



Government of Republic of Malawi

Ministry of Agriculture, Irrigation and Water Development

MALAWI AGRICULTURE COMMERCIALIZATION PROJECT

P 158434

ENVIRONMENTAL & SOCIAL MANAGEMENT FRAMEWORK.

The Secretary for Agriculture, Irrigation and Water Development
Ministry of Agriculture, Irrigation and Water Development,
P.O. Box 30134, Capital City
Lilongwe 3, Malawi
Phone: 265 – 1 789 033
Facsimile: 265 – 1 789 390

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Secretary for Agriculture, Irrigation and Water Development
Ministry of Agriculture, Irrigation and Water Development
Capital Hill
Lilongwe 3
Lilongwe

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Acronyms

ADC	Area Development Committee
DC	District Commissioner
DEA	Director of Environmental Affairs
DEC	District Executive Committee
DESC	District Environmental Sub – Committee
DFO	District Forestry Officer
EAD	Environmental Affairs Department
EMA	Environment Management Act
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GOM	Government of Malawi
ha	hectare
HIV	Human Immune Deficiency Syndrome Virus
IDA	International Development Association
IRLAD	Irrigation Rural Livelihoods Agricultural Development Project
AGCOM	Malawi Agriculture Commercialization Project
MGDS	Malawi Growth and Development Strategy.
MK	Malawi Kwacha
mm	millimetre.
MoAIWD	Ministry of Agriculture, Irrigation and Water Development
NAC	National Aids Commission.
NCE	National Council on Environment.
NEAP	National Environmental Action Plan.
NEP	National Environmental Policy.
NGO	Non – governmental organization.
PA	Productive Alliances
PIU	Project Implementation Unit
PO	Producer Organizations
PSC	Project Steering Committee
RPF	Resettlement Policy Framework.
SRBM	Shire River Basin Management Programme
TCE	Technical Committee on the Environment.
WASH	Water, Sanitation and Hygiene
WUA	Water Users Association

EXECUTIVE SUMMARY

This document serves as an Environmental and Social Management Framework for Malawi Agriculture Commercialization Project. The proponent is Ministry of Agriculture, Irrigation and Water Development. Government of Malawi is seeking a credit of US\$95.00 million from the International Development Association of the World Bank Group for the project. The aim of the project is to increase commercialization of selected farm and agribusiness products for domestic and export markets. Project implementation period is 6 years, from 2017 – 2022.

The Malawi Agricultural Commercialization Project (AGCOM) is in line with Malawi Growth and Development Strategy (MGDS II) under the Sustainable Economic Growth (Theme 1) with focus on agriculture sector growth. In the agricultural sector, the Government aims at enhancing agricultural productivity, diversification and food security through, among others, the following strategies: enhancing provision of effective extension services; enhancement of livestock and fisheries productivity; promotion of diversification of agricultural production for domestic and export markets; promoting dietary diversification; improving the functioning of agricultural markets; increasing national food storage capacity; and reducing post harvest losses.

1.0 SUMMARY OF COMPONENTS OF THE PROJECT.

The project has four components, and each component has sub-components. An outline of scope of components and sub-components is as follows:

Component 1: Building Productive Alliance (Us\$65 Million)

The objective of this component is to support small-scale¹, emerging farmers integrate into value chains by improving their capacity to finance and execute productivity-enhancing investments and respond to the requirements of the end-markets and buyers. This component will finance the following: (a) organization of and capacity building in Producer Organizations (approximately US\$15 million); (b) matching grant investments in Productive Organizations; (c) partial credit guarantee fund; and (d) public service infrastructure in selected areas.

Component 2: Support Investment Enabling Services: (Us\$18 Million)

The objective of the component is to support business enabling services by addressing some of the systemic gaps and challenges that constrain investment and trade in the agribusiness sector. These include access to agricultural finance; access to land for commercial agriculture, and removing some of the barriers to trade for agriculture business such as on standards and certification. The component will address processes in efficient access to finances, land and regulatory and operational business enabling services.

Component 3: Contingent Emergency Response.

This component will cover emergency response and recovery costs during project period. The component has not been allocated initial budget at this stage. However, it will allow for rapid reallocation of project proceeds in the event of future natural or man-made disaster or crisis that has caused or is likely to imminently cause a major adverse economic and/or social impact during the life of the project. The component will be used to draw resources from the unallocated expenditure category and/or allow the government to request the Bank to reallocate financing from other project components to cover disaster activities which would require urgent assistance

Component 4: Project Coordination and Management

This component will finance activities related to the coordination and actual implementation of project's activities. This includes both costs for: (i) project management/coordination including procurement, financial management, monitoring and evaluation mitigation of potential negative social and environmental impacts, and communication about project implementation and results; (ii) sector and cross-sector coordination with the agriculture, water, industry, trade, lands plans and frameworks; and (iii) facilitating inter-ministerial collaboration on tackling implementation challenges. Given the multi-sectoral nature of the Project, a Project Implementation Unit (PIU) will be established to handle day to day activities of the Project. A Project Steering Committee (PSC) will be established to provide overall guidance and will include the Ministries of Agriculture, Irrigation and Water Development, Industry, Trade and Tourism, and Lands, Housing and Urban Development. Private sector representatives (producer organizations and investors) will also seat on a steering committee.

2.0 SUMMARY OF POTENTIAL NEGATIVE ENVIRONMENTAL AND SOCIAL IMPACTS.

Main sources of significant environmental and social impacts would be from development last mile public infrastructure – feeder roads, rehabilitation of irrigation schemes and construction of electricity and potable infrastructure .Some potential negative environmental and social impacts from the Malawi Agriculture Commercialization Project are as follows:

- a) Increase in movement of migrant labour force in rural areas of Malawi. Migrant labour force will be used on various commercial farms and various irrigation schemes involved in production of cash crops. Construction of last mile service infrastructure (feeder roads, rehabilitation of irrigation schemes, construction of electricity and potable water infrastructure) will also enhance movement of migrant workers from one place to another.
- b) Increase in spread of HIV/AIDS and other communicable diseases in districts. The use of migrant workers within commercial farms and in construction works (feeder roads, electricity and potable water infrastructure) in various parts of the country would provide additional risks of spread of HIV/Aids in the area due to likely incidents of sexual interaction between migrant workers and local partners within project sites. In addition, increased disposal income would enhance male workers to be engaged in extra – marital sexual intercourses with local partners and thereby increase the spread of HIV/Aids and other sexually transmitted infections.
- c) Increase in rate of deforestation within the flood affected districts. This impact would result from bush clearing during development of construction/rehabilitation of rural warehouses by Productive Organizations, construction of feeder roads and expansions of small scale irrigation schemes. In addition, extraction of poles for construction of camps sites, and the extraction of firewood by migrant workers would enhance deforestation.
- d) Increase in rate of soil erosion and siltation of rivers/streams from the project sites and districts. Civil works in construction of rural warehouses, civil works in rehabilitation of feeder roads, rehabilitation of irrigation schemes would escalate soil erosion by surface run off.
- e) Pollution to water resources from petroleum products. One source of pollution would be from leaked oils and diesels from construction vehicles and machinery especially during construction/rehabilitation of rural warehouses and construction of feeder roads. The other source would be from application of excessive and harmful pesticides within irrigation schemes.
- f) Risks of spread of alien plants and diseases in some parts of the districts. This risk would come as a result of use of contaminated equipments such as front end loaders, dozers, graders, tractors and vehicles during civil works by contractors. Another source of alien pests and diseases to the area would be migrant workers to project site. Some migrant workers may transmit seeds of alien plants and also may also bring communicable diseases (such as scabies) to the area.

- g) Increase in multiplication of mosquitoes and spread of malaria in the districts. Most of districts in rift valley floor and within lakeshore plains are among areas with high malaria incidences in Malawi. Pools of stagnant water within borrow pits around would enhance the multiplication of mosquitoes throughout the year. Increase in density of mosquitoes throughout the year would increase the risks of spread of malaria among workers, women and children within project sites.
- h) Risks of water logging and salinization .The causes of water logging and salinization would be poor drainage of soils of small scale irrigation schemes, application of excess water to irrigation schemes and excess fertilizers.
- i) Human exposure and poisoning from agro-chemicals. Some workers and staff at the estates may be exposed to harmful pesticides and other agro-chemicals in course of work. The exposure may lead to some health risks such as skin irritation.
- j) Risks of child labour in construction/rehabilitation of rural warehouses and small scale irrigation schemes involved in cash crop draft production Wages from commercial farms may attract children to be engaged in gainful peace work. Some commercial farmers may opt for cheap labour through employment of children.

3.0 PROJECT APPRAISAL UNDER WORLD BANK SAFEGUARDS POLICIES.

Initial evaluation of Malawi Agriculture Commercialization Project under World Bank Safeguards Policies, has indicated some implications on some negative environmental and social impacts, and the project has been rated under category B of Operational Policy 4:01 (Environmental Assessment). Other safeguards policies triggered are: Operational Policy 4:09 (Pest Management) and Operational Policy 4.12 (Involuntary Resettlement). The appraisal under category B of Operational Policy 4:01 (Environmental Assessment) entails that potential environmental and social impacts would have moderate significance in the environment, and there is need of environmental ad social management plans to address the impacts.

This study has identified that Sub-component 1.3 Service Infrastructure for Productive Alliances (construction/rehabilitation of rural warehouses, construction of feeder roads, rehabilitation of irrigation schemes, installation of electricity and potable water infrastructure) under Malawi Agriculture Commercialization Project have triggered three World Bank Safeguards Policies, and these are: Operational Policy 4.01 (Environmental Assessment), Operational Policy 4:09 (Pest Management), and OP4.12 and (Involuntary Resettlement). Civil works for irrigation schemes, construction/rehabilitation of rural warehouses, construction of feeder roads, electricity infrastructure have potential to generate some negative impacts. The appraisal under category B of Operational Policy 4:01 (Environmental Assessment) entails that potential environmental and social impacts would have moderate significance in the environs, and there is need of environmental management plans to address the impacts. The main sources of impacts would be from migrant labour force and civil works during construction of rural warehouses, feeder roads, rehabilitation of small scale irrigation schemes and electricity infrastructure. The use of pesticides on irrigation schemes, commercial farms and livestock commercial farms would also pose some environmental and health risks to both human beings and biodiversity in the environment. All of the identified negative impacts can be reduced or in some cases avoided, with timely implementation of the mitigation measures outlined in this report.

4.0 RATIONALE FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK FOR THE PROJECT.

This Environmental and Social Management Framework has been prepared to guide on environmental screening and management of all sub-projects under the Malawi Agriculture Commercialization Project. A separate Resettlement Policy Framework (RPF) has been prepared to guide resettlement planning and management of potential socio-economic risks from project activities.

This Environmental and Social Management Framework (ESMF) provides an overall guidance on environmental and social screening and management of the project. Separate and detailed environmental and social management plans will be prepared to cover specific sub-projects to be implemented under this project. The justification for preparation of this environmental and social management framework at this stage is to provide overall guidance.

It is not possible to prepare site specific environmental and social management plans because the specific locations of within the country are not known at the moment. This is because identification of project sites and scope of construction and rehabilitation and re-construction works have not been finalised.

Recommended Environmental and Social Management Plans for rehabilitation and re-construction of last mile infrastructure such as feeder roads, electricity and potable water facilities have been developed and are outlined in chapter Eight. These plans will be used as guidelines in preparation of site specific environmental and social management plans for sub-projects under the project.

5.0 OBJECTIVES OF ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK.

The aim of the environmental and social management framework (ESMF) is to establish procedures for initial screening of the negative impacts which would require attention, prior to project implementation. Key specific objectives are:

- a) To undertake initial forecast of the main potential environmental and social impacts of the planned and future project activities.
- b) To recommend environmental and social screening process for project sites and sub-project activities for environmental and social considerations.
- c) To review environmental policies of Malawi Government in implementation of the project and relevant the World Bank Safeguard Policies to be triggered by the project.
- d) To develop an environmental management plan for addressing negative externalities in the course of project implementation and operation within environs.
- e) To recommend appropriate capacity building for environmental planning and monitoring in the project activities.
- f) To recommend appropriate further environmental work, including preparation of the site-specific ESIA/ESMPs for sub-projects.

6.0 USERS OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK.

The framework contains useful information on the procedures for environmental and social screening for sub-projects, potential environmental and social impacts; measures for addressing the negative impacts, recommended environmental and social rules for contractors. In addition, the framework contains useful information on list of required statutory approvals/licences which need to be obtained in order to ensure that the implementation and management of the project follows sound environmental management practices stipulated in various policies and pieces of legislation in Malawi. Such information will be useful in planning, implementation of the proposed sub-projects. In this regard, the report will be useful to the following implementing agencies, Ministry of Agriculture, Irrigation and Water Development, Ministry of Local Government, Malawi Investment and Trade Centre, Ministry of Trade, Industry and Tourism, Ministry of Lands, Housing and Urban Development, Ministry of Natural Resources, Energy and Mining, district

councils, project consultants , project construction contractors, Environmental Affairs Department. In addition, the framework will be useful to non – governmental organizations and civil society organizations, development partners such as World Bank during support missions.

7.0 APPROACH AND METHODOLOGY ON PREPARATION OF THE FRAMEWORK

The report has been prepared with information obtained by multi-faceted methods and from different sources. Some information has been obtained through desk studies by review of existing literature with information related to the project. Such document includes census reports, maps, project appraisal documents, preliminary project design plans, government policies and pieces of legislation. Information obtained from literature review includes background information. All these documents have been duly acknowledged in the reference page.

Some information was obtained through field surveys in selected districts (Dowa, Kasungu, Salima, Dedza, Mchinji, Mzimba, Lilongwe) and focus group discussions with stakeholders. The field surveys included visits to selected irrigation schemes, Area Development Committees, extension workers, non –governmental organizations and lead farmers. Fields surveys enabled collection of baseline data on the existing environments of project area. In addition, some information has been obtained through stakeholder consultations with a range of stakeholders. Stakeholders consulted include senior government officials, local government officials, extension workers, lead farmers, selected farmers, local leaders, development partners and selected private sector representatives. These consultations provided opportunities to obtain views on the scope of project, project designs, potential positive and negative impacts as well as mitigation measures for integration in project implementation.

1.0.0 CHAPTER ONE: INTRODUCTION ON THE PROJECT.

1.1.0 BACKGROUND INFORMATION.

Agriculture is the backbone of Malawi's economy. Agriculture accounts for 30 percent of Gross Domestic Product (GDP) and generates over 80 percent of national export earnings. Between 2005 and 2011, over 80 percent of the country's total exports were agricultural commodities, primarily tobacco, sugar and tea. Tobacco alone however, represents on average 60 percent of Malawi's total exports. Currently, agriculture employs 64.1 percent of the country's workforce comprising mostly the smallholder subsistence farmers. Agriculture also significantly contributes to the national and household food security and nutrition.

Government is seeking a credit of US\$95.00 million from the International Development Association (IDA) for implementation of the proposed Malawi Agricultural Commercialization Project. The aim of Malawi Agricultural Commercialization Project is to increase commercialization of selected farm and agribusiness products for domestic and export markets. The project will be implemented in all 28 districts of Malawi. Project period is 6 years, from July 2017 to June 2022.

The Malawi Agricultural Commercialization Project is in line with Malawi Growth and Development Strategy (MGDS II) under the Sustainable Economic Growth (Theme 1) with focus on agriculture sector growth. In the agricultural sector, the Government aims at enhancing agricultural productivity, diversification and food security through, among others, the following strategies: enhancing provision of effective extension services; enhancement of livestock and fisheries productivity; promotion of diversification of agricultural production for domestic and export markets; promoting dietary diversification; improving the functioning of agricultural markets; increasing national food storage capacity; and reducing post harvest losses.

1.2.0 PROPONENT AND IMPLEMENTING AGENCY.

The proponent of the proposed Malawi Agriculture Commercialization Project is Government of Republic of Malawi. Contact details and addresses of the proponent are as follows:

Proponent Name	:	Secretary for Agriculture, Irrigation and Water Development
	:	Ministry of Agriculture, Irrigation and Water Development
Postal address	:	P.O. Box 30134, Capital City, Capital Hill, Lilongwe 3, Malawi.
Telephone	:	265-01-789 033
Facsimile	:	265-01-789 390
E-mail	:	agric@gov.mw.net
Project Contacts	:	Erica Maganga/Cosmas Luwanda

A central project implementation unit based in Lilongwe will coordinate the overall implementation of The Malawi Agriculture Commercialization Project. The unit will be supported by sectoral ministries and these will include: Ministry of Agriculture, Irrigation and Water Development, Ministry of Lands, Housing and Urban Development, Ministry of Trade, Industry and Tourism. There will be number of consultants and contractors will be hired in the design and implementation of civil works to enhance good quality and timely completion of activities.

1.4.0 AN OVERVIEW OF THE PROJECT

The project has four components, and each component has sub-components. Brief description of each of the components is as follows:

Component 1: Building Productive Alliance (Us\$65 Million)

The objective of this component is to support small-scale², emerging farmers integrate into value chains by improving their capacity to finance and execute productivity-enhancing investments and respond to the requirements of the end-markets and buyers. This component will finance the following: (a) organization of and capacity building in Producer Organizations (approximately US\$15 million); (b) matching grant investments in Productive Organizations; (c) partial credit guarantee fund; and (d) public service infrastructure in selected areas.

Component 2: Support Investment Enabling Services: (Us\$18 Million)

The objective of the component is to support business enabling services by addressing some of the systemic gaps and challenges that constrain investment and trade in the agribusiness sector. These include access to agricultural finance; access to land for commercial agriculture, and removing some of the barriers to trade for agriculture business such as on standards and certification. The component will address processes in efficient access to finances, land and regulatory and operational business enabling services.

Component 3: Contingent Emergency Response.

This component will cover emergency response and recovery costs during project period. The component has not been allocated initial budget at this stage. However, it will allow for rapid reallocation of project proceeds in the event of future natural or man-made disaster or crisis that has caused or is likely to imminently cause a major adverse economic and/or social impact during the life of the project. The component will be used to draw resources from the unallocated expenditure category and/or allow the government to request the Bank to reallocate financing from other project components to cover disaster activities which would require urgent assistance

Component 4: Project Coordination and Management

This component will finance activities related to the coordination and actual implementation of project's activities. This includes both costs for: (i) project management/coordination including procurement, financial management, monitoring and evaluation mitigation of potential negative social and environmental impacts, and communication about project implementation and results; (ii) sector and cross-sector coordination with the agriculture, water, industry, trade, lands plans and frameworks; and (iii) facilitating inter-ministerial collaboration on tackling implementation challenges. Given the multi-sectoral nature of the Project, a Project Implementation Unit (PIU) will be established to handle day to day activities of the Project. A Project Steering Committee (PSC) will be established to provide overall guidance and will include the Ministries of Agriculture, Irrigation and Water Development, Industry, Trade and Tourism, and Lands, Housing and Urban Development. Private sector representatives (producer organizations and investors) will also seat on a steering committee.

1.5.0 PROJECT APPRAISAL UNDER WORLD BANK SAFEGUARDS POLICIES.

Preliminary review of the scope of activities under Malawi Agriculture Commercialization Project under World Bank Safeguards Policies, has indicated some implications on some negative environmental and social impacts, and the project has been rated under category B of Operational Policy 4:01 (Environmental Assessment). Other safeguards policies triggered are: Operational Policy 4:09 (Pest Management) and Operational Policy 4.12 (Involuntary Resettlement). The appraisal under category B of Operational Policy 4:01 (Environmental Assessment) entails that potential environmental and social impacts would have moderate significance in the environment, and there is need of environmental and social management plans to address the impacts.

This study has identified that construction/rehabilitation of rural warehouses, construction of feeder roads, rehabilitation of irrigation schemes, installation of electricity and potable water infrastructure have potential to generate some negative impacts. The main sources of impacts would be from civil works during development/rehabilitation of irrigation schemes and rural warehouses. In addition, the uptake and use of pesticides on irrigation schemes and rural warehouses would also pose some environmental and health risks to both human beings and biodiversity in the environment. All of the identified negative impacts can be reduced or in some cases avoided, with timely implementation of the mitigation measures outlined in this report.

1.6.0 JUSTIFICATION FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

Section 24 of Environment Management (60:02) stipulates the integration of environmental and social considerations in various development activities in Malawi. The proposed rehabilitation and reconstruction works under Malawi Agriculture Commercialization Project has potential to generate several negative impacts to the environment.

This document is not an environmental and social assessment of the project, but a framework to upstream environmental and social considerations design and implementation of the various sub-projects of the project. This Environmental and Social Management Framework (ESMF) provides an overall guidance on environmental screening and management for various sub-projects. The justification for this framework is from the following reasons:

- (a) Civil works under the Malawi Agriculture Commercialization Project would be many and cover various parts of the country. Construction/rehabilitation of rural warehouses, construction of feeder roads, and electricity and potable water facilities in rural areas would certainly enhance some environmental and social negative impacts such soil erosion, dust emissions, loss of trees, contamination of land from spillage of oils and diesels, discharge of both solid and liquid wastes.
- (b) Construction/rehabilitation of rural warehouses, development/rehabilitation of small scale irrigation schemes in the country would certainly enhance the uptake and use of various forms of pesticides for management of pests and diseases on cash crops.
- (c) The specific locations of rural warehouses, construction of feeder roads, construction of electricity and potable water facilities are not known at the moment as land sites would be selected at a later stage by the implementing agencies. However, based from previous experiences of similar commercial agriculture and infrastructure related projects, the proposed construction/rehabilitation of rural warehouses, and feeder roads would generate considerable environmental and social impacts within the project sites. Some potential negative impacts are: increase in migrant workers on commercial farms and construction camps, increase in spread of HIV/Aids and other sexually transmitted infections, clearance of trees, enhance soil erosion, dust emissions and emissions of gaseous from project equipment. Other environmental impacts would include noise nuisance from project vehicles on the site, contamination of land from spillage of oils and diesels, generation of solid and liquid wastes from workers during construction and operational stages.
- (d) Operational activities of rural warehouses and small scale irrigation schemes would generate a range of negative environmental impacts and effects. These would include: soil erosion, water logging and salinization of soils, increase in multiplication of water borne diseases, loss of biodiversity from use of pesticides, poisoning from pesticides and spread of invasive plants.

1.7.0 AIM AND OBJECTIVES OF ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK.

The aim of the environmental and social management framework (ESMF) is to establish procedures for initial screening of the negative impacts which would require attention, prior to project implementation within sites. Key specific objectives are:

- a) To describe components of the proposed Malawi Agriculture Commercialization Project.
- b) To recommend environmental and social screening process for project sites and sub-project activities for environmental and social considerations.
- c) To review environmental policies and procedures of the Government of Malawi in implementation of Malawi Agriculture Commercialization Project.
- d) To forecast the potential environmental and social impacts of project activities.
- a) To develop generic environmental management plans with recommended mitigation measures for addressing negative externalities in the course of project implementation.
- b) To recommend appropriate capacity building and budget resources for environmental safeguards and monitoring in the project

1.8.0 USERS OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK.

The Environmental and Social Management Framework contains useful information on the procedures for environmental and social screening for sub-projects, potential environmental and social impacts; measures for addressing the negative impacts, recommended environmental and social rules for contractors. In addition, the framework contains useful information on list of required statutory approvals/licences which need to be obtained in order to ensure that the implementation and management of the project follows sound environmental management practices stipulated in various policies and pieces of legislation in Malawi. Such information will be useful in planning, implementation of the proposed sub-projects. In this regard, the report will be useful to the following implementing agencies, Ministry of Agriculture, Irrigation and Water Development, Ministry of Local Government, Malawi Investment and Trade Centre, Ministry of Trade, Industry and Tourism, Ministry of Lands, Housing and Urban Development, Ministry of Natural Resources, Energy and Mining, district councils, project consultants , project construction contractors, Environmental Affairs Department. In addition, the framework will be useful to non – governmental organizations and civil society organizations, development partners such as World Bank during support missions.

1.9.0 TECHNICAL APPROACH IN PREPARATION OF ENVIRONMENTAL FRAMEWORK.

The focus of the assignment was to undertake initial scoping potential environmental impacts of the activities and prepare and an environmental and social management framework to guide the further environmental considerations in project planning and implementation. In order to achieve these targets, various methods (such as interviews of selected stakeholders, site visits to selected sites, literature review,) were adopted in the assignment.

Step 1: Review of existing literature.

This step involved a review of some existing literature and documents with information and data related to the project. Documents reviewed included: Project concept papers, project approval documents, World Bank Environmental and Social Safeguards Policies,

environmental profiles in Malawi, national environmental and social related policies and pieces of legislation. Examples of data and information obtained from such sources include background information on project, background information on Malawi's environmental policies and pieces of legislation, data on rainfall, flora and fauna, population statistics, altitude of the area; rainfall figures and the maps used in the report. All these documents have been duly acknowledged in the reference page of this framework.

Step 2: Field surveys in the project area.

This step involved field surveys in six selected districts which were Salima, Kasungu, Mchinji, Lilongwe, Dedza and Mzimba districts. The objectives of the field surveys were to observe existing agriculture systems, land tenure regimes and also to get views from farmers, extensions workers and district councils. The field surveys also assisted to capture baseline data/information on the components of the environment situation. In addition, the field surveys provided opportunities to characterize the scale/extent of potential impacts and effects from the proposed activities of Malawi Agricultural Commercialization Project.

Step 3: Stakeholder Consultations.

This step involved soliciting views from selected stakeholders. The following paragraph summarizes consultations and outcome from the consultations. Additional information/views obtained from stakeholders is attached in annex 15 of this document.

- a) Consultations with senior officials at various government ministries and departments. Consultations took place in Lilongwe from February 1-9, 2017. Stakeholders included Ministry of Agriculture, Irrigation and Water Development, Ministry of Health, Ministry of Gender, Ministry of Lands, Housing and Urban Development, Ministry of Trade, Industry and Tourism, National Aids Commission, Department of Environmental Affairs, Department of Disaster Management Affairs among others. The discussions centred on the aims and objectives of the project, the scope of the project, design and modalities of implementation. Main issues discussed included potential positive impacts of the project to the country, scope of beneficiaries, target areas, potential cash crops with high values. Main potential negative impacts identified included: deforestation, soil erosion, risks of poisoning from pesticides, increase in Malaria in districts. Meetings also discussed mitigation measures for main negative risks. Lists of persons consulted are attached in annex 14 of the report.

- b) Meetings and discussions with District Commissioners, District Agriculture Development Officers and District Executive Committees at within five selected district councils. The four selected district councils. Main issues raised by local government officials included: need of participation in selection of sub-projects for implementation, shortage of funds for environmental and social mitigation measures, inadequate food assistance for flood affected people (as priority activities), in adequate transport to

- supervise environmental mitigation measures, lack of skills in storage and management of pesticides, proposals to enhance environmental and social mitigation measures among others. List of officials consulted is attached in annexes 6-12
- c) Consultations with selected non-governmental organizations and civil society organizations in selected nongovernmental organizations. The nongovernmental organizations consulted were those in four flood affected districts chosen for field surveys: The non-governmental organizations included: Care International, World Vision International, Total Land Care, Eagles Relief Development Programme, Catholic Commission, NASAFAM, Malawi Red Cross Society. Some civil Society Organization consulted included Catholic Commission for Development, Civil Society Net for Agriculture and farmers Union of Malawi. Main issues raised by non-governmental organizations included: transparency and accountability in implementation of projects, incorporation of livestock component in Malawi Agricultural Commercialization Project, involvement of non-governmental organization in planning and implementation of disaster mitigation related projects, involvement of flood affected people in design and implementation of projects, avoiding duplication in implementation of projects and transparency in resource allocation and utilization on various. Some members of non-governmental organizations raised issues on high costs of pesticides for irrigation farmers. The issues will be incorporated in environmental and social management plans for sub-projects. Most of issues raised by non-governmental organizations would be addressed during planning and implementation cycle of the projects at district level. List of officials consulted is attached in annex 6-12 of the report.
- d) Consultations with extension workers and lead farmers in selected 6 districts in Salima, Mchinji, Lilongwe, Kasungu and Dedza districts Views from from extension workers and lead farmers included: consideration of suitable fertilizers and hybrid seeds for cereals and legumes; considerations of loans for lead farmers to purchase farm equipment, consideration of woodlot development, incorporation of agro-forestry, consideration of motorbikes for extension workers supervision among others. Other important issues discussed included incorporation of compost manure and land conservation programme in the project. List of extension workers consulted is attached in annexes 8 -11 of the report.

Step 4: Development of Environmental and Social Screening Forms.

This step involved the preparation of checklist for appraisal of the potential sub-projects from the components of the projects. The screening check list would be used by local council staff for screening potential impacts of projects on the proposed sites, and also around the environment. The screening form contains basic checklist for identifying potential impacts whether from rehabilitation of damaged roads, bridges, irrigation schemes among others. Copy of screening form is attached in annexes 3 and 4 of the report.

Step 5: Preparation of Generic Environmental and Social Management Plans.

This step involved the identification of mitigation measures for the potential negative impacts; identification of agencies for implementation of mitigation measures, budget estimates and development of monitoring systems for the implementation of mitigation measures. Samples of generic environmental and social management plans are included as tables 5 and 6 in chapter 8 of the report.

1.10.0 CONSTRAINTS AND LIMITATIONS.

The information presented in this report is by and large consistent with the data and information gathered through the various sources and approaches outlined above. However, just as in any study, there could be some gaps of information in the report. One constraint was that some local leaders and farmers in rural areas (who are ideally key stakeholders to the project) understood differently the purpose of environmental and social assessment of the project due lack of knowledge and advance awareness of the exercise. Some farmers and members of Area Development Committee in Kasungu and Mchinji District thought the project would provide free fertilizers, hybrid seeds and tractors to farmers. In view of this, the consultants devoted some considerable time in awareness discussions, including question and answer sessions, prior to settling down to real issues for their input.

Secondly, the consultants could not interview and discuss with all extension workers and members of farmers groups in sampled areas due to time limitations. Some farmers and members of groups were reported to be in gardens as the exercise took place during peak period of weeding of some crops. Other important agro-dealers have not been consulted and these producers of hybrid seeds in Malawi and producers of pesticides in Malawi. As such, while the findings and issues advanced in this report reflect the general views and feelings of some selected people, they may not cover the specific issues from some unique situations or locations. Lastly, but not least, some of the information in the framework was processed from secondary sources and such data include information for initial project proposals, rainfall and temperature data, employment data, population data among others. It is therefore necessary to understand such information with the time reference and their inherent limitations.

2.0.0 CHAPTER TWO: PROJECT DESCRIPTION AND IMPLEMENTATION OF ACTIVITIES.

2.1.0 AIM AND OBJECTIVES

The aim of the project is to promote in sustainable agricultural transformation that will result in significant growth of the agricultural sector, expanding incomes for farm households, improved food and nutrition security for all Malawians, and increased agricultural exports. Specific objectives include the following:

- a) Enhance agricultural production and productivity in Malawi
- b) Enhance diversification of agricultural production and marketed surpluses for exports
- c) Improve the use of irrigation in crop production to enhance food security
- d) To increase farm mechanisation, and value addition on agricultural produce
- e) To improve access to well functioning domestic and international markets

The project has three interrelated components which can stimulate transformation in both short and medium terms of various agricultural activities for smallholder farmers and commercial farmers in Malawi. The three components are: Building Productive Alliance; Support to Investment Enabling Services and Project Coordination and Management Component. The following paragraphs highlight objectives and activities under each component.

2.2.0 COMPONENT 1: BUILDING PRODUCTIVE ALLIANCE (US\$65 MILLION)

The objective of this component is to support small-scale farmers integrate into value chains by improving their capacity to finance and execute productivity-enhancing investments and respond to the requirements of the end-markets and buyers. This component will finance the following: (a) organization of and capacity building in Producer Organizations (approximately US\$15 million); (b) matching grant investments in Productive Organizations; (c) partial credit guarantee fund; and (d) public service infrastructure in selected areas.

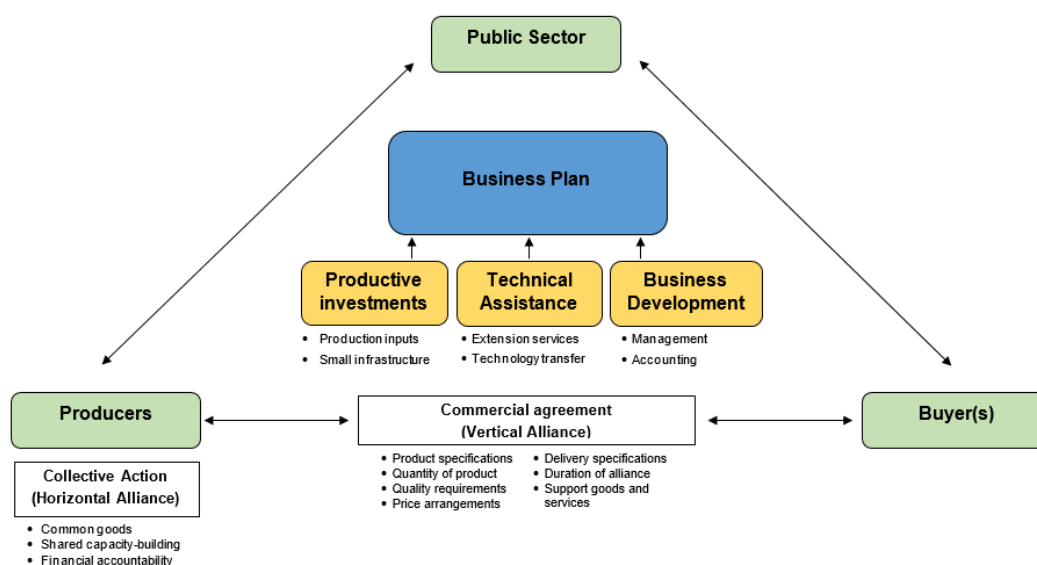
2.2.1 Sub-component 1.1 Horizontal Alliances (PO Formation, US\$15 million)

The objective of the sub-component is to organize smallholder producers into formal organizations and to strengthen the governance capacities of these newly formed farmer organizations for the purpose of them being able to effectively enter PAs with off takers. Special attention will be given to emerging women and youth POs to participate in PAs. This will be done by carrying out an effective communication and dissemination campaign and strengthening the capacity of these new farmer organizations in their ability to coordinate their business activities and manage funds. The communication and dissemination will support of PO formation, but will also advertise PA opportunity to market-ready POs.

2.2.2 Subcomponent 1.2 Productive Alliances (US\$32 million)

The objective of the subcomponent is to implement Productive Alliances (PA) in Malawi by financing the business proposals of the PAs that are successfully selected through the calls for proposals outlined in Component 1.1. A PA is based on a commercial agreement between a project supported PO and a commercial off-taker.

Figure 1. Stakeholders in Productive Alliances



The project will finance the costs related to the sub-projects of the PAs. The TAs are fully financed by the project while inputs and other working capital will need to be financed by the POs and financial institutions facilitated through the Partial Credit Guarantee Fund. MGs will be available to cover up to 70 percent of the total investment costs. The rest will be self-financed through cash or/and in kind and the difference through financial institutions, if any. The involvement of the financial institutions should happen from the beginning of the formulation of the productive alliance so that they can gain deeper knowledge on the producer organizations and appraise sub-projects. The project will also look for opportunities to support new income generating value chains utilizing agriculture products and practices better adapted to climate risks, such as more drought-resistant varieties and wider adoption of climate-smart farming systems.

Partial Credit Guarantee Fund (PCG) will be established in order to reduce risk exposure of financial institutions in financing producer organizations, with allocation of US\$3 million. The sub-projects of the PAs will require productive inputs (e.g. seeds and fertilizers) for agricultural production, which may require external finance if the POs' own funds are not sufficient. Although financial institutions are already providing seasonal loans, their current coverage is rather limited in terms of geographic locations and commodities and therefore, may not fit with the project target beneficiaries. A competitively selected third party entity

will manage the PCG on behalf of the PIU. The PCG will provide guarantees to selected financial institutions for their loans to the project beneficiaries. The PCG fees will be priced to cover the operational costs so that it will remain sustainable even after the project. In this scenario, the PCG will compensate the risks involved in reaching new borrowers and commodities. The guarantee will be offered on a first-come, first-served basis and cover up to 70 percent of the risk pari-passu for loans to smallholder borrowers, including project supported POs. The guarantee will cover all administration costs and risks involved. The project will provide tailored technical assistance support to the financial institutions in order to ensure high utilization of the PCG. The support will cover value chain financing in general and more specifically, various technical areas including risk analysis, product development and delivery, and coordination with other value chain actors.

The sub-component will include a special window with focusing on youth POs and Pas. Within this window, the project will also support Mhub and similar business incubator institutions to innovate and develop successful youth business entrepreneurship. Special attention will be given to training, skills development and mentorship in business entrepreneurship, facilitation of negotiations with the industry, targeting agribusiness and horticulture value chains.

