



Government of the Republic of Malawi

Ministry of Water Development and Irrigation  
National Water Development Programme

Independent Environmental Impact Assessment for the Upgraded  
Kamuzu Barrage

## Final Resettlement Action Plan Volume 1: Main Report



February 2014



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## List of Environmental and Social Impact Assessment Documents

### Volume 1: Main Report – Environmental and Social Impact Assessment

The Environmental and Social Impact Assessment (ESIA) Report is the “stand alone” main report addressing the environmental and social impact assessment of the Project and includes a summary of the Environmental and Social Management Plan (ESMP), which has been prepared as a separate document. The specialist reports in Volume 2: Annex to the Environmental and Social Impact Assessment (Annexe to the ESIA) need only be consulted if a reader wishes to follow-up the specialist studies undertaken to complete the ESIA.

### Volume 2: Annex to Main Report

1. Fisheries Report
2. Assessment of Wildlife Impacts
3. Vegetation Assessment
4. Water Quality Assessment

### Environmental and Social Management Plan

The Environmental and Social Management Plan (ESMP) is a stand-alone document, which addresses mitigation measures, monitoring and institutional arrangements for the environmental management of the Project. One part of the ESMP is the environmental monitoring program, which provides input to management decisions that may be taken during construction and operational phases. It provides the basis for evaluating the efficiency of mitigation and enhancement measures and suggests further actions that need to be taken to achieve the desired Project outcomes.

### Resettlement Action Plan

The Resettlement Action Plan (RAP) is a separate report to support the ESIA. It identifies resettlement and compensation issues and provides a compensation framework. The findings and recommendations have been included in the Main ESIA.

### Volume 1: Main Report (this Report)

This is the main report addressing the legal and policy framework, entitlement framework, institutional and organisational framework, monitoring and evaluation, grievance procedures and costs related to Project resettlement / compensation.

### Volume 2: Annex to the Resettlement Action Plan

1. Record of Consultation



## Abbreviations

ADB	Asian Development Bank
ADC	Area Development Committee
AEC	Area Executive Committee
AfDB	African Development Bank
AICC	African Institute of Corporate Citizenship
AIDS	Acquired Immuno-Deficiency Syndrome
ARET	Agricultural Research and Extension Trust
BoQ	Bill of Quantities
BWB	Blantyre Water Board
CADECOM	Catholic Development Commission in Malawi
CBO	Community Based Organisation
CEMP	Contractor Environmental Management Plan
CPC	Civil Protection Committees
CS	Construction Supervision
CSC	Construction Supervision Consultant
DC	District Commissioner
DDMA	Department of Disaster Management Affairs
DDP	District Development Plan
DEC	District Executive Committee
EA	Environmental Assessment
EAD	Environmental Affairs Department (Malawi)
EIA	Environmental Impact Assessment
ESCOM	Electricity Supply Corporation of Malawi (Ltd)
ESA	Environmental and Social Assessment
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FAQs	Frequently Asked Questions
FGD	Focus Group Discussion
GoM	Government of Malawi
GVH	Group Village Headman
HIV	Human Immunodeficiency Virus
HRWL	Highest Regulated Water Level
IAPs	Interested and Affected Parties
IDA	International Development Association (of the World Bank)
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
LMLC	Lake Malawi Level Control
M	metres

masl	metres above sea level
MCC	Millennium Challenge Corporation
MoLGRD	Ministry of Local Government and Rural Development
MoWDI	Ministry of Water Development and Irrigation (formerly Ministry of Agriculture, Irrigation and Water Development)
MS	Microsoft
MW	Mega Watt
MWK	Malawi Kwacha
MSEs	Micro and Small Enterprises
NAPHAM	National Association of People Living with HIV Aids in Malawi
NGO	Non-Governmental Organisation
NSO	National Statistical Office
NWDP	National Water Development Project
NWDP II	Second National Water Development Project
OD	Operational Directive of the World Bank
OP	Operational Policy of the World Bank
PAP	Project Affected Person
PDI	Participatory Development Initiative
PMU	Project Management Unit
PRA	Participatory Rural Appraisal
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SE	Supervising Engineer
SEP	Socio-economic Profile
SIA	Social Impact Assessment
SME	Small and Medium Enterprise
SMEC	Snowy Mountains Engineering Corporation (Australia)
SRBMP	Shire River Basin Management Project
STA	Sub-Traditional Authority
STIs	Sexually Transmitted Infections
TA	Traditional Authority
TCE	Technical Committee on Environment
TCPC	Town and Country Planning Committee
ToR	Terms of Reference
VDC	Village Development Committee
VH	Village Headman
VPCC	Village Protection Civil Committee
WB	World Bank
WESM	Wildlife Environment Society of Malawi

# Executive Summary

## Background Information

The Government of Malawi, through the Ministry of Water Development and Irrigation (MoWDI), is implementing the National Water Development Project Phase II (NWDP II). Under Phase I of the NWDP, a number of studies were undertaken including: i) Water Resources Development Plan Study to identify future potential sources of water supply, ii) Catchment Rehabilitation and Protection Study, iii) Integrated Water Resources Management Plan for the Lake Malawi and Shire River Study, iv) Songwe River Stabilisation Study, and v) Strengthening of the Water Resources Board Study.

The Integrated Water Resources Management Plan for Lake Malawi and Shire River Study (also known as the Lake Malawi Level Control (LMLC)) in Phase I was undertaken to investigate alternatives for regulating Lake Malawi level and Shire River system. A number of options including no action option, construction of a high dam at Kholombizo, refurbishment of the Kamuzu Barrage at Liwonde, construction of a new barrage at Liwonde and construction of a pumping barrage at Samama, were proposed. A subsequent feasibility study concluded that the upgrading of Kamuzu Barrage at Liwonde should be progressed to detailed design.

The feasibility study indicated that lake levels should be maintained between 473.50 masl and 475.50 masl since above 476 masl agricultural lands, property and tourist facility losses were expected; problems for fisheries and lake transport were expected at lake levels below 473.50 masl; and, at 470 masl negative impacts on commercial fisheries and cichlid fish species were also anticipated.

The findings and recommendations of this study partly formed the basis of the preparation of the Water Resources Management Component under NWDP II. The Water Resources Management Component of the NWDP II consists of the five subcomponents namely: Water Resources Management Institutional and Technical Support; Water Resources Investment Strategy; Pilot Catchment Management and Development; Lake Malawi Level Control; and, Enabling Legislation for National Water Policy.

Rehabilitation and upgrading of the present lake level control structure, the Kamuzu Barrage at Liwonde is to be undertaken under the proposed Shire River Basin Management Program (SRBMP) with IDA funding. The upgrading of the Kamuzu Barrage will contribute towards reducing risks and allowing greater regulation of Shire River flows and Lake Malawi levels over a range of droughts and wet climatic sequences. The effect of the Barrage on the lake level fluctuations will be insignificant compared to natural long term and seasonal fluctuations.

## Rationale

Kamuzu Barrage which became operational in 1965 is no longer full operational. The Barrage was originally constructed in response to low rainfall in the catchment areas of Lake Malawi and the Shire River resulting in lowered lake levels and lack of flow in the Shire River which in turn adversely affected hydropower generation, irrigation, urban water supplies and transport as well as livelihood activities such as *dimba* cultivation and fisheries.

The purpose of upgrading Kamuzu Barrage is to increase water storage capacity upstream (particularly within Lake Malawi) and thereby to help ensure adequate downstream flows in the Shire River to sustain key economic activities. The activities include hydropower generation (most of Malawi's electricity comes from Shire River hydroelectric plants), water supply (including for the city of Blantyre), existing and proposed irrigation systems, fisheries and traditional *dimba* (flood-recession) agriculture. The remaining natural ecosystems and wildlife (such as in the Elephant Marsh) downstream of the Barrage also depend upon Shire River flows. In previous years of especially low water levels in Lake Malawi, the Shire River has run dry; the Kamuzu Barrage is intended to help reduce a recurrence of these low flow situations, which would be disastrous because so many people and businesses now depend upon adequate year-round flows within the River.

## Project Description

The Project proponent is the Ministry of Water Development and Irrigation (MoWDI). The project involves upgrading the existing Kamuzu Barrage that is located on the Shire River at Liwonde by: refurbishment of the existing Kamuzu Barrage Structure with new gates; construction of a new road bridge immediately downstream of the existing Barrage (as part of the same structure); and construction of a floating steel

boom upstream of the Barrage to control floating weeds. Erosion protection works will also be constructed downstream of the Barrage. Refurbishment of the Barrage also includes increasing the regulating capacity of the Barrage by increasing the highest regulated water level from 475.32 masl by 20-40 cm. Construction period is estimated at 34 months according to the detailed design report for the Project.

## **Aim and Objectives**

The overall aim of this RAP is to assess any adverse impacts of the proposed project on the households living near or on the proposed construction sites, along the shorelines of the Shire River and Lakes Malombe and Malawi and to assess: its severity of impact, inform the affected persons about the project and policy applicable for providing compensation and assistance and to provide compensation cost estimates. This RAP is based on the World Bank's operational safeguard policies and procedures, particularly OP/BP 4.12 related to involuntary resettlement.

The resettlement scoping included the following sub-activities:

- A socio-economic baseline survey of affected persons and their assets;
- Consultations with persons potentially affected by the project, to inform them of project activities, the likely time frame, and an initial indication as to their preference for cash or in-kind compensation.

These activities were carried out in accordance with the World Bank's OP/BP 4.12, and relevant Government of Malawi Laws and Regulations. Information for this RAP was collected through primary and secondary sources. Major steps used for this study included:

- A desktop review of documents and other secondary data;
- Observation from site visits;
- Interviews with government authorities and local government officials; and
- A census and socio economic survey, community meetings and consultation with project affected persons (PAPs), including focus groups with men, women and community leaders.

## **Legal and Policy framework**

While developing this RAP, the relevant laws and policies of the Government of Malawi and the World Bank's OP/BP 4.12 related to Involuntary Resettlement were consulted. These laws and policies include: The Land Act 1969, Land Acquisition Act 1971, The Malawi National Land Policy 2002 and the Town and Country Planning Act, Cap 23:01. The World Bank OP/BP 4.12 on Involuntary Resettlement guided the preparation of this Report. The Operational Policy outlines many of the same principles contained in Malawian regulations. The applicable involuntary resettlement principles are:

- **Principle 1:** Relocation will be avoided or minimised.
- **Principle 2:** Affected people are defined inclusively.
- **Principle 3:** Ongoing and meaningful consultation and disclosure of information will occur with affected people and communities.
- **Principle 4:** All Project impacts will be identified and all losses properly recorded.
- **Principle 5:** Affected people will be entitled to full compensation and other rehabilitation measures, and will be assisted to improve their livelihoods, on an equitable basis.
- **Principle 6:** Vulnerable groups will receive special attention.
- **Principle 7:** Cultural and religious practices will be respected.
- **Principle 8:** Relocation planning, budgeting and implementation will be an integral part of the Project.
- **Principle 9:** Monitoring procedures will be in place.
- **Principle 10:** All legal obligations will be complied with.

## Socio-economic Setting

The Consultant undertook a socio-economic survey of the people inhabiting the shorelines of the Shire River, Lakes Malombe and Malawi to obtain a socio-economic profile of communities in the Project area. For the purposes of the socio-economic survey, eight districts were sampled, namely Salima, Mangochi, Machinga, Balaka, Blantyre, Chikhwawa, Zomba and Nsanje in the Southern Region of Malawi. These districts are located along the Shire River, and Lakes Malawi and Malombe in the Project area. Balaka, Mangochi and Salima districts are located upstream of the Barrage. Machinga, Zomba, Blantyre, Chikhwawa and Nsanje districts are located downstream; with Chikhwawa and Nsanje being located furthest from the Project site.

