establishing agri-businesses; M&E; Gender and Youth Mainstreaming; Communication and participatory planning; management of agri-businesses	1 set of guidelines	SVIP, PIO. DAES, MoAIWD	ST-MT							Consultant fees, Transport, Fuel, Lubricants, stationery, Communication, upkeep	60,000	$40,000 for Consultant; $20,000 for operational costs
8. LUANAR, Natural Resources College	8.1 Support production of additional professionals in Irrigation Engineering and Natural Resources to support the SVIP objectives	8.1.1 Support 5 professionals with scholarship to study Irrigation Engineering at LUANAR and 10 professionals with a diploma in natural resource management	15	SVIP, DIO, MoAIWD	ST-LT							Tuition fees, Upkeep allowances, stationery	100,000	$10,000 per scholarship for LUANAR and $5,000 for Natural Resources
9. MoAIWD	9.1 Engage the Ministry of Finance for a special waiver of the recruitment ban to fill critical positions in the MoAIWD to support implementation of the SVIP	9.1.1 Write a position paper to the Min of Finance & DHRMD on the need for a special waiver of the recruitment ban to fill critical positions in the MoAIWD & implement the new DOI structure in Nsanje and Chikwawa to support implementation of the SVIP	1 position paper	SVIP, DFO, DHRMD, MoAIWD	ST							Stationery	200	Stationery
	9.2 MIS for the SVIP that is compatible with the MAIWD MIS	9.2.1 Conduct a consultancy to develop the MIS for the SVIP	1 consultancy	SVIP, MoAIWD	ST							Consultant fees, Transport, Fuel, , stationery,	30,000	$20,000 for Consultant; $10,000 for operational costs

Organizational/Institutional Level Capacity Development Plan														
Organization or institution	**Intervention/s to address the gaps**	**Activities to address the gaps**	**Target to achieve**	**Participants**	**Priority Ranking**	**Timeframe in years**						**Resources needed**	**Estimate Budget in USD**	**Assumptions**
					ST/MT/LT	**1**	**2**	**3**	**4**	**5**	**6**			
												Communication, upkeep		
	TOTAL												**844,400**	

Appendix 4 – Institutional Level Capacity Development Plan

Institutional Level Capacity Development Plan														
Systemic Level	**Intervention/s to address the gaps**	**Activities to address the gaps**	**Target to achieve**	**Participants**	**Priority Ranking**	**Timeframe in years**						**Resources needed**	**Estimated budget USD**
					ST/MT/LT	**1**	**2**	**3**	**4**	**5**	**6**		
1. Financing Agri-Businesses	4.3 Strengthen financing of agri-businesses and provide incentives such as relief on private investment, facilitating swift land acquisition	4.3.1 Conduct a consultancy to explore financing models and incentives to support investments in the SVIP	1 consultancy	SVIP, MoAIWD, MRA, Min of Finance, MITC	ST							Consultant fees, Transport, Fuel, Lubricants, stationery, Communication, upkeep	40,000
2. GRM	2.1 Develop capacity for grievance handling at the agri-Business	2.1.1 Establish Grievance Handling Procedures and Committees at Agri-Businesses	Committees at SVIP, Agri-Businesses, district & ADC level	SVIP, Dist Council, PIOs, MoAIWD	ST							Meeting costs, Transport, Fuel, Lubricants, Stationery, Communication Training: Consultancy Fees, operation costs	40,000 30,000 15,000
3. Accountability (M&E)	3.1 Develop a GIS based M&E system for the SVIP, linked to the District Council and MoAIWD M&E systems	3.1.1 Develop a process manual for monitoring and evaluating the SVIP, including roles and responsibilities of stakeholders involved in the M&E process	1 Process Manual	SVIP, MoAIWD, PIOs, Cooperatives, Dist Council	ST							Consultant fees, Transport, Fuel, Lubricants, stationery, Communication, upkeep	40,000

INSTITUTIONAL AND CAPACITY ASSESSMENT AND DEVELOPMENT PLAN

Institutional Level Capacity Development Plan								
Systemic Level	**Intervention/s to address the gaps**	**Activities to address the gaps**	**Target to achieve**	**Participants**	**Priority Ranking**	**Timeframe in years**	**Resources needed**	**Estimated budget USD**
TOTAL								**165,000**

Appendix 5 – Individual Level Capacity Development Plan

Individual Level Capacity Development Plan													
Thematic groups	**Intervention to address the gap**	**Individual/Group of individuals targeted**	**Number targeted**	**Training Provider**	**Priority Ranking**	**Timeframe in years**						**Resources needed**	**Estimated Budget in USD**
					ST/MT/LT	**1**	**2**	**3**	**4**	**5**	**6**		
1. Extension delivery	1.1 Conduct training of extension workers on SVIP and agri-business using manual of 6.3 of organizational capacity	DIOs, DADOs, DAEOs, DLCOs, DFOs, DLOs, Crops Officers, Cereals Officers, Cotton Officers, Legumes Officers, DAHLDOs, DYOs, DCDOs, Hort Officers, DC M&E Officers, DCs, DPDs, MoAIWD Planning Officers, AEDCs, AEDOs	75 officers for 1 districts – 5 courses	Consultants	ST							Consultant fees, Training resources, Transport, Fuel, Lubricants, Upkeep	75,000
2. Project planning and accountability	2.1 Conduct training in Project cycle management, GIS based M&E, leadership and management	DIOs, DADOs, DAEOs, DLCOs, DFOs, DLOs, Crops Officers, Cereals Officers, Cotton Officers, Legumes Officers, DAHLDOs, DYOs, DCDOs, Hort Officers, DC M&E Officers, DCs, DPDs, MoAIWD Planning Officers, AEDCs, AEDOs	75 officers for 1 districts - (5 courses)	Consultants	ST-MT							Consultant fees, Training resources, Transport, Fuel, Lubricants, Upkeep	75,000
													150,000