2.2.3 Sub-component 1.3 Service Infrastructure for Productive Alliances (US\$18 million)

The subcomponent aims to provide an infrastructure envelope that will invest in 'last mile' public good infrastructure to enable the creation of more PAs (separate from the direct investments in PAs through MGs). This investment envelope will focus on infrastructure whose cost will be prohibitively high for PAs, whose benefits will exceed those to the PAs and reach broader surrounding rural communities, and finally, those that push otherwise unfeasible PAs over the sustainability and profitability line—as such this subcomponent is aimed as an enabler to the PAs but will be managed separately. The infrastructure investments will also help POs to manage the risks, especially drought-related risks, and hence reduce the vulnerability of participating farmers. In addition, these infrastructure investments will be built to ensure sustainability in the face of potential future climate hazards (e.g. extreme precipitation and droughts as expressed in the climate risk screening tool) to make sure farmers do not lose access to economic activities. The activities of this sub-component will be (i) develop/rehabilitate small scale irrigation infrastructure benefiting Producer Organizations (POs) in productive alliances to accelerate the pace of diversification, intensification and commercialization of agricultural production; (ii) Construct/rehabilitate feeder roads to access to the production areas; (iii) improve the access to electricity in project areas; and (iv) provide access to clean water for value addition where required

2.2.4 Rehabilitation of Small Scale Irrigation Schemes

This sub-component will include 'last mile' irrigation infrastructure to allow for small-scale access to water as an enabler for highly productive PAs and POs. Interventions will include

small-scale rehabilitation of existing but non-functional irrigation systems, spot improvement works for small irrigation pumps or provision of new small-scale systems and drainage structures using labor-intensive methods to benefit the productive alliances. Schemes will be selected in accordance with selection criteria, including (i) business orientation of investment and activities associated; (ii) readiness for investment, (ii) stakeholder interest and commitment, (iii) proximity to market and/ or potential to enter into a PA (iv) technical, environmental and social sustainability, and (v) economic rate of return. This will include capacity strengthening for farmers to incorporate climate risks.

2.2.5 Construction/Rehabilitation of Feeder Roads.

This sub-component will include 'last mile' rural road infrastructure to be able to get their products to their clients. Interventions will include small-scale rehabilitation and spot improvement works for short links including drainage structures using labor-intensive methods to benefit the poor. This activity will be implemented by the PIU in close liaison with the Ministry of Transport and Public Works and the Ministry of Local Government and Rural Development through District Councils. The selection criteria will be developed in the PIM. The beneficiary PO will have primary maintenance responsibility and its members will establish maintenance clubs together with rest of the community members and will be trained by the project.

2.2.6 Construction of electricity infrastructure.

Investments will be capped at US\$200,000 (although the average investment is expected to be in the US\$10,000 to US\$20,000 range) per subproject, and will need to fall under the pre-defined list of investments options disclosed a priori by the project's safeguards. The selection will be based on their alignment with existing PAs and their economic rate of return (ERR), and the details of the selection criteria, procurement arrangements, and monitoring and evaluation (M&E) will be included in the PIM. For POs that are constrained by lack of electricity, the project will finance drop down transformers and extension low voltage line for a distance not exceeding 2 km and not exceeding 20,000US\$, and will be done on condition that all other alternatives have been exhausted. The project shall also look at other off grid solutions that can serve the purpose.

2.2.7 Installation of potable water to agricultural market

This sub-component will support POs and Pas that are constrained by access to a good source of clean water. The investment will focus on connecting processing facility to portable water (clean water) sources. In the event that connecting to portable water sources is not possible, then the support will be towards provision of a borehole and all other connecting accessories such as submersible pumps, solar panels, tanks etc. The project will carry out an environmental and social impact assessment and develop an ESMP for the site. This activity will be implemented by the PIU for selected beneficiaries in close liaison with sectoral departments and Environmental Affairs Department.

2.3.0 COMPONENT 2: SUPPORT INVESTMENT ENABLING SERVICES: (US\$18 MILLION)

The objective of the component is to support business enabling services by addressing some of the systemic gaps and challenges that constrain investment and trade in the agribusiness sector. These include access to agricultural finance; access to land for commercial agriculture, and removing some of the barriers to trade for agriculture business such as on standards and certification. The component will address processes in efficient access to finances, land and regulatory and operational business enabling services.

2.3.1 Sub Component 2.1: Access to Agricultural Financing (US\$7 million).

The project will provide technical assistance and capacity building to POs, organized farmer organizations and PAs to participate in warehouse receipt system. It will also provide grant contribution for building and rehabilitation of rural warehouses through PPP arrangements with farmer organizations. This will be implemented with some collaboration with ACE, AHCX, and agri-business companies in Malawi. The location of the rural warehouses will be selected by the agribusiness companies to ensure their strong commitment and a commercially-directed investment framework. Technical Assistance will be provided to the farmer organizations and SMEs. The project funds will be leveraged by contributions from other donor agencies and private sector players to achieve a larger impact. Progress of the PPP formulation will be closely monitored and supported to reduce coordination failures among key stakeholders.

2.3.2 Sub Component 2.2: Access to Land for Commercial Agriculture: (US\$6 million)

The objective of the sub-component is to support the policy and regulatory environment aimed at increasing access to land and tenure security for commercially oriented smallholder and commercial farmers, and other actors in the agriculture value chains. Main activities under this organization will be as follows:

- a) Capacity building for stakeholders (Ministry of Lands, Housing and Urban Development Ministry of Trade, MITC, Ministry of Agriculture and private sector Institutions) as regards to the implementation of the new land bills within the context of PA. Within this capacity building support, the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) and the Principles for Responsible Investment in Agriculture and Food Systems (RIA) will be duly integrated. TA will be hired.
- b) Support for registration of land processes and equipment to the selected POs (based on need) in order to ensure land tenure security. The project will work closely with the Ministry of Lands, Housing and Urban Development to register the land pieces and provide title deeds to respective POs. The project will cover the costs related to all processes to ensure that this happen. Land rights for women and youth will be particularly protected and strengthened.

- c) Support for Malawi Investment and Trade Center (MITC) to acquire land for commercial investments in the agriculture sector, in line with the new land bills. MITC will be connected to Land Information System. Ministry of Lands is conducting a performance study on estates and the results will identify land for possible reallocations. The project will strengthen multi sectoral linkages and operationalization of Land Information and Management System by provision of technical assistance and equipment to MITC and the Ministry of Lands, Housing and Urban Development.

2.3.3 Sub Component 2.3: Support for business enabling services (US\$5 million)

The project shall support improvements in services (operations and regulations) to agribusiness related to standards and certification provided by Malawi Bureau of Standards (MBS). It will address inefficiencies in product certification that affect agriculture businesses that make the agriculture products less competitive on the domestic and international markets, such as:- a) lack of capacity by the bureau to execute its responsibilities in a timely manner; b) overlaps between MBS technical regulations and some of the country's laws and duplications on of inspection responsibilities with Ministry of Agriculture, especially those related to food safety; and c) unnecessary or high inspection fees. The project will support a) the introduction of risk assessment, improved market surveillance, and incentives for more compliance responsibilities to the agribusiness, b) improved efficiencies to testing and certification, c) strengthening, coordinating and improving the implementation of technical regulations in the BOS and other relevant ministries or agencies and d) introduction of automation to certification processes. The sub-component will provide finance directly to the Malawi Bureau of Standards (MBS) to undertake these activities. The project will also provide financing the Bureau to facilitate POs, organized farmers and PAs to obtain certification standards such as a) SPS certification; b) global gap; c) rain forest; d) halaal certification; e) fair trade certification and f) HACCP certification. It will also provide finance to at least three Malawian manufacturing firms with horizontal links to POs or organized farmers to obtain ISO certification.

2.4.0 COMPONENT 3: CONTINGENT EMERGENCY RESPONSE.

This component will cover emergency response and recovery costs during project period. The component has not been allocated initial budget at this stage. However, it will allow for rapid reallocation of project proceeds in the event of future natural or man-made disaster or crisis that has caused or is likely to imminently cause a major adverse economic and/or social impact during the life of the project. The component will be used to draw resources from the unallocated expenditure category and/or allow the government to request the Bank to reallocate financing from other project components to cover disaster activities which would require urgent assistance

2.5.0 COMPONENT 4: PROJECT COORDINATION AND MANAGEMENT

This component will finance activities related to the coordination and actual implementation of project's activities. This includes both costs for: (i) project management/coordination including procurement, financial management, monitoring and evaluation mitigation of potential negative social and environmental impacts, and communication about project implementation and results; (ii) sector and cross-sector coordination with the agriculture, water, industry, trade, lands plans and frameworks; and (iii) facilitating inter-ministerial collaboration on tackling implementation challenges. Given the multi-sectoral nature of the Project, a Project Implementation Unit (PIU) will be established to handle day to day activities of the Project. A Project Steering Committee (PSC) will be established to provide overall guidance and will include the Ministries of Agriculture, Irrigation and Water Development, Industry, Trade and Tourism, and Lands, Housing and Urban Development. Private sector representatives (producer organizations

2.6.0 PROJECT MANAGEMENT AND IMPLEMENTATION ARRANGEMENT

Four main structures will be established at national level to facilitate smooth implementation of Malawi Agricultural Commercialization Project. The structures include Project Implementation Unit, Project Steering Committee, Project Technical Committee, and Partnership between International Development Association and International Finance Corporation. Sections 2.5.1 to 2.5.4 highlight the roles of each of these structures.

At local level, implementation of The Malawi Agricultural Commercialization Project will be implemented through an existing decentralized framework. District Agriculture Development Officer and district councils will coordinate the implementation of sub-projects under the supervision of Project Implementation Unit.

2.6.1 Project Implementation Unit

The implementation of the project will be under the supervision of Ministry of Agriculture, Irrigation and Water Development and Ministry of Industry, Trade and Tourism. An independent Project Implementation Unit (PIU) will be established to oversee day to day project management, coordination of implementation, monitor progress and account for utilization of project funds. The PIU will be headed by the Project Coordinator, and include the following key professionals: Procurement Specialists, Finance Management Specialist, Monitoring and Evaluation Specialist, Agribusiness Specialist, Institutional Development Specialist, Irrigation/Civil Engineer and Environmental/Social Development Specialist. All the PIU staff will comprise of experienced professionals to be recruited through a competitive process.

2.6.2 Project Steering Committee

Project Steering Committee will be established to provide overall strategic guidance and comprise of Ministry of Agriculture, Irrigation and Water Development (MoAIWD), Ministry of Industry, Trade and Tourism (MoITT), Malawi Investment and Trade Centre (MITC), Ministry of Lands, Housing and Urban Development (MoLHUD) and Ministry of Finance, Economic Planning and Development (MoFEPD), all at PS level or delegated, and representatives from private sector and farmers. The PSC will be chaired by the PS for Agriculture, and co-chaired by PS for Ministry of Trade. The PSC will be the highest

oversight body responsible for providing general policy guidance to the project. The Project Coordinator will serve as secretary to the PSC, which will meet bi-annually.

2.6.3 Project Technical Committee

Project Technical Committee will be established under the PSC, and comprise of implementing agencies of the project (private sector, financial institutions, producer organizations representatives, directors of relevant implementing Ministries and government departments, brokers and relevant productive alliance service providers). The PTC will provide technical oversight of project implementation. This structure will be chaired by the Director of Planning in the Ministry of Agriculture and co-chaired by Director of Planning in Ministry of Trade. The PIU will function as the secretariat for both the PSC and the PTC. The PTC will meet on a quarterly basis in the initial years but later bi-annually.

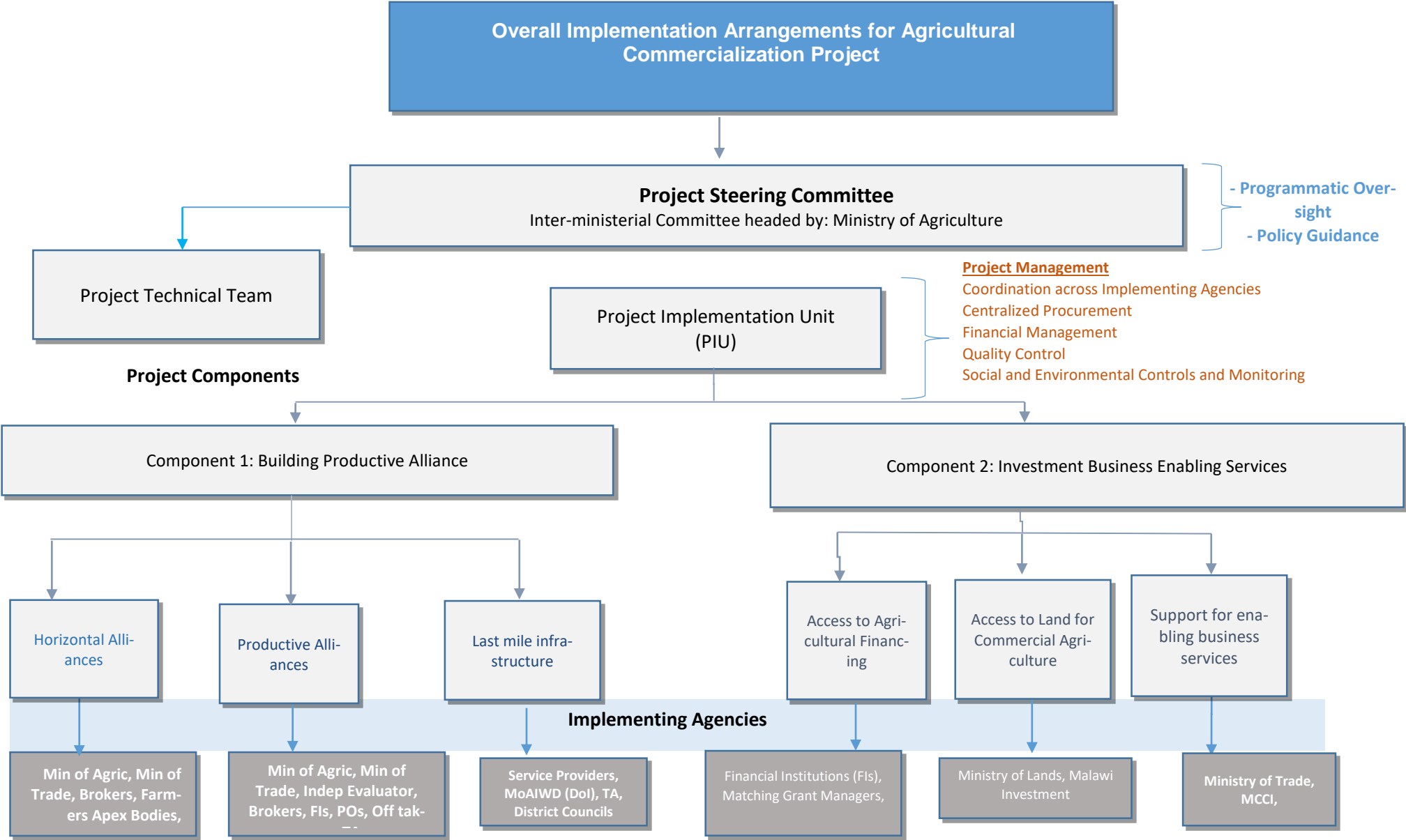
The project will also utilize existing policy dialogue forums to improve dialogue and coordination. Such platforms include Joint Sector Reviews (under Agriculture Sector Wide Approach), Technical Working Groups (Commercial Agriculture and Market Development of ASWAp, and other relevant TWGs under National Exports Strategy). The project will also utilize existing Public Private Dialogue (PPD) forum and other relevant commodity platforms.

In addition to the formal structures outlined above, there will be various other actors involved in implementation. Examples include producers, buyers, brokers, technical assistance and business services providers, independent evaluators and financial institutions. The PIU will facilitate to contract competent stakeholders (on a competitive basis) through MOUs with clear roles and responsibility as outlined in contracts.

2.6.4 Partnership of International Finance Corporation and International Development Association.

The project will be implemented in collaboration with the International Finance Corporation (IFC) and other development partners. IFC will provide advisory services on operations of agribusiness work, and required tools for ensuring an effective linkage between off takers and producer organizations. The World Bank and Government of Malawi will undertake joint implementation support missions on a bi-annual basis to provide guidance to project implementation teams.

Figure 2: Implementation Arrangements of the project



2.7.0 INSTITUTIONAL ARRANGMENTS ON IMPLEMENTATION

There are five main institutions responsible for implementation of Malawi Agricultural Commercialization Project. These are (a) the Ministry of Agriculture, Irrigation and Water Development (MOAIWD); (b) Ministry of Industry, Trade and Tourism (MoITT); (c) Ministry of Lands, Housing and Urban Development (MoLHUD); (d) Malawi Investments and Trade Centre (MITC); and (e) Productive Alliance Stakeholders. The following paragraphs highlight key roles for each of the institutions:

2.7.1 The Ministry of Agriculture, Irrigation and Water Development (MOAIWD)

Ministry of Agriculture, Irrigation and Water Development will have overall responsibility for implementation of the project. It will work hand in hand with its respective government departments in order to coordinate specific activities of the project. The Land Resources and Conservation Department will be responsible for ensuring integration of climate smart agriculture, while Department of Agricultural Extension will ensure strong integration of gender within the project. The Trade and Marketing Unit which sits in the Department of Planning of Ministry of Agriculture will be responsible for supporting marketing environment of the agricultural commodities while working closely with the Ministry of Industry, Trade and Tourism. At the implementation level, the project will work with respective District Councils and work closely with respective POs.

2.7.2 Ministry of Industry, Trade and Tourism

Ministry of Industry, Trade and Tourism will co-lead the implementation of the project, and be responsible for promotion of trade and private sector development, particularly championing to create a conducive environment for marketing and trade of commodities. It will work closely with its department for private sector development in promoting efforts by off takers to strengthen linkages between POs and off takers. On the latter, the cooperative unit of the Ministry of Trade will support strengthening horizontal linkages to make sure that various producer organizations in form of cooperatives are properly registered and conform to the expected standards. The Ministry will participate and Co-chair the PSC meetings (PS level) and PTC (at Director level).

2.7.3 Malawi Investment and Trade Centre (MITC)

Malawi Investment and Trade Centre as trade and inward investment promotion agency will provide specialized support to investors in all prioritized sectors for industrializing Malawi and promoting and facilitating export products and services of Malawi. Within the context of recently enacted land bills, the agency has been given the mandate to avail land for commercial investments in the agriculture sector.

Malawi Investment and Trade Centre will therefore work closely with Ministry of Lands, Housing and Urban Development to unveil the access to land bottleneck in order to promote agricultural commercialization. As a one stop center, the MITC will also facilitate in linking foreign buyers and investors to Malawian products. Ministry of Lands will create a conducive environment to promote access to land as well as tenure security. As part of operationalization of the new land bills, particular focus will be made to strengthen land tenure security particularly to vulnerable women and youth, while also ensuring efficiency and utilization of idle estates.

2.8.0 POTENTIAL LAND ACQUISITION REQUIREMENTS FOR PROJECT ACTIVITIES.

The proposed Malawi Agricultural Commercialization Project will be implemented in rural areas of the country where 85% of Malawi's population reside. Much of land in rural areas of Malawi is customary land tenure. Customary land tenure means that land is owned by families through cultural inheritance. Land holding sizes have declined over the last 20 years in rural areas due to rapid population growth.

The proposed Malawi Agricultural Commercialization Project has high potential of land acquisition for project activities. There are three project components which would require land acquisition from households for the project related activities: These are:

- a) Customary land will be acquired for construction/rehabilitation of rural warehouses for Productive Organizations (farmers clubs or cooperatives). In this project, smallholder farmers will mobilize and consolidate various pieces of gardens to optimize farm mechanization and enhance production of viable cash crops for viable exports. It is envisaged that most commercial farms will be in the region of 5-10 hectares.
- b) Customary land will be acquired for construction of rural warehouses and last mile public infrastructure. Last mile public infrastructure will include feeder roads, rehabilitation of small scale irrigation schemes and construction of electricity and potable water facilities.
- c) Customary land will be acquired for rehabilitation works and expansion of small scale irrigation schemes in some selected rural areas of Malawi.

Detailed procedures for land acquisition for construction/rehabilitation of rural warehouses and for feeder roads rehabilitation of irrigation schemes and construction of facilities for electricity and potable water has been outlined in Resettlement Policy Framework. In essence, land acquisition and compensation procedure must be in line with provisions of Involuntary Resettlement Policies (OP 4:12) of The World Bank Group

2.8.1 **Description of Potential Negative Socio-Economic Impacts of land acquisitions.**

Land acquisitions for construction/rehabilitation of rural warehouses, land for construction of feeder roads and rehabilitation/expansion of small scale irrigation schemes may affect various categories of people in rural areas of Malawi. Project affected people would include individuals, households, groups of people and vulnerable groups of people.

Communities may be affected by direct losses of land or by restriction to access land or other assets such as roads, foot paths and natural resources. Restrictions to access to assets inhibit free movement of people and also increase distance of travel in communities. In addition, restriction to access to natural resources constraints means of livelihoods. Such resettlement exercises undertaken whether within rural communities or urban setting trigger a number of negative externalities on the affected people. In general, some impacts emanate from the consequences of losses of access to their settlement sites, others from loss of relationships and loss of access to their traditional productive assets. Furthermore, some impacts arise from loss of social cohesion and relations. Examples of potential negative socio - economic impacts from such sources are outlined below here:

Table 1: Summary of main negative social and economic impacts from land acquisition and resettlement activities

Category of losses	Social and economic impacts
Displacement from land	<ul style="list-style-type: none"> • Landlessness • Loss of productive resource for agriculture and other businesses
Loss of residential properties to construction/rehabilitation of rural warehouses of Productive Organizations	<ul style="list-style-type: none"> • Landlessness, homelessness • Impoverishment of people • Disturbance of house production systems • Loss of sources of income • Weakening of community system and social networks. • Loss of access to ancestral sites, graveyards • Loss of access to social amenities such as hospitals and schools. • Loss of traditional authority.
Loss of assets or access to assets	<ul style="list-style-type: none"> • Impoverishment • Loss of sources of income • Loss of employment opportunities (self – employment)
Loss of income sources or means of livelihood	<ul style="list-style-type: none"> • Impoverishment • Loss of self – employment opportunities • Disruption of attainment of services such as schools, health services resulting in further impoverishment, malnourishment
Loss of identity and cultural survival	<ul style="list-style-type: none"> • Alienation of persons from their tribal society • Lack of access to community support
Loss of access or proximity to social amenities e.g. water sources	<ul style="list-style-type: none"> • Impoverishment. • Loss of sources of income • Increased time to access resources. Loss or shortage of time for other activities.
Blockage of footpaths/pathways	<ul style="list-style-type: none"> • Increase in travel distance due to longer route
Loss of grazing land	<ul style="list-style-type: none"> • Difficulties in rearing livestock
Blockage of access to public water bodies	<ul style="list-style-type: none"> • Difficulties in collection of water for domestic uses • Difficulties in collection of water for irrigation

2.8.2 Potential Project Affected People

Project affected people, refers to those households or members of society directly affected, socially and economically, by a project construction, as a result of: **(i)** The appropriation of land and other assets causing (relocation or loss of shelter; loss of assets or access to assets; loss of income sources or means of livelihood, whether or not of the affected person; and persons must move to another location); and **(ii)** The restriction or denial of access to legally designated pieces of land that result in adverse impacts on the livelihood of the economically or physically displaced persons.

a) Categories of project affected people

It is not possible at this stage to specifically highlight the specific households to be affected by acquisition of land for construction/rehabilitation of rural warehouses or construction of feeder roads and rehabilitation of irrigation schemes. However, the likely displaced (economically or physically) persons can be categorized into three groups: (i) individuals; (ii) households; and (iii) vulnerable groups or people.

Individuals. This category refer to those people with personal property/ businesses and may be affected in form of losses of their personal assets, land, property, or access to natural and/or economical resources as a result of land acquisition for construction/rehabilitation of rural warehouses or construction of feeder roads and other facilities.

Households: A household is affected if one or more of its members is affected by the program activities, either by loss of property, land or access, or is otherwise affected in any way by program activities. In case of this project, some household may lose family gardens, family wells, family trees and fruit trees, family winter gardens, family houses, family livestock kraals among others. A family is affected because of loss of source of livelihoods to members of the family.

Vulnerable groups of people: Vulnerable groups refer to underprivileged members of the society. Most of vulnerable groups are resource poor people. In implementation of project of this nature, vulnerable groups may be made worse off if they are not protected from undue negative risks. In rural areas of Malawi, vulnerable groups who may be affected by land acquisition and loss of properties may include the following:

- i) **Unmarried women:** These women may be dependent on sons, brothers, or others for support. Since an affected individual is able to name the person with whom he or she is linked to in dependency as part of the household, resettlement will never sever this link.
 - ii) **Elderly:** Elderly people farm or work as long as they are able. Their economic viability may depend on how much land they farm or how much they produce, because by producing even small amounts of food to "exchange" with others, they can subsist on cooked food and generous return gifts of cereal from relatives, friends, and neighbours. Losing land will affect their economic viability.
 - iii) **People living with HIV/AIDS:** Some parts of rural areas of Malawi, where the Malawi Commercialization Project will be implemented have relatively high percentages of the poor and total population are living with HIV or are terminally ill with AIDS. Many are beneficiaries of numerous health programs from government, international organizations, and NGOs. These will require special attention to enable them benefit from the project.
 - iv) **Orphans:** There are a considerable number of orphaned children in Malawi due to impacts of HIV/Aids on parents. These children today fall into three categories of care: (i) those being looked after by an uncle, aunt, grandparents, or other close relative; (ii) those being looked after by the government, local authorities, or NGOs; and (iii) those living alone and providing for themselves and other siblings. These children are more vulnerable since they are often "voiceless"; they have no parents to defend or stand up for them and they are considered too young to be heard. Orphaned children engage in any form of economic activity to provide for themselves and their siblings, including selling paraffin or water, artisanal mining, and exploitative employment, among others.
 - v) **Female-headed households:** These households may depend on sons, brothers, or others for support. However, there are also cases where women are the main breadwinner in their household even when the men have remained with the family. Women therefore need relatively easy access to farm inputs in project of this nature. In some case, some women have no formal rights to land and lose such pieces quite easily. Special considerations have to be made on land acquisition for construction/rehabilitation of rural warehouses to minimize displacement of female headed households during land acquisition for commercial farms.
- **Child headed households/Youth:** Child headed households and youth are vulnerable because most of them are voiceless. During land acquisition for commercial farms or land for feeder roads,

children/youth may lose family houses/land to commercial farmers and may not get assistance to repose their properties land. In addition, some women farmers are discriminated in technical support and provision of agricultural inputs in rural areas.

These groups are identified as particularly vulnerable to ensure that they are included in the socioeconomic and baseline study so that: (i) they are individually consulted and given the opportunity to participate in the project activities under Malawi Agricultural Commercialization Project; (ii) their resettlement/compensation are designed to improve their pre-project livelihood; (iii) they receive special attention to ensure that their pre-project livelihood is indeed improved upon; (iv) they are given technical and financial assistance if they wish to make use of the grievance mechanisms of the project; and (v) decisions concerning them are made in the shortest possible time.

Section 6.3.0 in chapter Six outline procedures of grievance redress mechanisms for project affected people or households during land acquisition or implementation of the project.

2.9.0 AGRICULTURAL COMMERCIALIZATION PROJECT AND MIGRANT LABOUR FORCE.

In Malawi, agricultural activities provide about 64 % of employment opportunities in Malawi and about 82 % of all employment opportunities in rural areas in rural areas. Smallholder agriculture, which constitutes about 85% of agricultural sector, labour intensive as it focuses on smallholder gardens where farm mechanization is rarely used. Most agricultural activities such as land clearance, ridging, planting of crops, weeding of crops, application of fertilizers use laborers from time to time. Some conservative estimates indicate that about 15-20 short term laborers are used on a commercial farm of about one hectare. Some family farms use family labour especially women and children.

One major implication of Malawi Commercial agricultural Commercialization Project on labour market is increase of migrant labour force. There are two components of the project which would recruit migrant workers. These are:

- a) **Irrigation Schemes.** Productive Organizations will recruit migrant workers to continuous labor for land husbandry activities and crop production activities. Migrant labour may be women or male workers. Some migrant workers may reside on farms and some may reside around the commercial farmers. Migrant workers or even tenants are preferred in Malawian commercial farms and estates because of commitment to work throughout the day or weeks
- b) **Construction sites.** Hired contractors will hire migrant workers to construct feeder roads, construction of electricity and potable water infrastructure and rehabilitation works for small scale irrigation schemes. Migrant workers are preferred by construction contractors because of commitment to work throughout the day or weeks

Migrant workers will certainly contribute positively to the overall production of agricultural produce in various commercial farms or irrigation schemes. However, increase in migrant labour force poses several environmental and social challenges within and around commercial farms and rehabilitated irrigation schemes. Some of the will be the following:

- a) Proliferation of temporary and unsightly housing camps for migrant workers around the commercial farms and irrigation schemes.
- b) Overcrowding and poor sanitary conditions in temporary structures.
- c) Competitions over the utilization of natural resources with host communities.
- d) Conflicts and tensions between local residents and migrant workers.
- e) Increase in gender based violence among migrant workers households
- f) Increase in discriminate solid and liquid waste disposal
- g) Outbreak of communicable diseases among the housing camps
- h) Increase in deforestation around the commercial farms and irrigation schemes
- i) Increase in interference in local marriages by unmarried migrant workers
- j) Increase in theft and burglaries among the migrant housing camps.
- k) Risks of child labour among commercial farms and irrigation schemes
- l) Increase in spread of sexually transmitted diseases including HIV/Aids among migrant workers and host communities

This study has recommended potential mitigation measures for all these labour related risks. A sample of mitigation plan with recommended mitigation measures is outlined on page 80 of this document

3.0.0 CHAPTER THREE: REVIEW OF POTENTIAL ALTERNATIVES WITHIN THE PROJECT

The purpose of this chapter is to explore available project alternatives which if adopted - could have minimal negative environmental and social impacts. The concept of “within project alternatives” relates to innovative options other than conventional development strategies which if adopted in implementation of the project can help to minimize the scope of the potential negative impacts. In this regard, one selected alternative considered in this chapter is the “no project” option. “Within the project alternatives” considered in the chapter are: alternatives in irrigation systems at irrigation schemes, alternative cash crops to current cash crops and alternative methods of disposal of wastes within irrigated estates.

3.1.0 Assessment of “No Project” Option for the project.

This scenario suggests that the proposed Malawi Agriculture Commercialization Project should be abandoned altogether. One main environmental advantage of the “no project option” is that most of predicted negative impacts would not occur. In addition, considerable land would be free from development activities and hence enhance the conservation of land resources and vegetation in Malawi. In addition, the abandonment of Malawi Agricultural Commercialization Project would reduce the risks of spread of HIV/Aid and other sexually transmitted infections among local communities. This would be because there would be no influx of migrant workers who otherwise would enhance risks of increase in the spread of diseases through interactions with local people.

However, the main disadvantage of **No Project option**” is that the abandonment of the project would deprive Malawians right to economic development and right to decent environment .This means that these options would not achieve socio-economic benefits to Malawi, and is therefore unacceptable option. The appropriate option is to implement Malawi Agricultural Commercialization Project with integration of environmental mitigation measures recommended in the environmental and social management plan, outlined in chapter 7 in this document.

3.2.0 Assessment of alternatives on irrigation systems.

There are two basic types of irrigation systems which can be installed on irrigation schemes under Malawi Agricultural Commercialization Project. These are surface irrigation and overhead irrigation system. Both of these types of irrigation systems may work at the proposed some of the irrigation schemes. However, what may differentiate one systems from the other are overall environmental advantages, financial costs and efficiency in resource utilisation. Table below summarises main environmental advantages and disadvantages of both surface and overhead irrigation systems. Analysis of disadvantages and advantages of each of potential irrigation system is one of the key factor in choice of appropriate irrigation designs of a commercial estate.

Table 2: An overview of environmental advantages and disadvantages of surface and overhead irrigation systems.

Surface Irrigation	Overhead irrigation (sprinkler system)
Advantages	Advantages
<ul style="list-style-type: none"> • Cheaper in construction • Covers more command area • Easier to operate, needs less skills • Opportunity to re-cycle the water discharges from farms 	<ul style="list-style-type: none"> • Economic use of water. • Minimal soil erosion and siltation. • Minimal cases of stagnant water. • Minimal water losses from evaporation and infiltration.
(b) Disadvantages	(b) Disadvantages
<ul style="list-style-type: none"> • Excessive losses of water through evaporation and infiltration within earth canals • Risks of stagnant water and multiplications of pests such as mosquitoes. • Risks siltation within earth canals 	<ul style="list-style-type: none"> • High initial capital outlay. • Needs reliable technical support and spare parts.

In surface irrigation system, water is normally diverted or lifted into open canal system. Water is then driven into secondary and feeder canals within the farms. In some cases water is stored within reservoirs within the command area and water is released at intervals into the earth canals to crops at intervals. This type of system requires soil types with high clay content, and that the water source must be at higher level than command area enables water flow by gravity. The system is easier to operate and covers greater area within a shorter time.

Sprinkler systems have either underground or surface pipes that supply stand alone sprinkler nozzles'. These sprinklers are moved from position to position after a pre-specified stand time has been completed. The sprinklers are supplied through a hose which is dragged from position to position (hence the name "dragline"). Overhead irrigation systems are simple to operate and are suited for areas with variable soils and topography. It is potentially less wasteful of water and uses less labour than surface irrigation. However, it requires high initial capital costs, it requires sophisticated design skills and on farm support in terms of maintenance and the supply of spare parts.



Figure 3: Sample of centre pivot irrigation system in maize commercial farm.

In use of centre pivot irrigation system, required amount of water is emitted from nozzles over crops. This system has become more popular due to its efficiency in water utilization and application as well as better results. Use of centre pivot system reduces risks of water logging and land salinization within the project area.

Overhead irrigation systems are simple to operate and are suited for areas with variable soils and topography. It is potentially less wasteful of water and uses less labour than surface irrigation. However, it requires high initial capital costs, it requires sophisticated design skills and on farm support in terms of maintenance and the supply of spare parts. This study recommends that the appropriate irrigation system is overhead system

However, smallholder farmers on small scale irrigation schemes may not be able to maintain centre pivot system due to high costs of maintenance and electricity costs. In addition, smallholder farmers may not hire skilled personnel to maintain the system when it is broken. In view of these challenges, this study recommends that the appropriate irrigation system for smallholder irrigated schemes is surface canal. The management of this system would be much easier and at lower costs for the farmers.

3.3.0 Assessment of alternative cash crops for commercial farmers.

One well known cash crop in Malawi which can be grown on commercial farms by smallholder farmers is tobacco. Tobacco grows well within the alluvial sandy-loam soils and the hot weather conditions of area. Unlike estates, tobacco production requires about 5-6 months to manure and harvest for marketing. There are two other environmental advantages of tobacco cultivation over legumes cultivation. Tobacco production has much higher crop output per hectare over legumes production. In addition, tobacco crop is less susceptible to pests and diseases compared to groundnuts and soya beans.

Samples of tobacco (potential alternative crop) and groundnuts.



A sample of tobacco crop at the beginning of harvesting season.

Yield of tobacco per hectare from a good crop is about 5 tones. Production of good crops as seen in this sample picture requires high capital inputs and labour for farmers. Most farmers decide to obtain high interest loans to fiancé such capital requirements. Unfortunately, most farmers are unable to repay loans due to low market prices for the tobacco produce in Malawi



A sample of groundnut field. The crop is about 2 months old.

Production of legumes such as groundnuts and soya beans do not require significant capital inputs as is the case of tobacco. In addition, the demand for groundnuts and soya beans has recently increased because of good crop marketing prices and competitive markets in South Africa and Western Europe. Crop marketing prices range from MK800 to MK1200 per kilogramme for a good crop yield of groundnuts and soya beans at international market.

Between 1980 and 2000, tobacco was an attractive cash crop for commercial estate farmers in Malawi because of good yields and good prices which were offered by ADMARC and other tobacco buying companies at that time. However, over the last ten years, tobacco has not been a reliable as a cash crop to farmers due to low prices as well as continuous drought conditions which have affected production and harvests. Currently, tobacco as a cash crop has two economic disadvantages. First, tobacco sales are facing poor market prices' at auction sales as well as international level. As a result most farmers get low income from tobacco production after deduction of capital costs and some transportation expenses. Secondly, volumes of

markets for tobacco at international level are dwindling due to increase in anti-smoking lobby at world level.

On the other hand, production legumes and paprika is guaranteed of good market at the due to increasing demand and stable international markets in Western Europe and USA. Prospects for better macadamia market prices are high in view of growth in demand of the commodity at world markets.

In conclusion, it can be said that the production of legumes and macadamia is much better option than tobacco. Legumes and pulses have much better returns for developer from the both the fields and markets. In addition, estates are a perennial crop, and the same plantations are able to provide more harvests to the developer in longer period of time.

3.4.0 Alternative methods for disposal of wastes from crops on the commercial farms.

Stalks and leaves are some main wastes from cereals and legumes from commercial farms or irrigation schemes. One simple method of disposal of all these wastes is open fire burning. Open fire burning is normally simple and cost effective method of disposal of dry maize stalks and leaves from legumes. Fire is able to decompose the dry vegetative matter within short period of time and within the site of collection. However main environmental disadvantages of burning of maize stalks and leaves from legumes include the killing of useful non-target wildlife and micro-organism with irrigated estates. The other environmental problem is the emissions of green houses gases (carbon dioxide, sulphur oxide and nitrous oxide) into the atmosphere. Alternative and environmentally friendly method is to use maize stalks and leaves from legumes as mulch within irrigated estates. Maize stalks and leaves from legumes can be properly stored and then used to conserve water and land resources within irrigated estates. Maize stalks can adequately control evaporation and soil erosion. In long term decomposition of maize stalks and leaves would enhance soil fertility through humus development.

On a local scene, maize stalks and leaves from legumes are used as animal feeds. As a way of disposal of excess wastes, commercial farmers under Malawi Agricultural Commercialization Project may wish to distribute some of maize stalks and leaves from legumes to local farmers with livestock around commercial estates.

4.0.0 DESCRIPTION OF POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK FOR THE PREPARATION OF ENVIRONMENTAL IMPACT ASSESSMENTS FOR PROJECTS.