The survey covered mostly rural areas. Only six households were classified under the semi-urban area of Machinga. Of the 520 households surveyed, 156 households are located upstream of the Kamuzu Barrage and the others are located downstream. About 60 percent of households are followers of Christianity and 40 percent of Islam. Societies in these areas tend to be matrilineal. Although several tribes are found in the project area, the Yao are the dominant tribe followed by Lomwe, Chewa, Sena, Manganja and Ngoni tribes. Other tribes include: Nyanja, Tonga and Tumbuka. Yawo and Ngoni are the main local languages. Chichewa, which is a common language in Malawi, is spoken by almost everybody.

In terms of population density, Zomba and Blantyre have the highest density. Only Chikhwawa has the population density of less than 100 persons per square kilometre. Among the upstream districts, Salima ranks third in population density among all districts sampled. In terms of literacy rate Zomba and Blantyre show the highest literacy rate with above 88 percent for males. In the case of female literacy, Blantyre has the highest rate of above 85 percent followed by Zomba at 75 percent. The demographic characteristics reflect that the fertility and mortality rates are still high in these districts. Blantyre and Zomba districts report relatively lower fertility rates whereas Chikhwawa is the only district having a mortality rate of less than ten.

Most of the houses in the sample households surveyed have brick and cement walls with grass thatched roofs. Only 16 households have electricity and alternative sources of lighting such as open fires, torches and candles were commonly used. Firewood was the most common source of energy. Communal bore wells were the main sources of drinking water with some households accessing the Shire River, Lake Malawi and/or Lake Malombe for water for domestic purposes.

Households surveyed are generally poor as reflected in assets owned. Few own luxury items such as a car, television and refrigerator. The most commonly owned household items included radios, bicycles and cell phones. The most common livestock owned were chickens followed by goats. Very few households owned cattle. Landholdings were also very small at two hectares or less with more than half of the households owning less than one hectare of land.

The main purpose of household travel was to visit markets and the most common means of travel was by bicycle taxi. Few household members travelled for social, employment or education purposes.

Of the total households surveyed, more than 80 percent reported to be unemployed and do not have a permanent source of employment year round. It was also found that 45 percent of households earn less than MWK 10,000 per month although a sizeable 30 percent earn more than MWK 40,000 per month. Households engaged in farming reported maize, rice and vegetables as major crops. Cassava, sugarcane, fruits and other crops were also grown.

Agriculture is the main economic activity of the sampled households followed by business, private jobs, landless labour, fishery and livestock keeping, government services and bicycle taxi. Machinga district had the largest number of households engaged in agriculture, followed by Mangochi, Machinga, Chikhwawa, Nsanje and Blantyre respectively. 82 percent of households reported to be engaged in agriculture. Major produce in these districts include rice, cassava, bananas, tobacco, maize, groundnuts, tomatoes and sugarcane. Retail commerce is undeveloped, being confined to small shops and kiosks. Kiosks and shops retail sugar, soap, matches, textiles and other goods brought from the regional centre of Lilongwe and neighbouring countries including Tanzania, Mozambique, Zambia and South Africa.

Almost three quarters of households reported facing food shortages during the year usually occurring during the rainy season when land for flood recession agriculture is limited highlighting the dependence on this type of agriculture for their livelihood. The most common coping strategies utilised by households during food shortages is to use household money to buy food from the market followed by sourcing

additional income from casual labour or obtaining assistance from relatives and friends. Obtaining credit or selling firewood and traditional medicines are amongst the least used strategies.

Food and farm inputs accounted for most household expenditure with the least amount spent on discretionary items including health / medications, beverages and travel.

Households considered that Lake Malawi and Lake Malombe and the Shire River were very important to them in terms of agriculture and fishing and to a lesser extent for transport. Conversely, households in all districts indicated that they were adversely impacted by flooding from Lake Malawi and Malombe and the Shire River and from adverse impacts from water animal attacks (crocodiles and hippopotamuses).

The project area is well serviced by government and private hospitals. There are also health centres in many parts of the rural communities however these are often overcrowded and there are capacity problems in terms of human resources and space. The most common diseases affecting households as recorded in the socio-economic survey are malaria (almost half of households surveyed), diarrhoea and asthma. HIV/AIDS infection rates are also high ranging from 14-21 percent according to Government statistics.

## **Beneficial Project Impacts**

### **Short Term (Construction)**

**Economic benefits** - Besides direct employment, it is highly likely that people in the area will benefit economically from the project through establishment of small scale businesses such as grocery stores and restaurants, houses for rent as well as the sale of agricultural produce and fish at the local market and by the road side. Significant economic benefits will be enjoyed in the project area.

**Employment opportunities** - Upgrading of the Barrage will create employment opportunities and bring economic benefits to people in Liwonde and neighbouring districts particularly those close to the Project.

**Alternative livelihoods** – The sale of fish both fresh and dry is, at present, the major livelihood activity in the project area particularly at the Barrage. Increased population as a result of the influx of people and movement of people into the area will bring about different demands for goods and services. The varied demands will provide opportunities for entrepreneurs to venture into new livelihood activities.

**Improved Standard of living** - Direct cash income from employment by the project and money realised from rentals, sale of agricultural produce and other commodities will enable people in the project area and beyond to meet their basic needs and afford essentials such as food, clothing and good houses which will raise their living standards.

### **Longer Term**

**Reliable hydropower generation** - The upgraded Barrage will improve the control and regulation of lake water levels and flow of the Shire River providing more reliable generation of hydropower nationally.

**Improved transport and communication** - The upgraded Barrage will be stronger and wider providing both motorists and pedestrians a useful, easy and safe access to health clinics, trading centres, markets and other places where they access goods and services. Upgrading the Barrage will enhance the benefits people are currently getting from the existing Barrage.

**Community skills development** - The many activities to be undertaken during Barrage upgrading works will likely require the contractor to train some local people as plant operators, technicians, electricians, mechanics and clerks. The acquired skills will benefit the individuals as well as communities in the project area during and after the project life.

**More efficient weeds disposal** – potential community benefits from the processing of weeds, for example fertiliser.

**Safer operation of Barrage** – improved safety for Barrage operators and other Barrage users. Currently operators have to stand in the traffic lanes which will be separated in the new structure.

**Improved hydro-meteorological information** – will result in improved downstream benefits for water users (irrigation and drinking water) through improved monitoring of water flows and discharges, water quality and sediment loads etc.

**Improved early warning system for Barrage operation** –The implementation of a warning system (radio, sirens etc.) to inform about high/ low water levels and sudden changes in discharge will minimise negative impacts and asset losses.

## **Adverse Project Impacts**

### **Short Term (Construction)**

**Involuntary resettlement** – No families are expected to have to resettle as a result of construction activities for the Project. Two commercial operations, Shiri Lodge and Shire Camp will be affected permanently. A shelter (owned by the Liwonde Town Council) located on the western approach to the Barrage will also have to be removed prior to commencement of construction activities. This shed will be rebuilt following completion of the Barrage works. Currently this shelter is used as a site for small business operators to sell meat. The Liwonde Town authorities have identified a piece of land opposite the National Bank Building where a new shelter will be constructed to house those that will be affected by the closure of the current shelter. Three other sheds housing small businesses will also be affected.

Except for a parcel of land, which has been encroached by the Shiri Lodge, all land required for the new-elevated approaches to the Barrage, is within the existing road reserve.

Land required for the permanent administration centre for the refurbished Barrage and for the weeds control mechanism on both east and west banks of the Shire River is Government owned.

Land required for the temporary contractor site is mostly vacant land under the control of the Liwonde Town Assembly and which ESCOM proposes to develop for an office complex. A small portion has also been allocated to a local developer. Presently it is being used on an opportunistic basis for maize cropping by staff from the Marine Police Unit.

**Loss of Farmland**- Borrow pits and disposal sites for gravel and other solid wastes may affect farm land making it temporarily unavailable for cultivation. The Contractor will be required to rehabilitate any sites used in accordance with the Project's ESMP so that these impacts will be minor and temporary.

**Traffic hazards during construction** – increased vehicle movements, especially heavy vehicles will lead to a temporary increased risk of accidents during the construction period.

**Health impacts** - Borrow pits if not reclaimed soon after construction works can fill up with water, which provides breeding ground for water-borne vectors for malaria and bilharzia. Individuals can contract bilharzia as they swim and wash clothes in the stagnant water in the pits.

The influx of workers and job seekers into the area is likely to introduce new life styles and potentially increase the incidence of communicable diseases, such as HIV/AIDS. Drug and alcohol abuse may also increase in the project area with the increased affluence and higher population. If these impacts are not mitigated they are likely to be long term and moderate in severity.

**Noise and vibrations** - The barrage rehabilitation activities will include blasting, crushing and transportation of materials and personnel using heavy vehicles. Machines used in all these undertakings produce noise and vibrations. Impacts will be short term and minor during the construction period.

### **Longer Term**

Part of Shiri Lodge will have to be demolished to provide for the construction of coffer dams and manoeuvrability of construction equipment. The part of the lodge that has to be demolished has been illegally built on government owned road and river reserve. The new weed boom will permanently affect boat access for Shire Camp which provides accommodation and boat safaris along the Shire River upstream of the Barrage.

Barrage operation is the main determining factor of impacts downstream.

**Loss of farmland** The rise in water levels upstream of the Barrage might also cause spatial shifts during certain years of the land available for *dimba* (flood recession) agriculture although it is not feasible to identify specific PAPs because the high and low water levels (which signify the boundary areas for *dimba* cultivation) vary each year, and most such variation is natural and not attributable to the Barrage – and especially not to the difference between the current Barrage operation and the future operating regime at the upgraded Barrage. In any event, the variation (amplitude) between high and low water levels along the Shire River and Lakes Malombe and Malawi will not be significantly affected by the Barrage, such that

overall *dimba* cultivation will be possible more or less to the same extent as at present. However, there could be some spatial shift (e.g. upslope from the water line) in some of the agricultural land parcels suitable for *dimba*.

Because it is not feasible to identify PAPs upstream or downstream of the Barrage (other than those within the construction footprint area) the water-related issues faced by people upstream and downstream of the Barrage has been addressed through environmental safeguards implemented through the Project's ESMP. The ESMP specifies:

- environmental and social boundary conditions for water releases from the Barrage, to help ensure that the future operating rules for the Barrage avoid scenarios that would exacerbate destructive flooding or other undesirable outcomes (to the extent the extremes of the possible release strategies would be able to cause this negative impact);
- an early warning system for short-term waves downstream of the Barrage due to (faulty) gate operation, as well as natural floods that are beyond the ability of the Barrage to control or regulate;
- a strong social communications and information-sharing program (involving university/engineering bodies/CSOs/Ministries) on natural and Barrage-induced changes in water levels; and
- A monitoring program for water-related issues faced by people upstream and downstream of the Barrage to feed into a revision of operating rules for the Barrage to minimise any adverse impacts.

### **Entitlement Framework**

Those who will be affected by asset loss are eligible for compensation and other assistance. The types of losses the PAPs may suffer include temporary loss of access to agricultural land, income, housing, proximity to work, utilities and social amenities. The identification of persons eligible for compensation in the project area was based on the following criteria:

- persons losing land with or without legal title;
- persons losing temporary or permanent access or rights to services;
- persons losing business or residential property;
- person with homes, farmland, structures or other assets within the proposed area for construction and in the vicinity of the Shire River;
- household whether men, women, children, dependent relatives, friends and tenants;
- members of the household who may not eat together but provide housekeeping or reproductive services, critical to the family's maintenance;
- persons that incur losses whether partial or total and whether they have their own land or rent land, including those that rent or occupy buildings individually or as a group for business or as households.