Appendix 6 – Capacity Gap Analysis Tool

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
A. Individual level				
1. DADOs	Post graduate trained	Project Management, M&E	Conduct training in project management, M&E	
	Agriculture trained	Agro processing and value chain	Conduct training in agro processing and value chain management	
	Participatory farmer engagement	Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
	Demand driven extension	Establishing management entities	Conduct an education tour to Zambia and Swaziland to learn about establishing management entities in irrigation farming	
	Gender mainstreaming	Integration of livestock in Irrigation	Conduct training in integration of livestock and fisheries in irrigation	
	Training skills	Entrepreneurship		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
2. Crops Officers	Post graduate trained	Agro processing and value chain	Conduct training in agro processing and value chain management	
	Agriculture Crop Science trained	Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
	Soil science	Integration of livestock in Irrigation.	Conduct training in integration of livestock and fisheries in irrigation	
	Participatory farmer engagement	Entrepreneurship		
	Demand driven extension	Crop nutrition	Conduct training in crop nutrition, soil chemistry and fertility	
	Land resource conservation	Soil chemistry and fertility		
	Training skills			
3. Cotton Officers	Vacant post in both Nsanje and Chikwawa	Vacant post in both Nsanje and Chikwawa	Fill the vacant posts of Cotton Officers in Nsanje and Chikwawa	
		Cotton breeding	Conduct training in cotton breeding and cotton seed multiplication	
		Cotton seed multiplication		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Agro processing and value chain	Conduct training in agro processing and value chain management	
		Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
4. Horticultur e Officers	Graduate trained	Irrigation water resources management	Conduct training in irrigation water management	
	Agriculture Crop Science trained	Agro processing and value chain	Conduct training in agro processing and value chain management	
	Soil conservation methods	Gender mainstreaming	Conduct training in gender mainstreaming	
	Participatory farmer engagement	Entrepreneurship		
	Demand driven extension	Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
		Horticulture pest management	Conduct training in horticulture pest management	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
5. Cereals Officers	Graduate trained	One officer in Nsanje only	Fill the vacant position of Cereals Officer in Chikwawa district	
	Agriculture Crop Science trained	Agro processing and value chain	Conduct training in agro processing and value chain management	
	Training skills	Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
	Participatory farmer engagement	Cereal seed multiplication	Conduct training in cereal seed multiplication	
		Project cycle development, M&E	Conduct training in project cycle management, M&E	
6. Legumes Officers	Vacant post in both Nsanje and Chikwawa	Vacant post in both Nsanje and Chikwawa	Fill the vacant posts of Legumes Officers in Nsanje and Chikwawa	
		Legumes multiplication	Conduct training in legumes multiplication	
		Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
		Legumes pest management	Conduct training in legumes pest management	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
7. Land Resource Cons Officers	Graduate level trained	Vacant post in Nsanje	Fill the vacant post of Land Resources Conservation Officer in Nsanje	
	Natural Resource Management and Environment trained	Soil survey skills	Conduct training in soil survey skills	
	Participatory farmer engagement	Soil chemistry and fertility analysis	Conduct training in soil chemistry and fertility analysis	
	Demand driven extension	Irrigation water resources management	Conduct training in irrigation water resources management	
	Soil conservation methods	Participatory community development methods	Conduct training in participatory community development methods	
8. Extension Methodologies Officer	Graduate level trained	Agro processing and value chain	Conduct training in agro processing and value chain management	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Agriculture & Rural Development studies	Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
	Participatory farmer engagement	Establishing management entities and capacities	Conduct training in establishing management entities and capacities	
	Demand driven extension	Project cycle development, M&E	Conduct training in project cycle management, M&E	
	Participatory Rural Appraisal	Forming cooperatives	Conduct training in formation of Cooperatives and VSL groups	
	Training skills	Irrigation water resources management	Conduct training in irrigation water management	
	Gender mainstreaming	Participatory demand driven and market driven development planning	Conduct training in demand driven and market driven development planning	
9. District Irrigation Officers	Graduate level trained	Participatory demand & mkt driven development planning		
	Irrigation Engineers	Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Participatory farmer engagement	Establishing mgt entities	Conduct training in establishing management entities and capacities	
	Demand driven extension	Leadership & management	Conduct training in leadership and management	
	Project dev and mgt	GIS and remote sensing	Conduct training in GIS and remote sensing	
	Irrigation water management	Entrepreneurship		
	Irrigation maintenance support	Irrigation designing	Conduct training in Irrigation designing	
10. District Community Development Officer (DCDO)	Graduate level trained	Community scorecard process	Conduct training in community score card process	
	Community development studies	Leadership & management	Conduct training in leadership and management	
	Project dev and mgt	Entrepreneurship		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Gender mainstreaming	Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
	Training skills	Forming cooperatives	Conduct training in formation and management of cooperatives and VSL groups	
	Adult education		Conduct training in agro processing and value chain management	
	Forming VSL Groups			
11. District Youth Officers (DYO)	Graduate level trained	Entrepreneurship		
	Development studies	Leadership and management	Conduct training in leadership and management	
	Training skills	Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
	Forming youth groups	Gender mainstreaming	Conduct training in gender mainstreaming	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Sexual and Reproductive Health	Project cycle management	Conduct training in project cycle management	
12. District Lands Officers (DLO)	Graduate level trained	Public policy analysis		
	Public Administration studies	Business Management	Conduct training in commercial farming, investment and entrepreneurship	
	Training skills	Project cycle management, M&E	Conduct training in project cycle management, M&E	
	District administration	Land & land resettlement related laws	Conduct training in land and land resettlement related laws	
		GIS and Remote sensing	Conduct training in GIS and remote sensing	
		Land use planning	Conduct training ln land use planning	
		Integration of irrigation, livestock and fisheries	Conduct training in irrigation, livestock and fisheries integration	
		Gender mainstreaming	Conduct training in gender mainstreaming	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
13. District Animal Health and Livestock Development Officer (DAHLDO)	Filled position in Chikwawa	Vacant position in Nsanje	Fill the position of DAHLDO in Nsanje	
	Graduate level livestock development training	Degree level training in Vet science		
	Participatory farmer engagement	Establishing mgt entities	Conduct training in establishing management entities	
	Demand driven extension	Gender mainstreaming	Conduct training in gender mainstreaming	
	Livestock management	Disease surveillance & investigation	Conduct training in disease surveillance and investigation	
	Training skills	Project Management, M&E	Conduct training in project cycle management, M&E	
	Livestock diseases	Impacts of climate change on livestock productivity	Conduct training in impacts of climate change on livestock productivity	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Modelling vulnerability/sustainability of pastoral systems (climate change)	Conduct training in modelling vulnerability and sustainability of pastoral systems (climate change)	
		Livestock feed analysis, formulation and production	Conduct training in livestock feed analysis and formulation	
		Commercial beef production	Conduct training in commercial beef production	
		Commercial farm economics	Conduct training in commercial farm economics	
		Genetic conservation and improvement	Conduct training in genetic conservation and improvement	
		Market value chain analysis & value addition	Conduct training in agro processing and value chain management	
		Information System Management	Conduct training in livestock information management system	
14. District Fisheries Officer	Vacant position in Chikwawa and Nsanje	Vacant position in Chikwawa and Nsanje	Fill positions of Fisheries Officers in Nsanje and Chikwawa	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Integration of fisheries in Irrigation	Conduct training in integration of irrigation with livestock and fisheries	
		Aquaculture (fish farming) and feed production	Conduct training in aquaculture & feed production	
		Entrepreneurship	Conduct training in sustainable fisheries management	
		Project Management, M&E		
		Market value chain analysis & value addition	Conduct training in agro processing and value chain management	
		Information System Management	Conduct training in fisheries information management system	
		Establishing commercial farming	Conduct training in commercial farming, investment and entrepreneurship	
		Project Management, M&E	Conduct training in Project Management, M&E	
15. AEDCs	Diploma level training	Livestock management	Conduct training in livestock management	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Agriculture trained	Irrigation water management	Conduct training in irrigation water management	
	Demand driven extension	Gender mainstreaming	Conduct training in gender mainstreaming	
	Participatory farmer engagement	Integration of fisheries in Irrigation	Conduct training in integration of fisheries in irrigation.	
	Training skills	Establishing commercial farming	Conduct training in establishing commercial farming and entrepreneurship	
		Participatory demand & mkt driven development planning	Conduct training in participatory demand & mkt driven development planning	
16. AEDOs	Diploma & certificate level training	Participatory demand & mkt driven development planning	Conduct training in participatory demand and market driven development planning	
	Agriculture trained	Livestock production and management	Conduct training in livestock production and management	
	Demand driven extension	Irrigation water management	Conduct training in irrigation water management	
	Participatory farmer engagement	Gender mainstreaming	Conduct training in gender mainstreaming	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Training skills	Integration of fisheries in Irrigation	Conduct training in integration of fisheries and livestock in irrigation	
		Entrepreneurship		
		Establishing commercial farming	Conduct training in establishing commercial farming and entrepreneurship	
		Animal health	Conduct training in Animal Health	
		Livestock disease surveillance	Conduct training in disease surveillance and investigation	
		Seed multiplication	Conduct training in seed multiplication	
		Formation of VSL groups	Conduct training in formation and management of VSL groups	
B. Institutional/Organizational level				