4.1.0 POLICY FRAMEWORK FOR PREPARATION OF THE ENVIRONMENT IMPACT ASSESSMENTS.

Over the years, Malawi has taken considerable strides in integration of environmental policies in development programmes with the aim of promoting and consolidating sustainable socio-economic development in the country. Some of environment related policies include: the National Environmental Action Plan, the National Environmental Policy, the Malawi National Land Policy, the Environmental Management Act, Occupational Health, Safety and Welfare Act, Town and Country Planning Act, and Local Government Act among others. Section 4.1.1 below provides an overview of policy framework for preparation of environmental impact assessment for prescribed projects in Malawi. This consideration has been necessary because the project has to observe the requirements of the various policies of the government in planning and implementation.

4.1.1 National Environmental Action Plan (NEAP).

Malawi prepared National Environmental Action Plan (NEAP) as a framework for integrating the environmental planning into the overall socio-economic development of the country through broad public participation. National Environmental Action Plan (NEAP) highlights key environmental issues that need to be addressed which include soil erosion; deforestation; water resources degradation and depletion; threat to fish resources; threat to biodiversity; human habitat degradation; high population growth among others. NEAP also provides guidelines actions to be taken by stakeholders such as local communities, government, agencies, non-governmental organizations and donors in environmental planning and management.

4.1.2 National Environmental Policy (NEP).

National Environmental Policy (2004) is based on the principles of National Environmental Action Plan, and provides broad policy framework on environmental planning in development programmes including undertaking environmental impact assessments for prescribed projects. The overall goal of National Environmental Policy is the promotion of sustainable social and economic development through the sound management of the environment in Malawi. The policy seeks to meet the following goals:

- promote efficient utilisation and management of the country's natural resources and encourage, where appropriate, long-term self-sufficiency in food, fuel wood and other energy requirements;
- facilitate the restoration, maintenance and enhancement of the ecosystems and ecological processes essential for the functioning of the biosphere and prudent use of renewable resources;

The National Environmental Policy has implications on the proposed Malawi Agriculture Commercialization Project in the country. Potential negative impacts would be loss of trees, increase of soil erosion from land leveling and lose soils, sewage discharge, ground water pollution from oils from leakages from construction vehicles among others. As a requirement under the environmental policy, the project will require to upstream adequate measures for protection of soil from erosion. It will be necessary therefore that an appropriate environmental management plan will have to be implemented during implementation and operation of new irrigation schemes and rural market infrastructure among others.

4.2.0 ADMINISTRATIVE FRAMEWORK FOR ENVIRONMENTAL IMPACT ASSESSMENTS.

In Malawi, Environmental Affairs Department in the Ministry of Natural Resources, Energy and Mining provides an administrative framework for environmental impacts assessments for

prescribed projects. The department is based in Lilongwe, and is led by Director of Environmental Affairs who is assisted by a number of professional and administrative officers.

Environmental Affairs Department is supported by a Technical Committee on Environment, a multi-sectoral committee set up under Environment Management Act. It provides expertise advice to Environmental Affairs Department on a wide range environmental matters including scrutinizing environmental assessments for projects. It provides professional opinions and makes necessary recommendations to the Director for appropriate action.

The Director for Environmental Affairs makes further recommendations on environmental impact assessments to the National Council on Environment (NCE) in the Ministry of Natural Resources, Energy and Mining for final consideration. The National Council on Environment is a policy making body and is made up Permanent Secretaries of government ministries and selected parastatals. The National Council of Environment (NCE) provides policy guidance and recommends decisions on environmental impact assessment reports to the Minister responsible for environmental matters. The Department of Environmental Affairs provides secretarial services to both the Technical Committee on Environment and the National Council on Environment

4.3.0 LEGAL FRAMEWORK ON PREPARATION OF ENVIRONMENTAL IMPACT ASSESSMENT.

4.3.1 Environment Management Act (60:02), 1996.

In Malawi, Environment Management Act, 1996 provides the basic legal framework for environmental planning including the preparation of environmental impact assessments for prescribed projects. The Environmental Management Act, 1996 is administered by the Director for Environment Affairs in the Environmental Affairs Department of the Ministry of Climate Change Management and Environment Affairs. The law covers specific responsibilities and duties for various public authorities in the environmental planning and management. The examples are as follows:

Section 9 sets out the powers and functions of the Environmental Affairs Department and duties of the Director of Environmental Affairs. The duties include spearheading environmental planning and monitoring in the country.

Section 10 of the Environment Management Act has provisions for the establishment, powers and duties of the National Council on Environment (NCE). The National Council on Environment is a policy making body which advises the Minister and the government on all matters regarding mainstreaming of environmental planning and management in public and private sector projects. The council is composed of Principal Secretaries of government ministries and selected senior executives of parastatals such as Malawi Bureau of Standards, National Herbarium of Malawi and University of Malawi. Its role includes overseeing the mainstreaming of environmental issues in socio-economic development programmes, overseeing the processing of environmental impact assessments for projects in Malawi. The National Council on Environment meets at least four times a year to deliberate matters.

Section 16 of the Environment Management Act has provisions for the establishment, the powers and duties of an inter-agency Technical Committee on Environment (TCE). The Technical Committee on Environment is composed of multi-disciplinary professionals. It acts as a technical arm for the Department of Environmental Affairs which provides technical expertise and professional recommendations on matters of environmental planning and management including environmental impact assessment of projects. The Technical Committee on Environment (TCE) meets at least six times to scrutinise and review environmental impact assessments for projects and programmes as well as other matters. The Director of

Environmental Affairs provides secretarial services to the Technical Committee on Environment on its operations.

Section 24 of the Environmental Management Act outlines the steps to be followed in the preparation of project briefs of projects which would require environmental impact assessment. Project briefs are the documents for appraisal of projects to determine whether or not environmental impact assessment would be required for particular projects.

Section 26 (3) of the act specifies that any project subject to environmental impact assessment cannot be issued with a licence by any licensing authority in Malawi for implementation until a satisfactory impact study report is approved and a certificate is issued by the Director of Environmental Affairs.

4.3.2 Guidelines for Environmental Impact Assessments (EIA) in Malawi, 1997.

In line with section 24 of the Environmental Management Act, the Government of Republic of Malawi produced a set of Guidelines for Environmental Impact Assessment (EIA) in Malawi in 1997. The principal use is to facilitate the procedures, steps in mainstreaming environmental planning and management in all development programmes. The guidelines are used by government agencies, project developers, donors and the general public in their project planning processes. The aim of the guidelines is to integrate environmental concerns into national development strategies for all types of projects, in both the public and private sectors. The guidelines outline specific roles for institutions in managing environmental impact assessment, the mechanisms for integrating in project planning; provide a list of prescribed projects that *require* an EIA (List A on pages 25 to 29) and a list of projects that *may require* an EIA (List B on pages 30 - 31) in all sectors. In case of the Malawi Agriculture Commercialization Project, sub-projects are prescribed under various sections. Sections A13.4 and A13.5 prescribe projects implemented in flood prone areas. Section A1.2 prescribes new irrigation schemes or rehabilitation of irrigation schemes over 10 hectares in size. The guidelines also provide a framework for the format and structure of the environmental impact assessment reports in order to adequately articulate environmental planning responsiveness.

Both the Environment Management Act (EMA) and the Guidelines for Environmental Impact Assessment in Malawi have implications on the proposed project. The first is that the proposed project falls under prescribed list as required under the guidelines and as such the proponent has to comply with the preparation of an impact assessment as required under section 25 of the Environment Management Act. This is necessary so that the proponent prepares a comprehensive environmental management plan for mitigating potential risks during construction and during operation.

4.4.0 REVIEW OF OTHER RELEVANT POLICIES AND LAWS APPLICABLE FOR THE PROJECT.

4.4.1 National Agriculture Policy (2016)

Malawi Government has developed a National Agriculture Policy to coordinate all efforts towards sustainable agriculture development. The policy includes commercialization agriculture

as one main theme towards enhancement of agriculture and national economy. Among others, the policy advocates for farm mechanization and contract farming as some key measures to enhance competitive agricultural sector. The Malawi Agricultural Commercialization Project incorporates both these aspects. In terms of environmental management, the policy advocates for conservation agriculture best practices. Integrated pest management measures in both smallholder gardens and estate sector.

4.4.2 National Irrigation Policy (2016)

The National Irrigation Policy advocates among others the promotion of sustainable irrigation development systems, which can adequately contribute to increased agriculture production in the country with minimal degradation of water resources and the environment. The policy highlights that some constraints to Malawian farmers to further irrigation development that include inadequate access to appropriate technologies/equipment for land reclamation and expansion, and inadequate trained personnel in irrigation technologies .

With respect to environmental issues, both the policy highlights the need of environmental impact assessments prior to implementation for all large scale and medium scale irrigation projects in Malawi. The requirement is necessary in order to identify in advance serious detrimental impacts which must be avoided and minimised in course of project implementation. Activities under Malawi Agriculture Commercialization Project would have some negative impacts if mitigation measures are not put in place. Significant impacts related to irrigation policy would be from irrigation schemes. Examples include soil erosion and siltation; salinization of soils from agro-chemicals, spread of invasive plants, spread of pests and diseases at irrigation schemes. It is therefore necessary that the rehabilitation and re-construction of irrigation schemes complies with the National Irrigation Development Policy Strategy and Irrigation Bill by incorporating an appropriate environmental management plan in implementation and operation of the estate.

4.4.3 National Disaster Risk Management Policy (2015).

The policy provides an integrated and coordinated disaster risk management system aimed at preventing or reducing the risk of disasters, mitigating the severity of disasters. The policy also outlines measures towards emergency preparedness, rapid and effective response to and management of disasters and post-disaster recovery; the establishment of a more effective institutional framework for disaster risk management in Malawi. The objectives of the policy includes

- (a) To ensure the sustainable reduction of disaster related losses in lives and the social, economic and environmental assets of communities in Malawi.
- (b) To uphold the constitutional rights to life, development and property by addressing the root causes of vulnerabilities to disasters, strengthening the country's institutional capacity for disaster risk reduction and management and building the resilience of communities to disasters.
- (c) The establishment of a more effective institutional framework for disaster risk management in Malawi

The policy advocates integration of environmental conservation and planning as some of effective long term measures of checking climate change and reducing natural disasters in Malawi.

4.4.4 Local Government Act (1998).

Local Government Act provides legal mandate for local councils in the planning, administration and implementation of various issues and development programmes in their respective geographical districts. One main function of the councils is that of local environmental planning and management. Some of the environmental management functions are provided in section 2 of the second schedule of functions of the council outlined in Local Government Act. These include agriculture development, local afforestation programmes, control of soil erosion, and appropriate management of solid and liquid wastes.

Local councils in the country will implement sub-projects under Agricultural Commercialization Project in collaboration with Project Implement Unit and Area Development Committees at grass roots level.

In addition, contractors for feeder roads, service infrastructure have to liaise with councils on undertaking HIV/Aids interventions on construction sites, undertaking HIV/Aids sensitization to mobile construction workers during construction phase.

4.4.5 National Water Policy (2005) and Water Resources Act (2013).

The Government of Malawi has a National Water Policy with the aim of providing a comprehensive and integrated water resource conservation and management within the country. The Ministry of Agriculture, Irrigation and Water Development is responsible for the coordination of water policy issues which include: protection of water resources, water resource planning and development, review of applications for water abstraction and water quality management including control of pollution.

The principal statute which regulates water resource use, protection and conservation is the Water Resources Act (2013). The administration of these responsibilities rests with The National Water Resources Authority. The Water Resources Act (2013) is the legal framework for the establishment, powers and duties of the National Water Resources Authority. This is a policy making body which advises the government as a whole on all matters regarding water resource protection, abstraction and conservation. Its role includes overseeing the processing of applications for water rights and monitoring water abstraction. Section 88-89 outlines measures and restrictions to access to water, to abstractions and interferences in water flows, to pollution of water in public water resources by people or companies. It is a requirement by people or companies who want to use water other than domestic uses by local people to apply for permission from National Waters Resources Authority before abstraction.

National Water Policy advocates for sustainable management of catchment and riverine areas in order to minimize soil erosion and siltation of river courses. Siltation of river courses is one of cause of floods in Malawi. This is because Shallow River causes overflows and destroys properties along the flood plains

There are a number of implications of National Water Policy and Water Resources Act (2013) related to the proposed project. First, the contractors may need to abstract water from rivers during development of irrigation schemes and rural market infrastructures. In this regard, contractors will have to apply for water rights abstraction from National Water Resources Authority. The second implication relates to discharge of effluent water into surface water resources. Water Users Associations running irrigation schemes have to obtain an approval from the authority.

4.4.6 Public Health Act (1966).

Public Health Act provides legal framework on planning and management of a wide range of health related issues including environmental health, occupational health and solid wastes management.

Section 87 of Public health Act stipulates the need for proper drainage works for new rural market infrastructures. The drainage works have to be designed so as to carefully drain out storm water. Section 88 stipulates the requirements for separate toilets for both female and male employees in public buildings such as rural warehouses.

There are three implications in relation to the proposed project, and these are: a) the provision of appropriate toilets and provision of proper storm water drains around feeder roads. b), the development plans for project has to include provisions of drainage works and provision for adequate toilets for both female and male at farms. C) Contractors will have in place adequate temporary toilets for both female and male workers during construction period.

4.4.7 Occupational Safety, Health and Welfare Act (1997)

The act provides regulatory mechanisms to ensure safe and secure work places in Malawi. Under section 6 and 7 of this act, all work places (be it irrigation schemes or rural farms) require “work place registration certificate” from the Director of Occupational Safety, Health and Welfare in the Ministry of Labour and Vocational Training. General safety facilities stipulated for most work places include the following: adequate ventilation, cleaning materials and cleanliness of workplaces, lighting, washing facilities, change rooms for some workers, sanitary conveniences and first aid kits. Both employers and employees are sensitized on basic procedures for proper use and operations of the welfare and safety facilities within work places. Non – compliance or negligence on use of work safety facilities is an offence under sections 82 and 83 of the act. Penalties include a fine of up to MK200, 000.00 and 12 months imprisonment of the offenders.

Section 56 and 57 provide guidelines for prevention fire out breaks, and control of incidences of fire outbreaks within work places. Section 57 stipulates some recommend means of fire escapes from work places such as rural market infrastructure. These have to be properly labeled with red letters and kept free of obstruction at all times Examples are *emergency escape door and emergency assembly points*.

Section 58 stipulates the provisions of protective clothing (such as gloves, foot wear, screens and goggles.ear muff and head covering) to protect workers from excessive exposure to nuisances with some work activities. And section 59 stipulates the provisions for breathing masks to employees against excessive emissions of dust and fumes. Such incidences are common with construction sites and within large kitchens.

Some of the implications from the Occupational Safety, Health and Welfare Act for consideration in the construction site of the project are as follow:

- Registration of the construction sites at irrigation schemes/market infrastructure by the contractor as “work place” in line with section 6 and 7 of the act
- Provision of necessary work place environmental health safety measures within construction sites. These could be sanitary facilities, washing rooms, change rooms, first aid kits and cleaning materials.
- Provision of protective clothing to construction workers and irrigation workers (during application of pesticides) in situations of exposure to risks.
- Installation of adequate measures for prevention and management of fire outbreaks within warehouses/market centres as specified under section 57 - 58 of the act

4.4.8 The Pesticide Act, 2000.

Pesticide Act provide legal and administrative framework for registration, procurement, distribution, export, importation, storage, usage and disposal of the pesticides and related materials. The administrative work is done by the Pesticide Control Board which is established under section 10 -11 of the act. Main duties include: processing registration of pesticides and subsequent issue of certificates and permits for procurement, importation, export, storage distribution, usage and safe disposal of pesticides. The other duty is to provide public campaigns on proper usage, storage, importation, export, safe disposal of pesticides in Malawi. By and large the provisions of the pesticide act are intended to minimize the potential adverse effects from pesticides to the people or non target species and the environment in general.

The implications of this act on rehabilitation of irrigation schemes

- (i) To obtain licence from Pesticide Control Board for approval and registration of the potential pesticides to be used at irrigation schemes or rural market centres in the country. This is necessary so that the board can screen them, and recommended whether the proposed agrochemicals are acceptable for use in Malawi, and whether or not they safe for use in Malawi.
- (ii) To put in place adequate facilities and mechanisms for storage and usage of the pesticides at irrigation schemes and rural market centres. The Pesticide Board will have to inspect and certify about the security of the facilities for storage of the pesticides.
- (iii) To train designated workers in best practices in storage and packaging of the pesticides, appropriate usage of the pesticides so as to minimize misuses and eventual accidents.

4.4.9 National HIV/Aids Policy (2012) .

The National HIV and Aids Policy (2012) highlights that HIV/Aids impact on the country is quite significant and affects a range of socio-economic activities be it in agriculture, fisheries, public sector, private sector, tourism, urban areas, rural areas among others. National HIV/Aids Policy identifies migrant workers (mobile population) and women are among highly vulnerable people to transmission of HIV and Aids and other sexually transmitted diseases. Sub – projects under Malawi Agriculture Commercialization Project will enhance movement of migrant workers. An implication from migrant workers is that some single male migrant workers would be at increased likelihood of contracting HIV and Aids in the project area. Increased disposal income from migrant workers may enhance some workers to indulge in extra – marital affairs with either local girls or married women within surrounding villages. These sexual activities would enhance the spread of HIV and Aids among workers and local people.

In order to minimize risks, this study recommends the following mitigations measures:

- a) Periodic distribution (and training in use) of both female and male condoms to workers.
- b) Periodic HIV and Aids sensitization meetings for workers.
- c) Development of HIV and Aids Work Place Policies for sub-projects.

4.4.10 National Gender Policy (2000)

The National Gender Policy (2000) (currently under review) calls for integration of gender responsiveness in planning and implementation of development projects and programmes. It is considered that consideration of gender needs and benefits enhance poverty reduction in both rural and urban environments. The proposed development and operation of irrigation schemes

and rural market centres has to integrate consideration of needs of women, men, boys and girls in project activities. Some of potential considerations could be the following areas:

- (a) Employment of both male and female workers at irrigation schemes and rural market centres.
- (b) Consideration of both men and women in participation of irrigated agriculture - in order to enhance income for both men and women.
- (c) Contractors to consider both qualified men and works in labour intensive tasks during construction of roads, electricity infrastructure and irrigation schemes.
- (d) Provision of both female conditions and condoms for male workers. This arrangement would empower both men and women to reduce risks of contraction of HIV/Aids and sexually transmitted diseases during construction and operation phases of the airport.

Some of these recommendations have been incorporated in environmental management plan and are outlined in tables 4-6 in chapter Eight of this document.

4.4.11 The Malawi National Land Policy.

The Malawi National Land Policy focus on land as a basic resource common to all people of Malawi and for enhancement of socio – economic development. Section 4.11 affirms equitable access to land to all citizens of Malawi. The policy recognizes human settlement and agriculture as the major benefactor land use sector. As such, the policy advocates for orderly resettlements of villages or households especially in rich agricultural zones. Furthermore the policy guarantees full legal protection to customary land tenure to the people of Malawi in order to enable the ordinary Malawians adequately participate in subsistence farming and socio-economic development activities. The Malawi National Land Policy also advocates for fair compensation on open market value to local people on all classes of land (whether held under customary land tenure or leasehold) in case such land is acquired for public interest or for development of public infrastructure. In reference to relocation of displaced people, the policy advocates adequate consultations with the affected people so that their interests are taken care of. Such provisions will have to be made in case of land acquisitions for some commercial farms Malawi Agriculture Commercialization Project. Examples could be consideration of acquisition of land for some selected new warehouses, new feeder roads.

4.4.12 Land Act and Land Acquisition Act

Land Act covers land tenure and land use quite comprehensively. Section 27 and 28 of the act guarantees landholders for appropriate compensation in event of disturbance of or loss or damage to assets and interests on land Act also provides procedures of acquisition of one class of land to another. The process begins with appropriate notice the existing lessee of the land.

Land Acquisition Act covers procedures relating to the acquisition of land by either the government or individuals or developers from any form of the land tenure systems in Malawi. The act makes provision for preliminary investigation, preliminary survey of the area and the procedure to be followed where land should be acquired. The procedure for land acquisition starts with issue of a formal notice to persons who have existing interests in the land. Such notices are issued under section 6 of this act. Sections 9 and 10 of the act covers the steps for assessment of land, crops, fruits and other landed properties and subsequent procedures for payments of the compensations to the displaced people. Section 11 to 14 outlines the necessary steps for land surveying and land transfer following notices in government gazette. The responsibility of identifying alternative land for those affected people rests with their village headman, their traditional authority and District Commissioner of the district. The District Commissioner assists in transportation and provisions of necessary services on new sites of resettlement.

Implications for the law on the project include land acquisition for new irrigation schemes and rural market centers and potential risks of movement of people from some places to pave way for sub-projects. Project Implementation Unit and district councils will ensure adherence to sections 6-14 of Land Acquisition Act.

4.5.0 REVIEW OF WORLD BANK SAFEGUARD POLICIES AND IMPLICATIONS.

Preliminary appraisal of the project on World Bank Safeguards policies has been made, and results of implications are summarized in annex 2. Results indicate whether and how the project activities trigger one of these policies. Those policies which have not been triggered have been indicated.

This study has identified that Sub-component 1.3 Service Infrastructure for Productive Alliances (construction/rehabilitation of rural warehouses, construction of feeder roads, rehabilitation of irrigation schemes, installation of electricity and potable water infrastructure) under Malawi Agriculture Commercialization Project have triggered three World Bank Safeguards Policies, and these are: Operational Policy 4.01 (Environmental Assessment), Operational Policy 4:09 (Pest Management), and OP4.12 and (Involuntary Resettlement). Rehabilitation works for irrigation schemes, and construction of feeder roads, electricity infrastructure have potential to generate some negative impacts. The appraisal under category B of Operational Policy 4:01 (Environmental Assessment) entails that potential environmental and social impacts would have moderate significance in the environs, and there is need of environmental management plans to address the impacts. The main sources of impacts would be from civil works during construction of feeder roads, rehabilitation of small scale irrigation schemes and electricity infrastructure. The use of pesticides on irrigation schemes and warehouses would also pose some environmental and health risks to both human beings and biodiversity in the environment. All of the identified negative impacts can be reduced or in some cases avoided, with timely implementation of the mitigation measures outlined in this report.

Environmental and Social Screening of all sub-projects will be undertaken during planning and design stage, before commencement of civil works on the site. Environmental and social management plans will be prepared to address all potential negative impacts. Resettlement screening exercise and/or Resettlement Action Plan will also be carried out in line with requirements of Resettlement Policy Framework. Resettlement screening guide measures to address social and economic impacts on project affected people.

4.5.1 Operational Policy 4:01 (Environmental Assessment).

The objective of Operational Policy 4:01 (Environmental Assessment) to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and mitigation of their likely environmental impacts. This policy is triggered if a project is likely to have potential adverse environmental and social impacts in its area of influence. The development/rehabilitation of irrigation schemes and rural market infrastructure under Malawi Agriculture Commercialization Project are likely to have some adverse environmental and social impacts, which will require mitigation. In order to comply with this safeguard policy, the following activities must be done prior to implementation of sub-projects. These are:

- (a) Environmental and social screening of sub-projects using a screening form attached as annex 3. The screening process will be done to appraise environmental and social risks and identify potential mitigation measures in advance.
- (b) Preparation and approval of Environmental and Social Management Plan (ESMP) for individual sub-projects. ESMP will guide the implementation of mitigation measures where need be.

4.5.2 Involuntary Resettlement (O.P.4.12)

The objective of Operational Policy 4:12 (Involuntary Resettlement) is to avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs. Furthermore, it intends to assist displaced persons in improving their former living standards; it encourages community participation in planning and implementing resettlement and in providing assistance to affected people, regardless of the legality of title of land. This policy is triggered not only if physical relocation occurs, but also by any loss of land resulting in: relocation or loss of shelter; loss of assets or access to assets; loss of income sources or means of livelihood, whether or not the affected people must move to another location.

Land acquisition for development of construction of rural warehouses, construction of last mile public infrastructure (feeder roads, electricity and potable water facilities) and livestock commercial farms will require careful adherence to international best practices followed by World Bank Group. In this regard, a separate **Resettlement Policy Framework (RPF)** has been prepared to guide on land acquisition and resettlement related exercises including compensations. The RPF outlines the principles and procedures to be applied in the event that any Project involves land acquisition and thus require the mitigation of potential adverse social impacts. Where there is land acquisition, impact on assets, and/or loss of livelihood, the RPF guidelines must be followed and a RAP completed prior to sub-project implementation. In this project, land will be acquired for new rural warehouses, expansion of irrigation schemes, construction of last mile public infrastructure (feeder roads, electricity and potable facilities) . Where there are differences between Malawi's legislation and the Bank's operational policy, the latter prevails for the duration of project implementation.

4.5.4 Pest Management (Operational Policy 4.09)

Malawi Agriculture Commercialization Project will support development and rehabilitation small scale irrigation schemes in selected districts. In addition the project will support the development of construction/rehabilitation of rural warehouses, expansions of irrigation schemes and construction of last mile public infrastructure (feeder roads, electricity and potable water facilities). Management of irrigation schemes, commercial farms and livestock farms s will certainly increase the intake of pesticides. The use of pesticides on these sites would trigger Pest Management Operational Policy (OP 4.09). This policy covers the procurement and use of pesticides on bank funded or bank supported project. The procurement of any pesticide in a Bank-financed project is contingent on an assessment of the nature and degree of associated risks, taking into account the proposed use and the intended users. The following criteria apply to the selection and use of pesticides in Bank-financed or bank supported projects:

- (a) They must have negligible adverse human health effects;
- (b) They must be shown to be effective against the target species;
- (c) They must have minimal effect on non-target species and the natural environment.
- (d) The methods, timing, and frequency of pesticide application must aim to minimize damage to natural enemies.

A separate and detailed **Integrated Pesticide Management Plan** has been prepared to support sustainable means of management of pests and diseases on irrigation schemes. Some measures include use environmentally safe pesticides, and use of biological means for control of pests and diseases as opposed to use of pesticides.

4.6.0. REVIEW OF WORLD BANK ENVIRONMENT HEALTH AND SAFETY GUIDELINES.

The implementation of Malawi Agricultural Commercialization Project has triggered a number of safeguard policies. These include Environmental Assessment (OP4:01) and Pest Management (OP4:09). In this regard, the implementation of sub-project has to consider mitigation measures for adverse effects to the environment and people. The integration of mitigation measures has to adhere to Environmental, Health and Safety Guidelines under World Bank. Some of the World Bank Environmental Health and Safety Guidelines to adhere included: Resource Efficiency and Pollution Prevention Guidelines, Community Health, Safety and Security Guidelines, Labor and Working Conditions Guidelines, Environmental Assessment. The following paragraphs highlight some aspects of environmental health and safety issues to be adhered in implementation of the sub-projects.

- a) **Community Health, Safety and Security Guidelines:** These Guidelines provide a framework for measures to safeguard the health conditions and safety of communities within which the sub-project will be implemented. The guidelines include the provision of personal protective equipment, measures for security of plant equipment. The guidelines also provide notes for measures for sanitation facilities for workers camps, security of plant and equipment at workers camp among others. The guidelines also provide measures to enhance the security of local communities to avoid abuse by security guards or personnel. The guidelines provide notes for security personnel/guards how to operate in the locality to minimize conflicts within host communities. Sub-project has to prepare mitigation plan for community health and safety during implementation period adequate resources has to be provided for the measures.
- b) **Resource Efficiency and Pollution Prevention Guidelines:** The guidelines provide measures for effective utilization of resources within the project and site to minimize wastes and effluent. The measures provide guidelines to minimize air pollution, measures to dispose wastes in sustainable manner into environment measures for recycling of some materials.
- c) **Labour and Working Conditions Guidelines:** The guidelines provide measures for management of all types of workers (migrant workers, recruitment of workers, short term workers, permanent workers), working conditions of services, human resource development for maximum benefits, welfare facilities/services, occupational health measures, roles of employers and employees in occupational health aspects.

4.7.0 SUMMARY OF MAIN APPROVALS /LICENCES REQUIRED FOR PROJECT AREAS.

Based on reviews of the requirements of several other national policies and pieces of legislations in sections above, table below provides a summary of relevant statutory and regulatory approvals and licences to be obtained in course of implementation and operation activities. This is to ensure that the project is in line with sound n environmental management practices and in compliance with other relevant pieces of legislation. The summary has been provided in table format for clarity purposes. Column one lists the required statutory

approvals/licences for the proposed project during implementation and operation, while column two outlines the legal and regulatory framework upon which the approvals/licences are prepared. Column three outlines the government department or parastatals responsible for processing the applications for statutory approvals/licences while column four outlines the designated public officer responsible for processing the applications for statutory approvals/licences.

List of statutory licences required for project implementation

List of statutory approvals or licences to be obtained	Regulatory frameworks.	Responsible department.	Responsible officer
1. Environmental impact assessment certificate <i>To guide the synchronization of environmental management practices.</i>	Environment Management Act(Cap 60:02)	Environmental Affairs Department	Director of Environmental Affairs
2.Registration certificate for pesticide storage and use	Pesticide Act (2000)	Pesticide Control Board	Registrar of Pesticides
3.Work Place Registration Certificate. <i>To guide on procedures on workers environmental health, safety during project implementation and operations.</i>	Occupational Health, Safety and Welfare Act (Cap 55:01)	Ministry of Labour and Vocational Training	Director of Occupational Health, Safety and Welfare.
3.Water right for abstraction, <i>To regulate mechanisms of water abstraction from rivers for irrigation schemes.</i>	Water Resources Act (2013) (CAP 72.03)	National Water Resources Authority	Executive Director
	Water Resources (Water Pollution Control) Regulations		
4. Effluent Discharge Permit. <i>Regulate the quality of waste water, means and of discharge into surface drainage system</i>	Water Resources Act (2013)	National Water Resources Authority	Executive Director

5.0.0 CHAPTER FIVE : ENVIRONMENTAL AND SOCIAL SETTING OF MALAWI.

Malawi is endowed with diverse natural resources, which include some of the most fertile soils, forest and water resources which accommodate diverse species of flora, fauna and fish resources. However these resources are currently challenged by complex interaction of several factors which include the rapid rate of population growth with an annual rate of about 2.8% .

This study has identified that Sub-component 1.3 Service Infrastructure Productive Alliances (construction of feeder roads, rehabilitation of irrigation schemes, construction of electricity and potable water facilities) under Malawi Agriculture Commercialization Project have potential to trigger some negative impacts in the environment. The main sources of impacts would be from civil works during development/rehabilitation works. The use of pesticides on irrigation schemes and warehouses would also pose some environmental and health risks to both human beings and biodiversity in the environment. All of the identified negative impacts can be reduced or in some cases avoided, with timely implementation of the mitigation measures outlined in this report.

The purpose of this chapter is to provide an overview of the conditions of this environmental and social situation in the country as a whole. This is necessary in order to understand the existing pressure and risks posed by the proposed rehabilitation/re-construction works on the already fragile environmental components of Malawi.

5.1.0 PHYSICAL ENVIRONMENT

5.1.1 Physiography and land resources.

The physical configuration of Malawi is divided into five zones and these are: Rift valley floor, rift valley scarp, hill zones, plains and plateaus. The Rift valley floors consist of lakeshore plains and Lower Shire Valley. The Rift Valley Floor is among the rich agricultural regions of Malawi due to fertile alluvium soils. Other important agricultural regions are plains such as Lilongwe – Kasungu Plains and Lake Chirwa - Phalombe Plains. These areas contain latosols (red – yellowish soils). These soils support a range of arable crops including maize, tobacco, groundnuts and beans.

Total land surface in Malawi is about 9.4 million hectares. Land under water bodies is about 2 million hectares. Agricultural estates occupy 1.2 million hectares and the area potentially available for agriculture by small holders farmers is approximately 6.5 million hectares after adjusting for wetlands, steep slopes and traditional protected lands as presented in the following table:

Table 3 :An overview of land availability in Malawi.

	Million hectares	%	% of total
Total land area of Malawi	9.4		100
• Less national parks, forests and game reserve	-1.7		18
• Land available for agriculture	7.7		82
Land available for smallholder agriculture and estates	7.7	100	82
• Land under estates	1.2	16	13
• Land available for smallholder farmers	6.5	84	69

Source: Malawi National Land Policy, 2002, page 7

Some official government estimates indicate that about 55% of the smallholder farmers have less than one-hectare of cultivable land, which does not meet their basic food needs. As a result

more than half of the population are unable to produce enough for food and cash such that the majority live below the poverty line of US\$495 per capita income annually. Much of the shortage of arable land for cultivation for smaller holder farmers felt widely and rapidly increasing in the Southern and Central regions of the country. Arable land is already problematic in districts in central and southern region of Malawi. As a result more than half of the population are unable to produce enough for food and cash such that the majority live below the poverty line.

(b) Land Tenure Regimes In Malawi

Malawi embraces the capitalistic ideals with regard to land ownership. There are five distinct land tenure classes existing in Malawi, which are detailed as follows:

(i) Customary Land

This is land held in trust for all people of Malawi by the president, who delegates his authority to traditional chiefs. This constitutes about 75% of the total 9.4 million hectares of the land. The land is commonly held and distributed to the people by local chiefs. Although each person has recognised ownership to a piece of land, he or she cannot trade on it as the land can be reassigned to other people in case the chiefs deem it fit. A coherent system in the distribution of land exists in both patrilineal and matrilineal societies.

(ii) Leasehold Land

This is part of private land that is leased by individuals or other legal residents. The lease period varies according to type of use that someone has applied for. Currently these fall into three groups of 21 years old leases for agricultural uses, 33 to 99 years old for property and infrastructure developments, and over 99 year lease for those who would wish to sublease to tenants of 99 years. About 8% of the land in Malawi is in this category.

(iii) Freehold Land

This is land, which has been granted to persons for perpetuity. The government has no specific control on transactions except on planning permission on uses. This lease is now limited to Malawian citizenship only. It is difficult to enforce conservation measures on this land because of the exclusivity, which the persons enjoy, particularly some owners who live overseas.

(v) Government Land

This is public land is owned and used by government for public utilities, schools, hospitals, government offices and other properties, markets, roads, government irrigation schemes and other public goods throughout the country.

(vi) Public Land

Land managed by agencies of the government and traditional leaders in trusts for the people of Malawi, openly used or accessible to the public at large. This includes catchments areas, protected forest reserves, national parks, game reserves, dambos, community forests, riversides, flood plains, wet lands, military sites and others.

Project activities under Malawi Agriculture Commercialization Project will cover both customary land and leasehold land. Customary land constitutes about 76% of agricultural land and supports over 4 million smallholder farmers. Most commercial farmers use leasehold estate for agriculture production.

5.1.2 Climate .

Malawi climate is influenced by proximity to the huge lake that covers almost two thirds of its entire length. The climate is tropical continental with three distinct seasons, the hot - rainy

season from November to April, the cool-dry season from May to July, the hot dry season from August to November.

Annual rainfall in Malawi ranges from 700 to 2200 millimeters. Topography and proximity to the lake influence its distribution. Least rainfall (about 700-800 millimeters per year) is registered in rain shadow areas such as the rift valley, west of shire highlands, North West of Viphya and Nyika highlands. Moderate rainfall (800-1200 millimeters) occurs mostly in plains, which include Lilongwe – Kasungu Plains and West Mzimba Plains. Most of the arable and food crops are planted in this rainfall belt. High rainfall (1500-1900 millimetres per year) is experienced in high plateau areas such as Mulanje Mountains, Zomba highlands, Viphya and Nyika Highlands.

The mean annual minimum and maximum temperatures for Malawi range from 12 to 32 degree Celsius. The highest temperatures occur at the end of October or early November, but thereafter, the rains bring moderating effects. The cold periods are in June and July. Highest temperatures are recorded in the Shire Valley and along the lake shore while the lowest temperature are recorded over the high altitude areas particularly the Shire Highlands, the Viphya and Nyika Highlands, Dedza and Mulanje highlands.

Over the last ten years, climate has been exposed to repetitive risks and shocks in the recent years which have necessitated increasing levels of humanitarian response to Malawi. The country has experienced floods and prolonged dry spells in most of the areas because of the occurrences of the La Nina and El Nino phenomena. This has also resulted in having unstable and unreliable water balance, especially if population is factored into the climate change paradigm. Therefore, in order to break the cycles of disaster and food security for greater developmental impact, the government has launched the National Resilience Master Plan. The agriculture and food security strategy of the Plan will focus on developing new irrigation schemes, diversifying agricultural production, promoting integration of smallholder farmers into agricultural value chains and promoting small scale agro

Excessive rainfall has profound impact on environmental degradation in Malawi. Surface runoff enhances soil erosion. In this regard, risks of soil erosion would be high from construction works under Public Works Programme during rainy seasons. Contractors and labourers have to schedule excavation works during the dry seasons. Additional erosion protection measures, including planting local species of trees, shrubs and grasses in the sensitive areas are recommended.

5.1.3 Water resources.

Malawi water resources are in two main categories namely: surface and ground water resources. Surface water resources are derived from rainfall. The rich surface water resources comprise a network of rivers and lakes that count for about 20% of the country's area. The dominant water body is Lake Malawi and the Shire River systems, which are interlinked since the Shire River serves as the only outlet of Lake Malawi. The drainage system is divided into 17 water resources areas.