The World Bank considers all titled landowners, customary landowners, encroachers (who have settled before the cut-off date), persons affected by loss of access to sources of income and persons affected by loss of access to natural resources (water, wood, grazing areas etc.), as PAPs. Therefore, PAPs will be entitled to compensation based on the status of their occupation of the affected areas.

The entitlements for compensation are laid out in the Entitlement Matrix included in this RAP. Land for land is considered to be appropriate for people whose livelihoods are land based. However, since this project has limited impacts, cash compensation is proposed for a number of impacted businesses.

### **Institutional and Organisational Framework**

The Government of Malawi has received an advance from the International Development Association (IDA) of the World Bank to finance the Shire River Basin Management Project (SRBMP). The SRBMP is supported by the Ministry of Water Development and Irrigation (MoWDI), the Ministry of Local Government and Rural Development (MoLGRD) and the Ministry of Lands, Physical Planning and Surveys. SRBMP



has the overall responsibility for coordinating and monitoring implementation of the RAP and for ensuring that project staff has the knowledge and skills to implement the RAP.

District and Municipal Councils will be responsible for the implementation at the local or municipal authority level with the support of the relevant ministries. This organisational framework is designed to effectively address any adverse potential social, economic and environmental impacts so that PAPs are fairly treated in all areas of the resettlement process and any impacts or loss of livelihoods.

### **Participation and Public Consultation**

A comprehensive public consultation and participation program was undertaken to ensure that all of the information pertaining to the project and its likely impacts was disseminated and in order to implement the Project in a transparent manner. Particular focus was given to the issues related to involuntary resettlement. In line with the above, the Consultants held meetings with all interested parties. Public consultation meetings and focus group discussions were held during October- November 2011 in villages and areas that are potentially affected by the Project, and specific consultation for PAPs in the construction footprint areas was held in February 2012 and June 2013. Altogether 42 focus group discussions were held with men, women, village chiefs, community based organisations and district councils. Twelve Public meetings were held with communities, including one in the area affected by Project construction.

The consultation process provided an opportunity for stakeholders, particularly village communities to express their views and opinions on the Project as well as to raise any issues of concern relating to the Project. Key points raised during consultations are as follows:

- Importance of the Shire Rive and Lakes Malombe and Malawi on the livelihoods of those living near the shoreline.
- Health concerns involved: the spread of STIs, particularly HIV/AIDS and also potential for increased human contact with hippos and crocodiles should water levels rise;
- Employment and business opportunities for those living close to the project, including women and youth;
- Appreciation for the project involved: this included expected benefits, improved irrigation downstream, improved electricity, improved fishing upstream and short term employment during the construction period; and
- Loss of land and assets involved: compensation amounts and process, participation of the community in valuation and the assessment of different crops.

The Consultant held meetings with the officials of the districts potentially impacted by the Project. The discussions covered issues such as the importance of the Shire River; causes of flooding; potential project effects on the Shire River, Lakes and *dimba* (flood recession lands) gardens close to the river; the handling of disputes and grievances in case of damages to property along the Shire River and Lake Malombe and development projects in the area.

### **Gender Mainstreaming**

Women and children/youth are the vulnerable group, especially households headed by women. For this project, specific consultations were held with women and youths to gain their opinions on the Project and potential project benefits, awareness raising opportunities and opportunities for women and children during the RAP implementation. Mitigation measures seek to enhance women's economic and social well-being where appropriate.

### **Monitoring and Evaluation**

Monitoring and evaluation will form an integral part of project implementation, and will provide the necessary information about the involuntary resettlement aspects of the project, measure the extent to which the goals of the RAP will be achieved and the effectiveness of mitigation measures.

Indicators and targets will be established for the project as a whole, in consultation with representatives of the affected communities and other key stakeholders. Indicators are usually grouped into the categories as spelt out in the RAP including: input indicators, output indicators, outcome indicators, impact indicators

and performance indicators. This RAP also details performance monitoring, impact monitoring and qualitative monitoring.

### **Grievance Redress Procedures/Mechanism**

When the individual resettlement plans are approved and individual compensation contracts are signed, PAPs and households will have already been informed of the process for expressing dissatisfaction and to seek redress. The grievance procedure will be simple and will be administered as far as possible, at local levels to facilitate access by PAPs. Since the implementing agency of the Project will be a party to the contract it will not be the best office to receive, handle and rule on disputes. Therefore, all grievances concerning non-fulfilment of contracts, levels of compensation, or seizure of assets without compensation will be addressed to a local committee comprising traditional leaders of the affected area and representatives of the District Council.

### **Implementation Schedule**

An implementation schedule for the RAP has been developed and included in Section 13 of this report.

### **Compensation Costs**

It is estimated that a total of MWK 272,118,525 (USD 777,482) will be required to implement this RAP based on June 2013 costing.

## Acknowledgements

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- The affected communities who provided their time and effort at meetings and participated in the socio-economic survey for the Project;
- Government officials at the Central Government and District Level who provided administrative support to the conduct of the socio-economic survey for the Project;
- The people of the Salima, Mangochi, Balaka, Machinga, Zomba, Blantyre, Chikwawa and Nsanje Districts for their hospitality;
- Government officials from various Ministries at Central Government and District Level;
- Mr. Chirwa, Mangochi District Commissioner;
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- Mr Mabvuto Phula, Valuer, Ministry of Lands;

# 1 Introduction

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## 1.1 Project Background

The Government of Malawi, through the Ministry of Water Development and Irrigation (MoWDI), is implementing the National Water Development Project Phase II (NWDP II). Under Phase I of the NWDP, a number of studies were undertaken including: i) Water Resources Development Plan Study to identify future potential sources of water supply, ii) Catchment Rehabilitation and Protection Study, iii) Integrated Water Resources Management Plan for the Lake Malawi and Shire River Study, iv) Songwe River Stabilisation Study and v) Strengthening of the Water Resources Board Study.

The Integrated Water Resources Management Plan for the Lake Malawi and Shire River Study (also known as the Lake Malawi Level Control (LMLC)) in Phase I was undertaken to investigate alternatives for regulating Lake Malawi level and Shire River system. A number of options including no action option, construction of a high dam at Kholombizo, refurbishment of the Kamuzu Barrage at Liwonde, construction of a new barrage at Liwonde and construction of a pumping barrage at Samama, were proposed. A feasibility study was conducted to assess the option that should be taken to detailed design. The upgrading of Kamuzu Barrage at Liwonde was selected as the best option.

The feasibility study indicated that Barrage regulation levels should be maintained between 473.50 masl and 475.50 masl as an acceptable range. It was found that above 476 masl agricultural lands, property and tourist facility losses were expected. It was further concluded that problems for fisheries and lake transport were expected at lake levels below 473.50 masl. At 470 masl negative impacts on commercial fisheries and cichlid fish species were anticipated.

The findings and recommendations of this study partly formed the basis of the preparation of the Water Resources Management Component under NWDP II. The Water Resources Management Component of the NWDP II consists of five subcomponents namely: Water Resources Management Institutional and Technical Support; Water Resources Investment Strategy; Pilot Catchment Management and Development; Lake Malawi Level Control; and, Enabling Legislation for National Water Policy.

Rehabilitation and upgrading of the present lake level control structure, the Kamuzu Barrage at Liwonde is to be undertaken under the Shire River Basin Management Program. The upgrading of the Kamuzu Barrage will contribute towards reducing risks and stabilising Shire River flows and Lake Malawi levels over a range of droughts and wet climatic sequences, but not for the most severe drought and wet climatic sequences. The effect of the Barrage on the extremes within downstream Shire River flow fluctuations will be very small in comparison with the natural long term and seasonal fluctuations. The project area is shown in Figure 1.

The Shire River Basin Management Program is financed through the World Bank. The overall development objective of the Program is to make significant progress in achieving socially, environmentally and economically sustainable development in the Shire Basin. The program has a planned duration of 12-15 years. The first phase project will establish coordinated inter-sectoral development planning and coordination mechanisms, undertake the most urgent water related infrastructure investments, prepare additional infrastructure investments, and develop up-scalable systems and methods to rehabilitate sub-catchments and protect existing natural forests, wetlands and biodiversity. Future phases will consolidate Basin planning and development mechanisms and institutions, undertake further infrastructure investments, and up-scale catchment rehabilitation for sustainable natural resource management and livelihoods.

The Project Development Objective (PDO) of the Shire River Basin Management Project (SRBMP) is to develop a strategic planning and development framework for the Shire River Basin and support targeted investments to improve land and water resources management, and associated environmental services and livelihoods in the Basin. The project will: (a) strengthen the institutional capacities and mechanisms for Shire Basin monitoring, planning, management and decision support systems; (b) invest in water related infrastructure that sustainably improves water resources management and development; (c) reduce erosion in priority catchments and sedimentation and flooding downstream, while enhancing environmental services, agricultural productivity and improving livelihoods; (d) improve flood management in the Lower Shire and provide community level adaptation and mitigation support; and (e) protect and enhance ecological services in the Basin.

The Project addresses the interlinked challenges of poverty and a deteriorating natural resource base in the Shire River Basin to halt the process of environmental degradation and improve the productive potential of natural resources. It will promote integrated climate resilient investment planning in the basin, including institutional capacity building to plan and monitor changes in land use patterns at a basin level. Project activities will support strategic planning and implementation of large-scale infrastructure investments; adoption of sustainable land, forest and water management practices to reduce land degradation in production and natural landscapes, to build resilience to climate risk and to improve the productivity and incomes of smallholder farmers in priority catchments. The project will also improve flood management in the Lower Shire. Project investments have been designed to support the GoM's economic growth and development plans for the basin.

## 1.2 Scope and Objectives of the Resettlement Action Plan

Infrastructure development, such as the Kamuzu Barrage, invariably requires the involuntary acquisition of land<sup>1</sup>. This may result in physical relocation, loss of assets or access to assets, and/or loss of income sources or means of livelihood whether or not those affected must move to another location – broadly termed involuntary resettlement or resettlement<sup>2</sup>.

Such acquisition of land can adversely affect the wellbeing of the people whose assets are acquired, as well as the communities in which they live, often giving rise to severe social and economic risks.

Unless consciously countered, these risks become reality, negatively reinforcing each other in an interactive and cumulative manner. As the Project proponent, the MoWDI can minimise risks by following procedures based on the following principles<sup>3</sup>:

- Involuntary resettlement should be avoided where feasible, or minimised, by exploring all viable alternative project designs.
- Where it is not feasible to avoid resettlement, these activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable those displaced by the project to share in project benefits.
- Affected people should be assisted in their efforts to improve their livelihoods and standards of living, or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.
- Affected people should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs.

A full Resettlement Action Plan (RAP) is required for the Kamuzu Barrage Upgrading Project to address the socio-economic impacts, both positive and negative, associated with involuntary resettlement. It forms part of the broader Environmental and Social Assessment (ESA) process, linked as a supplementary document to the ESIA – which encompasses socio-economic impacts additional to those resulting from involuntary resettlement.

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<sup>1</sup> The World Bank's Operational Policy (OP/BP) 4.12. *Involuntary Resettlement* (2007a) is the international benchmark for resettlement planning, covering direct socio-economic impacts caused by the consequences of the involuntary taking of land. It defines 'involuntary' as "actions that may be taken without the displaced person's informed consent or power of choice", and for land "includes anything growing on or permanently affixed to the land, such as buildings and crops".

<sup>2</sup> The terms 'involuntary resettlement' and 'resettlement' are used interchangeably by different organisations. Where 'resettlement' is used in this document, it implies 'involuntary resettlement' and *vice versa*.