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
1. VDCs & ADCs	Democratized the structures by removing the role of chiefs being automatic chairpersons	Community structures don't link properly into the Assemblies because they are not based on Councillor Wards as stipulated in the Local Govt Act	Strengthen the role of VDCs, ADCs, and District Councils in fostering the goals of the SVIP	1. Conduct workshops to create awareness of the SVIP among VDCs, ADCs and District Councils
	Functional structures having been trained	Competition for power between Chiefs, Councillors and MPs tends to undermine development work		2. Incorporate members of the District Council & ADCs in Task Forces responsible for SVIP sensitization
	Involved in the District Development Planning processes	Planning systems confused by parallel donor systems thereby undermining the role of the local development structures	Establish community based rural information centres to disseminate information on the SVIP, HIV and AIDS, irrigation farming, food security, entrepreneurship, etc.	1. Identify existing information centres and stock them with relevant information resources
	Community planning systems and development have so far been promoted and sustained by donor and NGO programmes and support	Need for much more community based training and awareness especially on role of Assemblies, Councillors, decentralization, budgets, local revenue, accountability, planning, projects, rights and responsibilities		2. Capacitate farmer cooperatives under the SVIP to develop information centres for use by their members as resource centres

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	VDCs and ADCs sometimes directly involved in managing funds for projects through project committees	High poverty and literacy levels among members of VDCs and ADCs undermines their effectiveness as leaders		
		Poor access to information		
3. District Councils	District Development Plans (DDPs) - not approved	Dwindling financial resources	Engage the Ministry of Finance for a special waiver of the recruitment ban to fill critical positions in the MoAIWD to support implementation of the SVIP	
	Socio-economic profiles (SEPs) - not approved	Delayed disbursement of resources		
	District Council (elected)	Very high vacancy rates		
	District Executive Committee (DEC)	Lack of key subject matter specialists (Legumes, Cotton, Crop Protection, Tobacco, Horticulture, Animal Health, Livestock Development)	Engage the Ministry of Finance for a special waiver of the recruitment ban to fill critical positions in the MoAIWD to support implementation of the SVIP	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	District Development Fund (DDF) has brought finances close to the people	Key positions filled in acting capacity		
	ADCs and VDCs	Lack of Irrigation expertise at EPA level	Train extension officers under DAES in irrigation water management	
	Area Executive Committees	Lack of key office of Fisheries Officer	Facilitate the creation of the position of District Fisheries Officer in Nsanje and Chikwawa districts to facilitate integration efforts in the SVIP	
	Use multidisciplinary teams and more holistic approaches	Abandoned dip tanks & livestock markets	Develop an irrigation, livestock and fisheries integration plan for the SVIP	
		Large extension worker to farmer ratio		
		Harsh weather conditions (extreme heat & drought conditions + floods)		
		Lack integrated approach (despite the rhetoric).		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Councillors overpowered by MPs		
		Councillors undermined by Chiefs		
		Lack of knowledge/capacity to create new By Laws	Support the District Councils to develop relevant by laws to support implementation of the SVIP	1. Conduct a consultancy to assist District Councils identify and implement new by laws that will support the SVIP
		Low local revenue		
		The District Development Planning Framework (DDPF) often undermined by parallel donor and NGO initiatives which affects ownership and coordination of projects		
		Very weak directorates in terms of manpower quantity & quality for effective financial management		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Ineffective or non-existent internal audit		
		Lack of vehicles and equipment	Build the logistics and equipment capacity of District Councils in implementation and monitoring the SVIP	1. Procure vehicles, computers and supplies for the District Council key offices to facilitate and monitor SVIP implementation
		Lack of computers and packages for accounts		
		SVIP not integrated in the DDPs	Support review of the DDPs for Chikwawa and Nsanje to integrate the SVIP in the DDPs	1. Conduct a consultancy to review DDPs and SEPs for Chikwawa and Nsanje to integrate the SVIP
		Weak M&E	Capacitate M&E to integrate SVIP	1. Update equipment, software and supplies for the M&E units of the council
				2. Conduct a consultancy to train M&E Officers in GIS based M&E
4. Shire Valley ADD	Livestock research capacities	High vacancy rates	Build the livestock research capacity at Shire Valley ADD to support the SVIP integration objectives	1. Update the equipment stock for livestock research at Shire Valley ADD

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
				2. Identify research needs and develop a research plan in livestock for the SVIP
				3. Conduct adaptive research in Livestock and Animal Health in collaboration with scientists at Shire Valley ADD
	Crops research capacities at Makoka Research Station (cotton, cassava, g/nut, sweet potato and legume research)	Dwindling financial resources especially for operations	Build the crop research capacity at Makoka Research Station to support the objectives of the SVIP	1. Update the equipment stock for crop research at Shire Valley ADD
				2. Identify research needs and develop a research plan in crops for the SVIP
				3. Conduct adaptive research in key crops in collaboration with scientists at Makoka Research Station
	Available subject matter specialists in Irrigation, Livestock Development, Extension, Horticulture and Crop Production	Harsh weather conditions (extreme heat & drought conditions + floods)		
	Pluralistic extension system	Very high literacy levels at community level		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Lack integrated approach (despite the rhetoric).		
		Duplication and repetition of failed projects		
		Farmers' loss of faith in government agricultural extension service providers		
		Over reliance on donors for program activities		
5. SVIP	PTT in place	SVIP ministerial structures such as the PSC & the Consultative Committee not fully functional	Develop the capacity of the SVIP Ministerial structures such as the PSC, the PTC, the Task Force and the Consultative Committee to become active	1. Develop and finance a meeting plan for the PSC, PTC, the Task Force and Consultative Committee to have predictable meetings and products
	PTC meeting	Pest Management Plan		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Task Force	Agriculture Development Planning Strategy	Monitor implementation of all SVIP preparatory consultancies to deliver on their products	1. Conduct coordination meetings and visits for preparatory consultancies
	Preparatory consultancies on course	SVIP ministerial structures not fully functional		
	Coordination by the DEC underway at district level	Overall GIS map	Facilitate development of the overall GIS map for the SVIP and deposit it with MASDAP	
		Overall SVIP Economic Analysis		
		EIA		
		SVIP Baseline study report	Facilitate resettlement and subsequent compensation in the SVIP affected areas	1. Develop and implement a resettlement framework and plan for the SVIP
		Options for resettlement		
		Options for compensation		
		PPP facilitator for the scheme	Facilitate identification of a PPP facilitator for the SVIP	