Map 2 shows a network of main river basins, location of Lake Malawi and other lakes in Malawi. The following paragraphs reviews the conditions of river basins in some the 15 flood affected districts – the impact areas of The Malawi Agriculture Commercialization Project

In Northern Region, prominent rivers rise from Nyika Highlands and those which maintain good flows of water for some parts of the year include Lufira River, Hara River, Lunyina River, North Rukuru among others. However due to human settlement activities and encroachments along the riverines, most rivers are affected by soil erosion and siltation. As a result, most rivers

indicate high flows during early middle part of rainy seasons and most often flooding. Most rivers dry up by August of the year

In Central Region main rivers rise from Dzalanyama Range and Dedza Hills. Examples of rivers are Linthipe River, Lilongwe River, Diamphwe River among others. Linthipe River rises from slopes of Dedza Mountain and it meanders wildly through the mountains. It has two main distributaries which are Lilongwe River and Diamphwe River in the middle. These rivers provide significant water flows to Linthipe River. Ligadzi River rises from Dowa Hills and flows down to Domira Bay at Lake Malawi. In some parts rainy seasons, Linthipe and Ligadzi River overflows and cause flooding in Salima due to high flows from upstream.

In Ntcheu District, Bwanje valley is annually affected by floods due to overflowing of Bwanje River and its tributaries. River and its tributaries drain from Bangwe Mountains within Kirk Range. Bwanje River flows through an extensive plain all the way into Lake Malawi on northern part of Ntcheu. Due to human settlement activities and encroachments along the riverines, most upper parts of river courses are affected by soil erosion and siltation. As a result, most rivers indicate high flows during early to middle rainy seasons and cause flooding downstream.

In Southern Region main rivers rise from Kirk Range and Shire Highlands (including Zomba mountains and Mulanje mountains). Rivers from Kirk range include Lisungwi River, Wankulumadzi River, Mwanza River and Mkodzi wa Fodya River which drain into Shire River. Other rivers from Shire Highlands include Lunzu River, Lukhubula River. All these rivers drain through areas of poor vegetation, high land degradation and low rainfall. Consequently rivers are high laden with debris and silt.

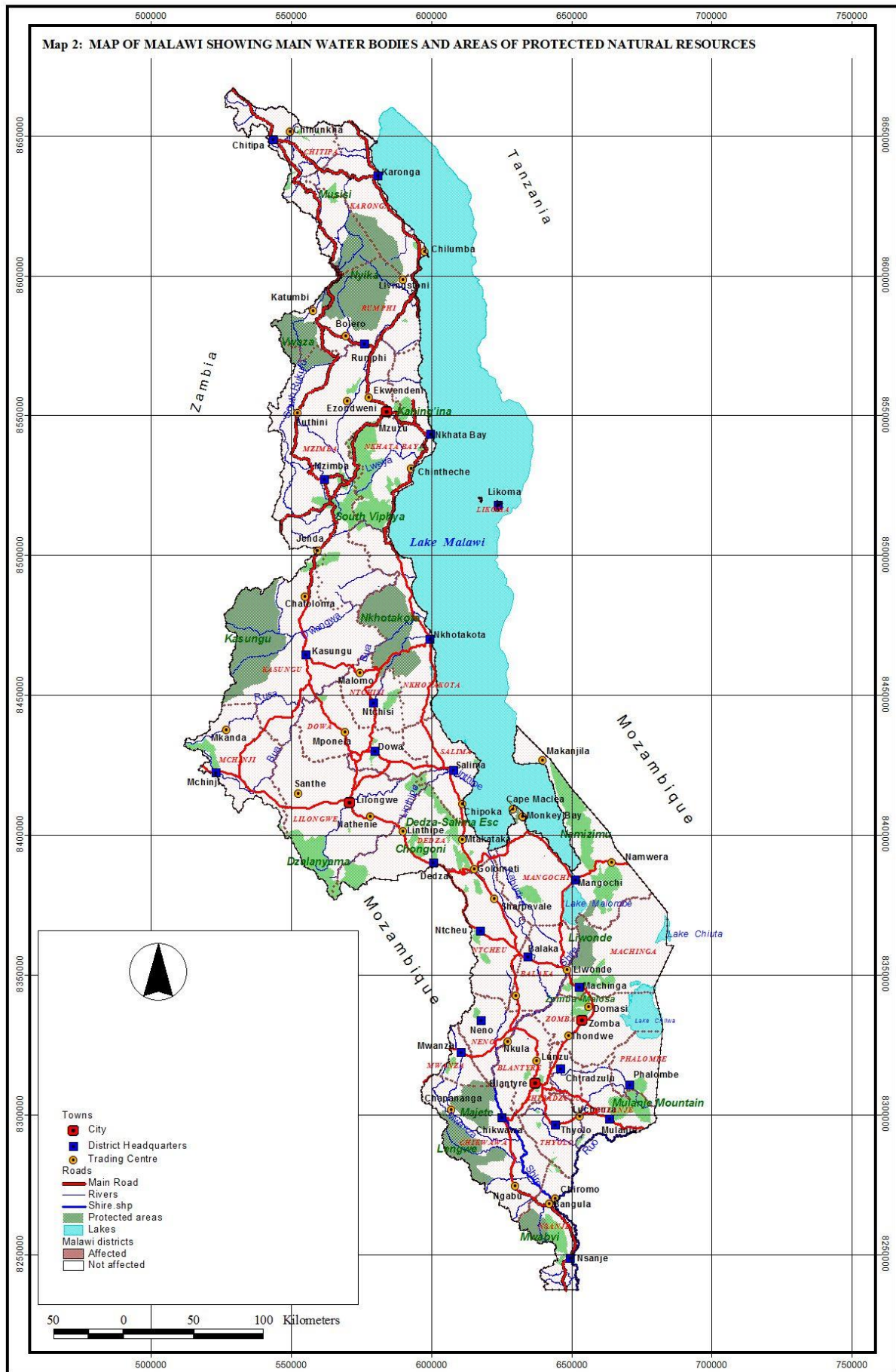
Mulanje Mountain is the source of important perennial rivers which drain into Shire River. These include Thuchila River and Ruo River. Just like the case in other river basins, Thuchila and Ruo Rivers are heavily affected by soil erosion and siltation due to tea cultivation, high population pressure and encroachments along the riverines. Floods are more frequent along Ruo River and they take different forms. In some cases especially in the flat areas such as Makhanga flooding causes total inundation of homes and infrastructure

National Environmental Action (1994) highlights that hydro chemistry of the majority of the surface resources in Malawi is alkaline earth (calcium and magnesium) delineated by the cation group and by carbonate system in the anion group. Most of the surface waters are classified as soft, to moderately soft. The microbiological quality of most major rivers is generally poor all the year round especially those that are draining through cities and towns. Typical count of faecal bacterial colonies range between 50 to 100 per 100 millimeters of sampled water. The physical quality of surface water is also affected by human activity occurring in various catchment areas. High-suspended solids are found in most of the surface water bodies. High population growth has forced people to cultivate marginal areas, to clear vast expanses of land for tobacco, other crops and livestock farming. This has resulted in excessive soil erosion, loss of soils fertility, destruction of catchment areas, and loss of biological diversity and the natural resources base.

Malawi contains has some important wetland ecosystems. Examples wetlands in flood affected districts include the shorelines plains of Lake Chilwa, and Lake Chiuta, a diversity of Dambo ecosystems, and the Elephants and Ndindi Marshes in the lower Shire Valley. Wetlands are the habitats of important plant and animal species such as birds in the Lake Chilwa plains, and the elephants in Ndindi marshes. In addition, the wetlands forms some sheltered fish spawning, nursery grounds and as habitat for adult fish. Recently, annual floods have negatively affected the biological diversity of wetlands through wash ways and water logging.

In context of water resources, significant negative impacts would be from civil works on rehabilitation of irrigation schemes due to proximity of the projects to rivers. Civil works may enhance soil erosion and subsequent siltation in surface drains, streams and rivers. In addition, increase in use of harmful pesticides (on rehabilitated irrigation scheme) may enhance pollution of water in rivers around the schemes.

Environmental and social management plans has to be put in place address negative impacts such as soil erosion, siltation of drains and rivers.



5.2.0 BIOLOGICAL ENVIRONMENT.

5.2.1 **Vegetation resources.**

There are various vegetation types in Malawi . However the common type is Dry Savannah Woodland which extends within the rift valley region. Some parts of the area (such as Karonga, Balaka and Chikwawa) this vegetation type has been modified by grazing of livestock. Existing indigenous trees of economic importance (within this vegetation type) within the area are follows: *Acacia nigrescens*, *Pterocarpus brenanii* *Comretum ghasalense*, *Sterculia Africana*, *Acacia tortilis*, *Bauhinia petersiana*, *Dalbergia melanosilon*, *Adansonia digitata* and *Faidherbia albida* among others. There are also different grass species and shrubs within this vegetation. In lakeshore areas, *Faidherbia albida* and baobab trees are specially maintained and conserved in smallholder gardens of local households. *Faidherbia albida* is an important agro forestry tree species and is known to enhance soil fertility through humus of shaded leaves. Trees shade leaves during rainy seasons, and humus from the leaves fixes nitrogen nutrients in the soils. The fact that the trees are leafless during rainy season minimizes competition from sunlight with crops and protects them from birds until harvest time. During field consultations, it was learnt that leaves and pods of this trees are good fodder to livestock during dry seasons. Some *Faidherbia albida* trees are used for fuel wood and construction materials by local communities.

Baobab is also an important tree to local communities. One economic use is supply of fruits which local people eat while fresh or dry. The fruits are also sold and used for production of high value juices by local manufacturers in the area. Leaves of Baobab trees are used as sources of delicious relish and traditional medicines by some local people in some of these flood affected districts.

Potential implications of the proposed Malawi Agriculture Commercialization Project to vegetation in the country would be in three ways. The first implication will be cutting down trees to pave way for development of new irrigation schemes and rural market centres. The second implication is the use planks in construction works. The third implication is the increase in demand for firewood and charcoal by the project workers. Demand for firewood and charcoal would escalate the existing high rates of deforestation in the flood affected districts.

5.2.2 **Forest Reserves**

Available government information estimates that about 28% (2,632, 000 hectares) of the total land area of Malawi can be broadly classified as forest land covered with vegetation. Out of these forest resources, 16000 hectares constitute plantations and woodlots. There are 85 protected forest reserves covering about 1, 109, 626 hectares .There are also 40 proposed forest reserve which cover about 154,137 hectares . In addition, 800,000 hectares are natural woodlands on customary land. Map 2 highlights some main forest reserves in Malawi.

Forest reserves on customary land are under pressure because it is annually being depleted at a rate of 1.6% (50,000 hectares) because of opening of new gardens, estates, overgrazing, and building infrastructure such as roads, settlements and bush fires. This has lead to deforestation and land degradation which have far reaching effects on living standards on the people. This situation has been aggravated by high annual population growth rate of over 2.4%

Forest reserves are a vital natural resource in Malawi. They supply 90 percent of the country's energy needs and provide timber for construction and other industrial use. Forests help maintain air, soil and water quality; influence biochemical processes; regulate run-off and groundwater, reduce downstream sedimentation and the incidence of flash flooding in addition to controlling soil erosion; provide watershed protection and enhance water resources. About half of Malawi's

forest cover is on customary land, owned but the local communities. The extremely high reliance on biomass for energy needs imposes heavy strains on the biological diversity of the forest ecosystem in the country. A commitment to conserve the biological diversity and the natural resource base in Malawi is enshrined in the Constitution of Republic of Malawi under section 13 paragraph 4d (v). The forest resource base is being rapidly depleted by firewood and pole extraction, land clearing for cultivation and felling of high-grade timber species. This is big threat to sustainable agriculture development in Malawi. As such, sustainable management and conservation of the forest ecosystem is imperative.

5.2.3 National Parks and Game Reserves

Malawi has eight protected wildlife reserves. These are Nyika National Park in Rumphi, Lake Malawi National Park in Mangochi, Liwonde National Park in Machinga, Majete Game Reserve and Lengwe National Park in Chikwawa and Mwabvi Game Reserve in Nsanje. Location of all these eight wildlife areas is shown on map 2. During field surveys and consultations, three wildlife reserves have been affected by floods in 2015 and these are Liwonde National Park, Lengwe National Park and Mwabvi Game Reserve. The effects are water logging and closure of service roads and access routes of wildlife within the parks. During field surveys, it was noted that government is at advanced stage of undertaking rehabilitation of roads and access roads within Liwonde National Park, Lengwe National Park and Mwabvi Game Reserves. New gravel roads will be constructed soon after rainy season and the exercise will address some of the challenges caused by the floods.

Nyika National Park - located on plateau in Rumphi - has not been affected by floods. Plateau area has montane vegetation. The grasslands of are rich in wildflowers all through the year. The escarpments and northern hill areas descend to lower altitude and feature a much drier landscape. Vegetation within escarpments and hills is dominated by *Brachystegia* woodland. Zebra and Elephants are often seen anywhere on the plateau. The park has over 400 species of bird have been recorded in the park. Common species include Denham's bustard, wattled crane and red-winged francolin - endemic .

Lake Malawi National Park has not been affected by floods. The park has over 500 fish species of which 350 species are endemic to Malawi. The lake contains 30% of all known cichlid species. Mammals include hippo, duiker, baboon, vervet monkey, bush pig, warthog and occasional elephants. The park is rich in birdlife including fish eagle along the shoreline.

Liwonde National Park includes parts of Upper Shire. There are reed swamp and marshland along the Shire River and southeast shore of Lake Malombe, floodplain grassland in the south, mixed woodland on all the hills, tall grass tree savannah along the narrow floodplains of seasonal streams, small pockets of semi-deciduous riverine forest..

Common wildlife include: elephant, hippo, impalas, waterbucks, warthogs, vervet monkeys, yellow baboons, bushbucks and kudu In the mopane woodland there are several hundreds of sable antelopes. Predators include lions, leopards, serval, and genet . In addition, the park, has considerable water – associated bird species and these include African fish eagle, the pied kingfisher, the saddle-billed stork, goliath heron, red-necked falcon, palm-nut vulture and white-backed night heron.

Lengwe National Park is regularly affected by floods due to poor drainage. Water logging is common during rainy seasons. Water logging affects service and access roads and movements

of both tourists and wildlife. The park is the home of Nyala antelope, elephants, kudu among others. Climate is hot and dry, and the only source of consistent water is from the rain. Many man-made water holes have been constructed to attract and maintain the animal population.

Mwabvi Game Reserve has been affected by floods due to overflowing of streams within the wildlife reserve. The reserve has a wide variety of habitats, including Mopane, and brachystegia woodland. Improvements in protection and conservation of flora and fauna has been carried out over the last 8 years. The improvements have in turn supported increase in numbers of wildlife including herbivores and birds. Examples of common herbivores are impalas, hippopotamus, vervet monkeys, yellow baboons, bushbucks, sable antelopes and kudus. Carnivores found in the park include lions, jackals, serval and leopards, although these are not as abundant as herbivores.

There are a number of problems faced in the management of national parks and game reserves in Malawi. These include the shortage of trained staff and resources (vehicles, equipment) for effective monitoring poachers and wildlife migration. In addition, lack of adequate funding for management of parks and game reserves has resulted to inadequate control of poachers and other external threats. The other problem emanates from some wildlife such as hippos, elephants and buffaloes which tend to move out of the park for greener pastures in gardens along the parks. Elephants move around to eat green crops such as winter maize, beans and vegetable. Such incidences create serious conflicts with local communities.

There are a number of external threats to the management of the park. One major threat is the pressure from poachers who target elephant for ivory, and duikers, kudus for bush meat. The second problem relates to increase in deforestation as a result of firewood extraction and charcoal making by local people around the park.

This study has reviewed the scope of project activities, and has identified the following which can generate negative risks to flora and fauna:

- . Influx of migrant workers during construction period would enhance extraction of firewood and charcoal within national parks and game reserves. The malpractices would enhance deforestation the park
- Influx of migrant workers may enhance demand for ivory and game meat. Such risks may escalate poaching of wildlife in national parks and game reserves.

5.3.0 SOCIO-ECONOMIC ENVIRONMENT

5.3.1 Population and Human Settlements.

The estimated population of Malawi (2017) is 17.8 million, and the annual growth rate is 2.9%. Children under the age of 18 years constitute about 50% of the population size which indicates high dependency ratio. Females are about 53% of population while males are about 47% of the population. About 85% of the population live in rural areas and depend on small holder farming while only 15% of the population live in towns where as much as 75% of the urban population live in poor peri-urban and informal settlements

National Population density is 148 people per square kilometer. population densities are among the highest in Malawi, ranging from 160 to Southern Region and Central Region of Malawi have about 88 % of the population in Malawi. The Shire Highlands, Lilongwe –Kasungu Plains and Lake Chirwa Plain have among highest population densities in Malawi, ranging from 200 - 350 persons per square kilometre.

The rate of population growth, density and distribution in a country have direct effects environment. Intensive and large scale human settlements enhance land degradation, natural resource utilization and depletion in incidences on excessive extraction. Infrastructural developments (water pipes, sewerage pipes, roads) have potential to negatively affect the environment. In this regard, understanding human settlement and socio-economic development is essential in environmental management.

Main urban areas in Malawi are: City of Lilongwe (capital city, about 1000,000 people), Blantyre (commercial capital, about 800,000 people), Zomba City (about 200,000 people) and Mzuzu City (estimated population of about 220,000 people). The majority (about 70%) in urban areas live in unplanned settlements, where there are inadequate services. Quality of housing in unplanned settlement is quite poor. Poor quality of housing is also visible in most rural areas. Population and Housing Census (2008) results on Malawi's housing indicates that housing structure in Malawi consists of 43% as traditional housing, 34% semi-permanent housing and 23% as permanent housing. Main building materials for permanent houses are burnt bricks, iron sheets, tiles, concrete or asbestos for roofs. The semi-permanent houses are built of sun dried bricks and grass thatched while traditional house is built of mud walls and thatched roof. Major environmental problem in urban areas in human settlement is the existing of high density slums/squatter settlements. It is estimated that about 70% of urban population live in unplanned settlements where housing conditions are quite poor characterized by poor sanitation, lack of potable water, poor roads among others. Other major environmental problems in urban areas include indiscriminate disposal of solid wastes and liquid wastes.

5.3.2 Governance and development Planning.

Malawi has two set of governance structures – central government and local government. Central Government is run by Cabinet headed by The President while local governments are run by local councils. Central government runs various line ministries including Ministry of Agriculture, Irrigation and Water Development. Office of President and Cabinet oversees the operations of central government. Ministry of Finance and Economic Planning coordinates central government economic development planning.

The overall local government institution at local level is the district council. A district council coordinates local development planning in districts. A district council in Malawi is a political structure and is composed of elected councilors from wards of the districts, members of Parliament, traditional authorities from the districts and some appointed persons representing some special interests within the districts. Local councils perform functions through various committees and these include: Planning and Development, Education Committee, Development Committee, Public Works Committee, Health Committee, Finance Committee among others . Two important decentralized structures include Area Development Committee and Village Development Committee. Area Development Committees are located in Traditional Authorities.

Local councils prepare local development plans and these cover various development sectors. Area Development Committees collaborate with councilors, traditional leaders and Members of Parliament in the area to coordinate local development activities within the project area.

The traditional authority (T/A) supervises village headman/ headwoman, who in turn oversee local people. The responsibilities of the both the village headman and traditional authorities include administration of customary land among the subjects, spearheading development activities and mobilizing community participation in development programmes, keeping law and order among their subjects Both villages and traditional authorities have structures within which they perform their functions.

A district Council secretariat is headed by the District Commissioner who supervises a number of departments. These include Planning and Development, Administration, Education, Environmental, Health, Forestry, Fisheries, Community Development, Agricultural Development and others. The District Commissioner and district heads of departments form a district executive committee (DEC) within the district. The DC also coordinates strategic planning for all government departments in the districts. The Council performs a number of functions and those related to the project and to environmental concerns are as follows:-

- promotion of environment sanitation,
- provision of and maintenance of water supplies in liaison with the Ministry of Irrigation and Water Development.
- preservation of the environment through protection of forests, wetlands, rivers and streams.

Local implementation of projects is carried out through extension workers such as Community Development Assistants, Agriculture Extension Development Officer, Senior Forest Assistants, and Primary Education Officers. These extension workers work within their demarcated zones such as Extension Planning Areas (EPA).

There are various non - governmental organizations and community based organizations which work in both rural and urban areas in Malawi. Most non - organizations work in areas of community development, education, HIV/Aids interventions, social welfare, environmental management, forestry, water supply and sanitation among others. Some prominent the non – governmental organizations are: Water Aid, Plan Malawi, Habitat for Humanity, Concern Universal (United for Purpose), Care International, World Vision International, Total Land Care, and National Initiative for Civic Education (NICE), NASAFAM, and Catholic Commission for Development, Save Children Malawi, Youth Net and Counseling among others. Non-governmental organization play important role in service delivery to vulnerable communities and households in Malawi. Non-governmental organization operates under Trustees Incorporated Act and NGO Act (2001).

Malawi Agricultural Commercialization Project will be implemented through decentralized framework. A district council with technical support of district agricultural development officer will play critical role in implementation of activities and environmental and social safeguards.

5.3.3 Economic Environment.

The economy of Malawi is predominantly agricultural, with about 90% of the population living in rural areas. The landlocked country in south central Africa ranks among the world's least developed countries. Agriculture accounts for 29% of GDP and 85% of export revenues. The economy depends on substantial inflows of economic assistance from International Monetary Fund, the World Bank, and individual donor nations. The government faces strong challenges: to spur exports, to improve educational and health facilities, to face up to environmental problems of deforestation and erosion, and to deal with the rapidly growing problem of HIV/AIDS in Africa.

Agriculture represents 37% of GDP, accounts for over 80% of the labor force, and represents about 80% of all exports. Its most important export crop is tobacco, which accounts for about 70% of export revenues. In 2008 the country was the tenth largest producer in the world. The country's heavy reliance on tobacco places a heavy burden on the economy as world prices decline and the international community increases pressure to limit tobacco production. Malawi's dependence on tobacco is growing, with the product jumping from 53% to 70% of export revenues between 2007 and 2008. Rural poverty stands at 56.5% compared to urban poverty at 25%.

Other important exports are tea, sugarcane and coffee. These crops are grown in commercial estates/plantations. Sugarcane is grown and processed by Illovo Sugar Group on its two large irrigated sugarcane estates at Nchalo in Lower Shire Valley and Dwangwa Sugarcane Estates in Nkhatakota District. Exports from sugar, tea and coffee constitute about 20% of Malawi's exports. Most of tea is grown in Mulanje and Thyolo.

Malawi has few exploitable mineral resources. An Australian consortium exploits uranium in at Kayerekera uranium Mine near Karonga. Coal is being extracted at various sites including Mchenga Coal Mine and Eland Coal Mine in Rumphi District. Malawi's economic reliance on the export of agricultural commodities renders it particularly vulnerable to external shocks such as declining terms of trade and drought.

Malawi's manufacturing sector contributes 18.9% to the national GDP. Malawi's manufacturing industries are situated around the city of Blantyre and City of Lilongwe. Main sectors are food processing, construction, consumer goods, cement, fertilizer, ginning, furniture production and cigarette production.

According to the post – disaster needs analysis report, the effects of damages and losses are estimated to result in a projected negative impact on GDP growth in 2015, to the tune of 0.6 percent. The economic costs resulting from the negative impact of the floods, other things being equal, may thus lead to GDP growth falling short of the 5.8 percent projection set for 2015. Economic growth is largely premised on expansions in agriculture, manufacturing, wholesale and retail trade, utilities, and transport sectors, most of which have been directly or indirectly adversely affected by the floods.

5.3.4 Irrigated agriculture development.

Over the last ten years, Malawi has made significant strides in irrigated agriculture to complement rain fed agriculture. Promotion of smallholder irrigated agriculture has focused on production of food crop and cash crops for smallholder farmers across the country. Most of smallholder irrigation schemes use water from perennial streams. The strategy adopts farmer participation in community based schemes in order to enhance sustainable food security and cash crop production. It is anticipated that such agricultural production would contribute to more cash crop production and industrial production which would in turn increase exports for international markets

Available government records indicate that by 2014 there were about 101,000 hectares of irrigated smallholder schemes in the country. About 98000 hectares of irrigated schemes were under utilization by 415,205 farmers (225,340 males and 189,865 females). Technology used in smallholder irrigation schemes include gravity fed system, motorised pumps, treadle pumps and watering cans

The gravity-fed technology accounts for 56% of the total developed area under smallholder farmers. A total 57,000 hectares have been developed under the technology, out of which 54,842.24 ha were being utilized for irrigation. The motorized pump-based irrigation technology covers about 8000 hectares. The treadle pump-based technology accounts for 29% of the total developed area covering 29,000 hectares.

Commercial irrigated agriculture is undertaken by private companies and has made considerable achievement in cash crop production as well as food crop production. Irrigated cash crop production focuses on commercial plantation crops such as sugarcane, coffee and tea. Sugar, tea and coffee are among high value cash crops and leading exports from Malawi. Illovo Sugar Estates maintains about 29,000 hectares of sugarcane estates in Chikwawa District and Nkhatakota District. Dwangwa Sugarcane Estates utilizes water from Dwangwa River and

Lake Malawi. Illovo Nchalo Sugarcane Estates and Alameda Sugarcane Estates abstract water from Shire River. Smallholder sugarcane estates constitute about 4000 hectares and these have been developed around Dwangwa Cane Growers Trust and Kasinthula Smallholder Scheme in Chikwawa district. Kasinthula Smallholder Sugarcane Scheme abstracts water from Shire River. Irrigated tea and coffee plantations constitutes about 9,000 hectares and most of these are in Thyolo and Mulanje Districts. Most tea and coffee estates in Thyolo and Mulanje abstract water from Ruo River and Thuchila River.

Irrigation development in Malawi remains a pillar for food security and improved nutrition. Malawi Agriculture Commercialization Project will support development of new irrigation schemes and rehabilitation of damaged irrigation schemes. The activities will be carried out with support of Water Users Associations who own and manage various schemes damaged by 2015 floods. Rehabilitation of irrigation schemes have been taken as a priority in order to restore food security among vulnerable communities.

5.3.4 Transport Infrastructure.

The transport sector in Malawi is comprised of four sub-sectors, namely roads, rail, water and air. Road transport is the dominant mode of transport on land due to the flexibility allowed to users in reaching remote areas. Road transport handles more than 70 percent of the internal freight traffic and 99 percent of passenger traffic. Accessibility in rural areas has remained a challenge in Malawi due to the condition of the rural roads, which are mainly comprised of secondary, tertiary, district and community roads. The total road network covers 15,451km, of which 28 percent is paved, while the rest constitutes of either earth or gravel roads.

The Roads Authority has the mandate of overseeing the maintenance, rehabilitation and upgrading of main, secondary and tertiary roads in Malawi. District and community roads are administered by district councils but the Roads Authority still assists the districts in providing rehabilitation and maintenance services due to the councils' lack of capacity. The Government of Malawi is currently implementing several programs, including the Agriculture Sector Wide Approach Support Project to address challenges related to the transport sector. The main interventions in the project's roads component is to provide access to areas that have agricultural potential.

Existing transport sector challenges have been aggravated by sporadic floods, which have wash away bridges, drainage structure and road sections, thereby isolating people from their socio-economic amenities, including schools, hospitals and others. The majority of the unpaved network lies in rural areas where the flood disaster has had the strongest effect. The Lower Shire has been the most affected.

Government is currently undertaking country wide road upgrading and rehabilitation of several main roads and secondary roads. Some road upgrading works are support by European Development Fund, African Development Fund and World Bank funded project.

5.3.6 Health Situation and HIV & Aids Prevalence.

Available government statistics highlights poor health indicators on infant and material mortality rates in the country. Malawi infant mortality rate in estimated at 92 per 1000 live birth, child mortality rate is 133 per 1000 live births and maternal mortality rate is 684 per 100,000 live births. Leading causes of death include HIV/Aids related ailments, malaria, pneumonia, anemia, diarrhea and malnutrition. Malaria accounts for about 50% of monthly outpatient visits in Malawi.

Health services in Malawi general are provide by government through Ministry of Health (about 65%) coverage), Christian Health Association (CHAM) which covers about 30% of the country. Government has district hospitals (except Phalombe) and health centres. However, in some rural parts of districts, reliable health facilities are those under Christian Health Association. Currently main challenges facing health facilities are shortage of drugs and health workers. One of main cause is inadequate funds to purchase drugs and low salaries which cannot motivate health workers.

The National HIV and Aids Policy (2012) highlights that HIV/Aids impacts on the country is quite significant and affects a range of socio-e-economic activities be it in agriculture, fisheries, public sector, private sector, tourism, urban areas, rural areas among others. HIV and Aids prevalence in the country varies from one region to the other and from rural to urban areas. Current rates (2014) indicate that highest rate is in the Southern Region at 15.18%, Central Region at 9.42% and lowest in Northern Region at 6.58%. Prevalence rate is 13.1% in urban areas and 10.61% in rural areas

National HIV/Aids Policy identifies migrant workers (mobile population) and women are among highly vulnerable people to transmission of HIV and Aids and other sexually transmitted infections.

Proposed development of irrigation schemes and rural market infrastructures will bring some workers within project premises. Recruitment of migrant workers is anticipated during both construction phase and during factory operations phase. Single male migrant workers would be at increased likelihood of contracting HIV and Aids in the project area. The reason is that some migrant workers would approach potential infected female partners in the surrounding local communities or could be approached by sex workers in the area. In addition, increased disposal income from migrant workers may enhance some workers to indulge in extra –marital affairs will either local girls or married women within surrounding villages. .

Sexual intercourses (involving migrant workers) during construction period may increase the spread of HV/Aids and sexually transmitted diseases. This may result into long term negative impact at local level. The impact is of high significance. With mitigation measures, the impacts can be reduced to low significance. Recommended mitigation measures for adherence by contractors include: (a) prioritize hiring of local workers to migrants, (b) periodic distribution of both female and male condoms, (c) periodic HIV and Aids sensitization meetings for workers and their spouses (d) development of HIV and Aids Work Place Policy and disseminating of mitigation measures to workers.

6.0.0 STAKEHOLDER CONSULTATIONS, PUBLIC DISCLOSURE AND GREVANCE REDRESS MECHANISMS.

6.1.0 Public Consultations

Procedures for project environmental assessment in Malawi and World Bank Safeguard policies require that adequate and informed consultations be carried out during preparation of environmental and social management framework. Consultations are supposed to provide opportunity for stakeholders/project affected persons to air views/concerns on project activities and provide opinions in appropriate plans before implementation. Consultations also help to avoids possible

conflicts or misunderstandings on the potential negative risks and also offer measures for addressing concerns. In addition, consultations help to identify enhancement measures for positive impacts.

In order to undertake informed consultations, disclosure of the project is necessary. Information for project disclosure includes: nature and scope of the project, proponent, main components, period of implementation, potential positive and negative impacts among others.

In carrying out consultations for environmental and social management framework for Malawi Agricultural Commercialization Project, consultants carried out a series of consultations with different stakeholders. These include local people, farmers in selected irrigation schemes, local government officials, extension workers, local leaders, non—governmental organizations and central government officials: A summary of consultations were as follows:

- Consultations with senior officials at various government ministries and departments. Consultations took place in Lilongwe from February 1-9, 2017. These included Ministry of Agriculture, Irrigation and Water Development, Ministry of Health, Ministry of Gender, Ministry of Lands, Housing and Urban Development, Ministry of Trade, Industry and Tourism, National Aids Commission, Department of Environmental Affairs, Department of Disaster Management Affairs among others. The discussions centred on the aims and objectives of the project, the scope of the project, design and modalities of implementation. Main issues discussed included potential positive impacts of the project to the country, scope of beneficiaries, target areas, potential cash crops with high values. Main potential negative impacts identified included: deforestation, soil erosion, risks of poisoning from pesticides, increase in Malaria in districts. Meetings also discussed mitigation measures for main negative risks. Lists of persons consulted are attached in Annex 14 of the report
- Meetings and discussions with District Commissioners and District Executive Committees at at five selected district councils. The four selected district councils. Main issues raised by local government officials included: need of participation in selection of sub-projects for implementation, shortage of funds for environmental and social mitigation measures, inadequate food assistance for flood affected people (as priority activities), in adequate transport to supervise environmental mitigation measures, lack of skills in storage and management of pesticides, proposals to enhance environmental and social mitigation measures among others. List of officials consulted in attached in annexes 6 -13 of the report.
- Consultations with selected non-governmental organizations and Civil Society organizations in selected nongovernmental organizations. The nongovernmental organizations consulted were those in four flood affected districts chosen for field surveys: The non-governmental organizations included: Care International, World Vision International, Total Land Care, Eagles Relief Development Programme, Catholic Commission, NASAFAM, Malawi Red Cross Society. Some civil Society Organization consulted included Catholic Commission for Development, Civil Society Net for Agriculture and farmers Union of Malawi. Main issues raised by non-governmental organizations included: transparency and accountability in implementation of projects, incorporation of livestock component in Malawi Agricultural Commercialization Project, involvement of non-governmental organization in planning and implementation of disaster mitigation related projects, involvement of flood affected people in design and implementation of projects, avoiding duplication in implementation of projects and transparency in resource allocation and utilization on various. Some members of non-governmental organizations raised issues on high costs of pesticides for irrigation farmers. The issues will be incorporated in environmental and social management plans for sub-projects. Most of issues raised by non-

governmental organizations would be addressed during planning and implementation cycle of the projects at district level. List of officials consulted is attached in annex 6-8

- Consultations with extension workers and lead farmers in selected 5 districts in Salima, Mchinji, Lilongwe, Kasungu and Dedza districts Views from extension workers and lead farmers included: consideration of suitable fertilizers and hybrid seeds for cereals and legumes; considerations of loans for lead farmers to purchase farm equipment, consideration of woodlot development, incorporation of agro-forestry, consideration of motorbikes for extension workers supervision among others. Other important issues discussed included incorporation of compost manure and land conservation programme in the project. List of extension workers consulted is attached in annexes 9-11 in the report

6.2.0 Public Disclosure

Public disclosure of the project is important in order to allow stakeholders/public appreciate the impacts of the project on their lives and environment. Project disclosure can take place during feasibility stage or planning stage or implementation stage. Disclosure of the project activities helps to gather wider views on the project and enlist support from local communities. Among others public disclosure of the project has to cover rationale of the project, nature of the project, period of implementation, areas of implementation, potential impacts and proposed mitigation measures.

Public disclosure for Malawi Agricultural Commercialization Project will follow several stages through various stages and means. These include:

- a) Briefs by government officials to news reporters and district information officers at district consultative meetings and briefs to local leaders and non-governmental agencies. These have already been done.
- b) Presentation, briefings and debates in Malaw's National Assembly sometime in May 2017 or June 2017. The presentation and debates will help members of Parliament and local people to know more about Malawi Agricultural Commercialization Project and why government of Malawi planned the project activities.
- c) Another important public disclosure has been through radio announcement. Government officials announced publicly through radio and Malawi Broadcasting Television regarding Malawi Agricultural Commercialization Project.
- d) Some members of public will be informed of the project through distribution of the project documents in district commissioner's offices, libraries in towns and districts.
- e) The Environmental and Social Management Framework, Resettlement Policy Framework and Integrated Pest Management Plan will be posted on websites for various government agencies and World Bank Info. The arrangement will allow more people access information on the project and make informed views and opinions.

6.3.0 Grievance Redress Mechanisms on Sub-Project Activities

Implementation of projects activities under Malawi Agricultural Commercialization Project will take place in various locations of the districts. Implementation of the activities may generate a number of challenges and complaints especially to those which relate to infringement of rights of sections of the society. Examples of complaints include: discrimination in distribution of relief food to flood affected people, discrimination among farmers on irrigation schemes, objections to use of someone's land during emergency detours, encroachment on private land, harassment of women, and marginalization of women in distribution of material assistance. And

examples of grievances: include dissatisfaction with amount of compensation and, dissatisfaction with size and nature of land replacement. Such grievances are likely to crop up in one way or another in implementation sub-projects under Malawi Agricultural Commercialization Project. It should be pointed out that since commercial farms will be community based, negotiation and agreement by consensus will provide the first avenue to iron out and resolve any compliant/grievances expressed by the individuals, the land owners or households whose land and properties might be affected. The communities will ensure that resettlement related grievances should be addressed during the identification and appraisal of sites.

Proper channels of grievance redress mechanisms will be put in place, and the project affected people sensitized to make use of them. The process of grievance redress mechanisms will involve project grievance committees, informal courts handled by traditional leaders (village headmen, traditional authorities) and also formal courts within the judiciary. The following paragraph highlights four main grievance redress mechanism:

a) Project Grievance Redress Committee.

Project Implementation Unit will ensure that implementation mechanism of each sub-project under Malawi Agricultural Commercialization Project has a project Grievance Redress Committee. The committee will be the first reference point of issues which crops from activities on the site. The committee will be composed of chosen representative of key stakeholders in implementation of sub-project. The committee will operate within framework and timeframe of project cycle. The committee will be set up to address some issues/cases related to activities. The committee will also be responsible for referring some cases/issue to relevant oversight bodies.

Project Grievance Redress Committee will ensure that user friendly mechanism are put in place to ensure that vulnerable people are taken care of. Some simple procedures will be developed and communicated to the public. Some procedures will include the following:

- i) Venue of meetings to be closer to the project site or site convenient to the project affected people.
- ii) Project Managers to disclose all data and information from safeguard documents .
- iii) Complainants must agree a reasonable time to go through both environmental and social safeguards plans .Project affected households to provide feedback within specified time.
- iv) Complainants can submit a complaint or dispute orally or through phone or through a simple letter. The submission can be in any local language or Chichewa or English languages.
- v) All complaints to be submitted through their local leader or civil society organization
- vi) Project Managers or government to provide feedback to all complaints/disputes within 5 days from date of Grievance Redress Committee
- vii) Complainants to be informed that in case of unsatisfactory response/resolution for Grievance Redress Committee, they can seek redress from Judiciary.
- viii) Complainants to be informed that in case of unsatisfactory response from Grievance Redress Committee, they can seek redress from World Bank Redress Service. The Office of submission of the complaint is Country manager, World Bank Malawi Office, Mulanje House, off Presidential Highway, City centre, Lilongwe 3.Phone 01 770 611.

b) Traditional courts.