<sup>3</sup> As outlined in the World Bank's OP 4.12.

Appendix 1 lists the Consulting Team which prepared the social and environmental documents (including the ESIA and RAP) for the Project. The Terms of Reference (TOR) for preparation of the RAP is reproduced in Appendix 2.

The main objectives of this RAP are to:

- a) assess the potential extent of involuntary resettlement relating to the Project;
- b) identify the possible impacts of such resettlement;
- c) identify Project Affected Persons (PAPs) and assets;
- d) avoid or minimise such impacts, where feasible;
- e) outline the Project's entitlement framework/matrix and cost estimate for resettlement/compensation; and
- f) ensure appropriate consultation with all stakeholders, particularly those affected, throughout the process.

### 1.3 Report Layout

The Resettlement Action Plan (RAP) is organised as follows:

**Section 2** provides a brief project description.

**Section 3** outlines the methodology employed in obtaining information for the RAP, with particular reference to the socio-economic survey.

**Section 4** describes the legal and policy framework, incorporating national legislation and practice, international standards, and project policy guidelines for involuntary resettlement.

**Section 5** describes the main features of the socio-economic environment.

**Section 6** presents potential social impacts of the project, positive and negative.

**Section 7** outlines the project's entitlement framework/matrix; eligibility criteria, including the determining criteria, a description of the eligible, and the unit of entitlement; procedures for the final verification and valuation of affected assets, and determination of compensation.

**Section 8** outlines institutional organisational responsibility for the RAP, and recommends institutional and organisational arrangements for the implementation of the RAP.

**Section 9** describes public consultation and participation undertaken, including disclosure of information.

**Section 10** presents guidelines on gender and vulnerable groups mainstreaming.

**Section 11** provides recommendations on monitoring and evaluation, including the development of some core indicators, and reporting methods.

**Section 12** discusses issues relating to grievance redress procedures.

**Section 13** details an implementation schedule.

**Section 14** gives a breakdown of preliminary compensation, resettlement and rehabilitation costs.

**Section 15** presents the conclusion.

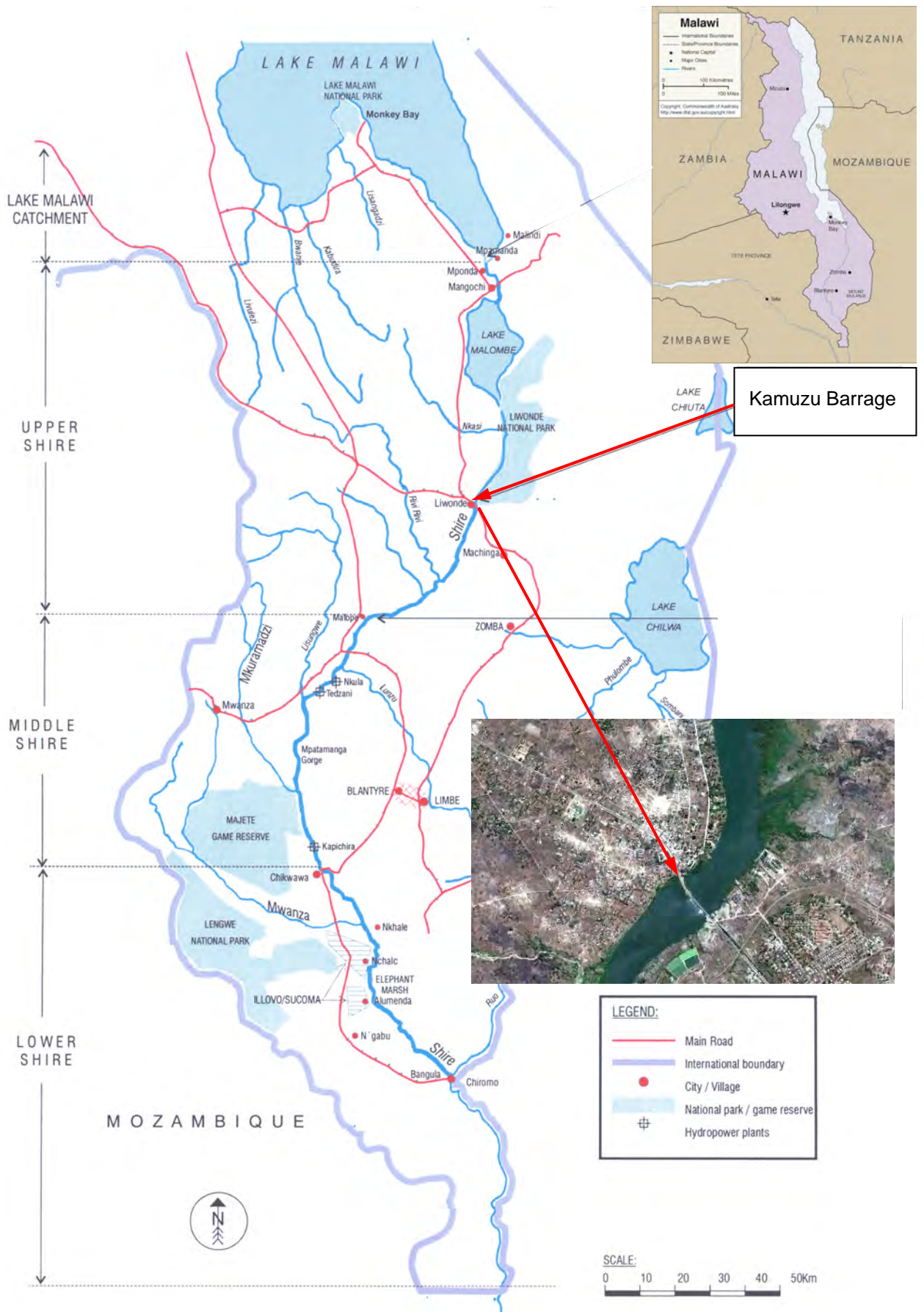


Figure 1. Project Location Map and Environmental Setting

## 2 Project Description

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### 2.1 Location and Justification

The Kamuzu Barrage was constructed across the Shire River at Liwonde on the Zomba to Lilongwe road. It is located on the upper Shire River downstream from Lakes Malawi and Malombe (Figure 1). For the purposes of the socio-economic survey, 8 districts were sampled, namely Salima, Mangochi, Machinga and Balaka, Blantyre, Chikhwawa, Zomba and Nsanje in the Southern Region of Malawi. These districts are located adjacent to the Shire River, and Lakes Malawi and Malombe in the Project area (Figure 2). Neno and Mwanza Districts were not included because they are unlikely to be affected by the Barrage refurbishment since the Shire River in these areas is characterised by a deeply incised river channel with numerous falls such that any changes in flow regime from the Barrage will not result in inundation of riparian areas suitable for agriculture, forestry or other resource use activities.

The Barrage was originally constructed in response to low rainfall in the catchment areas of Lake Malawi and the Shire River resulting in lowered lake levels and lack of flow in the Shire River which in turn adversely affected livelihood activities such as *dimba* cultivation, transport and the fisheries industry for those living adjacent to the two water bodies and the nation as a whole.

Kamuzu Barrage, which became operational in 1965, is reported to have outlived its life span by about 25 years and that some of its parts/sections are not functioning as intended. Different ways of securing and regulating the water flow have been suggested and studied. The most recent of these studies is the Lake Malawi Level Control Study – Phase I and II which analysed different types of interventions to further regulate the flow in the Shire River, including the no-action alternative. One alternative deals with the option of upgrading the existing Barrage at Liwonde.

The purpose of upgrading Kamuzu Barrage is to increase water storage capacity upstream (particularly within Lake Malawi) and thereby to help ensure adequate downstream flows in the Shire River to sustain key economic activities. These include hydropower generation (most of Malawi's electricity comes from Shire River hydroelectric plants), water supply (including for the city of Blantyre), existing and proposed irrigation systems, fisheries, traditional flood-recession agriculture, and other human uses. The remaining natural ecosystems and wildlife (such as in the Elephant Marsh) downstream of the barrage also depend upon adequate Shire River flows. In previous years of especially low water levels in Lake Malawi, the Shire River has run dry; the Kamuzu Barrage is intended to help prevent (within the limits of Barrage influence) a recurrence of these low flow situations, which would be disastrous because so many people and businesses now depend upon adequate year-round flows within the River.

### 2.2 Description of Proposed Works

The detailed design for the Upgraded Kamuzu Barrage is being undertaken in two phases under a separate design consultancy. The first phase which includes a review of Feasibility Studies and design optimisation for Kamuzu Barrage has been completed. The second phase involves preparation of detailed designs and is being undertaken parallel to the social and environmental studies for the Project.

The preferred design option for the Upgraded Kamuzu Barrage involves: refurbishment of the existing Kamuzu Barrage Structure including replacement of the existing 14 radial gates with new ones; raising the height of the maximum regulating level of the Barrage by up to 40 cm (corresponding to a Lake Malawi level of 475.72 masl); construction of a new road bridge immediately downstream of the existing Barrage (connected to the existing structure); and construction of a floating steel boom and weed collector upstream of the Barrage to control floating weeds (NORPLAN 2013). The Project layout is shown in Figure 3. The proposed works and activities which will be carried out in phases include:

**Erosion protection / energy dissipation** – erosion protection works (mainly concrete slab) will be constructed downstream to reduce water velocities and erosion.

**Excavations/extraction** - Borrow areas and a quarry will be required where the contractor will source construction materials including sand and quarry stone, weathered rock and gravel for the Project. Four



potential sites have been identified: Naliswe River, 6-8 km west of Liwonde towards Balaka (river sand); the existing Naliswe quarry, 14 km west of Liwonde towards Balaka (quarry stone); Molipa borrow area, 24 km east of Liwonde towards Nsanama (an existing source of weathered rock / coarse gravel); and, Chabwera borrow areas, 2-4 km east of Liwonde (also an existing source of weathered rock / gravel material).

**Work camp and plant area** - the contractor will establish a temporary camp for project administration and workers residence. The proposed site is located upstream of the Barrage on the left (east) bank of the Shire River (Figure 3).

**Transportation of equipment, materials and work force** - There will be increased traffic in the project area as the contractor transports equipment and materials (including new weeds boom and Barrage gates) to and from the site during the upgrading work.

**Construction of drainage structures** - A number of structures will be constructed to direct water away from areas of activity.

**Drilling riverbed** - for pillars for the new road bridge including 130 bored piles.

**Excavation and concrete works** – for foundation, erosion protection, pillars and bridge structure involving 25,000 m<sup>3</sup> of excavation/fill and 5,000 m<sup>3</sup> of concrete.

**Compaction** - Heavy road compacting machines will be used to strengthen/compact the ends of the barrage.

**Road works** – upgrading and adjustments of the existing approaches to the Barrage, asphalt work.

**Coffer dams** – There will be phased construction of temporary earth/rock-fill coffer dams (six in total requiring 11,000 m<sup>2</sup> of steel sheeting and 80,000 m<sup>3</sup> of fill) upstream and downstream of the existing Barrage to facilitate refurbishment of the Barrage including construction of the new road deck and the weeds boom.

**Dismantling** of the existing gates and installation of 14 new gates.

**Construction** of a new weed boom, jib crane for collection of weeds and a permanent store, workshop and office building with provision to house the Marine Police premises.

**Removal** of the existing weed boom and the east and west anchors after the new boom is installed.

**Construction** of a new permanent control and administration building near the Barrage.

**Installation** of a new hydraulic monitoring system for lake level monitoring, discharge monitoring and downstream flow monitoring.

**Emergency power supply** – a diesel generator will be installed to provide an emergency power supply during operation of the Barrage.