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
			Support the PPP facilitator to identify the Private Irrigation Operator for the SVIP	
			Support Private Irrigation Operators in the formation and capacitating of Cooperatives	1. Conduct registration of farmers for each block of the SVIP scheme
				2. Conduct training of the farmers in cooperative management
				3. Assist cooperatives with registration and operationalization
				4. Conduct a training needs assessment for each cooperative to respond effectively to their specific capacity needs
		Lack of irrigation infrastructure in the SVIP area	Support construction of irrigation infrastructure in the SVIP area	1. Construct the main canal, secondary canals and tertiary canals and related infrastructure for the SVIP
6. DAES	Gender, HIV and AIDS Mainstreaming Strategy	High vacancy rates especially affecting the field level		
	Uses DAESS, the overarching framework for GOM's system for decentralized agriculture extension	Dwindling financial resources		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Uses innovative extension delivery methods	Unified extension system. Which means EPAs and its field staff are responsible for all agriculture related activities including those they don't have expertise in including supporting implementation of NGO projects		
		Expertise in specialised areas such as Irrigation Water Management, Fisheries, Aquaculture, Livestock development, Animal health & Value Chain Development	Build the capacity of DAES Officers in Irrigation Water Management, Fisheries, Aquaculture, Livestock development, Animal health & Value Chain Development	
		Lack of vehicles and equipment to undertake supervisory work at ADD and district level	Build the logistics and equipment capacity of DAES in implementation and monitoring the SVIP	1. Procure vehicles, computers and supplies for the DAES to facilitate and monitor SVIP implementation
		Lack of computers to oversee extension delivery in the SVIP		
		Lack of entrepreneurship and investment guidelines in agriculture investment	Develop entrepreneurship and investment guidelines to guide irrigation, livestock and fisheries investments in the SVIP	1. Conduct a consultancy to develop entrepreneurship and investment guidelines to guide irrigation, livestock and fisheries investments in the SVIP

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Lack of guidelines in undertaking agro processing and value chain management	Develop agro processing and value chain management guidelines to guide the SVIP	1. Conduct a consultancy to develop agro processing and value chain management guidelines to guide investments in the SVIP
		Lack of guidelines in undertaking project cycle management, M&E; Gender Mainstreaming; establishing commercial farming; participatory farmer engagement and planning; and management of Cooperatives	Develop guidelines in undertaking project cycle management, M&E; Gender Mainstreaming; establishing commercial farming; participatory farmer engagement and planning; and management of Cooperatives to support the SVIP	2. Conduct consultancies to develop guidelines in undertaking project cycle management, M&E; Gender Mainstreaming; establishing commercial farming; participatory farmer engagement and planning; and management of Cooperatives to support the SVIP
		Lack of guidelines in integration of livestock and fisheries in irrigation	Develop guidelines in integration of livestock and fisheries in irrigation farming for the SVIP	1. Conduct a consultancy to develop guidelines in integration of livestock and fisheries in irrigation farming for the SVIP
7. DOI	Irrigation Master Plan (IMP)	Dwindling financial resources		
	National Irrigation Policy	The Department has a total 469 technical staff positions of which 320 (68%) are vacant		
	National Water Policy	Whilst DOI headquarters is fully staffed only three of the	Engage the Ministry of Finance for a special waiver of the recruitment	1. Write a position paper on the need for a special waiver of the recruitment ban to

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		eight ISDs have a Chief Irrigation Officer and only one has an Irrigation Agronomist	ban to fill critical positions in the MoAIWD to support implementation of the SVIP	fill critical positions in the MoAIWD to support implementation of the SVIP
	At district level, a new staffing structure has been approved (but not yet implemented) to cope with the increasing demand for irrigation support	The staffing shortage is most acute at district level where 72% of the 435 technical posts are vacant		
	Recently joined with Ministry of Agriculture	Only four districts have a Principal Irrigation Officer, three have a Senior Irrigation Engineer and none has a Senior Irrigation Agronomist.		
	Irrigation Officers at headquarters, ADD and district level	Most of the district level functions, including Chikwawa and Nsanje, are performed by an Irrigation Engineer/Agronomist or assistant level staff.		
	Part of the TWG structures	Large number of small irrigation schemes in the country, the fragmented		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		approach to irrigation development with many programmes and projects competing for the same limited resources		
		Efforts to build capacity in the irrigation sector have also tended to focus on professional level staff in Government institutions overlooking the capacity needs of non-state actors who are key in irrigation development	Build the capacity of DOI Officers in Irrigation Water Management, Irrigation+Livestock+fisheries integration, Agro processing and Value Chain Development, Irrigation & Water Saving Technology, Soil Chemistry & Fertility, Crop nutrition, Irrigation designing, GIS and Remote Sensing, Leadership, Project Management & Entrepreneurship	1. Conduct a consultancy to train DOI Officers in Irrigation Water Management, Irrigation+Livestock+fisheries integration, Agro processing and Value Chain Development, Irrigation & Water Saving Technology, Soil Chemistry & Fertility, Crop nutrition, Irrigation designing, GIS and Remote Sensing, Leadership, Project Management & Entrepreneurship
		Implementation of many small scale irrigation projects especially by NGOs without EIAs		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Limited capacity (technical and financial) to enforce environmental considerations during the establishment of irrigation schemes and the implementation of irrigation activities	Build the capacity for environmental monitoring within the irrigation sector so as not to rely on external consultants	
		Lack of vehicles and equipment to undertake supervisory work at district level	Build the logistics and equipment capacity of DOI in implementation and monitoring the SVIP	1. Procure vehicles, computers and supplies for the DOI to facilitate and monitor SVIP implementation
		Lack of computers to oversee extension delivery in the SVIP		
		Lack of guidelines for undertaking irrigation water management and maintenance	Develop guidelines for undertaking irrigation water management and maintenance in the SVIP	1. Conduct a Consultancy to develop user friendly guidelines for undertaking irrigation water management and maintenance in the SVIP
		Weak irrigation capacity in irrigation designing and construction	Build the capacity of the DOI in irrigation designing and construction	1. Conduct a consultancy to undertake SVIP irrigation designing
				2. Conduct a consultancy to undertake SVIP irrigation construction