Traditional courts are community based tribunals and operate in form of primary justice. Traditional courts are based in each local village in the country. When complaints/disputes

related to project arise, the matter will be referred to a village head of the area. The village head will organize a village tribunal to preside on the matter. Both parties in complaints/cases will be called to be heard. When one party is not satisfied with the decision at village headmen level, the complaint can be taken up to group village headmen. Similarly, that party not satisfied with decisions on complaints at that level, can take the matter to traditional authorities (T/A) for public hearings. In most cases/ complaints of this nature are sorted out at traditional authority level. However those who are not satisfied with the verdict will be allowed to appeal to the District Commissioner (DC) of the district. Further appeals can be made to the central government. In this regard, the matter can be referred to one of the line ministries (Ministry of Lands, Housing and Urban Development, Ministry of Labour, Ministry of Local Government and Rural Development) on the matter of dispute which may give direction on the existing policy to be implemented.

c) Formal Courts.

Formal courts include magistrates, High Court of Malawi and Supreme Court of Malawi. These courts handle both civil and criminal cases. In regards to complaints and cases during Malawi Agricultural Commercialization Project, people with complaints will have opportunity to take cases to these courts for review and determination on course of action. Such cases may include review of amount of compensations, cases theft of valuable property as well as beating each other. Magistrate courts are located in all 15 flood affected districts and these would help complainants to access the services of these magistrates in case such needs arise.

d) Access to World Bank Grievance Redress system.

Malawi Government will also ensure that communities and individuals in project locations are aware of World Bank Grievance Redress System. Government will disclose simple system of submitting issues of concern through letters or newspapers. People who believe that they are adversely affected by project activities carried by contractors or communities may submit complaints (through letters/phones) to Grievance Redress Service (GRS) World Bank Malawi office. The letters would be reviewed by offices. The system ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may also submit their complaint to the Bank's independent Inspection Panel, after having brought the complaint to the attention International Development Association through Malawi Country Office. Information on how to submit complaints to the Bank's Grievance Redress Service and the Bank Inspection Panel will be disclosed to the public during public disclosure of Environmental and Social Management Framework.

7.0.0 CHAPTER SEVEN: ENVIRONMENTAL AND SOCIAL SCREENING PROCESS FOR SUB - PROJECTS.

The Malawi Environment Management Act (1996) and the Guidelines for Environmental Impact Assessment in Malawi (1997) prescribe steps for Environmental Impact Assessment for development projects in Malawi. However, these instruments do not contain guidelines regarding the screening, identification, assessment and mitigation of potential localized impacts of small-scale investments, where the project details and specific project sites are not known.

Environmental and Social Screening Process outlined below complements Malawi's EIA procedures for meeting the environmental and social management requirements, as outlined in Appendix C of Guidelines of Environmental Impact Assessment in Malawi (1997) . The Environmental and Social Screening Process also meets the requirements of the World Bank's OP 4.01 Environmental Assessment for small to medium scale projects. It provides a mechanism for ensuring that potential adverse environmental and social impacts of public works funded sub-projects are identified, assessed and mitigated as appropriate, through an environmental and social screening process. In this way the results of the screening process can complement the national environmental assessment process.

7.1.0 PURPOSE OF ENVIRONMENTAL AND SOCIAL SCREENING.

Since the specific details and locations of the new construction and rehabilitation works are not known at this time, the environmental and social screening process (the screening process) is necessary for the review and approval of the engineering plans, for the development of new and the rehabilitation of existing facilities . The objectives of the screening process are to:

- a) Determine the level of environmental work required (i.e. whether an EIA is required or not; the requirement and the scope of ESMP to be prepared; whether the application of simple mitigation measures will suffice; or whether no additional environmental work required);
- b) Determine appropriate mitigation measures for addressing adverse impacts;
- c) Determine which rehabilitation and re-construction activities are likely to have potential negative environmental and social impacts;
- e) Facilitate the review and approval of the screening results of the sub-projects.
- h) Provide guidelines for monitoring environmental and social parameters during the construction, rehabilitation, operation of the sub-projects.

7.2.0 STEPS IN ENVIRONMENTAL AND SOCIAL SCREENING OF THE PROJECTS.

The extent of environmental work that might be required, prior to the commencement of construction/rehabilitation of rural warehouses, construction of feeder roads and rehabilitation of the sub-projects will depend on the outcome of the screening process by District Environmental Sub Committee described below.

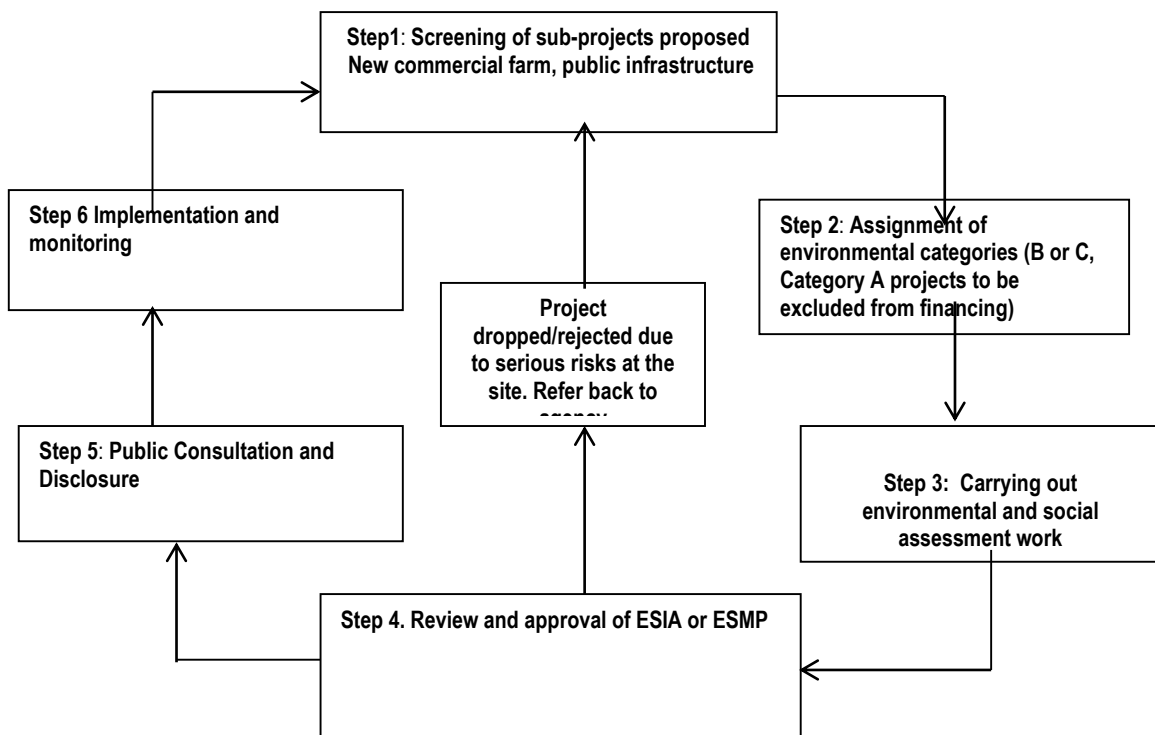
Step 1: Screening of Sub-project Activities and Sites.

The first exercise is desk appraisal of the construction and rehabilitation plans, including infrastructure designs. This will be carried out by the District Environmental Sub-Committee at the district level.

Secondly, the District Environmental Sub-Committee, which includes the Environmental District Officer, will carry out the initial screening in the field, through the use of the Environmental and Social Screening Form (Annex 3).

The screening form will facilitate the identification of potential environmental and social impacts, the determination of their significance, the assignment of the appropriate environmental category (consistent with OP 4.01), the determination of appropriate environmental and social mitigation measures, and the need to conduct an Environmental and Social Impact Assessment (ESIA). To ensure that the screening form is completed correctly for the various project locations and activities, training should be provided to members of the District Environmental Sub Committees as part of strengthening community level structures.

Figure 4: The flow diagram for screening activities for sub-projects.



Step 2: Assigning the Appropriate Environmental Categories

The environmental and social screening form, when completed, will provide information on the assignment of the appropriate environmental category to a particular activity for construction of new facilities or rehabilitation of existing structures. The Environmental Sub-Committee will be responsible for assigning the appropriate environmental category to the proposed sub-projects consistent with the requirements of Environmental Assessment (OP 4.01): Projects under this policy are classified into three categories. These are category A, Category B and Category C.

Category A: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works
Malawi Agricultural Commercialization Project has been categorized as environmental category B. Therefore Category A sub-projects are eligible.

(a) Category B: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas - including wetlands, forests, grasslands, and other natural habitats - are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects. The scope of environmental assessment for a Category B project may vary from project to project, but it is narrower than that of Category A. Like Category A, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.

Given that most sub-projects will not have significant adverse environmental and social impacts requiring a separate EIA report, the screening process will recommend the assignment of (i) category B to sub-projects requiring only the application of simple mitigation measures (using the attached environmental and social checklist); and (ii) some other sub-projects may require a separate EIA report due to the severity of their potential adverse environmental and social impacts. All sub-projects which require land acquisition, impacts assets, causes a loss of livelihood, and /or restrict access to natural resources will require the preparation of an (Abbreviated) Resettlement Action Plan, based on the project RPF report.

(c) Category C: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further environmental assessment is required for a Category C project. In cases where the results of the screening process indicate that the sub-project will not have significant adverse environmental and social impacts, if any, no additional environmental work will be required and sub-project implementation can proceed immediately.

The impacts from projects in Category C can be mitigated effectively through incorporation in bid documents. The contractor has to be empowered to address the impacts in course of project activities. Generic Environmental and Social Contractors Rules are attached as annex 5. These can be adapted by implementing agencies to suite specific contracts of various sub-projects under Malawi Agriculture Commercialization Project.

In the event that an Abbreviated Resettlement Action Plans (RAPs) has to be prepared for sub-projects, these would be reviewed and approved by the Commissioner for Lands and Valuation, consistent with the Resettlement Policy Framework, prior to initiating compensation and commencement of project activities.

Each local council will ensure that members of the District Environmental Sub Committees should receive appropriate environmental and social training so that they can perform this function effectively. The Environmental District Officer is the secretariat to the District Environmental Sub Committees and will therefore take a leading role in capacity building issues of the District Environmental Sub –Committee.

Step 3: Carrying Out Environmental and Social Work

After reviewing the information provided in the environmental and social screening form, and having determined the appropriate environmental category, the District Environmental Sub-Committee will determine whether (a) the application of simple mitigation measures outlined in

the Environmental and Social Checklist will suffice; (b) a comprehensive Environmental and Social Impact Assessment (ESIA) will need to be carried out, using the national environmental assessment guidelines; or (c) no additional environmental work will be required. ESIA reports are first subjected to technical review by Technical Committee on the Environment (TCE) before they are recommended to National Council on the Environment (NCE) for approval.

7.3.0 USE OF THE ENVIRONMENTAL AND SOCIAL CHECKLIST:

Generic checklists on environmental and social impacts have been prepared and are attached as annex 4 of report. The checklists cover potential environmental and social impacts in construction works, as well as typical mitigation measures. The Environmental and Social Checklist will be completed by District Environmental Sub Committees. Some of the activities categorized as B might benefit from the application of mitigation measures outlined in the checklist.

In situations where the screening process identifies the need for land acquisition and the project impacts on assets, causes a loss of livelihood, and/or restricts access to natural resources, an Abbreviated Resettlement Action Plan shall be prepared consistent with the standards and guidelines set forth in the Resettlement Policy Framework and World Bank Involuntary Resettlement Policy (under OP 4.12).

Where standard designs will be used, the District Environmental Sub Committees, in consultation with the District Commissioner will assess impacts on the chosen land site and the community; and modify the designs to include appropriate mitigation measures. For example, if the environmental screening process identifies loss of fertile agricultural fields as the main impact from the construction of a water storage reservoir, the mitigation measure would be for the District Environmental Sub Committees and members of the planning team to choose a site further away from the fertile gardens so that the livelihood systems are maintained.

7.3.0 CARRYING OUT ENVIRONMENTAL AND SOCIAL ASSESSMENT FOR SUB-PROJECTS.

The environmental and social impact assessment process will identify and assess the potential environmental and social impacts of the proposed construction activities, evaluate alternatives, as well as design and implement appropriate mitigation, management and monitoring measures. These measures will be captured in the Environmental and Social Management Plan (ESMP) which will be prepared as part of the environmental and social impact assessment process for each sub-project, based on the environmental and social screening.

Preparation of the environmental and social impact assessment and environmental management plans will be carried out in consultation with the Department of Environmental Affairs in the Ministry of Natural Resources, Energy and Mining. The District Environmental Sub Committees in close consultation with the Environmental Affairs Department and on behalf of the Local Council will arrange for the (i) preparation of Environmental and Social Impact Assessment terms of reference; (ii) recruitment of a service provider to carry out the ESIA; (iii) public consultations; and (iv) review and approval of the ESIA through the national ESIA approval process. A parallel exercise of preparation of Resettlement Action Plan (RAP) will also commence, if determined as required by the procedure outlined in the RPF.

Step 4: Review and approval of the screening activities

Under the guidance of the District Environmental Sub Committees, the relevant sector committees at the district level will review (i) the results and recommendations presented in the

environmental and social screening forms; and (ii) the proposed mitigation measures presented in the environmental and social checklists.

Where an environmental impact assessment has been carried out, Environmental Affairs Department will review the reports to ensure that all environmental and social impacts have been identified and that effective mitigation measures have been proposed.

Step 5: Recommendation for Approval of environmental assessment reports.

Based on the results of the above review process, and discussions with the relevant stakeholders and potentially affected persons, the District Environmental Sub Committees, in case of projects that don't require environmental assessment, will make recommendations to the District Executive Committee (DEC) for approval/disapproval of the screening results and proposed mitigation measures. As regards ESIA reports, Director of Environmental Affairs will recommend ESIA reports to the National Council for the Environment (NCE) for approval.

Step 6: Approval of the reports and environmental and social management plans.

Approval based on the results of the environmental and social screening form will be done by the District Environmental Sub Committees based on submissions by the Environmental District Officer. Approval of the results of the ESIA will be provided by the National Council on the Environment (NCE). Approval of RAP will be done by the District Commissioner.

7.5.0 CONSULTATIONS AND DISCLOSURE.

According to Guidelines for Environmental Impact Assessment in Malawi (1997) and World Bank Environmental and Social Safeguards, public consultations are an integral component of the ESIA Reports requirements, and the guidelines identify the following principal elements:

- Productive Organization will be required to conduct public consultation during the preparation of Project Briefs, ESIA, and ARAPs.
- The Director of Environmental Affairs may, on the advice of the Technical Committee on Environment (TCE), conduct his or her own public consultation to verify the works of a developer.
- Formal EIA Reports documents are made available for public review and comments. Documents to which the public has access include Project Briefs, ESIA terms of reference, draft and final ESIA Reports, and decisions of the appropriate authorities regarding project approval. The Director of Environmental Affairs will develop practices and procedures for making these documents available to the public. It is very unusual that an ESIA will need to contain proprietary or market sensitive information (i.e. technological and financial) which a developer would prefer to remain confidential. Unless public knowledge of such information is crucial to project review, and as provided under Section 25(1) of the Environment Management Act, the Director will comply with requests that such information does not appear in an ESIA or ARAP.
- Certificates approving projects will be published by the developer and displayed for public inspection. Public consultations are critical in preparing an effective proposal for the construction and rehabilitation of the project activities. The first step is to hold public consultations with the local communities and all other interested/affected parties, during the screening process and in the course of preparing the Environmental and Social Impact Assessment Reports.

These consultations should identify key issues and determine how the concerns of all parties will be addressed in response to the terms of reference for the Environmental and Social Impact Assessment Reports which might be carried out for construction and rehabilitation proposals.

7.5.1 Scope of consultations in environmental assessment of sub-projects.

Guidelines for Environmental Impact Assessment in Malawi (1997), provides details concerning the public consultation methods in Malawi. Such methods include press conferences, information notices, brochures/fliers, interviews, questionnaires and polls, open houses, community meetings, advisory committees, and public hearings.

The guidelines for public consultation include, among others, a requirement that major elements of the consultation program should be timed to coincide with significant planning and decision-making activities in the project cycle. In terms of Malawi's ESIA process, public consultation should be undertaken during (i) the preparation of the ESIA Reports terms of reference; (ii) the carrying out of an ESIA Reports; (iii) government review of an ESIA Reports; and (iv) the preparation of environmental and social terms and conditions of approval. Public consultations under sub-projects will be carried out by district environmental sub-committees, consultants and project committees as part of the environmental and social screening process of sub-projects, and the results will be communicated in an understandable language to potentially affected persons and beneficiaries.

7.8.0 RECOMMENDATIONS ON ENVIRONMENTAL SCREENING OF SUB-PROJECTS.

Proposed sub-projects will consist of construction/rehabilitation of rural warehouses, construction of feeder roads, electricity and potable water infrastructure. Potential environmental and social impacts are anticipated to be localized within the project sites. In this regard, detailed environmental and social assessments for these components will be adequate. There may e no need of detailed Environmental and Social Impact Assessment Reports..

Most of sub-projects (construction/rehabilitation of rural warehouses, construction of feeder roads, electricity and potable water infrastructure) will require simple environmental and social management plans. The impacts will localized and of moderate to low significance. The impacts can be mitigated effectively if the contractor is empowered to address the impacts in course of project activities. Generic Environmental and Social Contractors Rules are attached as annex 4 of the report. These can be adapted by implementing agencies to suite specific conditions.

8.0.0 CHAPTER EIGHT: POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND MANAGEMENT PLANS.

The proposed Malawi Agricultural Commercialization Project consists of various components/sub T projects. Sub-projects such as development of construction/rehabilitation of rural warehouses, construction of feeder roads, rehabilitation of irrigation schemes, construction of electricity and potable water infrastructure are expected to generate some significant environmental and social impacts in project locations.

The purpose of this chapter is to screen and highlight typical potential environmental and social impacts from main rehabilitation and re-construction works of Malawi Agriculture Commercialization Project.

8.1.0 METHODOLOGY OF IMPACT IDENTIFICATION.

The general approach adopted in screening potential environmental and social impacts is to adopt a life cycle dimension of the project. In this approach, impacts are examined at each main phase of implementation cycle of project. In context of construction/rehabilitation of rural warehouses, feeder roads, rehabilitation of irrigation schemes are categorised into three logically linked phases are as follows.

- a) **Planning and design phase.** Main activities include preparation of project plans and designs, recruitment of labourers, establishment of contractors camps
- b) **Development/rehabilitation phase.** Main activities are land clearance, compaction of road surface, building works, installation works, excavation of foundations, construction of feeder roads, electricity and potable water infrastructure
- c) **The operational and maintenance phase.** Main activities include use of irrigation schemes, use of feeder roads, electricity and potable water facilities, use of warehouses/market centres, use of pesticides in schemes and warehouses

Basically, the process of environmental screening involves exploration and examination possible changes and externalities to the public and environment. The following basic steps are followed in order to effectively scope the potential impacts of the project:

Step One: Assessment of baseline information in the project impact area.

The exercise involves analysis of data and familiarization with information on the physical environment of the project area, human settlements and demographic pattern of the project area, economic and social conditions of the project area. The information has been used as reference point for evaluation potential changes and externalities which would result from project implementation.

Step Two: Review the main machinery and inputs in project activities.

The necessity of this step was to examine the potential changes and impacts which could be created about in use of the proposed project machinery and inputs in activities within the project area. For example, the use of tractors on farms, and construction sites generate some environmental impacts. Use of pesticides on irrigation schemes have impacts on water and wildlife around irrigation schemes.

Step Three: Review the nature and quantities of the main outputs .

The aim of this step was to examine the potential changes and impacts which could be brought about by the delivery and use of such projects outputs. Examples of outputs are: rehabilitated

irrigation schemes, construction/rehabilitation of rural warehouses, last mile service infrastructure (feeder roads, electricity and potable water facilities)

Step Four: Identifications of the potential impacts from works.

Upon examination of the scope and project implementation strategy, checklist can be used forecast the main impacts. One common checklist is the Leopold Type Matrix which guided on identification of primary impacts on components of environment from categories of infrastructure related projects. The identification of secondary level impacts and the social impacts relied on the professional experience of experts.

8.2.0 SUMMARY OF POTENTIAL NEGATIVE ENVIRONMENTAL AND SOCIAL IMPACTS.

This step involved the systematic outline of the identified impacts, their sources/causes and the potential risks and effects of the impacts in the project impact area. This chapter presents sampled screening of impacts for three components of Malawi Agriculture Commercialization Project. These are construction/rehabilitation of rural warehouses and rehabilitation of irrigation schemes, and development of last mile public infrastructure (feeder roads, electricity and potable water facilities). Table 4 overleaf presents an outline of the predicted main negative impacts, the potential sources of the impacts from construction of last mile infrastructure (feeder roads, electricity and potable water infrastructure. Table 5a outline of the predicted main negative impacts, the potential sources of the impacts from development of construction/rehabilitation of rural warehouses and rehabilitation of small scale irrigation schemes in rural areas of Malawi. Table 5b presents potential impacts from commercial livestock farms.

Table 4: Outline of potential environmental and social impacts from development of rural warehouses, feeder roads, electricity and potable water facilities.

Component of the environment to be affected.	Potential impacts.	Source of impacts/cause of the impacts	Potential severity. Ranching Key: severe moderate marginal
Vegetation Resources	Loss of vegetation (trees) and greenery beauty along the road during project period Spread of invasive alien plants	Increase in tree felling for fuel wood by increased labour force. Spread by contaminated construction equipment or workers through transfer of seed	<i>moderate</i>
Land and Soil resources	Creation of borrow pits.	Gravel excavation, top soil stripping and road gravel	Moderate
	Incision of road verges and culverts.	Construction of new roads side drains	Moderate
	Increase in surface runoff and soil erosion.	Clearance of vegetation at and compaction of roads	Moderate
	Pollution of land by solid wastes. Pollution of soil from contamination of petroleum products	Disposal of solids from camps of contractors Leakages and spillage from vehicles and construction equipment, storage facilities and maintenance workshop	Marginal Moderate
Water Resources	Increase in suspended solids and sediments delivery into surface water bodies such as rivers and dams	Increase in surface discharge from premises. This would be due compaction of land within the premises.	Moderate
	Pollution of groundwater and surface water from sewage from offices,	Open defecation and urination by construction workers.	Moderate
	Pollution from spillage of petroleum products	Leakages or spillage of diesels and oils from storages and maintenance workshops.	Moderate
Ambient Air and Climate change	Dust emissions from construction works during construction phase	Project civil works and heavy equipment in fields and on dusty roads during dry season	<i>High</i>
	Noise and vibrations from construction equipment and trucks	Project civil works within construction phase.	<i>Marginal</i>
	Emissions of green house gases (carbaon dioxide, nitrogen and sulphur) into air.	Gases are released from exhausts of vehicles and construction plants	<i>Moderate</i>
Local Communities	Influx of migrant workers leading to competition of land and natural resources in the area	Migration of people and their families seeking employment.	Moderate
	Creation of unsightly workers camps with poor sanitary conditions within the periphery of construction sites	Migration of people and their families looking for job opportunities at Construction sites.	Moderate
	Risks of interferences in local marriages	Extra marital affairs instigated by some migrant workers.	Moderate
	Risks of introduction and spread of communicable diseases and sexually	Interactions between migrant workers and local people; extra marital affairs by some migrant workers with local girls in the area	moderate

	Conflicts between migrant workers and local people	This may rise due to high social and economic differentiation between workers and local people; This may arise due competition for jobs and due to interferences in local marriages by unmarried migrant workers	Marginal
	Disruption of communal paths.	Closure of some local paths which pass through and across the road	Moderate
	Risks of poor sanitation within housing areas	Increase in employment of more workers may lead to establishment of overcrowded temporary housing compounds with poor sanitary facilities	Moderate
	Risks of child labour in some activities at road rehabilitation/upgrading activities	Recruitment of under aged persons and within senior staff quarters may enhance local children dropping from school in option of work at	Marginal
Rural Livelihoods	Reduced availability of sources of fuel wood, mushrooms and medicinal	Clearance of natural trees within the area due to demand for fuel wood in the area.	Marginal
	Reduced availability of labour for local agricultural activities	Most people in the economic active age would be engaged in short term work at the cement works, thereby leading to shortage of labour in local gardens.	Moderate
	Increase in losses of assets such as chicken, and goats	Increase in theft in the area due to influx of migrant workers, some who may enhance theft of assets for sale.	Marginal
	Loss of properties due to relocation or demolition during road construction works	Structures along the roads	Moderate
Health and Safety	Risks of introduction and spread of communicable diseases and sexually	Interactions of migrant workers and local people; increase in sexual interactions between employed migrant workers and local women	Moderate
	Nuisance from emissions from burning of asphalt	Heating of bitumen by construction workers	Marginal
	Risks of occupational diseases for workers	Dust particles and contaminated air within premises can cause respiratory diseases among workers.	Marginal
	Risk of vehicle and machinery accidents	Increased presence of construction equipment and increased use of machinery	Marginal

Table 5a: Outline of environmental and social impacts from rehabilitation and operations of irrigation schemes .

Component of the environment to be affected.	Potential environmental and social impacts	Source of impacts/cause of the impacts	Potential significance
Vegetation Resources	Extensive loss of natural vegetation and greenery beauty.	Clearance of vegetation within land and possible increase in extraction of firewood due to increase in demand.	<i>moderate</i>
	Proliferation of invasive plants	Clearance of vegetation within project area and possible increase in extraction of firewood due to increase in demand.	<i>moderate</i>
Wildlife Resources	Loss of habitat for wild animals	Clearance of vegetation within project area for the estate.	<i>moderate</i>
	Loss of biodiversity such as snakes, butterflies, mice and micro-organisms	Clearance of vegetation within project area of the estate. Pre-harvesting burning of mature cane fields	<i>moderate</i>
Land and Soil Resources	Creation of burrow pits.	Top soil stripping; excavation of construction soil and road gravel	Moderate
	Incision of road verges and culverts.	Construction of scheme roads	Moderate
	Increase in surface runoff and soil erosion.	Clearance of vegetation and compaction of roads	Moderate
	Pollution of soil from contamination of petroleum products	Leakages and spillage from earthmoving and agricultural equipment, storage facilities and maintenance workshop	Moderate
	Risks of degradation of soil	Excess use of agro chemical, over utilisation of soils, nutrient depletion	Moderate
	Disturbance to the growth of micro - organisms	Land clearance and application of herbicides to soils.	Moderate
Water Resources	Increase in suspended solids and sediments delivery into surface water bodies	Increase in surface discharge.	Moderate
	Pollution of groundwater and surface water resources	Open defecation and urination by construction workers. Spillage from petroleum products.	Moderate
	Pollution from spillage of petroleum products	Leakages or spillage of diesels and oils from storages and maintenance workshops.	Moderate
	Pollution from agro- chemicals	Spillage in storage and improper use of agro chemicals.	Moderate
	Increase in siltation and deterioration of water quality in streams within the area	Increase in soil erosion and debris from the cleared land	Marginal
	Water logging and salinisation of the soils of the area	Excessive water supply to the scheme area Excessive compaction of the scheme are and poor internal drainage. Excessive application of chemical fertilisers within the scheme	Moderate
	Risks of loss of aquatic fauna within streams within the project area	Increase in pollution from residues of agro -chemicals	Marginal
Ambient Air	Dust emissions in the area	Project civil works and agriculture machinery in fields and on dusty roads during dry season	<i>Marginal</i>
	Noise pollution	Project civil works and trucks to and from the scheme	<i>Marginal</i>
	Green house emissions	From project vehicles and project machinery	<i>Marginal</i>

Local Communities (social impacts)	Disputes in allocation of land for production within the scheme	Corrupt practices and favoritism by those who would be charged in land allocation to potential smallholder growers. Inclusion of migrant people in allocation of land at the scheme	Moderate
	Marginalisation of vulnerable groups including women in land allocation (blocks) at the scheme	Corruption and favoritism in the process of land allocation and registration of growers Inclusion of migrant people/workers in land allocation at the scheme	Moderate
	Influx of migrant workers leading to competition of land and natural resources in the area	Migration of people and their families looking for job opportunities at the scheme	Moderate
	Risks of interferences in local marriages	Extra marital affairs by some migrant workers at the scheme	Moderate
	Risks of introduction and spread of communicable diseases and sexually transmitted diseases including HIV/Aids	Interactions between migrant workers and local people; extra marital affairs by some migrant workers,	moderate
	Conflicts between migrant workers and local people	This may rise due to high social and economic differentiation between scheme workers and local people; Competition for jobs at the scheme, migrant workers and local people	Moderate
	Closure of communal foot paths	Closure of some paths on the land of the proposed project site.	Moderate
	Increase in losses of assets such as chicken, doves and goats	Increase in theft in the area due to influx of migrant workers, some who may enhance theft of assets for sale.	Moderate
Rural Livelihoods	Reduced availability of sources of fuel wood and medicinal plants	Clearance of vegetation within some parts of the scheme.	<i>marginal</i>
	Loss of land for food crop production	Conversion of some land for irrigation infrastructure.	<i>marginal</i>
	Loss of land for grazing livestock and goats	Clearance of grass and vegetation within the 500 hectares were some local communities graze livestock and goats.	<i>marginal</i>
	Reduced labour force for food production in smallholder		
Health and Safety risks to workers and local people	Introduction and spread of communicable diseases and sexually transmitted diseases including HIV/ and Aids	Interactions of migrant workers and local people.	<i>marginal</i>
	Risks of poisoning from agro chemicals by workers	Accidental spillages and exposure to agro chemicals in storage and during use.	<i>marginal</i>
	Local people exposure and poisoning from agro-chemicals	Accidental spillage of agro-chemicals and unauthorized access to agro-chemicals in storage facilities.	<i>marginal</i>
	Physical injuries and cuts – falling from machinery	Accidents in falling from machinery vehicles; skin cuts during harvesting of cane.	<i>marginal</i>
	Prevalence of pools of stagnant water and multiplication of mosquitoes in the area	Poor internal soil drainage r within the irrigated scheme, roads and cane fields	<i>marginal</i>
	Multiplication of harmful pests –rodents and snakes	Within irrigation fields	<i>Marginal</i>

8.3.0 SUMMARY OF CUMMULATIVE ENVIRONMENTAL AND SOCIAL IMPACTS

8.3.0 ASSESSMENT OF POTENTIAL CUMMULATIVE NEGATIVE IMPACTS

The Malawi Agricultural Commercialization Project would trigger short and long term environmental and social impacts in the environment. Impacts within short term will include those which can be felt immediately upon implementation of activities and occur within 5 years. Most of these impacts have short term and localized effects. On the other hand, some impacts from agricultural activities have long term negative effects and to the wider communities and environmental resources in general. Some of these impacts will build up after accumulation of effects over a set period of time. The following paragraph summarizes some potential cumulative environmental and social impacts from selected components of The Malawi Agricultural Commercialization Project.

8.3.1 Cumulative impacts on commercial farms and irrigations schemes.

Main cumulative effects will be from activities on the commercial farms and rehabilitated irrigation schemes. These will include the following:

- a) *Salinization of soils due to over application of fertilizers and irrigation water.* Salinization of soils normally occurs after over application of chemical fertilizers. Fertilizers are used on commercial farms to enhance yields. Soils become less productive as it has less nutrients.
- b) *Pollution of surface and underground water resources.* Underground water resources on the commercial farms would be polluted by agro-chemicals and fertilizers. Pollution of underground water leads to health risks to communities who use wells and boreholes for drinking and cooking water.
- c) *Outbreak of water borne diseases and communicable diseases in the area.* Incidences of outbreak of communicable diseases results from contaminated water resources and poor sanitary conditions in the commercial farms. Poor sanitary conditions are common in temporary housing camps of migrant workers. Outbreak of diseases and pests leads to loss of human lives.
- d) *Loss of productive human resources/labor force due to HIV/Aids related infections.* Some localities experience loss of productive labour force in rural areas due to effects of death from HIV/Aids related complications. Loss of productive labour force may affect agricultural production around the project area.
- e) *Conflicts between water users in upstream and downstream areas.* Water resources have been affected in some rivers due to siltation of streams and by over abstraction by upstream users (irrigation schemes or water supply schemes). Shortage of water resources down steam users would lead to serious resents and conflicts between some communities.
- f) *Depletion of micro-organism within the soil of commercial farms.* Micro-organism play vital role in humus production and aeration of soils. Humus help to maintain water in soil. However, some micro-organisms will be depleted due to compaction of soils and heavy application of fertilizers and agro-chemicals on commercial farms

8.3.2 Cumulative impacts on construction of last mile infrastructure facilities

Some main cumulative effects from construction of feeder roads and water facilities will be compaction of land. Land compaction will occur in long run due to use of construction machinery and trucks during construction of feeder roads. Compaction of land will lead to increase in surface discharge leading to local flooding in stream.

8.3.3 Cumulative Impacts on livestock commercial farms

Important cumulative impacts from livestock farm will be air pollution from green houses emission from cattle dung. Other long term impacts will be pollution of land and water resources from pesticides used in treatment of cattle on livestock farm. Human health risks from livestock farm will include risks of transmission of tuberculosis from cattle to human beings through contaminated dairy products and beef products

8.4.0 SAMPLES OF ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANS.

Some samples of environmental and social management plans for sub-projects have been prepared for identified impacts. These samples of environmental and social management plans cover for generic environmental and social impacts for commercial farms and irrigations schemes, Livestock Commercial Farms and public infrastructure (feeder roads, electricity and potable water facilities).

The descriptions of environmental and social management plan are as follows:

- a) Table 6 presents an Environmental and Social Management Plan for development construction of rural warehouses, feeder roads, electricity and potable water facilities.
- b) Table 7 presents an Environmental and Social Management Plan for construction/rehabilitation and operation of small scale irrigation schemes.

These ESMPs have been prepared for reference purposes in preparation of detailed ESMPs for some of the sub-projects. Implementing agencies will prepare site specific environmental and social management plans once the specific sub-projects have been identified and specific site of implementation has been identified. These activities would be carried out in a later stage in project preparation and design stages.