With regard to the construction workforce it is envisaged that there will be between 200 and 250 workers on the project depending on the various stages of construction. Out of these about 100 will be unskilled workers who will most likely come from the local area, another 100 will be skilled workers (technicians and artisans, drivers, plant operators etc.) who will be Malawian and may come from other areas of the country while about 50 will be expatriate from elsewhere (i.e. the region or abroad) whose special skills will be required from time to time so they will all not be there during the whole construction period. However up to 10 expatriate employees (for the consultant and the contractor) will be on site for almost all the time.

## 2.3 Operation and Maintenance Activities

Only a small permanent workforce is expected to be employed to undertake the operation and maintenance activities once the Barrage has been refurbished. They will be located in a permanent administration building located on the left bank of the Shire River just upstream of the Barrage (Figure 3).

## 2.4 Area of Project Impact

In general the study area will include the following areas which will benefit from the Project, or which may be directly affected in a negative way, by any of the components of the Project (see Figure 1 and Figure 2). Specifically, the study area will include:

- The upstream environment as far as Lake Malawi and its foreshores which will be affected by the operation of the upgraded Kamuzu Barrage;

It has been empirically established the Barrage only influences a small range of Lake Malawi water levels within the natural variation of the Lake (approximately one metre annually and seven metres over the recorded history of Lake levels) and hence the variations that would be caused due to raising the height of the Barrage by 40 cm would be much less than the natural variations. Impacts on Lake Malawi are therefore expected to be minimal. There will however be more frequent inundation of land upstream of the Barrage (especially during the dry season) as a result of the 40 cm increase in water level at times within Lake Malawi.

Although people living along the shoreline of Lake Malombe experience variations in water levels more than for Lake Malawi, increasing the regulating capacity of Kamuzu Barrage is not expected to have a significant impact. However, operation of the Barrage could cause a significant impact. Because of the relative shallowness of Lake Malombe's foreshores, a sudden drawdown could strand irrigation pumps, make foreshore access difficult and impact on fisheries (especially during the breeding season), which would impact on the livelihoods dependent on the Lake's fishery.

- The land resources and the people who may be affected by construction activities as these relate to the refurbishment of the Barrage, new temporary and permanent roads, and other ancillary work sites including material storage and handling sites, worker camp etc.;
- Farmers, hydropower stations and other water users downstream of Kamuzu Barrage dependent on regulated flow releases from the Barrage.

The Barrage influence is mainly dependent on a selected flow regime rather than the elevation of the Barrage. Different release strategies will have differential environmental and social impacts, although given the river profile and the fact that many tributaries with much more pronounced hydrographs enter the system downstream, the impact of the main stem is negligible (this is also why the Barrage cannot be used to a great extent for flood control), and hence minimal adverse impact is expected downstream of the Barrage.

## 2.5 Project Implementation

Construction time is estimated at 34 months. Construction will be sequenced to minimise disruption to transport across the Barrage. The proposed work schedule is shown in detail in Chapter 15 of the detailed design report (NORPLAN and Associate, 2013).

It is proposed that construction management and construction supervision will be undertaken by a Consultant appointed through a tendering process.

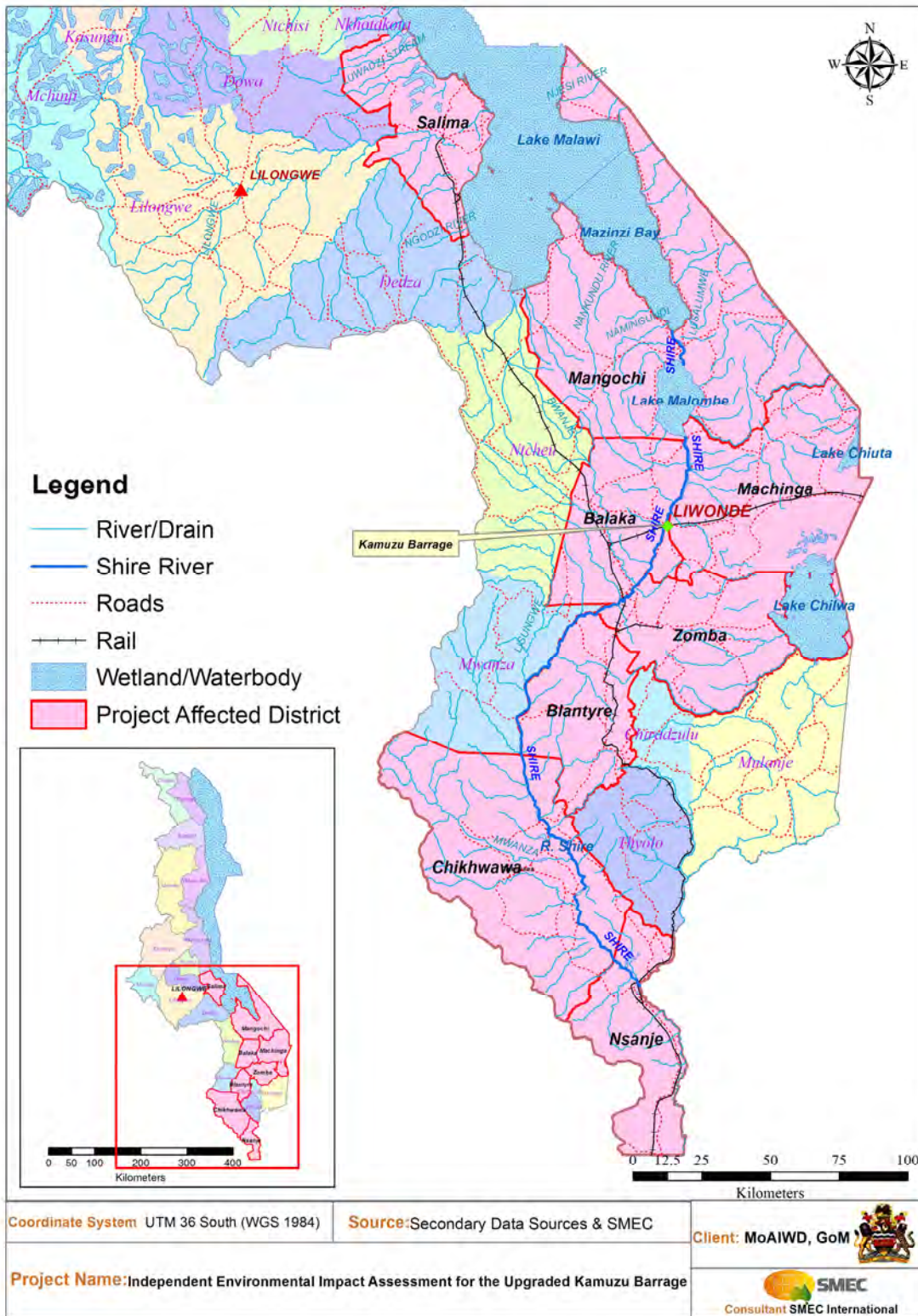
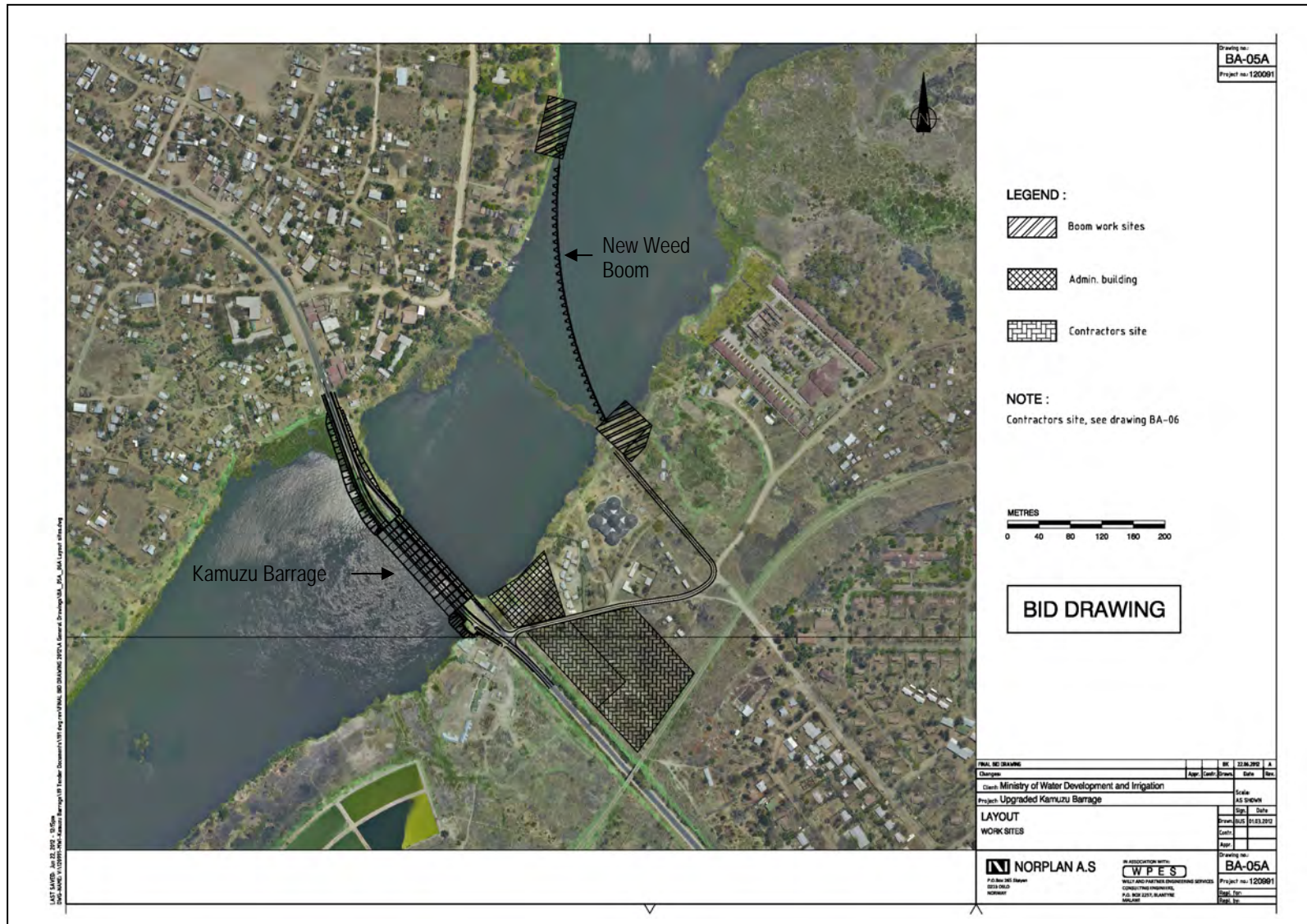


Figure 2. Project Affected Districts Map



Source of map: Design Report (NORPLAN and Associate, 2012a).

Figure 3. Location of Barrage work sites

### 3 Methodology

Information for the preliminary RAP was collected through primary and secondary sources and was processed. Major steps used for this study included:

- A desktop review of documents and other secondary data;
- Observation from site visits;
- Interviews with government authorities and local government officials; and
- Socio economic survey, community meetings and focus group discussions with women.

#### 3.1 Site Visits

Site visits were undertaken at various periods of the social and environmental study for the Project, including at the time of screening and for the preparation for the RAP. During these meetings, information was collected on the important social receptors for the areas along the Shire River and Lakes Malombe and Malawi.

Field surveys began in October 2011, when members of the Consultant's team visited the villages/towns alongside the Shire River and Lakes Malombe and Malawi. Since then a number of field observations and meetings have been conducted as well as a socio economic survey and a Census of Project Affected Households (PAHs) and consultations with Project Affected Persons (PAPs), which was undertaken in February 2012. A further site visit to meet with PAPs was undertaken in June 2013 to update compensation being offered to households and businesses affected by the Project.