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
				3. Support 10 DOI professionals with scholarship to study Irrigation Designing at a specialized international university
8. DAHLD	Livestock development research capacity (Vet Lab at Shire Valley ADD + Central Vet Lab in Lilongwe)	Very few Vet Professionals	Support training of additional Veterinary Professionals at graduate level to fill leadership roles for the SVIP	1. Support 10 professionals with scholarship to study Veterinary Science at a specialized international university
				2. Support 30 under graduates with scholarship to study Veterinary Science at a Mikolongwe college
	Animal product professionals	Lack of Livestock Breeding Policy	Facilitate development of the Livestock Breeding and Animal Health Policies to support integration efforts in the SVIP	
	Livestock Development Policy	Lack of Animal Health Policy		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Professional skills in epidemiology		
		Information System Management	Strengthen the MIS for livestock monitoring in the DAHLD	1. Conduct a consultancy to strengthen the MIS for livestock monitoring in the DAHLD
		Livestock entrepreneurship		
		GIS and Remote sensing		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Project design, planning, M&E		
		Lack of website		
		About 40% vacancy rate for Ass Vet Officers (AVO) in the field (Diploma holders). Hence 2-3 dip tanks per AVO instead of one dip tank per AVO		
		Very high cost of running dip tanks. As a result, may are abandoned	Conduct an assessment of dip tanks and determine how they can be operationalized within the SVIP framework	1. Conduct a consultancy to assess dip tanks and determine how they can be operationalized within the SVIP framework
		At EPA level, livestock production and vet issues are done by AEDOs who are general extension workers in agriculture	Build the capacity of DAHLD & DAES Officers in Irrigation+Livestock+fisheries integration, Agro processing and Value Chain Development, GIS and Remote Sensing, Leadership,	1. Conduct a consultancy to train DAHLD & DAES Officers in rrigation+Livestock+fisheries integration, Agro processing and Value Chain Development, GIS and Remote Sensing, Leadership, Project Management &

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
			Project Management & Entrepreneurship, Disease surveillance & investigation, Poultry production, Beef production, and establishing commercial farming	Entrepreneurship, Disease surveillance & investigation, Poultry production, Beef production, and establishing commercial farming
		Weak beef production system	Strengthen the system for beef production in the SVIP area	1. Conduct a consultancy to assess the capacity needs to develop a robust beef production system in the SVIP area as part of integration efforts
		Weak livestock associations at community, district and national level	Build the leadership and operational capacity of livestock associations at national, district and community level to enhance their effectiveness in livestock development	1. Conduct a consultancy to train livestock associations at national, district and community level in association management and sustainability
		Dwindling funding to the department		
		Lack of vehicles and equipment to undertake supervisory work at district level	Build the logistics and equipment capacity of DAHLD in implementation and monitoring the SVIP	1. Procure vehicles, computers and supplies for the DAHLD to facilitate and monitor SVIP implementation
		Lack of computers to oversee extension delivery in the SVIP		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Lack of guidelines for undertaking commercial beef production	Develop guidelines for undertaking commercial beef production in the SVIP	1. Conduct a Consultancy to develop user friendly guidelines for undertaking commercial beef production in the SVIP
		Lack of guidelines for management of Livestock Associations	Develop guidelines for management of Livestock Associations in the SVIP	1. Conduct a Consultancy to develop user friendly guidelines for management of Livestock Associations in the SVIP
9. DLRC	Strategic plan	High vacancy rate (48%)		
	National Land Resources Policy & Strategy (expired)	Dwindling funding to the department		
	National Agriculture Policy under development by MoAIWD	Lack of Soil Engineers, Soil Conservation Specialists, Soil Survey Specialists and Agro-Forestry Specialists	Support training of additional professionals as Soil Engineers, Soil Conservation Specialists, Soil Survey Specialists and Agro-Forestry Specialists	1. Support 10 professionals with scholarship to study Soil Engineering, Soil Conservation, Soil Survey and Agro Forestry at LUANAR
	1 LRCO each for Nsanje and Chikwawa districts	Currently there is no legal instrument on land resources, hence difficult to check non compliance	Facilitate development of a legal instrument on land resources to ensure compliance through the MoAIWD	1. Conduct a consultancy to conduct a feasibility and development of a legal instrument on land resources to ensure compliance

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	2 LRCD officers at Shire Valley ADD (4 on establishment)	Students not willing to study soil engineering		
		M&E only process oriented.		
		Expensive methods to measure soil loss as an M&E key indicator. It is resource intensive	Build GIS capacity to undertake soil loss analysis in the DLRC	1. Update the stocks of equipment within the DLRC
		Inadequate and obsolete equipment hampers the Department's technical capacities in areas of surveying, soil assessment and mapping		
		Growing neglect to adoption land resources management technologies across the country looking for quick livelihoods leading to escalating land degradation		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Limited policy influence compared to other Departments since the dept is often considered only as a technical support dept		
		Department relies on general extension staff at EPA level as it is not represented at that level		
		Lack of vehicles and equipment to undertake supervisory work at district level	Build the logistics and equipment capacity of DLRC in implementation and monitoring the SVIP	1. Procure vehicles, computers and supplies for the DLRC to facilitate and monitor SVIP implementation
		Lack of computers to oversee extension delivery in the SVIP		
		Lack of guidelines for undertaking land resources conservation	Develop guidelines for undertaking land resources conservation in the SVIP	1. Conduct a consultancy to develop guidelines for undertaking land resources conservation in the SVIP