Table 6: Environmental and Social Management Plan for development rural warehouses, feeder roads, electricity and potable water facilities

Identified Negative Impacts for mitigation	Recommended mitigation measures	Recommended Period of implementation	Budget Estimates (in MK)	Responsible Authority for Implementation of the measures	Recommended Performance targets on implementation
1.0 Impacts on vegetation resources.					
1.1 Loss of vegetation and greenery beauty through clearance of trees on the site	a) Use of firewood from exotic tree species such as pipe trees and blue gum trees at contractors camp	During road construction phase	K200, 000.00	• Contractor	<ul style="list-style-type: none"> • .Use of firewood from exotic tree species at camp site • Number of stoves used
1.2 Risks of spread of invasive alien plants/seeds in the area	b) Promote the use of wood – energy efficient cooking stoves for workers.				
	a) Migrant workers to ensure clean out clothes and personal effects to get rid of alien plants and seeds				<ul style="list-style-type: none"> • Number of migrant workers who clean clothes • Use of clean equipment
	b) Clean construction equipment used elsewhere before use on the site				
2.0 Impacts on climate change					
2.1 Increase in green house gas emissions from the area.	a) Use of new or well maintained construction equipment or project vehicles.	During road construction phase	MK200,000.00	Project Contractor	<ul style="list-style-type: none"> • Number of new vehicles on site and use of well maintained construction plants
4.0 Impacts on land and soils.					
4.1 Increase in surface runoff and soil erosion due to increase in exposure of soil	a) Construction of drainage structures b) Compaction of the road and drains	During road construction phase	MK300000	Contractor	<ul style="list-style-type: none"> • Length of storm water drains • Number of culverts
4.2 Creation of borrow pits and risks of soil erosion.	Back fill and regenerate natural vegetation in all borrow pits after construction works	During road construction phase	K2,000,000.00	Project Contractors	<ul style="list-style-type: none"> • Number of borrow pits backfilled
4.3 Increase in brick making by local communities around roads.	a) Use stones or cement bricks for main drain construction b) Sensitization of the communities on dangers of haphazard brick making and sand mining.	During road construction phase	Budget in construction budget	Project Contractors	<ul style="list-style-type: none"> • Cement bricks used in construction of canals
4.4 Pollution of soil from contamination of petroleum products	a) Proper storage facilities for oils, diesel and minimize spillage. Minimize spillage from machinery on site through proper maintenance b) Fence to storage facilities for fuel to reduce unauthorized personnel	During construction	MK200,000	Project Contractors	<ul style="list-style-type: none"> • Fuel tanks well constructed no leakages. • Fuel collectors installed in garage/workshops
5.0 Impacts on water resources.					
5.1 Increase in suspended solids and sediments into surface water resources.	a) Construct drainage structures	During road construction phase	Included under Construction budget	Project Contractors	<ul style="list-style-type: none"> • Length of storm water drains • Number of culverts..
5.2 Pollution from human waste within the area	a) Provision of appropriate pit latrines to construction workers	During road construction phase	MK200,000	Contractors Project Contractors	<ul style="list-style-type: none"> • Pit latrines for construction workers at camp

5.3 Pollution from spillage of petroleum products	a) Security of storage facilities for oils, diesel at camp and minimize spillage b) Use of well maintained vehicles and construction equipment	During road construction phase	Included in section 4.5 above	Project Contractors	<ul style="list-style-type: none"> Secured fuel tanks with no leaks Used oil kept in drums for recycle elsewhere Used of well maintained vehicles/equipment
6.0 Impacts on air.					
6.1 Dust emissions in the area	a) Suppress of dusts from dry civil works by application of water. b) Provide protective wear to workers to protect workers from contamination	During road construction phase	MK200,000.00	Project Contractors Project Contractors	<ul style="list-style-type: none"> Application of water to dry civil works Use of protective wear by workers such as dust coats
6.2 Noise from construction machinery and transportation trucks in the area	Provide protective wear to workers during civil works to protect ear drums	During road construction phase	K400,000.00	Project Contractors Project Contractors	<ul style="list-style-type: none"> Use of protective clothes in ear to protect ear-drums
7.0 Social impacts on local communities.					
7.1 Influx of migrant workers leading to competition of land and natural resources in the area	a) Recruitment of local people as general labour force as priority.	During road construction phase	K50,000.00	Project Contractors	<ul style="list-style-type: none"> Number of local people employed.
7.2 Risks of interferences in local marriages	a) Recruitment of local people as general labour force as priority. b) Sensitization of migrant workers to desist from interferences in local marriages.	During road construction phase	Not applicable	Project Contractors Local village headmen	<ul style="list-style-type: none"> Number of local people employed. Number of sensitization meetings.
7.3 Risks of introduction and spread of communicable diseases and sexually transmitted diseases including HIV/Aids	a) Put in place HIV/Aids Work Policy and operationalise it for benefit of workers b) Establishment of roads HIV/Aids Workers' committee. c) Weekly sensitization meetings among roads workers, on dangers of HIV/Aids. d) Distribution of condoms and IEC materials for free of workers, and, local people around e) Paste stickers with HIV/Aids messages on project vehicles and construction equipment	During road construction phase	MK200,000.00	Project Contractors Local village headmen District HIV/Aids Coordinator	<ul style="list-style-type: none"> HIV/Aids Work Place Policy for road . HIV/Aids Workers Committee and peer groups at roads Number of sensitization meetings Number workers and condoms distribution.
7.4 Conflicts between migrant workers and local people	a) Recruitment of local people as general labour force as priority b) Sensitization of migrant workers to respect local cultures and live with local people in harmony.	During road construction phase	Not applicable	Project Contractors Local village headmen	<ul style="list-style-type: none"> Number of local people employed. Number of sensitization meetings

7.5 Risks of child labour	a) Recruitment of workers through District Labour Office. No recruitment of school going children or persons below 18 years for any work at roads. b) Put a sign board at contractors camps “ No employment for person under age of 18 years ”	During road construction phase	K200,000	Project Contractors District Labour Officer	<ul style="list-style-type: none"> Minimum age of workers at road works. Sign board in place
7.6 Loss of trees, structures, land uptake for gravel pits and feeder roads	c) Compensation for land uptake for gravel pits. d) Compensation for small structures, trees (miscellaneous)	During road construction	MK400,000.00	Project Contractor	<ul style="list-style-type: none"> Number structures ,trees compensated Number of borrow pits compensated
8.0 Impacts on health and safety of workers/people					
8.1 Spread of sexually transmitted infections including HIV and Aids	a) Adoption and operation of HIV and Aids Policy for road b) Distribution of condoms and IEC materials to both men and female workers c) Civic education on dangers of the HIV and Aids among the workers and local people	During road construction phase	Budget included in item 7.2 above	Project Contractors District Labour Officer	<ul style="list-style-type: none"> HIV and Aids Policy in place. Number workers distributed with condoms every month Number of civic education meeting.
8.2 Prevalence of pools of stagnant water and multiplication of mosquitoes	a) Regular flashing of pools of stagnant water. b) Distribution of mosquito nets to workers		MK100,000.00	Project Contractors	<ul style="list-style-type: none"> Number of pools of stagnant water flashed
8.3 Nuisance from smoke and smut from burning of bitumen	a) Use of cold mix asphalt or concrete slabs for road surface which is noted heated b) Use of slurry bound macadam surfacing which is not heated c) Provision of protective wear to workers.	During road construction phase	MK150,000.00	Project Contractors	<ul style="list-style-type: none"> Use of alternative surfacing materials
8.4 Physical injuries from accidents– fall from trucks and machinery etc	a) Provide protective clothing to workers	During road construction phase	MK200,000.00	Project Contractors	<ul style="list-style-type: none"> Types of protective wear with workers
8.5 Exposure and poisoning from cement	a) Provision of adequate protective clothing to workers in use of agro-chemicals such as mouth masks, goggles and gloves. b) Adequate training of workers calibration of equipment, handling storage materials c) Restriction of access to storage of cement to trained staff only	During road construction phase	MK200,000.00	Project Contractors	<ul style="list-style-type: none"> Protective wear in use for workers handling petroleum products. Training done for staff Restriction to storage facilities
8.6 Solid wastes and sewage from contractors camp	b) Refuse pits for disposal c) Ventilated pit latrines for workers	During road construction phase	MK300,000.00	Project Contractors	<ul style="list-style-type: none"> Number of toilets Number of refuse pits Number of ventilated pit latrines
			6,000,000.00		

Table 7: Environmental and Social Management Plan for construction/ rehabilitation and operation of irrigation schemes

Identified Negative Impacts for mitigation	Recommended mitigation measures	Recommended Period of implementation	Budget Estimates (in MK)	Responsible Authority for Implementation of the measures	Performance targets on implementation
Impacts on vegetation resources.					
Loss of vegetation and greenery beauty on the site	<ul style="list-style-type: none"> Maintain some trees as buffer zones around the scheme Establishment tree nurseries including tree seedlings for natural trees Promote the use of wood – energy efficient cooking stoves among schemes workers and local communities around the scheme. 	Rehabilitation and re-construction phases	K300, 000.	<ul style="list-style-type: none"> Farm Management Scheme Management 	<ul style="list-style-type: none"> Vegetative buffer zones Tree nurseries established at the scheme. Number of energy –efficient stoves used by scheme workers.
Impacts on wildlife Resources					
<ul style="list-style-type: none"> Loss of habitat for wild animals Loss of biodiversity mice,snakes 	<ul style="list-style-type: none"> Maintain some trees around the scheme blocks as tree belts Afforestation within local villages around the scheme for fuel wood supply to local people. 	Rehabilitation and re-construction phases	K200,000.	<ul style="list-style-type: none"> Scheme Management Farm Management 	<ul style="list-style-type: none"> Vegetative buffer zones around the scheme. Number of trees planted in villages around the scheme
Impacts on land and soils.					
<ul style="list-style-type: none"> Increase in surface runoff and soil erosion due to increase in exposure of soil 	<ul style="list-style-type: none"> Implement soil conservation measures within all the fields (check dams, box ridges) Regular tilling of land for infiltration 	During rehabilitation phase and operational phase	K200,000.	<ul style="list-style-type: none"> Scheme Management Farm Management 	<ul style="list-style-type: none"> Regular harrowing and tilling of land Soil conservation measures – box ridges, check dams.
<ul style="list-style-type: none"> Incision of road verges and culverts. 	<ul style="list-style-type: none"> Installation of storm water outlets involving a flared apron to spread out flow at all culvert outlets. Establishment of appropriate grass lining further downstream to provide good protection against erosion. 	During road re-construction	K200,000.	Project Contractors	<ul style="list-style-type: none"> Storm water outlets. Grass lining in water courses
<ul style="list-style-type: none"> Risks of water logging and salinization 	<ul style="list-style-type: none"> Apply correct amount of water to irrigated area and correct amount of fertilizers Ensure sufficient infield drainage and minimize over-irrigation. Use overhead irrigation system (centre pivot) Add lime to soil where there are problems of salinization 	During scheme operational phase	K1000, 000. MK5,000,000	Scheme Management	<ul style="list-style-type: none"> Regulation of correct amount of water and fertilizers to soils Centre Pivot irrigation system in place Degraded soil reclaimed.
<ul style="list-style-type: none"> Disturbance to the growth of micro - organisms 	<ul style="list-style-type: none"> Use correct amount of fertilizers in fields 	During scheme operational phase	Not applicable	Scheme Management	<ul style="list-style-type: none"> Use of organic fertilizers, minimum tillage and residue recycling methods

	<ul style="list-style-type: none"> Use of a combination of organic fertilizers; minimum tillage and recycling of crop residue 				
Impacts on water resources.					
<ul style="list-style-type: none"> Increase in suspended solids and sediments delivery into surface water resources. 	<ul style="list-style-type: none"> Water harvesting measures (box ridges, check dams) and improvement of soil infiltration 	During scheme operational phase	K300,000.00	Scheme Management	<ul style="list-style-type: none"> Water harvesting/land conservation measures in place Regular tillage..
<ul style="list-style-type: none"> Pollution from human waste within the area 	<ul style="list-style-type: none"> Provision of appropriate pit latrines to construction workers and cane cutters. 	During operational phase	K200,000	Contractors Scheme Management	<ul style="list-style-type: none"> Pit latrines for construction workers and can cutters.
<ul style="list-style-type: none"> Pollution from spillage of petroleum products 	<ul style="list-style-type: none"> Proper storage facilities for oils, diesel and minimize spillage Install an oil collector in workshops/garages to collect oil during maintenance works. 	During scheme operational phase	K500,000	Scheme Management	<ul style="list-style-type: none"> Proper fuel tanks with no leaks Oil collectors installed in garage
<ul style="list-style-type: none"> Exposure and pollution from agro-chemicals 	<ul style="list-style-type: none"> Use environmentally friendly agro-chemicals, registered with Pesticide Board of Malawi Train workers in proper storage, handling and use to minimize the spillage. Storage of agro –chemicals within spacious and well designed storage facilities. 	During scheme operational phase	K500,000	Scheme Management	<ul style="list-style-type: none"> Use of registered agro -chemicals
<ul style="list-style-type: none"> Increase in siltation and deterioration of water quality in streams nearby 	<ul style="list-style-type: none"> Maintenance of vegetative buffer zone along sugarcane fields to minimises soil erosion into river. Check out soil erosion on the scheme 	During scheme operational phase	Not applicable	Scheme Management	<ul style="list-style-type: none"> Vegetative buffer zone along cane fields
<ul style="list-style-type: none"> Risks of loss of aquatic fauna within streams within the scheme and Shire River 	<ul style="list-style-type: none"> Minimise level of pollution of all drains discharging in to Streams Check soil erosion from the scheme 	During scheme operational phase	Not applicable	Scheme Management	<ul style="list-style-type: none"> Reports of loss of aquatic life in streams
Impacts on air.					
<ul style="list-style-type: none"> Dust emissions in the area 	<ul style="list-style-type: none"> Suppress of dusts from dry civil works by application of water. Provide protective wear to cane cutters to protect workers from contamination 	During land preparation phase	K100,000	Project Contractors Scheme Management	<ul style="list-style-type: none"> Application of water to dry civil works Use of protective wear by workers such as dust coats
<ul style="list-style-type: none"> Noise from farm machinery 	<ul style="list-style-type: none"> Provide protective wear to workers during civil works to protect ear drums 	During land preparation phase	K100,000	Project Contractors Scheme Management	<ul style="list-style-type: none"> Use of protective clothes in ear to protect eardrums
Social impacts on local communities.					
<ul style="list-style-type: none"> Loss of land for food crop production 	<ul style="list-style-type: none"> Reserve at east 20% of land for irrigated food crop production on the scheme for each growers 	During operational stage	MK500,000	Scheme Management	<ul style="list-style-type: none"> Reserve of land for irrigated food crops

	<ul style="list-style-type: none"> Construct a diversion canal to convey water to gardens surrounding Phase IV Scheme for food production 				<ul style="list-style-type: none"> Extension of canal to gardens of local people around the scheme
<ul style="list-style-type: none"> Loss of land for livestock grazing. 	<ul style="list-style-type: none"> Villageheadmen to show alternative land for grazing of livestock 	During planning stage	Not applicable	Local villageheadmen	<ul style="list-style-type: none"> New site for grazing of livestock
<ul style="list-style-type: none"> Marginalisation of women in allocation of land for crop production 	<ul style="list-style-type: none"> Allocation of land to be restricted to households who own land on the site. No migrant people/workers. Allocation system to be done by tripartite committee (drawn from KSCGL, local headman and representative of DC) Reserve number of pieces of land for women participation. 	During planning stage	MK100,000	Scheme Management District Commissioner Local villageheadmen	<ul style="list-style-type: none"> Restriction of land allocation to original owners of land. Establishment of tripartite committee for land allocation. Percentage of land reserved for female headed households
<ul style="list-style-type: none"> Disputes in land allocation, ownership and benefits from sales of produce 	<ul style="list-style-type: none"> Register all households and sizes of their gardens on the site. Use this register as basis of allocation of land at scheme. Disputes to be presided over by tripartite committee- Committee to define and agree with growers on the formulae of distribution of benefits 	During planning and scheme development stages	MK100,000	Scheme Management District Commissioner Local villageheadmen	<ul style="list-style-type: none"> Register for all owners of land and sizes of their pieces. Establishment o tripartite committee Definition of formulae for distribution of benefits.
<ul style="list-style-type: none"> Influx of migrant workers leading to competition of land and natural resources in the area 	<ul style="list-style-type: none"> Recruitment of local people as general labour force as priority. 	During operational phase	K100,000	Scheme Management	<ul style="list-style-type: none"> Number of local people employed.
<ul style="list-style-type: none"> Risks of interferences in local marriages 	<ul style="list-style-type: none"> Recruitment of local people as general labour force as priority. Sensitization of migrant workers to desist from interferences in local marriages. 	During operational phase	Not applicable	Scheme Management Local village headmen	<ul style="list-style-type: none"> Number of local people employed. Number of sensitization meetings.
<ul style="list-style-type: none"> Risks of introduction and spread of communicable diseases and sexually transmitted diseases including HIV/Aids 	<ul style="list-style-type: none"> Put in place HIV/Aids Work Policy and operationalise it for benefit of workers Establishment of scheme HIV/Aids Workers' committee. Regular sensitization meetings among scheme workers, on dangers of HIV/Aids. 	During operational phase	K1,000,000	Scheme Management Local village headmen District HIV/Aids Coordinator	<ul style="list-style-type: none"> HIV/Aids Work Place Policy for the scheme . HIV/Aids Workers Committee and peer groups at scheme Number workers and condoms distribution.
<ul style="list-style-type: none"> Conflicts between migrant workers and local people 	<ul style="list-style-type: none"> Recruitment of local people as general labour force as priority Sensitization of migrant workers to respect local cultures and live with local people in harmony. 	During operational phase	K100,000	Scheme Management Local village headmen	<ul style="list-style-type: none"> Number of local people employed. Number of sensitization meetings
<ul style="list-style-type: none"> Closure of communal paths 	<ul style="list-style-type: none"> Provide alternative foot paths through the schemes or along the perimeter of the scheme. 	During operational phase	Not applicable	Scheme Management	<ul style="list-style-type: none"> Number of alternative foot paths
<ul style="list-style-type: none"> Risks of child labour 	<ul style="list-style-type: none"> Recruitment of workers through District Labour Office. No recruitment of school 	During operational phase	K100,000	Scheme Management District Labour Officer	<ul style="list-style-type: none"> Minimum age of workers at the scheme.

	going children or persons below 18 years for any work at scheme.				
Health and Safety of workers/people					
<ul style="list-style-type: none"> • Spread of sexually transmitted infections including HIV and Aids 	<ul style="list-style-type: none"> • Adoption and operation of HIV and Aids Policy for the scheme • Distribution of condoms • Civic education on dangers of the HIV and Aids among the workers and local people 	During construction and operational stage	MK500,000	Scheme Management District Labour Officer	<ul style="list-style-type: none"> • HIV and Aids Policy in place. • Number of condoms • Number of civic education meeting.
<ul style="list-style-type: none"> • Prevalence of pools of stagnant water and multiplication of mosquitoes 	<ul style="list-style-type: none"> • Regular flashing of pools of stagnant water. • Distribution of mosquito nets to workers 	During operational stage	MK100,000	Scheme Management	Number of pools of stagnant water flashed
<ul style="list-style-type: none"> • Risks of accidents –children and live-stock falling in canals 	<ul style="list-style-type: none"> • Provide culverts and foot bridges over canals for pedestrians and livestock 	During operational	MK500,000	Scheme Management	Number of foot bridges and culverts over main canal
<ul style="list-style-type: none"> • Physical injuries from accidents– fall from trucks and machinery etc 	<ul style="list-style-type: none"> • Provide protective clothing to workers 	During construction	MK100,000	Scheme Management	Types of protective wear with workers
<ul style="list-style-type: none"> • Exposure and poisoning from agro-chemicals 	<ul style="list-style-type: none"> • Provision of adequate protective clothing to workers in use of agro-chemicals such as mouth masks, goggles and gloves. • Adequate training of workers calibration of equipment, handling storage • Restriction of access to storage of agro-chemicals to trained staff only 	During operational	MK500,000	Scheme Management	Protective wear in use for workers handling agro-chemicals. Training done for staff Restriction to storage facilities

MITIGATION PLAN FOR LABOUR INFLUX RELATED RISKS

Description of Potential risks	Proposed Mitigation measures for risks	Authorities responsible for implementation	Proposed Budget	Performance Indicators
Deforestation around the project site	<ul style="list-style-type: none"> Purchase fuel wood from commercial plantations Use of energy saving stoves. No charcoal on camp Planting of trees around the workers camp 	Commercial Farmers Contractor	MK200,000.00	Use of soft Energy saving stoves
Overcrowding and poor within housing camps	<ul style="list-style-type: none"> Recruitment of local workers Provision of sanitation facilities 	Commercial Farmers Contractor	Not applicable	No overcrowding
Competition over natural resources	<ul style="list-style-type: none"> Desist from recruitment of migrant workers. Recruit workers locally 	Commercial Farmers Contractor	Not applicable	No competition
Increase in gender based violence	<ul style="list-style-type: none"> Periodic sensitization of workers against gender based violence in homes 	Commercial Farmers Contractor	Not applicable	No reports of violence
Risks of child labor in the area and increase in school drop out	<ul style="list-style-type: none"> Recruitment workers through Labour Office Recruit workers above 18 years old Put sign board “ NO CHILD LABOUR” at site 	Commercial Farmers Contractor	MK200,000.00	No children working on the site
Increase in theft of properties in local communities	<ul style="list-style-type: none"> Periodic sensitization meetings for migrant workers to desist from theft Establishment community policing programme 	Commercial Farmers Contractor	MK200,000.00	Few reports of theft
Increase in population by migrant workers and “followers”	<ul style="list-style-type: none"> Desist from recruit of migrant workers. Relocate migrant workers to homes after project 	Commercial Farmers Contractor	MK500,000.00	No followers on camp
Increase in pressures on service infrastructure – potable water, health services etc	<ul style="list-style-type: none"> Provide additional boreholes Provide more drugs to health centre 	Commercial Farmers Contractor	MK1000,000.00	No pressure on facilities More boreholes
Increase prices of goods in the area	<ul style="list-style-type: none"> Designate site for temporary market for goods 	Commercial Farmers Contractor	MK100,000.00	Stable market prices
Increase in pressure on accommodation and rent	<ul style="list-style-type: none"> Recruit workers locally to commute from their homes. Reduce recruitment of migrant workers 	Commercial Farmers Contractor	Not applicable	No pressure of accommodation
Proliferation of unsightly temporary housing structures	<ul style="list-style-type: none"> Clear unsightly workers camp. Recruit more local people to commute from homes 	Commercial Farmers Contractor	MK500,000.00	No unsightly workers camp
Indiscrimination solid waste disposal in the area	<ul style="list-style-type: none"> Promote compost for some wastes Designate site for waste disposal 	Commercial Farmers Contractor	MK200,000.00	No indiscriminate waste disposal
Poor sanitation at workers camp	<ul style="list-style-type: none"> Provide adequate toilets and bath rooms in homes 	Commercial Farmers Contractor	MK200,000.00	Proper sanitation facilities

Interference in local marriages by unmarried migrant workers	<ul style="list-style-type: none">• Periodic sensitization meetings for host communities and migrant workers to desist from illicit behaviors	Commercial Farmers Contractor	Not applicable	No reports of conflicts and marriage break ups
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8.4.0 ENVIRONMENTAL AND SOCIAL MONITORING PLANS.

The environmental and social monitoring plans are presented in tables 7 and 8. The monitoring plans are in tabular format in order to clearly show linkages between recommended mitigation measures, monitoring indicators, frequent of monitoring and stakeholders responsible for monitoring.

There will be two levels of monitoring in order to enhance effective follow up on implementation of proposed mitigation measures. One level of monitoring will be by Safeguards Expert resident at Project Implementation Unit. The second level of monitoring will be carried out by Environmental Inspectors/Specialist from Environmental Affairs Department in ministry of Natural Resources, Energy and Mining

The Safeguards Expert from Project Implementation Unit will work on day to day supervision of implementation of environmental and social safeguards. The Environmental and Safety officer will also responsible for training of construction workers on adherence to occupational health and safety measures within the contractors' camps and construction site.

Environmental Affairs Department will designate Environmental Inspector/Specialist during construction phase of the project. The Environmental Inspector/Specialist will carry the following tasks on the project:

- Supervise adherence to environmental and social mitigation measures for contractors.
- Orient and supervise construction workers on use of relevant personal protective equipment/clothing during construction period.
- Sensitize workers and communities around on community health aspects including preventative measures on communicable diseases
- Provide technical guidance on implementation of environmental and social mitigation measures.
- Sensitize migrant workers on dangers of sexually transmitted diseases including HIV/Aids. Train workers on HIV/Aids Work Place Policy, mitigation measures for contraction/spread of HIV/Aids among workers, family members and members of surrounding communities.
- Prepare periodic monitoring reports on environmental and social safeguards. The reports will be shared with all stakeholders including World Bank Office,

Budget estimates for all activities under Environmental and Social Monitoring Plans have been incorporated under column four of the monitoring plan.

Ministry of Agriculture, Irrigation and Water Development will provide funds for monitoring environmental and social mitigation measures.

Table 8: Environmental and Social Monitoring Plan of mitigation measures for rural warehouses, feeder roads, electricity and water facilities.

Identified Negative Impacts for mitigation	Recommended mitigation measures	Monitoring indicators	Frequency of monitoring	Monitoring authorities and budget estimates	Means of verifications
Impacts on vegetation resources.					
Loss of vegetation and greenery beauty through clearance of trees on gardens Risks of spread of invasive alien plants/seeds in gardens	<ul style="list-style-type: none"> • Use of firewood from exotic tree species such as pipe trees and blue gum trees at contractors camp • Promote the use of wood – energy efficient cooking stoves for workers. • Migrant workers to ensure clean out clothes to get rid of alien plants • Clean construction equipment used elsewhere before use on the site 	<ul style="list-style-type: none"> • .Volume of firewood from exotic tree species • Number of stoves used • Number of migrant workers who clean clothes • Use of clean equipment 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Impacts on climate change					
Increase in green house gas emissions from the area.	<ul style="list-style-type: none"> • Ensure construction equipment and project vehicles are well maintained. 	<ul style="list-style-type: none"> • Number of new vehicles on site • Number maintained construction plants 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Impacts on land and soils.					
Increase in surface runoff and soil erosion due to increase in exposure of soil	<ul style="list-style-type: none"> • Construction of drainage structures • Compaction of the road and drains • Stone pitching on road side cut in mountains 	<ul style="list-style-type: none"> • Length of water drains • Number of culverts 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Creation of borrow pits and risks of soil erosion.	<ul style="list-style-type: none"> • Back fill and regenerate natural vegetation in all borrow pits after construction works 	<ul style="list-style-type: none"> • Number of borrow pits backfilled 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Pollution of soil from contamination of petroleum products	<ul style="list-style-type: none"> • Proper storage facilities for oils, diesel and minimize spillage. Minimize spillage from machinery on site through proper maintenance • Fence to storage facilities for fuel to reduce unauthorized personnel 	<ul style="list-style-type: none"> • Upright fuel tanks installation 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections
Impacts on water resources.					
Increase in suspended solids and sediments into surface water resources.	<ul style="list-style-type: none"> • Construct drainage structures 	<ul style="list-style-type: none"> • Length of storm water drains • Number of culverts.. 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Pollution from human waste within the area	<ul style="list-style-type: none"> • Provision of appropriate pit latrines to construction workers 	<ul style="list-style-type: none"> • Pit latrines for construction workers at camp 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records

Pollution from spillage of petroleum products	<ul style="list-style-type: none"> • Security of storage facilities for oils, diesel at camp and minimize spillage • Use of well-maintained vehicles and construction equipment 	<ul style="list-style-type: none"> • Upright fuel tanks • Used oil kept in drums for recycle elsewhere • Used of well-maintained vehicles/equipment 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Impacts on air.					
Dust emissions in the area	<ul style="list-style-type: none"> • Suppress of dusts from dry civil works by application of water. • Provide protective wear to workers to protect workers from contamination 	<ul style="list-style-type: none"> • Number of days per month for application of water to dry civil works • Number of protective wear e.g dust coats 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Noise from construction machinery and transportation trucks in the area	<ul style="list-style-type: none"> • Provide protective wear to workers during civil works to protect ear drums 	<ul style="list-style-type: none"> • Number of ear muff for workers 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Social impacts on local communities.					
Influx of migrant workers leading to competition of land and natural resources in the area	<ul style="list-style-type: none"> • Recruitment of local people as general labour force as priority. 	<ul style="list-style-type: none"> • Number of local people employed. 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Risks of interferences in local marriages	<ul style="list-style-type: none"> • Recruitment of local people as general labour force as priority. • Sensitization of migrant workers to desist from interferences in local marriages. 	<ul style="list-style-type: none"> • Number of local people employed. • Number of sensitization meetings. 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Risks of introduction and spread of communicable diseases and sexually transmitted diseases including HIV/AIDS	<ul style="list-style-type: none"> • Put in place HIV/AIDS Work Policy and operationalise it for benefit of workers • Establishment of roads HIV/AIDS Workers' committee. • Weekly sensitization meetings among roads workers, on dangers of HIV/AIDS. • Distribution of condoms and IEC materials for free of workers, and, local people around • Paste stickers with HIV/AIDS messages on project vehicles and construction equipment 	<ul style="list-style-type: none"> • HIV/AIDS Work Place Policy for project . • HIV/AIDS Workers Committee • Number of sensitization meetings • Number condoms distribution. • Number stickers pasted on vehicles 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records
Conflicts between migrant workers and local people	<ul style="list-style-type: none"> • Recruitment of local people as general labour force as priority • Sensitization of migrant workers to respect local cultures and live with local people in harmony. 	<ul style="list-style-type: none"> • Number of local people employed. • Number of sensitization meetings 	Every six months	<ul style="list-style-type: none"> • Environmental Affairs Dept • PIU Safeguards Expert • MK200,000.00 	<ul style="list-style-type: none"> • Inspections • Records

Risks of child labour	<ul style="list-style-type: none"> Recruitment of workers through District Labour Office. No recruitment of school going children or persons below 18 years for any work at roads. Put a sign board at contractors camps “No employment for person under age of 18 years” 	<ul style="list-style-type: none"> Minimum age of workers at works. Sign board in place 	Every six months	<ul style="list-style-type: none"> Environmental Affairs Dept PIU Safeguards Expert MK200,000.00 	<ul style="list-style-type: none"> Inspections Records
Loss of trees, structures, land uptake for gravel pits and feeder roads	<ul style="list-style-type: none"> Compensation for land uptake for gravel pits and feeder roads Compensation for small structures, trees (miscellaneous) 	<ul style="list-style-type: none"> Number structures ,trees compensated Number of borrow pits compensated 	Every six months	<ul style="list-style-type: none"> Environmental Affairs Dept PIU Safeguards Expert MK200,000.00 	<ul style="list-style-type: none"> Inspections Records
Spread of sexually transmitted infections including HIV and AIDS	<ul style="list-style-type: none"> Adoption and operation of HIV and AIDS Policy for road Distribution of condoms and IEC materials to both men and female workers Civic education on dangers of the HIV and AIDS among the workers and local people 	<ul style="list-style-type: none"> HIV and AIDS Policy in place. Number workers distributed with condoms every month Number of civic education meetings. 	Every six months	<ul style="list-style-type: none"> Environmental Affairs Dept PIU Safeguards Expert MK200,000.00 	<ul style="list-style-type: none"> Inspections Records
Prevalence of pools of stagnant water and multiplication of mosquitoes	<ul style="list-style-type: none"> Regular flashing of pools of stagnant water. Distribution of mosquito nets to workers 	<ul style="list-style-type: none"> Number of pools of stagnant water flashed 	Every six months	<ul style="list-style-type: none"> Environmental Affairs Dept PIU Safeguards Expert MK200,000.00 	<ul style="list-style-type: none"> Inspections Records
Nuisance from smoke and smut from burning of bitumen	<ul style="list-style-type: none"> Use of cold mix asphalt or concrete slabs for road surface which is noted heated Use of slurry bound macadam surfacing which is not heated Provision of protective wear to workers. 	<ul style="list-style-type: none"> Use of alternative surfacing materials 	Every six months	<ul style="list-style-type: none"> Environmental Affairs Dept PIU Safeguards Expert MK200,000.00 	<ul style="list-style-type: none"> Inspections Records
Physical injuries from accidents– fall from trucks and machinery etc	<ul style="list-style-type: none"> Provide protective clothing to workers 	<ul style="list-style-type: none"> Number of protective wear with workers 	Every six months	<ul style="list-style-type: none"> Environmental Affairs Dept PIU Safeguards Expert MK200,000.00 	<ul style="list-style-type: none"> Inspections Records
Solid wastes and sewage from contractors camp	<ul style="list-style-type: none"> Refuse pits for disposal Ventilated pit latrines for workers 	<ul style="list-style-type: none"> Number of toilets Number of refuse pits Number of ventilated pit latrines 	Every six months	<ul style="list-style-type: none"> Environmental Affairs Dept PIU Safeguards Expert MK200,000.00 	<ul style="list-style-type: none"> Inspections Records

Table 9: Environmental and Social Monitoring Plan for mitigation measures for construction/ rehabilitation and operations of irrigation schemes

Identified Negative Impacts for mitigation	Recommended mitigation measures	Monitoring indicators	Frequency of monitoring	Monitoring authorities and budget estimates	Means of verifications
Impacts on vegetation resources.					
Loss of vegetation and greenery beauty on the site	<ul style="list-style-type: none"> Maintain some trees as buffer zones around the scheme Establishment tree nurseries including tree seedlings for natural trees Promote the use of wood – energy efficient cooking stoves among schemes workers and local communities around the scheme. 	<ul style="list-style-type: none"> Vegetative buffer zones Tree nurseries established at the scheme. Number of energy –efficient stoves used by scheme workers. 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
Impacts on wildlife Resources					
<ul style="list-style-type: none"> Loss of habitat for wild animals Loss of biodiversity mice,snakes 	<ul style="list-style-type: none"> Maintain some trees around the scheme blocks as tree belts Afforestation within local villages around the scheme for fuel wood supply to local people. 	<ul style="list-style-type: none"> Vegetative buffer zones around the scheme. Number of trees planted in vil-lages around the scheme 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
Impacts on land and soils.					
<ul style="list-style-type: none"> Increase in surface runoff and soil erosion due to increase in exposure of soil 	<ul style="list-style-type: none"> Implement soil conservation measures within all the fields (check dams, box ridges) Regular tilling of land for infiltration 	<ul style="list-style-type: none"> Regular harrowing and tilling of land Soil conservation measures – box ridges, check dams. 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Pollution of soil from contamination of petroleum products 	<ul style="list-style-type: none"> Proper storage facilities for oils, diesel and minimize spillage. Minimize spillage from machinery on site through proper maintenance Install a collector in workshops/garages to collect oil during maintenance works. 	<ul style="list-style-type: none"> Fuel tanks well constructed no leakages. Fuel collectors installed in garage/workshops 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Risks of water logging and salinization 	<ul style="list-style-type: none"> Apply correct amount of water to irrigated area and correct amount of fertilizers Ensure sufficient infield drainage and minimize over-irrigation. Use overhead irrigation system (centre pivot) Add lime to soil where there are problems of salinization 	<ul style="list-style-type: none"> Regulation of correct amount of water and fertilis-ers to soils Centre Pivot irrigation sys-tem in place Degraded soil reclaimed. 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Disturbance to the growth of micro - organisms 	<ul style="list-style-type: none"> Use correct amount of fertilizers in fields Use of a combination of organic fertilizers; minimum tillage and recycling of crop resi-due 	<ul style="list-style-type: none"> Use of organic fertilizers, minimum tillage and residue recycling methods 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
Impacts on water resources.					

<ul style="list-style-type: none"> Increase in suspended solids and sediments delivery into surface water resources. 	<ul style="list-style-type: none"> Water harvesting measures (box ridges, check dams) and improvement of soil infiltration 	<ul style="list-style-type: none"> Water harvesting/land conservation measures in place Regular tillage.. 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Pollution from spillage of petroleum products 	<ul style="list-style-type: none"> Proper storage facilities for oils, diesel and minimize spillage Install an oil collector in workshops/garages to collect oil during maintenance works. 	<ul style="list-style-type: none"> Proper fuel tanks with no leaks Oil collectors installed in garage 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Exposure and pollution from agro-chemicals 	<ul style="list-style-type: none"> Use environmentally friendly agro-chemicals, registered with Pesticide Board of Malawi Train workers in proper storage, handling and use to minimize the spillage. Storage of agro –chemicals within spacious and well designed storage facilities. 	<ul style="list-style-type: none"> Use of registered agro -chemicals 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Increase in siltation and deterioration of water quality in streams nearby 	<ul style="list-style-type: none"> Maintenance of vegetative buffer zone along sugarcane fields to minimises soil erosion into river. Check out soil erosion on the scheme 	<ul style="list-style-type: none"> Vegetative buffer zone along cane fields 	Every six months	Environmental Affairs Dept PIU Safeguards EXPERT MK200,000.00	Inspections Records
Social impacts on local communities.					
<ul style="list-style-type: none"> Loss of land for food crop production 	<ul style="list-style-type: none"> Reserve at east 20% of land for irrigated food crop production on the scheme for each commercial farmer Construct a diversion canal to convey water to gardens surrounding Scheme for food production 	<ul style="list-style-type: none"> Reserve of land for food crops Extension of canal to gardens of local people around the scheme 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Marginalisation of women in allocation of land for crop production 	<ul style="list-style-type: none"> Allocation of land to be restricted to households who own land on the site. No migrant people/workers. Allocation system to be done by tripartite committee (, local headman and representative of DC) Reserve number of pieces of land for women participation. 	<ul style="list-style-type: none"> Restriction of land allocation to original owners of land. Establishment of tripartite committee for land allocation. Percentage of land reserved for female headed households 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Disputes in land allocation, ownership and benefits from sales of produce 	<ul style="list-style-type: none"> Register all households and sizes of their gardens on the site. Use this register as basis of allocation of land at scheme. Disputes to be presided over by tripartite committee-. 	<ul style="list-style-type: none"> Establishment o tripartite committee Definition of formulae for distribution of benefits. 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Influx of migrant workers leading to competition of land and natural resources in the area 	<ul style="list-style-type: none"> Recruitment of local people as general labour force as priority. 	<ul style="list-style-type: none"> Number of local people employed. 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records

<ul style="list-style-type: none"> Risks of interferences in local marriages 	<ul style="list-style-type: none"> Recruitment of local people as general labour force as priority. Sensitization of migrant workers to desist from interferences in local marriages. 	<ul style="list-style-type: none"> Number of local people employed. Number of sensitization meetings. 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Risks of introduction and spread of communicable diseases and sexually transmitted diseases including HIV/AIDS 	<ul style="list-style-type: none"> Establishment of scheme HIV/AIDS Workers' committee. Regular sensitization meetings among workers. Distribution of condoms and IEC materials for free to workers 	<ul style="list-style-type: none"> HIV/AIDS Workers Committee Number of sensitization meetings Number workers and condoms distribution. 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Conflicts between migrant workers and local people 	<ul style="list-style-type: none"> Recruitment of local people as general labour force as priority Sensitization of migrant workers to respect local cultures and live with local people in harmony. 	<ul style="list-style-type: none"> Number of local people employed. Number of sensitization meetings 	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Risks of child labour 	<ul style="list-style-type: none"> Recruitment of workers through District Labour Office. No recruitment of school going children or persons below 18 years for any work at scheme. 	Minimum age of workers at the scheme.	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Prevalence of pools of stagnant water and multiplication of mosquitoes 	<ul style="list-style-type: none"> Regular flashing of pools of stagnant water. Distribution of mosquito nets 	Number of pools of stagnant water flashed	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Physical injuries from accidents– fall from trucks and machinery etc 	<ul style="list-style-type: none"> Provide protective clothing to workers 	Number of protective wear with workers	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records
<ul style="list-style-type: none"> Exposure and poisoning from agro-chemicals 	<ul style="list-style-type: none"> Provision of adequate protective equipment. Integrated pest management methods 	Protective wear Training of farmers in IPMP	Every six months	Environmental Affairs Dept PIU Safeguards Expert MK200,000.00	Inspections Records

8.6.0 DEFINITION OF ROLES AND RESPONSIBILITIES .

The successful implementation and monitoring of the environmental and social management framework would depend on collaboration of different stakeholders at district level and national level with Ministry of Agriculture, Irrigation and Water Development. This is necessary because the implementation of the activities would require inputs, expertise and resources which would be adequately taken care of if the concerned parties work together. The following sections outline some of the selected and recommended activities to be done by each stakeholder in the environmental activities.

8.5.1 District level

Members of Environmental District Sub Committee which will consist of at least three technical specialists and led by the Environmental District Officer, will be responsible for carrying out the environmental and social screening of planned activities using forms in Annex 3. The Committee may include the District Forestry Officer, District Water Officer, Director for Planning and Development, District Agriculture Officer, District Lands Officer and District HIV Officer.