#### 3.2 Literature Review

The Consultants reviewed secondary data / information, policies, regulatory frameworks and relevant legal documents. The documents and reports that were reviewed are presented in Table 1.

TABLE 1. DOCUMENTS/REPORTS CONSULTED

Documents / Reports	
• The Malawi National Land Policy, 2002	• The Land Act Cap. 57:01, 1965
• National Gender Policy	• The Forestry Act
• Section-18 of the Monuments and Relics Act	• Resettlement Policy Framework, Ministry of Irrigation and Water Development, National Water Development Programme (NWDP) II
• Resettlement Policy Framework, Ministry of Economic Planning and Development, 2007	• Town and Country Planning Act, cap.23:01,
• The Monuments and Relics Act	• The Public Roads Act

#### 3.3 Consultation with Stakeholders

The primary aim of the stakeholder consultation and participation was to solicit public views and concerns on the project, explore ways of avoiding or minimising all concerns and to reach a consensus that all concerns have been adequately addressed. The approach was to encourage full participation in project implementation by national, district and local authorities and community stakeholders, from the commencement of the process. Furthermore the social impact assessment (SIA) process was to identify, in advance, the potential social consequences of the proposed project so that social issues of operational relevance inform project design. The SIA was guided by the following principles:

- Implementation as an integral part of project preparation and not just as a freestanding operation.

- Identification of a range of relevant stakeholders so that their views can be taken into account in the final project design.
- Identification of some of the key social issues (constraints and opportunities) to be taken into account in project preparation.
- Full community participation to enhance (a) the legitimacy of the overall investigation; (b) the social development potentials of the Project; and (c) the capacity of affected persons to collaborate in the subsequent implementation of the ESMP and RAP.
- Identification of appropriate participation, delivery, mitigation and impact management mechanisms and procedures for incorporation into the ESMP.

Key outcomes from the consultation and participation have aided in the identification of potential impacts and development of mitigation measures as detailed in the ESMP. Mitigation measures have been identified with community input.

This stakeholder consultation and participation has further informed the Resettlement Action Plan (RAP) for the Kamuzu Barrage upgrading. Affected individuals that have been identified were requested to indicate their compensation preferences, the outcomes of which are included within this report. The aim of public consultation and participation for the RAP was to:

- Disseminate concepts for proposed project activities with a view to encouraging project interest amongst targeted communities;
- Promote sense of ownership as well as social accountability for the project and resettlement activities;
- Determine communities' readiness to resettle and encourage their willingness to contribute in-kind towards the implementation of the project and;
- Foster and support community willingness to contribute towards long-term maintenance of Project facilities/infrastructure.

Focus Group Discussions (FGDs) were held with women and/or youth groups in the villages affected and other groups, to inform participants of the status of the Project, and to investigate their issues and concerns. Focus group discussions were held with women and/or youth representatives from villages in all Project districts, located along the Shire River, Lake Malombe and Lake Malawi in Malawi.

### 3.4 Stakeholder Consultation and Participation Methodology

The consultation and participation methods for the consultation process varied depending on the stakeholder and the information sought. Generally, Participatory Rural Appraisal (PRA) methods were applied that allowed for a wider participation of stakeholders within a short period of time. The consultation and participation methods included:

- Public and community meetings;
- Individual Consultation;
- Focus group discussions (5-25) persons;
- Random Socio-economic household survey. A sample of households and other stakeholders directly affected by the Project (including upstream and downstream areas);
- Compensation and resettlement assessment and survey was completed for households and other groups such as tourist facility owners whose assets will be affected by the project.

This varied approach ensured that there was an open and interactive communication between stakeholders, that minority groups, women, youth and other vulnerable groups were fairly represented, and that there was a framework for effective disclosure to all relevant stakeholders.

Public consultation and participation formed an integral part of the process used for gathering data, understanding community and individual preferences, selecting project alternatives, and designing viable and sustainable mitigation and compensation plans. It was included in the planning and design phases as well as

during implementation. This included meetings with local government, which were held prior to field survey work being undertaken in order to brief relevant stakeholders about the project objectives and activities. Particular attention was paid to attitudes of community members towards the project; to compensation preferences and mitigation measures, as well as to the long-term monitoring of the project.

Additionally representatives of the relevant villages and interest groups were included in the operational activities of the social/resettlement surveys. This ensured participation of local community members in the collection of data, as well as ensuring that local knowledge regarding land tenure, livelihood activities, gender etc. was appropriately included in the surveys. Table 1 of Volume 2: Record of Consultation provides full details of stakeholders consulted. The following groups were consulted:

- National Government Officials
- District/Regional Officials/Organisations
- District Councils
- Environmental Groups
- Non- government organisations
- Community Members
- Community leaders

### 3.4.1 Public and Community Meetings

A number of public and community meetings were held in order to obtain the opinions, concerns and suggestions from stakeholders including different communities in project affected districts and specific meetings with project affected persons in Liwonde. The meetings include one to present the terms of reference for the EIA, town council meetings which had been organised by MoWDI located in Liwonde and community meetings organised and run by the Consultant. Community meetings had up to 400 participants attending to provide their opinions and to find out about the Project.

Logistical arrangements and announcements were made well in advance to ensure wider attendance and participation of communities. Local assistants were used to help organise the meetings that were cleared through the authorities at village level. Participants were provided with project information and these meetings were held in all 8 districts during October 2011- February 2012. See **Volume 2: Record of Consultation** for stakeholder outcomes.

### 3.4.2 Individual Consultation

Individual meetings were held with national and district level government officers as well as one business, SUCOMA Sugar Plantation. These meetings included a Project briefing and provided an opportunity for stakeholders to raise their concerns and express their views and suggestions. This type of consultation was undertaken from October 2011- February 2012. See **Volume 2: Record of Consultation** for stakeholder outcomes.

### 3.4.3 Focus Group Meetings

Focus group meetings were used at the community level as a forum to achieve three main objectives:

- To facilitate the dissemination of information about Project activities;
- To provide an opportunity for stakeholders to ask questions or voice concerns; and
- To gather information/input from stakeholders based on their local experience and knowledge.

42 Focus group discussions were undertaken within all districts potentially affected by the project-Balaka, Blantyre, Chikhwawa, Machinga, Mangochi, Nsanje, Salima, and Zomba. The meetings were undertaken from October – November 2011 in villages along the Shire River, Lake Malombe and Lake Malawi. They involved representatives of village leaders, men and women. Within these FGDs a range of occupational groups were represented, such as farmers and fishermen. Neno and Mwanza Districts were not included because they are unlikely to be affected by the Barrage refurbishment since the Shire River in these areas is characterised by a

deeply incised river channel with numerous falls such that any changes in flow regime from the Barrage will not result in inundation of riparian areas suitable for agriculture, forestry or other resource use activities.

A copy of the focus group questions asked and details of stakeholder consultation is provided in **Volume 2: Record of Consultation**.

### 3.4.4 Socio- Economic Survey

The socio-economic household survey was conducted during October and November 2011 to capture the socio-economic profile of the people living in the vicinity of the Shire River and Lake Malombe and Malawi. The survey collected baseline information on the following topics:

- Household composition (age, gender, educational and employment status for each household member);
- Construction material of the house and details of assets;
- Access to health facilities and health status;
- Income and expenditure patterns;
- Agricultural and other economic activities;
- Access to and use of community services and facilities and natural resources; and
- Status of women.

A copy of the survey is included in **Volume 2: Record of Consultation**.

The procedure for preparing the survey and identifying the households was as follows:

**Phase 1:** Formulation of the Survey Instrument (Socio-Economic Survey Questionnaire) and Pre- testing.

**Phase 2:** Identification of the Study Area and Formulation of Sampling Procedure/Methodology. This included selection of districts, which was based on proximity to the Shire River, Lake Malombe and Lake Malawi. The districts selected were Nsanje, Chikhwawa, Blantyre, Zomba, Balaka, Machinga (along the Shire River), Mangochi (Lakes Malawi and Malombe) and Salima (Lake Malawi). From this the villages were selected based on village listings at the district level. The villages were randomly selected from a listing of those that were along the Shire River or along Lakes Malombe and Malawi. Households were then randomly selected.

**Phase 3:** Recruitment and Training of Field Interviewers/Enumerators and Supervisors.

**Phase 4:** Actual Field Data Collection/Survey Work.

**Phase 5:** Data Entry and Data Analysis.

**Phase 6:** Report preparation on Socio-Economic Survey Findings, data is included in Section 5 of this Report.

For this project 520 socio-economic surveys were conducted in the eight potentially project affected districts. Details of the number of surveys conducted in each village are in Table 2 and a copy of the survey is included in **Volume 2: Record of Consultation**.

TABLE 2. SURVEYED HOUSEHOLDS BY VILLAGE AND DISTRICT

District	Village	Number of Surveys
Balaka	M'manga	22
	Mmanga	1
	Mpilisi	26
Blantyre	Kachakwala	11
	Masinde	12
	William	18
Chikhwawa	Chiphazi	13



District	Village	Number of Surveys
	Matope	1
	Namila	5
	Njeleza	7
	Salumeji	11
	Ulemu	12
Machinga	Chabwera	15
	Kaudzu	33
	Liundi	23
	Liwonde	8
	Massi	1
	Mpalira	14
	Mzingala	10
	Sitola	6
Mangochi	Chimwala	4
	Chipeta	1
	Chiwaula	21
	Maliro	24
	Mtenje	1
	Mtonda	1
	Mtuwa	3
	Mwalabu	17
	Mwenechande	17
Nsanje	Chimphwembwe	5
	Chiphwembwe	1
	Mbenje	8
	Mnembe	9
	Mphamba	10
	Mnembe	2
	Nyamula	15
Salima	Dalankwanda	46
	Kunkhongo	26
	Mgawi	1
	Mkwanda	1
Zomba	Mlowoka	56
<b>Total</b>		<b>520</b>

Source: SMEC Socio-economic Survey 2011.

### 3.4.5 Compensation and Resettlement Assessment and Survey

The project affected persons (PAP) assessment and surveys were undertaken in February 2012 and covered property that would be directly affected by construction works, either permanently or temporarily. The identification of the PAPs was based on the Consultant's current designs and the likely structures (private and public) to be affected by construction, both permanently and temporarily. The assessment was undertaken in line with the requirements of the Government of Malawi draft Resettlement Policy Framework (RPF) for the Shire River Basin Management Project (SRBMP) and the World Bank Operational guidelines (OP/BP 4.12) regarding involuntary resettlement. The consultation process included the following:

- Consultation with the design consultant prior to the administration of the questionnaire to verify the assets likely to be affected;
- Discussion with the District Commissioner and Town Council Executive Officer which aimed to facilitate the meeting with PAPs and to further clarify any outstanding issues on previous consultations;
- Meeting with PAPs at the Liwonde Town Council Office to further discuss the implications of Upgrading the Kamuzu Barrage;
- Meetings with the regional Lands Physical Planning Office to obtain more information on development and ownership of plots;
- Administration of a household census for the affected people.

See **Volume 2: Record of Consultation** for details of consultation.

Nine households/businesses were originally surveyed in 2012 as PAPs with an additional eight identified in June 2013 as being affected, bringing the total households/businesses affected to seventeen (17); the households included small business owners, including those using a government owned shelter as a site for their business and the owners of the Shiri Lodge and Shire Camp. Of these, the two commercial properties will be permanently affected. Construction works will affect the other households temporarily. See Table 3 for details of households affected. The remaining assets affected are all government owned.