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
10. Department of Fisheries	National Fisheries Policy	No fisheries staff presence in Nsanje and Chikwawa despite fishing opportunities in the Shire river		
	Related policies such as the Malawi Nutrition Policy, Agricultural Policy on diversification and food security issues, and the Environmental Policy on sustainable environmental management	Cultivation in the river banks causing erosion and siltation results in destruction of fish breeding places and habitats		
	Relocation of the DoF to MoAIWD is widely seen as an opportunity that can be exploited for the sector to realise its full development potential as it raises the profile of the DoF both in terms of visibility and funding	Weak Government capacity and coordination to implement or enforce policies and legislation concerning the environment and natural resources management		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Increasing pool of trained Fisheries Scientists	Low and declining funding		
		Low staffing (vacancy rate at about 40 %)	Facilitate the creation of the position of District Fisheries Officer in Nsanje and Chikwawa districts to facilitate integration efforts in the SVIP	1. Write a position paper on creation of the offices of Fisheries Officers in Nsanje and Chikwawa to the Department of Fisheries and MoAIWD
		Insufficient training due to funding constraints	Build the capacity of DOF Officers in irrigation, livestock and fisheries integration; aquaculture; sustainable fisheries management; establishing commercial fish farming; entrepreneurship development	1. Conduct consultancies to train DOF officers in irrigation, livestock and fisheries integration; aquaculture; sustainable fisheries management; establishing commercial fish farming; entrepreneurship development
		Lack of up-to-date data on fish resources and production	Strengthen the MIS in fisheries as part of the SVIP integration efforts	1. Conduct a consultancy to strengthen the MIS in fisheries as part of the SVIP integration efforts
		Weak Monitoring and Evaluation (M&E) system for the sector		
		Deterioration of infrastructure at Mpwepwe Fisheries Training School in Mangochi due to limited funding		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		There is hardly any institutionalized research collaboration between DoF, universities, NGOs and the private sector in setting the research agenda for the sector	Develop fisheries research capacity for the DOF to support integration efforts with the SVIP	1. Update laboratory equipment to support fisheries research
		The sector is ill-equipped in the area of fish pathology to address disease outbreaks in aquaculture		2. Undertake research in fish pathology in collaboration with LUANAR to support aquaculture
		The existing stock of equipment in laboratories is either outdated or in state of disrepair to facilitate innovative and progressive research work		
		Lack of vehicles and equipment to undertake supervisory work at district level	Build the logistics and equipment capacity of DOF in implementation and monitoring the SVIP	1. Procure vehicles, computers and supplies for the DOF to facilitate and monitor SVIP implementation
		Lack of computers to oversee extension delivery in the SVIP		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Lack of guidelines in fisheries management	Develop guidelines in fisheries management for the SVIP	1. Conduct a consultancy to develop guidelines in fisheries management for the SVIP
		Lack of guidelines in aquaculture management	Develop guidelines in aquaculture management for the SVIP	1. Conduct a consultancy to develop guidelines in aquaculture management for the SVIP
11. Private Irrigation Operators	Cooperative business model @ Phata	Farmer and Operator Conflicts @ KCGL		
	Agricane & KCGL experience in irrigation farming	Non business oriented association model @ KCGL		
	Presscane cane crashing plant for ethanol production under construction	Large loan burden at KCGL		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Presscane developing 2,500 ha of land for cane production	Weak financial management in the KCGA		
	Illovo cane crashing plant	Gender mainstreaming	Develop the capacity of private irrigation operators in integration of livestock and fisheries in irrigation farming; establishment of management entities; gender mainstreaming; participatory demand and market driven planning; participatory farmer engagement and planning; and effective communication with farmer groups	1. Conduct consultancies to train private irrigation operators in integration of livestock and fisheries in irrigation farming; establishment of management entities; gender mainstreaming; participatory demand and market driven planning; participatory farmer engagement and planning; and effective communication with farmer groups
	Sugar export market through Illovo	Establishing management entities and capacities		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Corporate social responsibility projects at Illovo and Agricane	Participatory demand and market driven development planning		
	Professional field and administrative staff members	Participatory farmer engagement and planning capacities		
	Illovo private power producer	Communication between management and farmers/farmer groups		
	Mechanised production system	Entrepreneurship development for farmers	Facilitate development of an investment strategy for cooperatives to grow their group and individual benefits from mainstream cooperative proceeds	1. Conduct a consultancy to develop an investment strategy for cooperatives to grow their group and individual benefits from mainstream cooperative proceeds
12. Phata Sugarcane Outgrowers	Advanced irrigation infrastructure	Good agricultural practices & cane husbandry	Develop the capacity of cooperatives in effective development of and management of cooperatives	1. Conduct a consultancy to train in establishment of management entities, organizational development, corporate governance and gender mainstreaming

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
Cooperative				
				2. Conduct a consultancy to train in participatory demand and market driven planning, participatory farmer engagement and planning, and communication with farmer groups
				3. Conduct a consultancy to train in financial management
	Experienced private irrigation operator	Communication between management and farmer groups	Develop the capacity of cooperatives in investment, marketing and market development. irrigation water management, irrigation scheme maintenance, good land husbandry practices, good crop husbandry practices, investment and entrepreneurship development	1. Conduct a consultancy to train in Agro-processing and value chain management
	EU grant partnership	Gender mainstreaming		2. Conduct a consultancy to train in investment and entrepreneurship development to grow income

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
			Develop the capacity of cooperatives in scheme management.	1. Conduct training in irrigation water management and irrigation scheme maintenance
				2. Conduct training in good land and crop husbandry practices
	Fish farm component - 10 ponds (1.2ha)	Investment and entrepreneurship development	Facilitate Fair Trade certification for all Cooperatives to enhance accountability, social corporate responsibility and good cooperative management practice	1. Conduct awareness of Fair Trade & its requirements & registration process to all cooperatives
				2
	Food crops component (24ha)		Facilitate establishment of VSL models at cooperatives to enhance savings and access to investment finance	1. Conduct awareness of VSL, its procedures and benefits to all cooperatives
	Wood for fuel (6ha)			2. Provide start up equipment for VSL groups to all cooperatives

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Fruits (2ha)			
	Organizational development			
	Sugar value chain			
	Corporate governance			
	HIV and AIDS			
	Fair Trade Certified and therefore eligible for FT premiums			
	Dividend policy pays out 60% of the profits to the			

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	shareholders and retains 40% to cover operational expenses			
	Revolving fund for members to access credit for IGAs and short term credit			
13. NWRA	Water Resources Act, 2013	Secretariat for the NWRA not yet operational. CEO position advertised but not yet recruited	Develop the capacity of the NWRA to become operational	1. Conduct an audit of the NWRA to identify and support its institutional and operational needs in the next six years
	20% of the revenues from license fees to be ploughed back into the communities to fund environmental conservation activities	Poor coordination with NGOs and other players that form the numerous Water Users Associations which has resulted in most of them not paying water license fees	Develop a data base of NGOs and players in water use to enhance coordination and collaboration	1. Conduct registration of NGOs and players in water use in the country
	Three Regional Catchment Management Boards (Shire River, Linthipe and Rukuru)	Board for the NWRA not yet appointed and therefore not yet operational	Develop a database of small water users to ease their licensing for water use and capacity building	1. Conduct registration of small water users across the country to ease their licensing for water use

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	NWRA secretariat office accommodation identified	Only one year committed funding to support the NWRA secretariat from the Shire Basin Management Program		2. Develop simple and user friendly water licensing guidelines for use among water users to honour their obligations
	Mandate to undertake collection of water charges	Lack of framework for ploughing back revenues into local communities to fund environmental conservation activities	Support development of a framework for ploughing back revenues from water licensing back into local communities to fund environmental conservation activities	1. Conduct a consultancy to develop a framework for ploughing back revenues from water licensing back into local communities to fund environmental conservation activities
	Water Resources Licensing Reform Consultancy Report			
	Consultancy report on the establishment of the NWRA			
	Two vehicles procured			
	Large Water Users paying water license fees			

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
14. Shire Valley Catchment Mgt Board	SVIP is a member of the board	Secretariat for the SVCMB not yet operational. Director was interviewed but not yet recruited	Develop the capacity of the SVCMB to become operational	1. Conduct an audit of the SVCMB to identify its institutional and operational needs
	Can obtain from the Authority, on request, a percentage from the proceeds of the collection of water charges to undertake water resources conservation activities	Board for the SVCMB not yet appointed and therefore not yet operational		2. Support the formation of Catchment Management Committees under the SVCMB
	May obtain money from any other lawful sources, including the Water Resources Trust Fund, to fund their activities	Lack of guidelines for undertaking and monitoring integrated water management	Develop guidelines for undertaking and monitoring integrated water management for use in the Shire Valley	1. Conduct a consultancy to develop guidelines for undertaking and monitoring integrated water management in the Shire Valley
	Office for the SVCMB identified in Blantyre	Lack of vehicles and equipment to undertake supervisory work at district level	Build the logistics and equipment capacity of SVCMB in implementation and monitoring the SVIP	1. Procure vehicles, computers and supplies for the SVCMB to facilitate and monitor SVIP implementation
		Lack of computers to oversee extension delivery in the SVIP		2. Support establishment of an office for the SVCMB in Blantyre