Members of Environmental District Sub Committee will be responsible for determining the appropriate environmental mitigation measures the proposed sub-projects and to arrange for the appropriate level of environmental work to be carried out.

The budget for the district environmental offices in all districts is estimated at US\$500,000.00. Malawi Government will provide financial resources to all Environmental District Offices to supervise adherence to environmental and social safeguards by contractors during implementation of Malawi Agricultural Commercialization Project

8.5.1 National level

Director of Environmental Affairs will be responsible for monitoring the synchronizations of recommended environmental and social mitigation measures within the sites for public works projects during construction, rehabilitation of existing facilities and during decommissioning phases of the construction and rehabilitation works. The annual budget estimate at the national level is: US\$400,000.00. Malawi Government will provide financial resources to Environmental Affairs Department in Ministry of Natural Resources, Energy and Mining to supervise the preparation and approval of Environmental and Social Impact Assessment reports and Environmental and Social Management Plans for sub-projects during implementation of Malawi Agricultural Commercialization Project Environmental Affairs Department will also provide technical support towards Project Implementation Unit to ensure adequate integration of environmental considerations in planning, design and implementation of the sub-projects

9.0.0 CHAPTER NINE : CAPACITY DEVELOPMENT, TRAINING AND RESOURCES

It is envisaged that to strengthen capacity in the implementation of ESMP two institutions will need capacity building: the District Environmental Sub Committees. The District Environmental Sub Committees will have an orientation on environmental and social safeguards. This orientation will be a sub-set of the orientation of District Executive Committee on proposed construction works and rehabilitation and reconstruction works for last mile infrastructure in districts will run for 1 day. The participants to the course will include the five local council sector heads from Forestry, Environment, Agriculture, Health and Water. District meetings will be organized and facilitated by Department of Environmental Affairs, and Department of Lands and Valuation. The cost of the orientation in all districts is estimated to be about U\$500,000.00. This is based on costs of previous training programmes of similar World Bank funded project in Malawi.

- Infrastructural development activities under Malawi Agricultural Commercialization Project
- Guidelines for Environmental and Social Screening process;
- Preparation of Environmental and Social Management Plan for construction/ rehabilitation works of feeder roads , electricity and potable water infrastructure
- Gender assessment and mainstreaming within project activities;
- HIV /AIDS mainstreaming within project activities.
- Pesticide Management Plans

Specific information, education and communication materials will be prepared to guide on matters of environmental and social screening to councils, non-governmental organizations. Materials will include fact sheets and briefing notes.

9.1.0 Technical Support in Preparation of Environmental and Social Management Plans for Sub-Projects

Consultants have to prepare detailed environmental and social management plans for the sub-projects such as building/rehabilitation of rural warehouses, construction/rehabilitation of small scale irrigation schemes, feeder roads, electricity and potable water facilities. The budget for one such assignment is estimated at US\$5000.00. The budget for ESMP will be included in the construction contracts.

Malawi Government has agreed to provide financial resources to implement activities listed above. Ministry of Agriculture, Irrigation and Water Development will provide the resources to Project Implementation Unit in each financial year in order to carry out environmental and social impact assessment reports and environmental and social management plans for sub-projects.

9.2.0 Work Plan and Budget

PIU and local government officials at district level will be responsible in the implementation of capacity development activities on Environmental and Social Management Framework. Budget estimated costs for the various activities under this program will be built in the overall project budget. The core activities will be as follows:

- Sensitization of stakeholders on environmental and social management framework for the project.
- Training on environmental and social screening of sub-projects
- Preparation of environmental and social impact assessment reports.
- Preparation of environmental and social management plans for sub-projects
- Preparation of environmental and social clauses for sub-projects
- Training of contractors on environmental and social impacts
- Supervision and monitoring on implementation of mitigation measures
- Workshops for review of the activities

The recommended budget for main activities within each year is summarized in Table 9 overleaf.

Malawi Government has agreed to provide financial resources to implement activities listed above. Ministry of Agriculture, Irrigation and Water Development will provide the resources to Project Implementation Unit each financial year in order to implement the list activities above.

Table 10: Summary of budget estimates for environmental and social management activities per component of the project

Component of the project	Proposed Environmental and Social Safeguards	Annual budget estimates (in US\$)			
		2017/2018	2018/2019	2019/2020	2020/20210
Component 1 : Building Productive Alliances (Budget US\$65.00 million)					
Sub-Component 1.3 Last Mile Infrastructure for Productive Alliances	<ul style="list-style-type: none"> • Orientation of PIU staff , Senior government staff and district council officials on ESMF and best practices in the Malawi Agricultural Commercial Project 	100,000.00	100,000.00	100,000.00	100,000.00
<ul style="list-style-type: none"> • Rehabilitation of small scale Irrigation Schemes 	<ul style="list-style-type: none"> • Environmental and Social Screening of sub-projects 				
<ul style="list-style-type: none"> • Construction of feeder roads 	<ul style="list-style-type: none"> • Orientation on risks and mitigation measures on HIV/AIDS 				
<ul style="list-style-type: none"> • Construction of electricity infrastructure to processing plants 	<ul style="list-style-type: none"> • Preparation of ESMPs for sub-projects 				
<ul style="list-style-type: none"> • Construction of potable water to processing plants 	<ul style="list-style-type: none"> • Environmental friendly construction technology 				
	<ul style="list-style-type: none"> • Supervision, monitoring of activities • Sensitization of communities on ESMP and HIV/AIDS 				
Component 2: Investment Enabling Services (Budget US\$18.00 million)					
a) Sub-component 2: Access to land for commercial agriculture	<ul style="list-style-type: none"> • Orientation of staff and communities on ESMF and best practices in conservation agriculture 	150,000.00	100,000.00	100,000.00	100,000.00
	<ul style="list-style-type: none"> • Environmental and social screening of sub-projects • Preparation of ESIA Reports and ESMPs for sub-projects • Supervision and monitoring of implementation of measures • Orientation on risks and mitigation measures on HIV/AIDS 				

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Annex 1 Terms of reference for Environmental and Social Management Framework (ESMF)

MALAWI AGRICULTURAL COMMERCIALIZATION PROJECT

1.0 INTRODUCTION.

The Government of the Republic of Malawi is seeking the financial support of US\$120.00 million from the International Development Association (IDA) of the World Bank Group for The Malawi Agricultural Commercialization Project. The Malawi Agricultural Commercialization Project will seek to increase the commercialization of diversified, high value commodities for domestic and export markets by establishing inclusive ventures between agribusiness and emerging commercial smallholder farmers, and promote vertical integration through the support to business – oriented farmers' organizations, around targeted value chains. The Project will also invest towards making land more available to resources – constrained smallholders.

1.1 SUMMARY OF COMPONENTS OF THE PROJECT.

The project has three components, and each component has sub-components which focus on specific areas of recovery in the flood affected districts. An outline of the components and sub-components is as follows:

Component 1: Building Productive Alliance (Us\$65 Million)

The objective of this component is to support small-scale³, emerging farmers integrate into value chains by improving their capacity to finance and execute productivity-enhancing investments and respond to the requirements of the end-markets and buyers. This component will finance the following: (a) organization of and capacity building in Producer Organizations (approximately US\$15 million); (b) matching grant investments in Productive Organizations; (c) partial credit guarantee fund; and (d) public service infrastructure in selected areas.

Component 2: Support Investment Enabling Services: (Us\$18 Million)

The objective of the component is to support business enabling services by addressing some of the systemic gaps and challenges that constrain investment and trade in the agribusiness sector. These include access to agricultural finance; access to land for commercial agriculture, and removing some of the barriers to trade for agriculture business such as on standards and certification. The component will address processes in efficient access to finances, land and regulatory and operational business enabling services.

1.4 Component 4: Project Coordination and Management

This component will finance activities related to the coordination and actual implementation of project's activities. This includes both costs for:

- (i) project management/coordination including procurement, financial management, monitoring and evaluation (M&E), mitigation of potential negative social and environmental impacts, and communication about project implementation and results;
- (ii) sector and cross-sector coordination with the agriculture, water, industry, trade, lands plans and frameworks; and
- (iii) facilitating inter-ministerial collaboration on tackling implementation challenges. Given the multi-sectoral nature of the Project, a Project Implementation Unit (PIU) will be established to handle day to day activities of the Project.

2.0 PROJECT APPRAISAL UNDER WORLD BANK SAFEGUARDS POLICIES

Initial evaluation of Malawi Agriculture Commercialization Project under World Bank Safeguards Policies, has indicated some implications on some negative environmental and social impacts, and the project has been rated under category B of Operational Policy 4:01 (Environmental Assessment). Other safeguards policies triggered are: Operational Policy 4:09 (Pest Management) and Operational Policy 4.12 (Involuntary Resettlement). The appraisal under category B of Operational Policy 4:01 (Environmental Assessment) entails that potential environmental and social impacts would have moderate significance in the environment, and there is need of environmental and social management plans to address the impacts.

Sub-component 1.3 Service Infrastructure for Productive Alliances (construction/rehabilitation of rural warehouses, new livestock farms, construction of feeder roads, rehabilitation of irrigation schemes, installation of electricity and potable water infrastructure) under Malawi Agriculture Commercialization Project have triggered three World Bank Safeguards Policies, and these are: Operational Policy 4.01 (Environmental Assessment), Operational Policy 4:09 (Pest Management), and OP4.12 and (Involuntary Resettlement). Rehabilitation works for irrigation schemes, construction/rehabilitation of rural warehouses, livestock commercial farms and construction of feeder roads, electricity infrastructure have potential to generate some negative impacts. The appraisal under category B of Operational Policy 4:01 (Environmental Assessment) entails that potential environmental and social impacts would have moderate significance in the environs, and there is need of environmental management plans to address the impacts.

3.0 POLICY AND LEGAL REQUIREMENTS ON ENVIRONMENTAL ASSESSMENTS

3.1 Malawi's Environmental Policy and Law.

National Environmental Policy (2004) provides broad policy framework on environmental planning in development programmes including undertaking environmental impact assessments for prescribed projects. The overall goal of National Environmental Policy is the promotion of sustainable social and economic development through the sound management of the environment in Malawi. The policy seeks to meet the following goals: secure for all persons resident in Malawi now and in the future, an environment suitable for their health and well-being; promote efficient utilization and management of the country's natural resources and encourage, where appropriate, long-term self-sufficiency in food, fuel wood and other energy requirements; facilitate the restoration, maintenance and enhancement of the ecosystems and ecological processes essential for the functioning of the biosphere and prudent use of renewable resources.

Environment Management Act (EMA), provides the legal framework for environmental planning including the preparation of environmental impact assessments for prescribed projects. The Environmental Management Act is administered by the Director for Environment Affairs in the Environmental Affairs Department of the Ministry of Natural Resources, Energy and Mining. The law covers specific responsibilities and duties for various public authorities in the environmental planning and management. Guidelines for Environmental Impact Assessment (EIA) in Malawi issued in 1997 facilitate the procedures steps in mainstreaming environmental planning and management in all development programmes. The guidelines outline specific roles for institutions in managing environmental impact assessment, the mechanisms for integrating in project planning ; provide a list of prescribed projects that *require* an EIA (List A on pages 25 to 29) and a list of projects that *may require* an EIA (List B on pages 30-31) in all sectors.

3.2 World Bank Environmental Safeguards: OP 4.01 (Environmental Assessment)

The objective of OP 4.01 is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and of their likely environmental impacts. This policy is triggered if a project is likely to have potential (adverse) environmental risks and impacts in its area of influence. Three categories of prescribed projects for environmental assessment are stipulated. Category A covers large scale

projects such as dams while category B covers medium scale projects and category C covers minor projects. Malawi Agricultural Commercialization Project falls under category B of prescribed projects for environmental impact assessment. This is because the project will not fund large scale new infrastructure development projects (e.g. dams, or power stations) but small to medium size rural infrastructural rehabilitation and reconstruction works in localized sites across the country.

The justification for classification of category B is that most of the project will focus on medium size rehabilitation and re-construction projects for canals and head works of irrigation schemes and market centres. The anticipated scale of potential adverse environmental or social impacts on human populations will be site-specific, few if any of them are irreversible, and in most cases mitigation measures could be designed to address the impacts. An environmental and social management plans and abbreviated resettlement action plans for sub-projects can be used to address the impacts.

4.0 TERMS OF REFERENCE FOR THE STUDY

4.1 Specific features of this assignment

A Project Steering Committee (PSC) will provide overall guidance and will involve the ministries of Agriculture, Irrigation and Water Development (MoAIWD), Industry, Trade and Tourism (MoITT), and Lands, Housing and Urban Development (MoLHUD). Private sector representatives (producer organizations and investors) will also be part of the PSC. Implementers will include various government agencies including district councils across the country. However, at this stage, the specific sites/locations and specific interventions have not been identified. Given the multi-sectoral nature of the Project, a Project Implementation Unit (PIU) will be established to handle day to day activities of the Project.

In view of these circumstances, and for practicality purposes, the appropriate environmental safeguard instrument for this project would be an Environmental and Social Management Framework (ESMF). An Environmental and Social Management Framework (also known as Strategic Environmental Assessment) is a statement of the policies, principles, institutional arrangements and procedures that would be followed in each sub-project of a multiple scale project or programme. The ESMF establish a mechanism for determining and assessing potential environmental and social negative impacts of all activities financed under Agricultural Commercialization Project. Furthermore, the ESMF provides guidance on mitigation, monitoring and institutional measures to be taken during implementation and operation of the program activities to eliminate adverse environmental and social impacts, offset or reduce them to acceptable levels. An ESMF sets out the elements that will be common to all the subprojects. In this regard, an ESMF provides generic environmental management principles and processes to be followed in each of the subprojects, so that these need not be prepared individually for every subproject of the broader programme.. ESMF is a base for the preparation of the project or subproject specific Environmental and Social Management Plans (ESMPs). It presents a summary of the requirements to comply with both the Government of Malawi Environmental Management Act (1996) and the World Bank Environmental and Social Safeguard Operational Policies (OPs). Therefore Compliance by the Agricultural Commercialization Project supported activities with this document was deemed necessary.

4.2 Objectives of the Environmental and Social Management Framework

The main objectives of ESMF are to:

(1) Undertake screening of potential impacts of Malawi Agricultural Commercialization Project and to prepare generic Environmental and Social Management Plans for the direct impacts and indirect impacts, as well as incremental impacts from rehabilitation and re-construction works for infrastructure and irrigation schemes.

(2) Formulate an Environmental and Social Management Framework (ESMF) standards and procedures, specifying how unidentified subprojects whose locations are unknown will systematically address environmental and social issues in the screening for environmental and social impacts and categorization, site selection criteria, mitigation/enhancement measures, design, implementation and operational phases as well as maintenance of the subproject lifecycle.

(3) Provide operational guidance on how to mitigate, inspect and monitor potential environmental and social issues during preparations, construction, and operation and maintenance of sub projects

4.3 Rationale for the ESMF

The World Bank Environmental and Social Safeguard Policies require that before a project is appraised, relevant safeguard instruments are locally disclosed in country and on the World Bank's InfoShop website. The ESMF seeks to establish a process of environmental and social screening which will permit the institutions in charge of the implementation of the sub-projects to identify, assess and mitigate the environmental and social impacts of the proposed interventions and to prepare required safeguards instruments. ESMF also determine the institutional measures to be taken during the program implementation, including capacity building activities.

5.0 GENERAL SCOPE OF THE WORK.

The Malawi Agricultural Commercialization Project has been assigned environmental assessment risk category B, hence required safeguards instruments need to be prepared and disclosed in the country (by posting the ESMF on the Government websites, library or any place accessible to the public) and in the Bank Infoshop prior to the world bank approval of the project. The World Bank Safeguard Policies OP 4.01 (Environmental Assessment), OP 4.09 (Pest Management) and OP 4.12 (Involuntary Resettlement) are triggered for the Malawi Agricultural Commercialization Project. Additional Bank environmental safeguard policies to be evaluated for possible implications include Physical Cultural Properties (OP 4.11), Natural Habitats (OP 4.04) and Forests (OP 4.36). The Consultant should carefully review any possible triggering issues, and clearly describe if there is a potential to trigger these policies. The scope of work is determined by the requirements of the EMA (1996) and prescriptions of the Malawi EIA Guidelines of Environmental Impact Assessment in Malawi (1997) as supported by the World Bank's Safeguard policies. The consultant should also make due consideration of other relevant Malawi Environmental policies, laws, guidelines, procedures and standards for implementation of public sector projects in this category. The detailed scope outlines the task that the consultant shall undertake as follows:

- i. Identify key environmental and social impacts that could result from project activities at Agricultural Commercialization. Describe and analyze all significant changes expected due to the proposed activities focusing on both negative and positive impacts. These could include, economic, environmental, ecological and social impacts resulting from the implementation of the proposed project that would result in changes in the baseline environmental and social conditions around Agricultural Commercialization.
- ii. Identify and describe all pertinent legislation, regulations and standards governing the environmental quality, solid and liquid waste management, paste management, health and safety, protection of sensitive areas, land use control at national and local levels and ecological and socio-economic issues.
- iii. Outline standards and procedures including checklists showing how unidentified future subprojects whose locations are unknown will systematically address environmental and social issues in the screening for environmental and social impacts and categorization, site location criteria, mitigation measures, and implementation
- iv. Develop a template ESMP for direct project impacts, including mitigation measures, capacity and awareness building requirements to mitigate those measures, and monitoring.
- v. Recommend how environmental and social safeguards procedures could be strengthened in Agricultural Commercialization to ensure compliance with principles of the ESMF

- vi. Establish clear procedures and methodologies for the environmental and social planning, review, approval and implementation of project to be financed under the Project;
- vii. Specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to project;
- viii. Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF in Agricultural Commercialization project;
- ix. Consult with key stakeholders, interested and affected parties as well as relevant Government Departments on issues relating to the proposed development to ensure compliance with existing policies, legislation, and regulations, and to accommodate public views expressed during the consultation process, and get the necessary approvals from Environmental Affairs Department.
- x. Analyze and describe occupational and health concerns. Describe and analyze all occupational health and safety concerns likely to arise as a result of construction/rehabilitation and operations of the proposed project. Critically analyze the impacts of labor influx into project areas, that of quarries and borrow pits and make recommendations on corrective and remedial measures to be implemented under the environmental management plan.

6.0 MAIN AREAS OF FOCUS OF THE STUDY.

6.1 Description of background and scope of the project

The consultant shall provide the pertinent background in the conduct of the environmental and social management framework. The consultant should briefly describe in a logical order the major components of the proposed project, a statement of the need for it and the objectives it is intended to meet. Also describe a brief design of the project, (including alternatives considered), the implementing agencies, its location, preparation of layout plans, provision of basic service infrastructure (roads, boreholes, water supply systems, irrigation systems and market buildings) number and type of personnel to be employed, total project cost, off-site investments, operation and maintenance activities, its current status and timetable, and the identities of any associated projects. Describe other projects in progress or planned within the project intervention zones, which may compete for the same resources. In the background also state the purpose of the study and the target population.

6.2 Policy, Legislative and Administrative Framework

describe all the pertinent policies, laws and necessary licenses and approvals to be obtained for the proposed project to ensure that the implementation of the subprojects are in line with sound environmental management practices and are in compliance with relevant pieces of legislation. Description should include those governing water resources, forests resources, health, protection of sensitive areas including forest reserves and game reserves, land use control. Also describe in general terms an institutional setup which supports the regulatory framework.

6.3 Environmental Baseline Information.

The consultant shall review and assess any existing environmental database for the country, and collect additional data as necessary from any possible source but should include field visits and baseline studies, with the objective to determine the state of the environment in Malawi. The consultant shall summarize country's environmental setting broadly as follows:

Population distribution including growth, size, density and implications.

Land resources: such as soils, topography, land tenure types and distribution in the country, commercial estates and smallholder farming in the country;

Water resources: such as water quantity and quality with respect to surface waters and ground water.

Biological resources: flora and fauna; including parks or protected forest reserves, main challenges in management of wildlife and forest resources

6.4 Screening of the Potential Environmental and Social Impacts of sub-projects

Potential impacts to be screened to include:

(i) Rehabilitation and re-construction of irrigation schemes: Loss of vegetation, soil erosion, compaction of land; construction spoils; dust emissions, solid and liquid waste disposal; sanitary conditions and health risks associated with migrant labour; local alteration in topography; disruption of important communal pathways, water resources degradation, disturbance or loss of archaeological/ paleontological and other heritage sites, noise nuisance from construction contractors .

(ii) Rehabilitation and re-construction of market facilities: loss of forest land; dust emissions, soil erosion, noise nuisance from contractors, rubble and solid wastes, damage on historic and cultural sites; effects on water resources within chosen sites; alternative future land use and possible land use conflicts.

6.5 Analysis of Alternatives to the Proposed Project

Describe alternatives that were examined in the course of developing the proposed project and identify other alternatives which would achieve the same objectives. Compare alternatives in terms of potential environmental and social impacts; institutional and training, and monitoring requirements. Include the alternative of not implementing the project in order to demonstrate environmental conditions without it.

6.6 Development of Generic Environmental and Social Management Plan to Mitigate

The Consultant shall prepare and recommend feasible and cost-effective measures to prevent or reduce significant negative impacts. Estimate the impacts and costs of those measures, and of the institutional and training requirements to implement them. Prepare a management plan including proposed work programs, budget estimates, schedules, staffing and training requirements and other necessary support services to implement the mitigating measures.

For sub-projects, whose locations are unknown, the consultants will develop a checklist and recommend typical impact assessment methodologies, to be annexed to the report, of typical impacts and mitigation measures. The consultants shall also describe institutional arrangements, including roles and responsibilities of different parties involved for screening, review, approval, implementation and monitoring of sub-projects envisioned under the project.

6.7 Development of an Environmental Monitoring Plan.

The consultants shall prepare a detailed plan, with relevant and measurable indicators to monitor the implementation of mitigating measures and the impacts of the project during construction and operation. Include in the plan an estimate of capital and operating costs and a description of other inputs (such as training and institutional strengthening) needed to carry it out.

6.8 Development of Environmental and Social Rules for construction contractors.

The Consultant shall prepare environmental and social rules for construction contractors .These rules shall be attached to ESMF as an annex. The rules shall be recommended for incorporation in contractor's bids and contracts for civil works.

8.0. Suggested Outline of ESMF of Malawi Agriculture Commercialization Project.

Executive Summary

Introduction

Description of the Proposed Project

Policy and Legal Framework on environmental assessment in Malawi

Review of World Bank Safeguards and implications

Description of the Environmental Setting

Significant Environmental Impacts

Analysis of Alternatives

Screening criteria and forms

Environmental and Social Management Plan

Capacity Building and Training for Environmental Management

References

Annexes

- *Environmental and Social Screening Form*
- *Environmental and Social Rules for construction contractors*
- *Checklist of environmental and social impacts from rehabilitation and re-construction works*

Annex 2 Review of World Bank's Safeguard Policies

List of safeguard Policies	Focus of the safeguard policy	Explanatory Notes
Environmental Assessment OP/BP 4.01	The objective of this policy is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and of their likely environmental impacts. This policy is triggered if a project is likely to have potential (adverse) environmental risks and impacts on its area of influence. OP 4.01 covers impacts on the natural environment (air, water and land); human health and safety; physical cultural resources; and transboundary and global environment concerns.	An ESMF will be prepared which will provide the criteria and procedures for screening sub-project investments and guide the preparation of site-specific environmental and social management plans. The ESMF will also assess the institutional capacity of the implementing agency and provide measures for capacity building along with an estimate of the budget needed for the implementation of the ESMF. The ESMF will also provide a list of activities that could be financed by the Project and screen out activities that correspond to Category B projects.
Natural Habitats OP/BP 4.04	This policy recognizes that the conservation of natural habitats is essential to safeguard their unique biodiversity and to maintain environmental services and products for human society and for long-term sustainable development. The Bank therefore supports the protection, management, and restoration of natural habitats in its project financing, as well as policy dialogue and economic and sector work. The Bank supports, and expects borrowers to apply, a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development. Natural habitats are land and water areas where most of the original native plant and animal species are still present. Natural habitats comprise many types of terrestrial, freshwater, coastal, and marine ecosystems. They include areas lightly modified by human activities, but retaining their ecological functions and most native species.	The policy is not triggered
Forests OP/BP 4.36	The objective of this policy is to assist borrowers to harness the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development and protect the vital local and global environmental services and values of forests. Where forest restoration and plantation development are necessary to meet these objectives, the Bank assists borrowers with forest restoration activities that maintain or enhance biodiversity and ecosystem functionality. The Bank assists borrowers with the establishment of environmentally appropriate, socially beneficial and economically viable forest plantations to help meet growing demands for forest goods and services.	The Policy is not triggered
Pest Management OP 4.09	The objective of this policy is to (i) promote the use of biological or environmental control and reduce reliance on synthetic chemical pesticides; and (ii) strengthen the capacity of the country's regulatory framework and institutions to promote and support safe, effective and environmentally sound pest management. More specifically, the policy aims to (a) Ascertain that pest management activities in Bank-financed operations are based on integrated approaches and seek to reduce reliance on synthetic chemical pesticides (Integrated Pest Management (IPM) in agricultural projects and Integrated Vector Management (IVM) in public health projects. (b) Ensure that health and environmental hazards associated with pest management, especially the use of pesticides are minimized and can be properly managed by the user. (c) As necessary, support policy reform and institutional capacity development to (i) enhance implementation of IPM-based pest management	The project will support the development and rehabilitation of irrigation schemes and rural market centres. This involves investments in the agriculture sector that will enhance production and will likely increase the use of pesticides. However, the Project will not finance the procurement of pesticides. In cases where pesticides are used within existing production systems, the Project will promote the use of integrated pest management and the safe use, storage, and disposal of agro-chemicals. Irrigation schemes may use pesticides to control pests on schemes. An Integrated Pest Management Plan (IPMP) has been prepared to provide guidance on the use of proper use of pesticides.

	and (ii) regulate and monitor the distribution and use of pesticides.	
Physical Cultural Resources OP/BP 4.11	The objective of this policy is to assist countries to avoid or mitigate adverse impacts of development projects on physical cultural resources. For purposes of this policy, "physical cultural resources" are defined as movable or immovable objects, sites, structures, groups of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above ground, underground, or underwater. The cultural interest may be at the local, provincial or national level, or within the international community.	The policy is not triggered
Indigenous Peoples OP/BP 4.10	The objective of this policy is to (i) ensure that the development process fosters full respect for the dignity, human rights, and cultural uniqueness of indigenous peoples; (ii) ensure that adverse effects during the development process are avoided, or if not feasible, ensure that these are minimized, mitigated or compensated; and (iii) ensure that indigenous peoples receive culturally appropriate and gender and inter-generationally inclusive social and economic benefits.	The policy is not triggered
Involuntary Resettlement OP/BP 4.12	The objective of this policy is to (i) avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs; (ii) assist displaced persons in improving their former living standards, income earning capacity, and production levels, or at least in restoring them; (iii) encourage community participation in planning and implementing resettlement; and (iv) provide assistance to affected people regardless of the legality of land tenure.	Development and rehabilitation of irrigation schemes and rural market warehouses may require land for temporary or permanent use. The land acquired for this purpose may lead to loss of assets for some households. Potential risks are: loss of access to land/assets and loss of income sources or means of livelihoods whether or not affected people must move to another location. A RPF has been prepared to guide procedures on all sub-projects in incidences of land acquisitions, in cases of negative social impacts to people such as losses of assets, loss of income sources, loss of access to assets and income sources.
Safety of Dams OP/BP 4.37	The objectives of this policy are as follows: For new dams, to ensure that experienced and competent professionals design and supervise construction; the borrower adopts and implements dam safety measures for the dam and associated works. For existing dams, to ensure that any dam that can influence the performance of the project is identified, a dam safety assessment is carried out, and necessary additional dam safety measures and remedial work are implemented.	The Policy is not triggered
Projects on International Waterways OP/BP 7.50	The objective of this policy is to ensure that Bank-financed projects affecting international waterways would not affect: (i) relations between the Bank and its borrowers and between states (whether members of the Bank or not); and (ii) the efficient utilization and protection of international waterways. The policy applies to the following types of projects: (a) Hydroelectric, , flood control, navigation, drainage, water and sewerage, industrial and similar projects that involve the use or potential pollution of international waterways; and (b) Detailed design and engineering studies of projects under (a) above, include those carried out by the Bank as executing agency or in any other capacity.	The Policy is not triggered
Projects in Disputed Areas OP/BP 7.60	The objective of this policy is to ensure that projects in disputed areas are dealt with at the earliest possible stage: (a) so as not to affect relations between the Bank and its member countries; (b) so as not to affect relations between the borrower and neighboring countries; and (c) so as not to prejudice the position of either the Bank or the countries concerned.	The Policy is not triggered

Annex 3: Basic Environmental and Resettlement Screening Form for Sub-projects.

ENVIRONMENTAL AND SOCIAL SCREENING FORM FOR THE SCREENING OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS OF SUB- PROJECTS.

INTRODUCTION

This Environmental and Social Screening Form (ESSF) has been designed to assist in the evaluation of planned construction and rehabilitation activities under Malawi Agriculture Commercialization Project. The form will assist the sub-project implementers and reviewers to identify environmental and social impacts and their mitigation measures, if any. It will also assist in the determination of requirements for further environmental work (such as environmental and social management plan) if necessary.

The form helps to determine the characteristics of the prevailing local bio-physical and social environment with the aim of assessing the potential impacts of the construction and rehabilitation activities on the environment by the sub-project.

The ESSF will also assist in identifying potential socio-economic impacts that will require mitigation measures and/or resettlement and compensation.

GUIDELINES FOR SCREENING

The evaluator should undertake the assignment after:

1. Gaining adequate knowledge of baseline information of the area.
2. Gaining knowledge of proposed project activities for the area.
3. Having been briefed / trained in environmental and social screening.

The form is to be completed by consensus of at least three people, knowledgeable of the screening process.



Government of Republic of Malawi

Ministry of Agriculture, Irrigation and Water Development

Malawi Agriculture Commercialization Project

Environmental & Social Screening Form

Guidelines: Site inspection of project site. The evaluation results to be a consensus of at least three officials.

Project Name: Rehabilitation of Nkhate Irrigation Scheme	District.: Chikwawa
Project Location: T/A Luvenzu	Nature/Size: 20 hectares
Name & Signature of Evaluator: Hastings S. Mumba and Peter Mwanza	Date of Field Evaluation: 20/06/2017

		Appraisal Yes/No	Significance Low, medium, high	Potential Mitigation Measures
1.0	Environmental Screening (OP 4:01)			
	Will the project generate the following impacts			
1.1	Loss of trees			
1.2	Soil erosion/siltation in the area			
1.3	Pollution to land-diesel ,oils			
1.4	Dust emissions			
1.5	Solid and liquid wastes			
1.5	Spread of HIV/Aids and other STI			
1.6	Borrow pits and pools of stagnant water			
1.7	Rubble/heaps of excavated soils			
1.8	Invasive tree species			
1.9	Long term depletion of water			
1.11	Reduced flow of water			
1.12	Nuisance from noise or smell			
1.13	Loss of soil fertility			
1.14	Incidence of flooding			
4.0	Resettlement Screening (OP 4:12)			
	Will the project generate the following negative social and economic impacts?			
4.1	Loss of land to households			
4.2	Loss of properties –houses, structures			
4.3	Loss trees, fruit trees by households			
4.4	Loss of crops by people			
4.5	Loss of access to river/forests/grazing area			
4.6	Impact cultural site, graveyard land			
4.7	Conflicts over use of local water resources			
4.8	Disruption of important pathways, roads			
4.9	Loss communal facilities –churches			
4.10	Loss of livelihood system			
4.11	Spread of HIV/Aids			
4.12	Blockages to footpath/roads			

Overall evaluation of Screening Exercises.

The results of the screening process would be either the proposed sub - projects would be exempted or subjected to further environmental and resettlement assessments. The basis of these options is listed in the table below:

Review of Environmental Screening (OP 4.01, OP 4.09, OP 4.36)	Tick	Review of Resettlement Screening (OP 4.12)	Tick
1. The project is cleared. No serious impacts. <i>(When all scores are "No" in form)</i>		1.The project is cleared. No serious social impact. <i>(Where scores are all "No", "few" in form)</i>	
2. There is need for further assessment. <i>(when some score are "Yes, High" in form)</i>		2. There is need for resettlement/compensation. <i>(When some score are "Yes, High" in form)</i>	
Endorsement by Environmental District Officer		Endorsement by Director of Planning and Development	
Name		Name:	
Signature: _____	Date _____	Signature: _____	Date: _____

NOTES:

1. The DPD shall ensure that a completed form is filed within project file immediately after endorsement. EDO may keep a duplicate.
2. Project Management Committee will maintain a copy of completed form
3. It is the duty of Director of Planning and Development and Environmental District Officer to ensure mitigation measures outlined in form are implemented.
4. An EDO shall prepare a monthly monitoring report on implementation of mitigation measures.

Annex 4: Generic Environmental and Social Checklist

The Environmental and Social Checklist below serves as a sample checklist which will be adapted to the particular type and circumstance of the sub-project as well as the relevant local level (Village, District) at which the sub-project is planned. The checklist will be completed members of District Environmental Sub-Committee.

Table 1: General Environmental and Social Checklist for development /rehabilitation of irrigation schemes and rural market infrastructure.

Stage	Potential Negative Environmental and Social Impacts	Tick if relevant	Mitigation Measure	Tick if relevant	Responsible Person
Before construction					
	Loss of livelihoods, impact on assets, land acquisition		Prepare Resettlement Action Plan as per OP 4.12 – see RPF		
	Landslides and soil erosion on sloppy hillsides		Terracing; excavation to level; control of water flows		
	Destruction of vegetation during excavation; may cause loss of fauna		Construction contracts to include provisions for limiting vegetative removal, and for re-vegetation of the construction area after completion of works		
	Soil erosion, deposition of fine debris (sand, silts, clays) in downstream water courses during construction, particularly in the rainy season		Construction contracts will require re-vegetation as soon as possible; contractors to be limited regarding activities that can be carried out in the rainy season; contractors will be required to treat excavated areas below flood water levels as required under the design contract (use of stone gabions and mattresses, before the start of each rainy season)		
	Traffic disruption		Deliver materials during off peak hours Provide slip lanes		
	Noise disturbance		Not likely to be a problem		
	Dust impacts		In extreme cases, particularly near clinics, contractors will be required to moisten the construction area to minimize dust		
	Pit formation from sand mine		Use sand from existing borrow pits; fill back pits		
During construction					
	Noise		Use of ear protectors		

	Soil erosion		Planting trees and grasses, landscaping works		
	Cément and dust pollution		Dust control by water or other means		
	Pressures on existing water sources		Liaise with local utilities to ensure adequate water supply		
	Soil and water pollution due to large number of labourers on the construction site and related wastes		Build latrines and ensure adequate waste water disposal; ensure safe storage of construction materials such as oils, paints		
	Increase in theft		Civic education of migrant workers		
	Increase in spread of HIV/Aids and communicable diseases		Distribute condoms Civic education		
	Conflicts between migrant workers and host communities		Civic education to migrant workers. Sensitization of host communities		
After construction					
	Soil and water pollution due to remainder of construction wastes, tools, equipment, and temporary infrastructure		Contractors to clear construction site of temporary infrastructures and restore vegetation of the site		
	Increase on solid wastes		Construct pit latrines Provide refuse bins		
	Increase in liquid wastes		Provide latrines		
	Conflicts over use of water with downstream users		Maintain some water for flow and use in downstream of the river		
	Pollution of water with pesticides		Use of minimal amount of pesticides Use of safe pesticides		
	Multiplication of pests and diseases		Drain off stagnant water		
	Salinization of soils due to overuse of fertilisers		Application of lime to soils		
	Clinical wastes		Destroy wastes at incinerator		

This form has been signed by: _____

Chairperson of the VDC / CDC: _____

Chairperson of the Environment Sub-Committee: _____

Date:.....

Annex 5: Environmental and Social Rules for contractors.

These Environmental and Social Rules for Contractors are prepared for all the contractors to be engaged development/rehabilitation of feeder roads, irrigation schemes, service infrastructure for electricity and potable water under Malawi Agriculture Commercialization Project. The guidelines include provisions for proper management of construction sites, safe storage of construction materials and safe disposal of wastes.

1.0 General Considerations.

- a) The contractor shall, in all his activities ensure maximum protection of the environment and the socio-economic wellbeing of the people affected by the project, whether within or outside the physical boundaries of the project area.
- b) Before any construction works begin, the contractor shall ensure that the relevant environmental and land acquisition certificates of authorization for the works have been obtained from the Director of Environmental Affairs and/or the Commissioner for Lands and Valuation.
- c) In general, the contractor shall familiarize himself with the Environmental and Social Management Plans and Resettlement Action Plans. Specifically, the contractor shall make every effort to follow and implement the recommendations and mitigation measures of the ESMP to the satisfaction of client and all relevant agencies.
- d) The contractor shall work in cooperation and in coordination with the Project Management Team and/or any other authority appointed to perform or to ensure that the social and environmental work is performed according to the provisions of the Environmental and Social Screening and environmental management plans for sub-projects.
- e) The contractor shall always keep on site and make available to Environmental Inspectors or any authorized persons, copies of the ESMPs, RAPs and ARAPs for the monitoring and evaluation of environmental and social impacts and the level or progress of their mitigation.

2.0 Acquisition of Construction Materials.

- a) The contractor shall ensure that construction materials such as sand, quarry stone, soils or any other construction materials are acquired from approved suppliers and that the production of these materials by the suppliers or the contractor does not violate the environmental regulations or procedures on mining. Collection of sand by communities will be guided by local council's by-laws.