TABLE 3. PROJECT AFFECTED PERSON SURVEY AND ASSET DETAILS

Household / Business	Name of Business Owner	Ownership Type	Asset <sup>1</sup>	Impact
1	Steve Njovuyalema Moyo	Owner	Shiri Lodge- restaurant and hotel	Permanent
2	Mr Billy Mphande	Owner	Shire Camp - accommodation and boat tours	Boat access permanent
3	Felix Mwawa	Owner	Building- grocery shop and barber	Temporary
4	Liwonde Town Assembly	Owner	Market Shelter	Temporary
5	Inusa Matola	Tenant	Market Shelter	Temporary
6	Jackson Moote	Tenant	Market Shelter	Temporary
7	Shaibu Matemba	Tenant	Market Shelter	Temporary
8	Joseph Master	Tenant	Market Shelter	Temporary
9	Symon Laison	Tenant	Market Shelter	Temporary
10	Francis Phiri	Tenant	Market Shelter	Temporary
11	Damiano Makina	Tenant	Market Shelter	Temporary
12	Aufi Daudi	Tenant	Market Shelter	Temporary
13	Mussa Mabuka	Owner	Bicycle Shed	Temporary

Household / Business	Name of Business Owner	Ownership Type	Asset <sup>1</sup>	Impact
14	Innocent Sanudi	Owner	Chips Shed	Temporary
15	Adine Mponda	Owner	Meat Roasting Shed	Temporary
16	Lucius Banda	Owner	Land	Temporary
17	Daniel Chipeta	Owner	Land	Temporary

1. All the affected assets are in the vicinity of the Barrage construction and work sites. The list excludes assets of Government Institutions.

Further assessment was undertaken to measure the size of the areas and assets impacted by the project sites- specifically the temporary work camp, permanent administration building, Shiri Lodge, government owned shelter and the locations of the weed collection points. See Section 6 for more information on potential impacts.

### 3.4.6 Mapping and Database of Affected Persons and Assets

The information obtained from the PAP census, socio-economic survey and asset recording exercise has been entered into a Microsoft Excel spreadsheet (PAP census) and a Statistical Package for the Social Sciences (SPSS) database. The databases will be provided to the client and will be a useful resettlement-planning tool in subsequent project phases, and for monitoring over the long term. The assets identified as potentially affected by construction works for the Kamuzu Barrage Upgrade have been captured and outlined on aerial photography undertaken for this project (see Figure 10).

## 4 Legal and Policy Framework

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The MoWDI is committed to conduct its activities with full compliance to the requirements of national regulations and its obligations under international conventions and treaties, giving due consideration to international best practices and policies. This Report has been developed taking into consideration the laws and decrees of the Republic of Malawi and International Standard Policies including those of the World Bank and other acknowledged international standards. The proposed Project may induce changes in other sectors and the livelihoods of the people living in the Project area. Several international and local sector-specific policies may be touched upon by the proposed development and its broader implication. The relevant policies and legislations are discussed below.

### 4.1 National Legislation and Practice

#### 4.1.1 The National Constitution

The Constitution of the Republic of Malawi provides the principle on which land acquisition can occur in Malawi. Section 28 (2) states that “No person shall be arbitrarily deprived of property” and section 44 (4) states that “Expropriation of property shall be permissible only when done for public utility and only when there has been adequate notification and appropriate compensation, provided that there shall always be a right to appeal to a court of law for redress. The National Land Policy specifies the need for having provisions in the land law that allows Government to acquire any piece of land required for public services by: clearly specifying the purposes for which Government may acquire land; revocation of leasehold rights granted on Government land; payment of compensation in the event of the repossession of a leasehold interest on Government land; and no compensation to be paid for the land when the private user rights granted as a result of the lease is terminated.

The policy further states that compensation valuation for customary land, at the time of acquisition by the Government, should be based on the open market value of the land and all improvements on the land. The policy points out two main reasons for under-compensation which should be avoided including exclusion of certain items or qualities during property valuation and delays in payment of compensation resulting in depreciation of monetary values.

#### 4.1.2 National Policies and Acts

##### 4.1.2.1 Environment Management Act, 1996 and Environmental Impact Assessment Guidelines, 1997

The Environment Management Act (EMA) is described as a framework piece of legislation on environmental management, protection and conservation. The Act contains general provisions on protection, management, conservation and sustainable utilisation for almost all forms of environmental media.

The Act provides for Environmental Impact Assessment (EIA) under Part IV. It further gives power to the Minister to publish in the Gazette the type and size of projects that shall not be implemented without an EIA. A prescribed list of projects for which EIA is mandatory is given in Malawi's Guidelines for EIA, 1997. Environmental Impact Assessment is mandatory for the rehabilitation of the Kamuzu Barrage at Liwonde. The Act requires that every developer implementing a project requiring an EIA must submit to the Director of Environmental Affairs a project brief, stating the matters provided for under section 24(2). If the Director is satisfied that there is sufficient information in the project brief, he will require the developer in writing to conduct an EIA in accordance with prescribed guidelines and submit to the Director an EIA report giving the particulars stipulated in section 25(1).

Upon receipt of the EIA report the Director must invite written or oral comments from the public and may conduct public hearing or require the developer to redesign the project or conduct a further EIA or recommend to the Minister to approve the project subject to such conditions as the Director may impose. In making the decision whether or not to recommend to the Minister to approve the project or impose any conditions, the Director shall take into account any likely impact of the project on the environment and the actual impact of

any existing similar project on the environment. Finally, it should be noted that no licensing authority can issue any licence under any written law unless the Director certifies either that the project has been approved by the Minister under EMA or that an EIA is not required.

Part IV of the EMA makes provision for pollution control that is, both air and water pollution. With regard to water pollution, the EMA prohibits discharging of any pollutants into the environment. It further makes it a duty of every person to prevent the discharge of any pollutant into the environment otherwise than in accordance with it and to comply with such general or specific directions of the Minister or Director for preventing, minimising or cleaning up, removing or disposing of any pollutant discharged into the environment. Although the provision requires that any discharge of pollutants be in accordance with the EMA, nowhere has the EMA made provision to that effect. However the EMA goes on to provide that where any person discharges any pollutant into the environment otherwise than in accordance with it, he or she may be required by the Minister to clean up, remove or dispose of the pollutant in such manner and within such period as the Minister shall direct.

This RAP is part of the EIA study undertaken for the Project to determine the potential positive and negative environmental and social impacts that could arise during project implementation and to develop appropriate mitigation measures. It also outlines the extensive stakeholder consultation and participation process undertaken as part of the EIA process as required under the Environmental Management Act.

#### 4.1.2.2 Land Act (1965)

The Land Act, 1965, mainly deals with issues of ownership, land transfer, use of land, and compensation. It recognises that every person has a natural dependency on land and that it is therefore important that Government provides for secure and equitable access to land as a multipurpose resource and an economic asset by defining issues of security of tenure. The Land Acquisition Act outlines procedures to be followed for land acquisition by individuals or Government. The procedures include the steps to be undertaken for government to acquire land starting from the issue of formal notices to persons with existing land interests to payment of compensation formal land ownership transfer. This has implications on the proposed project in that all land for the project especially for the diversions should be acquired following formal land acquisition procedures and that the people who will lose property or displaced should be fairly compensated.

Further, under section 14 of the Act, the Minister has power to re-enter for breach of conditions contained or implied in a lease. The developer will work closely with the local community and will inform them and where required, obtain consent from chiefs, headmen, area councillors and local authorities for the construction works.

#### 4.1.2.3 The Lands Acquisition Act (1971)

The Lands Acquisition Act (Cap 58:04) and the Public Roads Act (Cap 69:02) sets out in detail, the procedures for acquisition of customary land and freehold land. The processes and procedures for proclamation of the land to be acquired in this project especially for the diversions crossing the bridge downstream should follow the steps as provided for in the existing Lands Acquisition Act (Chapter 58:04) Sections 3-11.

Land for this Project will be acquired from individuals. There will be a need to make sure that procedures set out in the Act are followed to ensure that landowners are fairly and equitably compensated.

#### 4.1.2.4 The Malawi National Land Policy (2002)

The Malawi National Land Policy recognises Government's duty to protect the free enjoyment of legally acquired property rights in land and for that reason a landholder's entitlement to fair and adequate compensation where the Government acquires the owner's property for public use. The Malawi National Land Policy emphatically dispels the popular notion that customary land has no value and stipulates that compensation valuation for customary land, at the time of acquisition by the Government, should be based on the open market value of the land and all improvements on the land. The Malawi National Land Policy notes that the inadequacy of compensation is always a direct result of excluding certain items or qualities from the factors considered when determining value and delays in payment of compensation. According to Section 4.11 the land policy ensures that security of land tenure can be guaranteed on an equitable basis to all citizens in accordance with the following:

Any citizen or group of citizens of Malawi can have access to land in any part of Malawi provided that:

- Land is available where it is being sought
- The person agrees with the land owner and the laws governing disposal of land
- The proposed land use is compatible with land use plans, environmental regulations and community land management duties and obligations

Land values shall be determined by open market procedures for customary lands acquired through compulsory acquisition by the government. The Ministry responsible for land matters has an ad-hoc resettlement policy, which is usually used to help in emergencies. Usually the Ministry deals with matters of resettlement in relation to land redistribution.

#### 4.1.2.5 The Employment Act (2000) and Labour Relations Act (1996)

The two Acts regulates employment matters i.e. minimum wage, fair labour practices, non-discrimination, prohibition (in some cases) of employment of children. When employing people for the implementation of the project activities, the developer should ensure that provisions of this Act are taken care of.

#### 4.1.2.6 Town and Country Planning Act (1990)

This Act controls development in urban and rural areas, the acquisition of land, and compensation due to use of land. It states that no general right to compensation shall accrue in respect of any action, decision or plan taken or made under the Act that does not involve or amount to a taking or deprivation of property. It also states that compensation shall be assessed by the Minister in accordance with the Second Schedule 1 to the Act, and that an assessment of compensation by the Minister shall be final and shall not be subject to any appeal or review by any court. Sections of this law are currently under review by the Special Law Commission.

#### 4.1.2.7 The Monuments and Relics Act (1991)

The Act stipulates the proper management and conservation of monuments that are of importance both nationally and locally. It also provides for proper preservation of monuments in the event that there is a change in the use or development of land. This gives room for the authorities for monuments and relics to protect monuments under the provisions of the Land Act or the Lands Acquisition Act. The RAP will have to be implemented in such a way that any acquisition, resettlement and compensation conform to section 18 of this Act.

#### 4.1.2.8 The Public Roads Act (1962)

The Act provides for the management of road projects in such a way that the different stakeholders involved, especially the local communities, are not adversely affected by the road projects. The Act also requires the processing of land acquisition, resettlement, and compensation issues in accordance with the provisions of the Land Act, for proper implementation of public roads projects.

## 4.2 International Standards

The international legal and policy framework within which projects operate, and implementation procedures and guidelines, have developed substantially since adoption of the Universal Declaration of Human Rights (UDHR) in 1948. Instruments supported by member states include those developed by the United Nations (UN) and the European Union/Commission. Others have been developed by particular bodies, such as the World Bank Group, including the International Finance Corporation (IFC), the Asian Development Bank (ADB), and the African Development Bank (AfDB).