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
15. LUANAR	Livestock development degree course	Does not offer animal health (Vet) degree courses		
	Irrigation Engineering degree course	Aging laboratory facilities & rely upon older methods		
	Agricultural engineering degree course	Very low annual intake in irrigation engineering degree course	Support production of additional professionals in Irrigation Engineering to support the SVIP objectives	1. Support 10 professionals with scholarship to study Irrigation Engineering at LUANAR
	Crop production degree course	Researchers remain "accustomed to top-down approaches where they themselves define the problems and steer the remainder of the process"	Engage with the SVIP, private irrigation operators and cooperatives in bottom up adaptive research	1. Develop an engagement research strategy with the SVIP, private irrigation operators and cooperatives
	Agricultural economics degree course	Research at LUANAR are too seldom translated into simple extension messages intended for grassroots efforts because scientists seldom work in partnership with farmer		2. Conduct adaptive research to develop of gender-sensitive and appropriate on-farm technologies for improving commercial irrigation, food security and household income

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		associations and developmental interests		
	Fisheries & Aquaculture degree course	Very high overall enrolment of students which has affected accommodation, classroom, laboratory and library capacity		
	Forestry degree course			
	Environmental & Natural Resources Management degree course			
	Human Nutrition degree course			
	Animal Science degree course			
	Youth development diploma course			
	Research capacity through the Centre for Agricultural Research			

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	and Development (CARD)			
	Impressive library facility			
	Good and long collaboration with the Department of Agriculture Research (Chitedze)			
	7,000 acres of farm land with a dam for fish farming			
	PhD, & Masters level teaching staff			

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
16. Mikolongwe Veterinary College	Animal health (Vet) diploma course	Stuck with certificate diploma level training for so long	Develop the capacity of Mikolongwe Vet College to support the objectives of the SVIP	1. Update laboratory equipment for Livestock development and Animal health training
	Artificial insemination capacities	Low student intake due to dwindling financial resources		2. Strengthen breeding capacity for cattle to support livestock integration in the SVIP
	Poultry production capacities	Beef production and processing		3. Train livestock associations in beef production and processing
	Government subsidized model	Establishing commercial livestock farming		4. Train livestock associations in commercial livestock management and disease surveillance
		Entrepreneurship development for farmers		
		Outdated infrastructure and equipment		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
17. Natural Resources College	Livestock development diploma course	Many graduates not willing to join the mainstream agriculture extension	Develop the capacity of Mikolongwe Vet College to support the objectives of the SVIP	1. Support training of diploma level Irrigation Development Professionals to work as irrigation extension workers
	Animal health (Vet) diploma course	Climate-smart agricultural practices		
	Irrigation development diploma course	Financial literacy including credit and crop insurance		
	Agriculture extension diploma course	Lack of best practice agronomic knowledge of the non-traditional legumes		
	Nutrition diploma course	Intake now favours those students that can afford the commercial school fees unlike in the past		
	Part of LUANAR			
	Commercialised business model			

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
18. MFIs	VSL groups, FINCA, Opportunity Bank, SACCOs, and COMSIP	Prohibitive interest rates (currently at 45%/annum and 120% per annum for VSL groups on average	Build the capacity of MFIs in transforming their clients into entrepreneurs	1. Train MFIs in investment and entrepreneurship development
	Formal banks (NBM, Standard, FDH, CDH, FMB, EcoBank)	Limited ability to transform clients into entrepreneurs		
	Available loan portfolios	High loan default rates		
		Farming not a very attractive enterprise for commercial oriented banks as they often require immediate repayments		
		No agriculture specialized banks		
		Limited investment financing to support farm and industry mechanization		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Very high risk of loss of savings by VSL groups since they keep money in clandestine homes	Government through Min of Trade should develop best practice and standards of performance for VSL groups as a substitute for strict regulation to protect savings and ensure growth and graduation	1. Develop a standards manual for operations of VSL groups with mechanisms for enforcement and sanctions for violating the standards
		Weak growth potential for most VSL groups since they share savings and profits each year	Strengthen business models for VSL operation to enhance their growth and sustainability	2. Develop a revised VSL operation manual with improved operational mechanisms to enhance their growth and sustainability
19. MoAIWD	The ASWAp approach	High vacancy rates coupled with slow recruitment processes		
	The ASWAp program	Dwindling financial resources		
	Improved coordination through the TWGs	Sometimes training courses not linked to training needs		
	National Agriculture Policy (Draft)	Some individuals seeing training primarily as an opportunity to travel or receive extra allowances		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Fisheries Policy	SVIP structures not fully functional (PSC, PTC, Task Force & Consultative Committee)	Facilitate the functionality of SVIP ministerial structures	1. Prepare and implement an MOU to engage authorities to endorse the TORs for the SVIP ministerial structures
	Irrigation Master Plan (IMP)	Lack of coordination be-tween ad hoc trainings delivered through donor projects.		2. Conduct orientation sessions for the PSC, PTC, Task Force and Consultative Committee to raise awareness of the roles of members and operational mechanisms
	National Irrigation Policy	An "allowance culture" persists across many government institutions, with staff un-willing to turn up to meetings unless they are paid an allowance to do so		
	National Water Policy	Lack of performance appraisal exacerbates the problem of lack of motivation in public service offices		
	Agriculture, livestock and fisheries research capacity	Good results are not achieved often because individual good performance is not rewarded and poor performance is not punished.	Develop an incentive scheme for government officers supporting the SVIP implementation from different departments and ministries to ensure commitment	1. Develop and implement a practical incentive scheme for government officers supporting the SVIP implementation from different departments and ministries to ensure commitment

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Largest footprint of agriculture extension structures (8 ADDs, 28 DAOs, over 200 EPAs and 2,880 sections)	Coordination and communication with departments often difficult due to lack of resources to carry out these functions (both staff and finances).		
	SVIP PTT fully operational	Information management system (outdated and inadequate data)	Strengthen the MIS for the ministry to improve access to SVIP data	1. Conduct a consultancy to strengthen the MIS for the MoAIWD to improve access to SVIP data
		TORs for the various coordination structures (the PSC at PS level, the PTC at Director level, the Task Force and the Consultative Committee) for the SVIP have been developed but they still need to be endorsed through an MOU and implemented		
		Lack of vehicles and equipment to undertake supervisory work at district level	Build the logistics and equipment capacity of MoAIWD in implementation and monitoring the SVIP	1. Procure vehicles, computers and supplies for the MoAIWD to facilitate and monitor SVIP implementation
		Lack of computers to oversee extension delivery in the SVIP		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
C. Systemic level				
1. Policies	The MGDS 11	Weak Government capacity and coordination to implement or enforce policies and legislation concerning the environment and natural resources management		
	The Malawi Expost Strategy	Lack of the Livestock Breeding Policy	Facilitate development of a Livestock Breeding Policy	1. Conduct a consultancy to develop the Livestock Breeding Policy through the MoAIWD
	The Malawi Agriculture Policy under development	Lack of Animal Health Policy	Facilitate development of an Animal Health Policy	1. Conduct a consultancy to develop the Animal Health Policy through the MoAIWD
	National Irrigation Policy			
	National Water Policy			