3.0 Movement and Transportation of Construction Materials.

- a) The movement and transportation of construction materials to and within the construction sites shall be done in a manner that generates minimum impacts on the environment and on the community, as required by the ESMPs and the RAPs or ARAPs.

4.0 Storage of Construction Materials and Equipment.

Construction materials shall be stored in a manner to ensure that:

- a) There is no obstruction of service roads, passages, driveways and footpaths;
- b) Where it is unavoidable to obstruct any of the service paths, the contractor shall provide temporary or alternate by-passes without inconveniencing the flow of traffic or pedestrians;
- c) There is no obstruction of drainage channels and natural water courses;
- d) There is no contamination of surface water, ground water or the ground;
- e) There is no access by public or unauthorized persons, to materials and equipment storage areas;
- f) There is no access by staff, without protective clothing, to materials and equipment storage areas;

- g) Access by public or unauthorized persons, to hazardous, corrosive or poisonous substances including asbestos lagging, sludge, chemicals, solvents, oils or their receptacles such as boxes, drums, sacks and bags is prohibited;
- h) Access by staff, without the appropriate protective clothing, to hazardous, corrosive or poisonous substances including asbestos lagging, sludge, chemicals, solvents, oils or their receptacles such as boxes, drums, sacks and bags is prohibited.

5.0 Safe Disposal of Construction Waste

- a) Construction waste includes but is not limited to combustion products, dust, metals, rubble, timber, water, waste water and oil. Hence construction waste constitutes solid, liquid and gaseous waste and smoke.
- b) In performing his activities, the contractor shall use the best practical means for preventing emissions of noxious or offensive substances into the air, land and water. He shall make every effort to render any such emissions (if unavoidable) inoffensive and harmless to people and the environment.
- c) The contractor shall, in particular, comply with the regulations for disposal of construction/demolition wastes, waste water, combustion products, dust, metals, rubble and timber. Wastewater treatment and discharge will conform to the applicable regulations by the relevant Local Authority and Ministry of Agriculture, Irrigation and Water Development.
- d) Asbestos wastes, PCBs and other hazardous wastes shall be treated and disposed of in conformity with the national regulations and where applicable, with the supervision of qualified personnel.

6.0 Occupational Health and Safety of Workers.

- a) The contractor shall provide all necessary protective clothing for workers exposed to hazardous and dangers work activities.
- b) All workers shall be regularly sensitized on safety regulations on the site.
- c) The contractor shall be guided by and shall adhere to the relevant national safety cardinal rules on the site.
- d) The construction shall maintain on the site first aid kits for male and female workers.
- e) Workers shall be provide with clean potable water on the site and safety cooking places
- f) Workers shall be provide with wash rooms and ventilated pit latrines.

7.0 HIV/Aids Work Place Policy and Training on HIV/Aids for workers.

- a) The contractor shall prepare and adopt an HIV/Aids Work Place Policy for construction site.
- b) The contractor shall arrange for HIV/AIDS training programmes for the construction crews to ensure their understanding of the relevant issues. These will be budgeted elements within Bill of quantities for a construction project.
- c) Appropriate IEC materials shall be distributed to workers on the site.
- d) Both male and female condoms shall be distributed to workers on the site.

Annex 6. List of members of District Executive Committee and Non-Governmental Organizations consulted at Kasungu District Council on 10th February 2017

REGISTRATION FORM FOR DEVELOPMENT MEETING
HELD ON 10TH FEBRUARY, 2017 AT DC'S CHAMBER

NO.	NAME	ORGANIZATION & ADDRESS	PHONE NO.	E-MAIL ADDRESS
1	J. LIBATO	POSTAL DEPT Box 17, KU	099 3326166	libatojgustis@yahp.com
2	Fred Mtendere	PUMP AID	0888734934 0991357222	fredmtendere@gmail.com
3	Olive Panyazi	LABOUR Bx 21 LG	0999285554	—
4	K. CHAKUZAMUTU	SPORTS DEPT.	0888 657505	—
5	Chitungama Banda	WATER DEVT	09993770856	chitungama.banda2014@gmail.com
6	V. KHONJE	INFORMATION	0999947168	vkhojje@gmail.com
7	J. C. THOM	KUDC - LANDS	0999359844	Johnusthomas@yahoo.com
8	Gerald Chimwa	NICE	0999255178	chimgerry@gmail.com
9	SAMSON msuku	WVI	0999 332474	msamson@yahoo.com
10	Fehster Mazenga	Police	088863690	—
11	John Washali	Gunder	0995891783	Washali@yahoo.co.uk
12	LUCIOUS MABOMBA	CRWB	0888861783	—
13	P. Sawati	LDF	0888868020	PSawati@yahoo.co
14	Benjamin Makoto	KUDC - Finance	0888613414	benjamakoto@gmail.com
15	N. M. Ngiloma	NRB	0999 039 209	ndundangoma@gmail.com

**REGISTRATION FORM FOR DEC MEETING
HELD ON 10TH FEBRUARY, 2017 AT TITHANDIZANE HALL**

NO.	NAME	ORGANIZATION & ADDRESS	PHONE NO.	E-MAIL ADDRESS
1				
2	Lucius Njobvu	Kasungu DC Council	0999246629 0888176388	njobvulucius@yahoo.co.uk
3	Jemimah Lawandi	Theatre for a change	0999645388	jemimah.lawandi@tfc.org
4	Gentry Kamansa	Good Health organized	0999408136	gentrykamansa@gmail.com
5	Esther Macanga	CCSP	0881280180	
6	Lucious Mabumba	CRWB	0888861703	
7	John Washali	Gender	0995891783	Washali.j@los.co.uk
8	Bernard Chanachi	Com. Dev.	0999478703	bchanachi@gmail.co
9	Ben MISOCHI	DA	099930517	
10	Olive	LABOUR	099928534	
11				
12				

**REGISTRATION FORM FOR DEC MEETING
HELD ON 10TH FEBRUARY, 2017 AT TITHANDIZANE HALL**


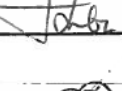

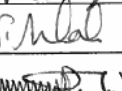
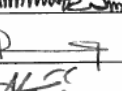
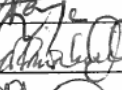
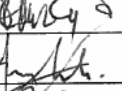

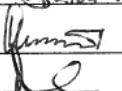

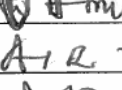
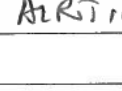





NO.	NAME	ORGANIZATION & ADDRESS	PHONE NO.	E-MAIL ADDRESS
1	Chas Nachingo	KIP	0996087935	Chas.Nachingo@gmail.com
2	Richard Maweni	DPC	0999147698	richardmaweni@yahoo.co.uk
3	Matias Gondwe	FORESTRY - KU DC	099929888	matiasgondwe@gmail.com
4	Jester Banda	DHO Rep - KU DHO	0999016128	jesterbanda@gmail.com
5	Leonard Siule	National Bank	0999990615	lsiu@nbank.co.zw
6	David Zopangwa	MTL	0888730622	Zopangwa@yahoo.co.uk
7	custerson Hondo	prisons	0881798486	
8	Francis Keliwankwani	Inter Aids - KU	0999410218	Francis.Keliwankwani@gmail.com
9	Clackin L. Nyasulu	HOUSING DEPT.	0888644788	lacksonnyasulu@yahoo.co.uk
10	Friday Mwanak	Kasungu DHO	0888516849	fmwanak@gmail.co.uk
11	Blame Mkwinda	NAGFAM - R4	0999570191	mkwindablame@gmail.com
12	James Mathiya	DYO	0995509453	Jamesmathiya@gmail.com
13	KILSON CHAGATI	CSCD	0991185950	
14	Linda Lungu	MEC	0997931665	linda.lungu@gmail.com
15	Stephen Sakhama	EDO	0995742944	Ssakhama@gmail.com

✓
**REGISTRATION FORM FOR DEC MEETING
 HELD ON 10TH FEBRUARY, 2017 AT TITHANDIZANE HALL**

NO.	NAME	ORGANIZATION & ADDRESS	PHONE NO.
1			
2	M.O. Gumphe (P)	Kuse, P/BG-1, 1Ka	088319852
3	Helle Gadder	Agriculture, Box 17, k	028222793
4	Kelvin Mtambo	PASI	0999311272
5	James Lachuma	K u . D e	0999335384
6	Amos Simwela	CADECOM LL	0999335519
7	Felix Mwambima	HEIFER	0999 6668 78
8	Piliam Athino	Oxfam	0995 489050
9			
10			

Annex 7 : List of members of District Executive Committee consulted at Mchinji District Council on 1 February 2017.

ATTENDANCE REGISTER AT CONSULTATIVE MEETING WITH DISTRICT EXECUTIVE COMMITTEE – MCHINJI DISTRICT COUNCIL – 10/2/2017

Name of Participant	Organization/Dept	Amount in MK	Signature	Phone
Kalungi Males	EAB			099951647
H.S.K. Numb	Ministry of Agriculture consultant			099995899
I. L. K. M JUMIRA	MCHINJI D. COUNCIL			099308638
Nelson Hlongo	Agriculture			099936052
Sarah Muthala	Information			0999380529
Jim Wotcha	Social Welfare			099962487
Rita Malawala	Agriculture			09997743
Adrian Kasinja	AGRICULTURE			0999781779
Welford Masakingshile	AGRICULTURE			0999307816
Hansel Kauthega	Forestry			099312276
Maudling Nhemu	Youth			0999933993
Jossum Dzele Mwalu	Labour			099359578
Martin M. Panyanga	Sports			0999361463
BONEX CHIKADZA	EDUCATION			099253664
Duncan Kampini	Trade			09938984
Joseph K. Ngwira	O.P.C. M.C.			09972768
Innocent Chimwanga	Agriculture			099965905
Nelson Hlongo	Agriculture		AIR TIME	
I. L. K. M JUMIRA	Mchinji D. Council		AIR TIME	

Annex 8: List of members of Mduwa Area Development Committee and Area Executive Committee consulted on 11th February 2017

MDUWA ADC - 11/02/2017 - MIKUNDI SCHOOL

	Mduwa	MDUWA	Phone No	Signature
1	Uliya Mtenje	ADC MEMBER	0993654418	U. Mtenje
2	Joshua Chimwani	ADC Member	09911505327	Jchimwani
3	PROSPERINA NYADIBWE	A.D.C. MEMBER	09917782792 08851111443	P. Nyadibwe
4	MSINDI YOSEF	GROUP D.P.P	0991656207	MSINDI
5	CROWNELID GOSTINO	CHAIRMAN. C.P.F	0999307787	C. GOSTINO
6	LOYD. J. CHIRWA	ACTIONAID member	099901620	L. Chirwa
7	RODGERS MAGALANGA	ADC VICE CHAIR PERSON	0999592214	R. Magalanga
8	HALISON. C. FALIOI	SGVN MDUWA	0881685000	H. Falioi
9	LETISON DICKISON	P.S. MDUWA	0995412607	L. Dickison
10	Langwan. Medayi	P.S. Mduwa	0996814299	L. Medayi
11	HILARYUS TINKWA	PSMZA Mduwa	099927784	H. Tinkwa
12	Blessings Munthali	OVC MIKUNDI	0999281405	B. Munthali
13	Redson Potifala	P.S.G.V.H MISANGALA	0999844543	R. Potifala
14	Kennedy P. Chipanga	Councillor	0882593724	K. Chipanga
15	P. Magaleta	CHIEF MDUWA	0995130080	P. Magaleta
16	Jackson Zimbu	ADC chair	0884797688	J. Zimbu
17	Wilson KALISIRE	AEDO	0999677172	W. Kalisire
18	SANDRAM MCFORD	AEDO TRAINING	0884738208	S. McFord
19	GEORGE SESMANI	AEDO	0995235294	G. Sermani

MOHWA ADC - 11/02/2017 - MIKUNDI SCHOOL

	DZUNIA	UDUNDO	PHONE	AMT	Signature
7	AUGUSTINO KAZIPWA	ACEC (NICE)	0995 406 660		
8	Egriant phiri	wachinyamata V.B.C VICE CHAIR	0994856187 0995242521		
9	MADASE JANUARY	ADC MEMBER			
10	Sodom Katsinda	YDC chairman	0997519191		
11	Ethel J. Kadimba	Treasure A.D.C	0991078454		
12	Zagwa Lufeyo	Chair CWI	099535861		
13	FRANCIS MUMBA	Leaf Technician	0999336326		
14	FRANCIS KHOMA	Leaf Technician	09944488		
15	Charles Ngoms	SDEA	099156136		
16	Boniface Phiri	PEA	0995928795		
17	STEPHEN JETTE	ASP	0991050331		
18	Felix Kachingwe	CBO Network	0991074418		
19	BLACKSON KAMUNDA	LCBE M. CAREER	0996756333		
20	Ben Zimba	EDC member	0991102522		
21	Darius Kato	Action Aid Facilitator	0991078019		
22	Fales Kalima	CPW	0996611534		
23	ABEL NOAH YAMIKANI	Child protection officer	0915717076		
24	Jackson Zimba	ADC Chair	0884792888		
25	Phillip Kalobweya	ADC secretary	09977782		
	CHARLIE S CHIKWI	AEDO	0999316529		
	CHRISTIANI KACHIGAMBA	AEDO	0999120251		
	Pempherani Jimani	AEDO training	088147480		
	Ephraim Chaglamuka	AEDO training	0888300210		
	Ausward Kapakasa	AEDO training	0884033308		
	FLETCHER CHAULUKA	AEDO	0999019558		
	Phillip Kalobweya	AEDC	09977738		

Annex 9: List of staff of Lilongwe District Agriculture Office and Agricultural Extension Development Officers consulted on 17th February 2017

CONSULTATIONS FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

MALAWI AGRICULTURE COMMERCIALIZATION PROJECT

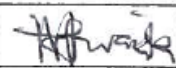

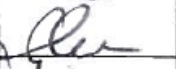
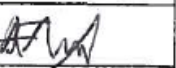
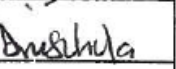
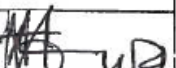
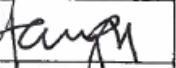
ATTENDANCE REGISTER AT CONSULTATIVE MEETING WITH OFFICERS AT DISTRICT AGRICULTURAL DEVELOPMENT OFFICE – 17/2/2017

Name of Participant	Position	Name of EPA/Office	Amount MK	Signature
Maswai Kamukama	AHLDO	LADD MU		
Nobisi Kachale	AEDO	Nyanga EPA		
Patrick Sami	DAHLDO	LLEast		
M A Mangulu	L/SSDC	L East		
Austin Mpetetula	L/stock officer	Lilongwe East		
Emily Nyondo	SARCO (land Resource)	LL west		
Abraham Kambika	AEDC	Mlomba EPA		
Phillimon Banda	AEDO	Mlomba EPA		
Edna Nyirongo	AEDO	Mkwinda		
Jiji Ibrahim	AEDC	Chidamba		
Wanangwa Mhango	AEDO	MPEVU EPA		
Olson Chagwa	YRCS	LL East		
EPHRAIM KILEMBE	AEDC	LL WEST		
Hodges K. Nkhosini	AEDC	LL WEST		
Chaphukira	AEDO	Chidamba		
SUZGO D. MKAJAWIRE	AEDC	DEMRA EPA		
DIVERSON Banda	AEDO	Malonyembe EPA		
Jim Chirwa	S/Straw	LADD-MU		
Billy Nkhata	AEDO	Demera		
McLaugh Nkhakwala	AEDO	NITONDO		
Wenington Phabete	AEDO	NSARU		

CONSULTATIONS FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

MALAWI AGRICULTURE COMMERCIALIZATION PROJECT

**ATTENDANCE REGISTER AT CONSULTATIVE MEETING WITH OFFICERS AT DISTRICT
AGRICULTURAL DEVELOPMENT OFFICE – 17/2/2017**

Name of Participant	Position	Name of EPA/Office	Signature
Khumbo Kayira	ABO	LL - East	
Trumpale Pindani	CPO	LL - west	
Nathan Millie	AEDO	Mung'ongo	
GRACE V. PHIRI	DAHDO-HW	LL-WEST	
IGNATIUS KAULENDU	DFD	LILONGWE	
Deziderata Chulalire	Planning	LL west	
YVONNE PHIRI	LIVESTOCK	LL WEST	
CM. phiri	CPS	Exploratory East	
Lissa Gamani	Intern (nutrition)	LL west	
Fred Kumwenda	NSO	LCADD MY	
Brenda MUYAYS	AEDO	Childs -LL WEST	
Moses Kumwenda	AEDO	Thswale	
Ambokole Mwasakwa	NEO	LADD MY	
Zione Kachule	AEDO	Chigosthi EPA	
Florence Mwanthali	AEDO	Mitundu	
Denalesi Mkandi	AEDO	Chitekwere	
YAMIKANI NIKHONO	AIE	Lilongwe West	
Andrew Mauwa	AIE	Lilongwe West	
Patrick M. Chikoti	AIE	Lilongwe East	
Damiano Jacob	AEDO	M PINANI EPAU	
Steph mthethwa	AEDO	Chiliza EPA	

M. Singani	Aedo	LL west
N. Kusamba	AEDO	LL EAST
M. Mhone	AEDO	LL WEST
B. Nkhoma	CPO	
M. Kangombe	CPO	LL EAST
LEN Kapelamula	SALTO	LL west
F. JUNE	MOSS	LL west
E. chantanda	AEDO	LL EAST
Sheila Musikapiri	HRMO	LL west
Winesome Chikafa	HRMO	LL East
S. MARDANYENGA	AEDO	LL EAST
E. Mboweni	HR (CO)	LL WEST
M. Mandawire		LL west
P. Nkhumba	AEDO	

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Annex 10: List of members of Mitundu Area Development Committee and Extension Workers in Lilongwe members consulted on 18th February 2017

CONSULTATIONS FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

MALAWI AGRICULTURE COMMERCIALIZATION PROJECT

ATTENDANCE REGISTER AT CONSULTATIVE MEETING WITH OFFICERS AT MITUNDU
EPA IN LILONGWE

Name of Participant	Position	Dept/Org	Amount MK	Signature
Jekoya Kamneya	member	mphonde vdc 0881839082	K2000.00	
Christina Zibole	member	mphonde vdc	K2000.00	CHRISTINA
Bizwick Chisamba	member	nsabwe manyaza vdc 0995723787	K2000.00	B. Chisamba
Jesam Betifala Jato	vice chairman	Chisamba vdc 0996348758	K2000.00	J. Jato
Christina Kaomba	member	nsabwe manyaza	K2000.00	
florence victor	Secretary	Kamaguya	K2000.00	F. victor
Likwisa Kamzati	Secretary	khomani	K2000.00	L. Kamzati
Rabera sickson	member	khomani	K2000.00	cosbama BCKP
France Chimwizi	member	0996934095 Chingala	K2000.00	F. chimwizi
Nixon Chiwayuts	chairperson	0995724309 Kwanyi	K2000.00	
Kesala Banda	chairperson	0995723730 mphonde	K2000.00	Banda
Chikandi mtwizits	member	khomani 099599717	K2000.00	
felix B. selemani	Treasurer	khomani 0995309361	K2000.00	F. B. selemani
Nebat midims	committee member	nsabwe manyaza 0993953090	K2000.00	N. MIDIMA
milliot Kanyiro	Secretary	nsabwe manyaza 0999756889	K2000.00	milliot
Elias Chimwaye	chairperson	chisamba 0996200330	K2000.00	E. Chimwaye
Peto Sankhani	chairperson	khomani 0995722861	K2000.00	P. Sankhani
G.v.H chidzaja	chairperson	0996763380 chiseka ASP	K2000.00	G.V.H
G.v.H Matambo	member	0991581769 matambo	K2000.00	G.V.H
Jector Peter	member	0995161682 chiseka ASP	K2000.00	J. Peter
mantchichi Jezala	member	0999603934 chiseka ASP	K2000.00	G. Mantchichi

Isaac Kainbe	Secretary	0881304309 chadza ADC	K2000.00	
Masaito Malumbira	Secretary	0999391272 Chisamba VDC	K2000.00	
Cosmas Juhur	member	0999806511 Chireka ASP	K2000.00	
Judson Lyson	staff - AEDU	0997727433 Mutundu EPA	K3000.00	
Paskale Mwerda	member	0991388140 Chigala	K2000.00	
Fredrick Chakwats	vice secretary	0995724098 Chireka ADC	K2000.00	
Elleson Diliwo	staff - AEDU	0992447131 Mutundu EPA	K3000.00	
Dinawo Kyton	member	Pundu VDC	K2000.00	
Adanson Majaneka	staff - AEDU	0992772034 Mutundu EPA	K3000.00	
Sebastian. c. Wilson	staff - AEDU	0999005804 Mutundu EPA	K3000.00	
Zebson Zakahia	member	0995714255 Chireka ASP	K2000.00	
Halord Mbedza	Secretary	Pundu VDC	K2000.00	
Masaito Chitsanga	member	Chigala	K2000.00	
felix Bazahio	member	0999448224 Chigala	K2000.00	
Lyson Jerenan	vice chairman	0991523802 Chigala VDC	K2000.00	
Enna Xwnei	staff - AEDU	0999393035 Mutundu EPA - chadza	K3000.00	
florence Muntali	staff - AEDU	0884566137 " " - Chireka	K3000.00	
Chionwemwe moyo	staff - AEDU	0885352391 " " - Chireka	K3000.00	
Letia Chakhaza	staff - AEDU	0993854896 " " - Chadza	K3000.00	
Christopher Zaipa	staff - AEDU	0999492661 " " - Chadza	K3000.00	
Andy Gwarentani	staff - AEDU	0881544817 " " - Chadza	K3000.00	
violet Dickson	Treasurer	0996024700 Chireka ADC	K2000.00	
Gloria John	member	088542391 Khwani	K2000.00	
Irene Nyengo	Secretary	Pundu	K2000.00	
Danlesi Chitandale	Treasurer	0998330883 Khwani VDC	K2000.00	

Chrissy	chiogagwe	secretary	0881869499	chiseka AP	K2000.00	C. CHIAGAGWE
Nolet	Lekadala	staff - AEDC	0881204912	mtundu EPA-chiseka	K3000.00	LeKadala
Immaculate	chaomba	staff - "	0888792713	" " - chiseka	K3000.00	I. chaomba
Spiwe	shaga	staff - "	0999865046	" " - chiseka	K3000.00	Spiwe
Irene	chayera	staff = "	0881763944	" " - chiseka	K3000.00	Irene
Sophie	chileje	staff = "	0991421113	mtundu EPA-chadza	K3000.00	S. chileje
Sylvia	xkhama	staff = "	0884337849	mtundu EPA-chiseka	K3000.00	Sylvia
Ellen	sondo	staff = "	0995229619	" " - chadza	K3000.00	Ellen
Joyce	sakasa	secretary	0996592317	chadza ADC	K2000.00	J. Sakasa
Doreen	phiri	staff - AEDC	0884965833	mtundu EPA-chiseka	K3000.00	Phiri
Melai	siu	staff - AEDC	0997780978	" " - chiseka	K3000.00	Melai
Henry	fawteru	member		Nabwemanya29	K2000.00	H. Fawteru
Alice	Bahwa	member		Khamani	K2000.00	Alice
Kyson	Dahkeni	member		mphonde	K2000.00	K. DAHKENI
Sivanadze	chutho	AEDC		mtundu EPA	K2000.00	Sivanadze

Annex 11: List of members of Kawamba Area Development Committee and Extension Workers consulted in Lilongwe on 18th February 2017

NAME	POSITION	Amount	SIGNATURE
1. Jafati Chimpezi	ASP		
2. Stafiel Banti	VAC	2000	
3. Mbon Kalenga	VAC	2000	
4. Thomson Tindi	ADC	2,000	
5. Samuel Kapangazinga	ADC	2000.00	
6 Etizala Balon	ADC	2000.00	
7 Albert Kamkamba	ADC	2000.00	
8 Alexander Kapus	ADC	2000.00	
9 Haswell Decator	ADC	2000	
10 Chombo Comasi	ADC	2000	
11 HENDERSON LUFUYO	ADC	2000.00	
12 HENRY CHINDZI	ADC	2000.00	
13 KESILINGA MALISEN	ADC	2000.00	
14 Alice Magombo	ADC	2000	
15 KIVINESI ZIMWENI	ADC	2000.00	
		2000.00	

NO.	NAME	POSITION	AMOUNT	SIGNATURE
1.	Evason Peter	ASP member	2000	
2.	Donka Samuel	ADC member	2000	
3.	Sinton Chakamba	ASP V. Chairman	2000	
4.	Catherine Chigusa	ASP member	2000	C CHIGUSA
5.	Isfina Kamsilanga	ASP Vice Secretary	2000	
6.	Jonathan Allison	A.S.P Member	2000	J ALLISON
7.	Evason Kufanlomba	ADC member	2000	
8.	DANIEL Chitsichi	ADC Member	2000	
9.	Tonick Rabson	A.S.P. Member	2000	
10.	Sivilia Matumba	A.S.P. Treasure	2000	S. Matumba
11.	Lyson Gaizian	ADC Member	2000	L. Gaizian
12.	Chancy Banda	ADC Secretary	2000	
13.	BIZIWIKA Kaunguza	ADC chair	2000	
14.	STAPHAEL BICKLESS	ASP secretary	2000	
15.	Thomas Chombo	ADC (Treasurer)		

A

Annex 12: List of members of Salima District Executive Committee and Non-organizations consulted at Salima District council on 13th February 2017

Name of Participant	Organization/Dept	Signature	Phone
Berilo Kampana	Trade		08837732
Faith kudzala	SDC		0884325340
COSMO A. GOND	COOPI		0996565190
JOHN NAMALOMBA	COOPI		0997559801
LYTTON CHINDHO	SDC		09942365025
GEOFFREY JOYAMU	SDC		0995407660
CHISOMO GULUMBA	SW		09926116
OWEN WISIWESI	DWDD		0882985474
FRED S. GAMA	MUFIS		0993122572
JESAJA MONGDA	FORESTERS		0999433511
BLANDINA NKHOMA	MLBP		0999366425
FELIX KANJEDZA	CONSULTING		0888208613
FELIX R. BANDA	ARET		0881802340
OMAR KANGULA	AG CARE		0884716669
KIDDE L. CHAYULA	WORLD RELIEF		0888716669
LYTTON KAMPIRA	CONSULTING TEAM		
JOSEPH KANSANKAZI	AGR		0991339965
M. SIMPHA	SDC		088577325
L. CHWICHI	SDC		0999432111
W. MAINGO	SDC		
Felix R. Banda	ARET		0888208613
Michael Chayo	Agriculture		0995428530
M. Kombi	Irrigation		0888480163
MOSES MPANZANDIRA	Nice		08888810
Michael Chayo	Agriculture		0995428530

Annex 13 List of members of Kalonga ADC and Area Executive Committee in Salima District consulted on 13th February 2017

Name of Participant	Organization/Dept	Amount in MK	Signature	Phone
Lenson Madamba	KALONGA ADC			0999013790
James B. Kango	KALONGA ADC			0998576437
MIZECK THANDO	KALONGA ADC			0992852871
Fletcher Mbumba	Kalonga ADC			0992435861
FRANZ KALONGA	KALONGA ADC			0884582809
CHARLES COSMAS	KALONGA ADC			0997880115
ALOPE Banda	KALONGA ADC			0997493471
Aisha Kamwona	KALONGA VDC			09990721
ENDESI samuel	Kalonga ADC			0995703631
LINLEY MIZEKI	KALONGA ADC			0994791278
Judith Nyalugwe	Kalonga ADC			0995316846
Patricia Chiwaya	Kalonga A.D.C			0991483927
GIVENESS hulk	Kalonga ADC			0992553576
Frezer Steven	Kalonga ADC			0997657597
Steven petelos	Kalonga V.D.C			0996436160
Emmah Abril	Tembwe EPA Agric			0881839879
Steven S. Nkhonjera	Tembwe EPA District of Agricult			0882034804
Brenda Kadere	Tembwe EPA Agric			0283622311
Sahin Gabriel	" AEDD			0888999080
Alfred Chikwera	" "			0995662967
PRINCE MKUPATIRA	TEMBWE WEST AEDD			0994270350
Chiphiso Chankwala	Kalonga ADC			0991583631
Michael Cheyo	Agriculture			0995428530
Lenson Madamba	CD			

Appendix 15: Summary of main issues/observations raised by selected stakeholders during consultations.

Name of people consulted	Main issues /comments raised	Remarks on the comments
<p>Cosmas Luwanda Project Coordinator Ministry of Agriculture, Irrigation and Water Development</p>	<ul style="list-style-type: none"> • The Malawi Agricultural Commercialization Project will turn around agriculture in Malawi. The project has been design to enhance crop production to improve local needs and exports. The project will support smallholder farmers and promote commercial production on their gardens and farms. Farmers will be linked to viable markets through Ministry of Trade and Industry and Malawi Investment Trade Centre. • The project will focus on high value crops (except tobacco). The project is inline with the new National Agriculture Policy and will cover entire country. • World Bank will support the funds for the project • Environmental Affairs dept and Department of Land Resources will provide support on environment management issues 	
<p>Moses Chimphepo, District Commissioner, Kasungu District Council</p>	<ul style="list-style-type: none"> • The proposed project is welcome and will contribute to food security in the district and employment opportunities. • The project to focus on smallholder farmers and some estate owners. Some estates are idle –left by Press Agriculture. • Issue of land conflicts between local people and former migrant workers of Press Agriculture. Press Agriculture has not relocated the migrant workers and these families are finding difficult to get land for farming. Government is working on a solution to assit the families of migrant workers • Risks of migrant workers in commercial farms to be examined properly. Options include recruitment of local people instead of migrant workers. • Risks of child labour are being addressed in tobacco estates through a project run by tobacco companies and Ministry of Labour. The incidences of child labour have been reduced over the years. There is need of sensitization to farmers during project implementation. 	
<p>District Executive Committee (DEC) of Kasungu District Council</p>	<ul style="list-style-type: none"> • The project will help to boost production of alternative cash crops such as legumes. Tobacco has been key cash crop and now the production is down due to prices. • Govt to consider proper farm equipment for small gardens. Some farmers will big garden are able to use tractors. How will farmers be organized? How will fertiliser and hybrid seeds reach farmers? • Farmers currently complain on charges for tractors which are about MK22000 per hectare. Will tractors in the project be for free or on loans? • Key environmental impacts to include deforestation soil erosion, degration of water resources. The project to include land conservation measures, agro forestry and afforestation programme. Other govt dept to participate and some non- government organization. 	

	<ul style="list-style-type: none"> The project to consider some activities for the youth and some recent graduates who are just staying in the district. 	
Rodney Simwaka District Commissioner of Salima	<ul style="list-style-type: none"> The proposed project will support farmers on food production and incomes. The project has to consider those affected by floods as well. What type of crops will the project focus? How will the issues of tractors and other farm equipment be administered? Will the project include irrigation schemes? In Salima, there are several irrigation schemes which can be commercialised and farmers may produce good crops for exports? 	
Mchinji District Executive Committee	<ul style="list-style-type: none"> The project sounds to be quite useful. Will it consider contract farming for smallholder farmers? Will farmers be given hybrid seeds for legumes and maize crops or will they buy from companies The implementation of the project has to consider local structures such as ADC so that there is systematic approach in handling the support. Issues of capacity building on environmental management of the project. There are a number of extension workers who will need training to effectively support the activities. Funding is always problem for environmental and social safeguards in donor funded project. Will the project have funds for safeguards? Potential social problems of child labour and exploitation of workers will low wages is common in some estates in the districts. The project to incorporate mitigation measures on child labour and low wages for farm workers Potential risks of pesticide poisoning being sold on open markets. Pesticide management and sensitization to farmers need to be conducted 	
Mduwa Area Development Committee and Agricultural Extension Workers	<ul style="list-style-type: none"> The project will help farmers access fertilisers crops and hybrid seeds for better production. Will the govt help on prices for produce? There are several vendors who come and buy crops at very low prices , how will government address? Communities are well experience in agro-forestry and woodlot development. The trees species help o conserve gardens. The project has to consider integration of agro forestry and land conservation Will the project support road projects as was the case under IRLAD Project? 	
Hastings Yotamu and Evelyn Chima Lilongwe District Agriculture Development Officers and Extension Workers in Lilongwe	<ul style="list-style-type: none"> The proposed project will boat food security and will be supported as has been with other project. There is need to include component for livestock and some farmers are very keep to improve on livestock rearing. In the last ILARD Project, livestock component cam in the project very late and this component has been left behind. Potential environmental risks include deforestation and soil erosion from farm mechanization. To include land conservation measures HIV/Aids risks has been on decline but would require integration 	

	<ul style="list-style-type: none"> • Currently there is hind demand for tractors in garden and yet DADO offices have to tractors and these are at ADD level. The farmers want more tractors to till and ridge gardens. These need to be considered 	
Mitundu Area Development Committee and Extension Workers in Lilongwe District	<ul style="list-style-type: none"> • Farmers will be interested in hybrid seeds and fertilisers and these are scarce for those who do not buy on market prices. • Which crops will the project focus? Will the project support maize, and ground nuts. • Key environmental challenges in the area include deforestation, loss of soil fertility and soil erosion. Farmers are already working on measures to address some of these. There are a number of some NGOs which are helping on land conservation and agro-forestry 	
Wimbe ADC and Extension Workers in Mtuntham EPA in Kasungu District	<ul style="list-style-type: none"> • The project will revive agriculture in the area. There are several gardens which are not cultivated as some people lose hope on tobacco. By the way will the project support siya beans for production? Soya beans, ground nuts are now good crops with high prices. • The issue of tractors and fertilisers needs to be clarified. Will these be on loans or on hire from govt? How much will be the charges • Wimbe area has been affected by deforestation, soil erosion due to farming in the past. But now communities grow woodlots and trees within their gardens and homestead. • Training of extension workers on environmental and social management issues need to be incorporated in the project to enhance better results. Some extension workers are excluded when projects of this nature are implemented • HIV/Aids and other sexually in the area are prevalent . Project has to include interventions on HIV/Aids and STIs. There are clubs and CBOs which work in the interventions and this need to support. 	
Gilbert Kapundu and Joseph Kanyangalazi Dept of Land Resources , Ministry of Agriculture, Irrigation and Water Development	<ul style="list-style-type: none"> • The project will be implemented throughout the country and will cover all crops. The project will replace the current ASWAP which will close early next year. • Govt is working on interventions for environmental and land conservation as part of suitable agriculture development • Conservation agriculture will be encouraged in the project to enhance soil fertility and increase yield from gardens • Govt has just launched guidelines on Conservation agriculture and these will be disseminated to all extension workers and non-governmental organizations working in agriculture sector and land conservation. 	
Kawamba Area Development Committee and Agricultural Extension Workers, Lead Farmers in Lilongwe District	<ul style="list-style-type: none"> • The area has experienced better crop production in the last two years due to increase in use of fertilisers and hbrid seeds. There are clubs and co-operatives which work together to buy fertilisers and seeds. The project will support such efforts as the farmers will benefit from tractors and other 	

	<p>farm inputs. How will the farm inputs be administered in the project?</p> <ul style="list-style-type: none"> • Land conservation and agro-forestry have been incorporated in gardens. However, there is need of fast growing tree species such as cassia which can benefit farmers' in short period. • Lead farmers in the area are supporting some smallholder farmers and these will be potential beneficial to implementation of the project. • There are some non-government organizations such as ARISE working on reduction of child labour in the area. They focus on tobacco estates. However, there will be need to work together to reduce incidences of child labour in the project activities. 	
<p>Mr Joshua Valera Commercial Director Atha Atkins –Technical Director Malawi Mangoes Limited</p>	<p>Malawi Mangoes is aware of the proposed project. Is is quite good project which can turn around economy in Malawi. There is need for government to priortise some key crops which can fit specific market in world market. There is need to focus on production of high quality produce which can attract high prices. Potential crops are legumes and pulses and these are on high demand in India and South Africa. The project has to include Agri-business expert so as to anlays the market dynamics properly before the farmers start growing crops.</p>	<ul style="list-style-type: none"> •
<p>Felix Kadewere Director of Policy and Planning Malawi Investment and Trade Centre</p>	<ul style="list-style-type: none"> • The Malawi Investment and Trade Centre has been working with AUHLCX to identify market for various crops. Potential market for legumes includes India, South Africa and Western Europe. Legumes have potential to generate considerable forex for the country. Legumes also help in land conservation and also on fixing nitrogen in land. • Malawi Investment Trade Centre will also support some investors to identify land for further investment in agricultural production. The centre will work with Ministry of Land on land leases. Environmental assessment is a requirement for acquisition of large trucks of land for investment. 	
<p>Oswald Mwamsamali Chief Water Resources Officer Dept of Water Affairs</p>	<ul style="list-style-type: none"> • Water Users Associations in new irrigation schemes have to apply for water abstraction rights. The fees are payable annually and there are application fees • Water rights for small irrigation schemes are readily issues as the volumes are low • Potential environmental risks from irrigation schemes include pollution to surface and underground water resources; land degradation and siltation from irrigation activities along the streams 	<ul style="list-style-type: none"> •
<p>Walusingu Msiska Principal Environmental Officer Environmental Affairs Department</p>	<ul style="list-style-type: none"> • The project has triggered Pest Management Policy and Ministry of Agriculture is preparing integrated Pest M management Plan. There are risks of misuse of pesticide by farmers. One potential risks is use of pesticides which are not registered and allowed in Malawi such as DDT. DDT is allowed in neighbouring countries such as Zambia and Mozambique. • Some farmers in border districts may opt to buy unlicensed pesticide in these countries and these may affect biodiversity in some areas. The Integrated Pest Management Plan will address 	

	issues of sensitization of farmers and stakeholders on suitable management and storage of pesticides on farms and post -harvest	
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