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Irrigation Master Plan			
2. Laws	The Investment and Export Promotion Act (No, 11 of 2012)	Unapproved Land Law		
	The Public-Private Partnership Act (No. 27 of 2011)	Currently there is no legal instrument on land resources, hence difficult to check non-compliance (DLRC relies on other sector laws)	Facilitate development of a land resources management law to enforce compliance in the SVIP through the DLRC	1. Conduct a consultancy to develop a land resources management law to enforce compliance in the SVIP through the DLRC
	Water Bill			
	Environmental Management Act (EMA)			

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
3. Societal support	Cultural practices generally not at logger head with the SVIP	High levels of illiteracy especially among women	Build capacity of cooperatives and other farmer organizations in undertaking communication between management entities and farmers/ farmer groups and communities	1. Establish Public Relations Offices in the SVIP, Cooperatives and Private Irrigation Operators to interface with farmers, farmer groups and communities
	Agriculture, livestock production and fishing are traditional livelihoods	High levels of poverty especially among women		2. Develop a communication strategy for the SVIP to guide communication content and processes
	Increased community interest in the SVIP though still uncertain of its full implications	High dependency syndrome	Undertake social corporate responsibility projects to improve income, education and health of the local people in the SVIP area	1. Develop a Trust Fund modelled on Kaombe Trust to support social corporate responsibility projects to support participatory community development in the SVIP area
		Cultural practices that look down upon women		
		High farm input loan default		
		Lack of farm mechanization		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
4. Incentives	42,000 ha of land for irrigation	Inadequate power generation and distribution by ESCOM	Explore opportunities to invest 18 MW of power released by Illovo in the SVIP area to support agro processing and value chain projects power needs	1. Conduct a consultancy to undertake a study to explore opportunities to invest 18 MW of power released by Illovo in the SVIP area to support agro processing and value chain projects power needs
	Gravity fed irrigation system	High inflation rate leading to high interest rates		
	Community interest in the SVIP	Land tenure uncertainties may create mistrust		
	Shire river as a source of water	Limited knowledge of the SVIP by local people		
	Livestock production as a key livelihood source	Conflicts between irrigation and livestock farmers	Develop an integration plan for irrigation farming, livestock & fisheries in the SVIP	1. Conduct a consultancy to develop an integration plan for irrigation farming, livestock and fisheries in the SVIP
	Fishing as a key livelihood source	Information System Management - often outdated data in agriculture & livestock		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
	Existing large scale Irrigation Operators (Presscane, KCGL, Illovo & Agricane)	Inadequate locally available foreign exchange for input importation during critical import financing period	Strengthen irrigation financing and provide incentives such as relief on private investment (from taxation structuring, subsidies in inputs and loan interests and guarantees, etc.), facilitating swift land acquisition and lease by private sector investors, etc.	1. Conduct a consultancy to explore financing models and incentives to support investments in the SVIP
	Existing large scale livestock producers	The current Malawi economic and financial conditions are challenging. Inflation is at around 17% and interest rates charged by banks are close to 45% per annum.		2. Engage with the Ministry of Finance, the Malawi Investment and Trade Centre (MITC) and Malawi Revenue Authority to lobby for incentives to support investments in the SVIP
	Increased NGO involvement in irrigation scheme development			
5. Stakeholder participation	MoAIWD & other ministries showing growing interest to participate	Lack of PPP facilitator	Support deployment of a PPP Facilitator who will recruit a Private Partner to manage the scheme	1. Engage the PPP Commission in the SVIP processes to get them oriented to the SVIP

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
				2. Develop TORS for the PPP Commission on its role in PPP facilitation for the SVIP
				3. Identify and finance the institutional and operational needs of the PPP Commission to perform its role in recruiting and monitoring the performance of the Private Partner
	Increased private sector interest in the SVIP	Communities not fully aware of the SVIP and its implications	Develop a communication strategy to guide awareness and mobilization efforts for the SVIP	1. Conduct a consultancy to develop a communication strategy to guide awareness and mobilization efforts for the SVIP
	Increased community interest in the SVIP though still uncertain of its full implications	MoU between the participating ministries/agencies and for the agencies to free up staff to contribute to SVIP project preparation	The PTT should hold regular meetings with media, academia and NGOs amongst others to clarify timeline, designs, expectations, roles and responsibilities of the project to make sure the right information is passed to the population	1. Develop a communication program for the PTT to hold regular meetings with media, academia and NGOs amongst others to clarify timeline, designs, expectations, roles and responsibilities of the project to make sure the right information is passed to the population
		Cabinet endorsement of the SVIP principles		

Capacity Gap Analysis Tool				
Level	**Existing capacity**	**Capacity/Training gaps**	**Intervention/s to address the gaps**	**Activities to address the gaps**
		Women and youth participation remains low in the existing irrigation projects		
		Participation of MFIs		
		Weak institutional mechanisms for grievance handling at community and district level	Develop capacity for grievance handling at Cooperative and SVIP level	Establish Grievance Handling Committees at Cooperative and SVIP level
6. Accountability frameworks (M&E)	Harmonised ASWAp M&E system based on ASWAp themes	Spatial GIS platform not connected to MASDAP through the Department of Surveys	Develop a GIS based M&E system for the SVIP, linked to the District Council and MoAIWD M&E systems	1. Develop a process manual for monitoring and evaluating the SVIP, including roles and responsibilities of stakeholders involved in the M&E process
	ASWAp SP in the MoAIWD doing ASWAp project implementation & monitoring	Biannual sector reports are distributed mainly to TWG on M&E members and not widely disseminated to policymakers hence failure to influence decisions & policy		2. Develop MOUs stipulating the roles of players in managing the M&E system for the SVIP
	M&E under the Department of Planning Services	Consolidation of the three M&E systems into one, some of the relevant indicators have been left out, creating gaps		3. Create an M&E office within the SVIP secretariat to facilitate monitoring and evaluation of the project and the linkages with the District Council and the MoAIWD

Capacity Gap Analysis Tool				
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		Most of the indicators consolidated for ASWAp implementation monitoring are at the policy level, largely leaving out project micro level monitoring	Strengthen decentralized data gathering and analysis systems in order to be able to assess how microlevel activities contribute to food and nutrition security as well as poverty reduction in the country	4. Capacitate M&E units at the District Councils and MoAIWD with personnel, computers, software, supplies, and training to support linkage of M&E
		Lack of quality control standards for operation of farmer organizations in the SVIP area	Develop quality control standards for management and growth of farmer organizations in the SVIP area	1. Conduct a consultancy to develop quality control standard guidelines for development, management and growth of farmer organizations
		Understaffed M&E Unit in the MoAIWD	Support the strengthening of the MoAIWD M&E System to support SVIP objectives	

Capacity Gap Analysis Tool				
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Capacity Gap Analysis Tool				
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