### 4.2.1 International Agreements and Conventions

The Government of Malawi is a party to a number of international conventions, treaties and other agreements in the ambit of environment. Of particular importance to social issues that relate to aspects of involuntary resettlement are the following:

#### 4.2.1.1 The Millennium Development Goals

As a member of the UN, Malawi has an interest in aspiring towards the Millennium Development Goals, which came out of international conferences/summits held in the 1990s, and the Millennium Declaration adopted by the UN, including Malawi as a member state, in September 2000. The goals "commit the international community to an expanded vision of development, one that promotes human development as the key to sustaining social and economic progress in all countries, and recognises the importance of creating a global partnership for development. The goals have been commonly accepted as a framework for measuring development progress"<sup>4</sup>.

The goals establish the yardsticks for measuring results, not only for developing countries but also for countries that help to fund development programs and for institutions that help countries institute them, guiding funders in determining their development assistance. The first seven goals are directed at reducing poverty, through specific targets based on indicators, while the eighth, global partnership for development, is about the means to achieve these, mostly by 2015:

- Goal 1: Eradicate extreme poverty and hunger;
- Goal 2: Achieve universal primary education;
- Goal 3: Promote gender equality and empower women;
- Goal 4: Reduce child mortality;
- Goal 5: Improve maternal health;
- Goal 6: Combat HIV/AIDS, malaria and other diseases; and
- Goal 7: Ensure environmental sustainability (Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation).

The above goals need to be taken into consideration in developing the compensation framework and other mitigation measures in this RAP.

#### 4.2.1.2 Agenda 21

Agenda 21 is an action plan of the United Nations (UN) related to sustainable development and was an outcome of the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, in 1992. It is a comprehensive blueprint of action to be taken globally, nationally and locally by organisations of the UN, governments, and major groups in every area in which humans directly affect the environment. Malawi is party to a number of internationally acceptable policies, conventions, treaties and protocols in order to augment the national policies and laws. Malawi has been actively involved in activities mentioned under Agenda 21 related to social development. Malawi participates in all regional and international fora dealing with poverty alleviation with the hope that from this participation, programs and infrastructure can be developed to provide job opportunities and other economic benefits to the country and its neighbours. The key component of the national strategy is the promotion of medium and small enterprises (MSEs) and informal sector enterprises. There is a comprehensive policy on medium and small enterprises developed by the Ministry of Commerce, which includes: strategies on development of infrastructure; entrepreneurship and skills development; technology support; credit and technical advisory services; market skills development; and credit and resources. All measures are to be linked with appropriate institutional development programs to support medium and small enterprises and informal sector enterprises.

The overall strategy of the government is to increase both economic growth and investments in priority areas, such as agriculture, industries and rural infrastructure in particular, education, health, human resources, especially for women and youth development, as well as free primary education for girls, large scale training and credit provisions for employing women and unemployed youth. Government and NGOs are collaborating to combat poverty.

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<sup>4</sup> [www.undp.org](http://www.undp.org)

The Agenda 21 aims should be reflected in the compensation framework and other mitigation measures developed within this RAP.

## 4.2.2 International Guidelines and Procedures

### 4.2.2.1 World Bank

The operations of the World Bank are guided by a comprehensive set of policies and procedures, dealing with the Bank's development objectives and goals, the instruments for pursuing them, and specific requirements for Bank financed operations. The core of this guidance lies in the Bank's Operational Safeguard Policies (OP/BPs), which are critical to ensuring that potentially adverse environmental and social (consequences) aspects/risks are identified, minimised and mitigated so as to prevent "undue harm to people and their environment in the development process"<sup>5</sup>. Those relevant to resettlement are<sup>6</sup>:

- OP/BP 4.10 Indigenous Peoples: "to design and implement projects in a way that fosters full respect for Indigenous Peoples' dignity, human rights, and cultural uniqueness".
- OP/BP 4.11 Physical Cultural Resources: "to assist in preserving physical cultural resources and avoiding their destruction or damage, including resources of archaeological, paleontological, historical, architectural, religious (including graveyards and burial sites), aesthetic, or other cultural significance".
- OP/BP 4.12 Involuntary Resettlement: "to avoid or minimise involuntary resettlement and, where this is not feasible, to assist displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher".
- OP/BP 4.36 Forests: "to realise 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".

Beyond these Safeguard Policies, and because of its cross-cutting dimensions, the World Bank requires due consideration to gender dimensions. Though OP 4.20 Gender and Development is not a Safeguards Policy per se, its main objective is "to reduce poverty and enhance economic growth, human well-being, and development effectiveness by addressing the gender disparities and inequalities that are barriers to development"; which, indeed is closely aligned with the project development objective of the Shire River Basin Management Project.

### **Operational Policy/Bank Policy 4.12 Involuntary Resettlement**

OP/BP 4.12 identifies three categories of affected people:

- a) Those who have formal legal rights to land, including customary and traditional rights recognised under the laws of the country;
- b) Those who do not have formal legal rights to land, but have a claim to such land or assets provided that such claims are recognised under the laws of the country or become recognised through a process identified in the resettlement plan. "Such claims could be derived from ... continued possession of public lands without government action for eviction (that is, with the implicit leave of the government)"; and
- c) Those who have no recognisable legal right or claim to the land they are occupying.

People described in (a) and (b) above should be compensated for the land they lose, as well as provided with other agreed-upon assistance; whereas, those described in (c) above should be provided with resettlement assistance in lieu of compensation for the land they occupy as well as other assistance as necessary, if they

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<sup>5</sup> [www.worldbank.org](http://www.worldbank.org)

<sup>6</sup> World Bank. July 2005. OP 4.00 Table A1: *Environmental and Social Safeguard Policies – Policy Objectives and Operational Principles*.



have occupied the area prior to an agreed cut-off date for entitlements. All three cases should be provided with compensation for loss of assets other than land.

The World Bank policy requires that the provision of compensation and other assistance to Project Affected Persons (PAPs) is carried out prior to the physical displacement of people. In particular, repossession of land for project activities may take place only after compensation has been fully paid (i.e. no physical activities at a particular site should start prior to ensuring that the last PAPs at that site have been fully compensated). OP/BP 4.12 requires that displaced people are provided with prompt and effective compensation at full replacement cost for losses of assets attributable directly to a project; provided assistance (such as moving allowances) during relocation; and provided with residential housing or housing sites. The policy requires that the taking of land and related assets may occur only after compensation has been paid and, where applicable, resettlement sites and moving allowances have been provided.

### 4.3 Project Policy Principles and Guidelines for Involuntary Resettlement

Based on OP/BP 4.12 and local laws, the policy principles and guidelines outlined in Table 4 will apply to the Project.

TABLE 4. PRINCIPLES UNDERLYING RESETTLEMENT ACTION PLAN GUIDELINES

PRINCIPLE	GUIDELINE
<p><b>Principle 1</b> Relocation will be avoided or minimised.</p>	<p>Involuntary resettlement will be avoided as far as possible by exploring feasible alternative project designs/configurations.</p>
<p><b>Principle 2</b> Project Affected People (PAP) are defined inclusively.</p>	<p>Project Affected People (PAP) are defined as those whose livelihoods and standards of living are adversely affected by Project activities, whether through the loss of assets or access to assets, through being deprived of resources, through loss of income sources or means of livelihood, through physical relocation, or through other losses that may be identified during the process of resettlement planning.</p>
<p><b>Principle 3</b> Ongoing and meaningful consultation and disclosure of information will occur with affected people and communities.</p>	<p>PAPs have the right:</p> <ul style="list-style-type: none"> <li>▪ to be informed of Project developments on an ongoing basis;</li> <li>▪ to be consulted on issues pertaining to them, such as possible measures to restore their livelihoods, allowing participation in the final selection and design of such measures;</li> <li>▪ to be informed in time of Project proposals and implementation schedules, such as land acquisition dates sufficiently in advance of actual execution; and</li> <li>▪ to have access to relevant Project documents, such as the draft RAP, at a place accessible to them and local NGOs in a form, manner, and language that are understandable to them.</li> </ul>
<p><b>Principle 4</b> All Project impacts will be identified and all losses properly recorded.</p>	<p>All losses will be properly recorded and a database of affected people, assets and resources established. This will include:</p> <ul style="list-style-type: none"> <li>▪ a census detailing household composition and demography, and other relevant socio-</li> </ul>

PRINCIPLE	GUIDELINE
	<p>economic characteristics, as a baseline for the monitoring of household reestablishment; and</p> <ul style="list-style-type: none"> <li>▪ an inventory of landholdings and non-retrievable improvements (buildings and structures) to determine fair and reasonable levels of compensation and mitigation.</li> </ul>
<p><b>Principle 5</b> Affected people will be entitled to full compensation and other rehabilitation measures, and will be assisted to improve their livelihoods, on an equitable basis.</p>	<p>Affected people who are identified as of the date of the census and inventory will be entitled to full compensation and other rehabilitation measures sufficient to assist them to improve or at least maintain their pre-project living standards.</p> <p>The livelihoods of PAPs will be improved through:</p> <ul style="list-style-type: none"> <li>▪ the replacement of productive resources and income sources;</li> <li>▪ the provision of housing, new residential sites and relocation support measures (e.g. shifting and residential allowances) where physical relocation is required; and</li> <li>▪ the implementation of other livelihood restoration and development measures as required;</li> <li>▪ All will be equally eligible to such rights, irrespective of social or economic standing, tenure status, or any other discriminating factor.</li> </ul>
<p><b>Principle 6</b> Vulnerable groups will receive special attention.</p>	<p>Particular attention will be paid to adverse impacts on groups/social categories such as household heads who are women, the elderly, children, disabled, or sick who because of their social position may be vulnerable to changes brought about by Project activities or excluded from its benefits. Members of these groups are often not able to make their voices heard, and this will be taken into account in the consultation and planning processes, as well as in the establishment of grievance procedures.</p>
<p><b>Principle 7</b> Cultural and religious practices will be respected.</p>	<p>Existing cultural and religious practices will be respected and, to the maximum extent practical, preserved. This extends to cultural heritage.</p>
<p><b>Principle 8</b> Relocation planning, budgeting and implementation will be an integral part of the Project.</p>	<p>To ensure that involuntary resettlement, including land acquisition, is an integral component of the Project, the following approach will be adopted:</p> <ul style="list-style-type: none"> <li>▪ Land acquisition and relocation costs should be built into the overall Project budget;</li> <li>▪ If required, relocation schedules should be integrated with Project schedules, and any land and asset acquisition should commence only after the necessary resettlement and compensation procedures have been successfully initiated.</li> </ul>

PRINCIPLE	GUIDELINE
<p><b>Principle 9</b> Monitoring procedures will be in place.</p>	<p>Monitoring procedures will be implemented to assess the effectiveness of the compensation and relocation program. Monitoring will be an ongoing activity, employing mechanisms such as:</p> <ul style="list-style-type: none"> <li>▪ internal performance and impact monitoring;</li> <li>▪ external monitoring through an independent source; and</li> <li>▪ a completion audit.</li> </ul>
<p><b>Principle 10</b> All legal obligations will be complied with.</p>	<p>Where involuntary resettlement occurs, it will comply with the provisions of relevant local legislation pertaining to:</p> <ul style="list-style-type: none"> <li>▪ environmental management;</li> <li>▪ public consultation and participation and access to information;</li> <li>▪ land tenure and occupation, expropriation and compensation;</li> <li>▪ grievance redress procedures;</li> <li>▪ local government, development and services provision; and any other legislation that may be appropriate.</li> </ul>

## 5 The Socio-Economic Environment

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This section relies on baseline information collected through the socio-economic household survey undertaken as part of the SIA and RAP study as well as secondary data sources. Data from the household survey has been processed and analysed with output provided in the form of tables, charts and other statistical formats. Perceptions and opinions on defined issues concerning stakeholders and their communities have also been included throughout this section.

### 5.1 Administrative and Geographic Context

#### 5.1.1 Geographical Context

Malawi is a landlocked country located in south-eastern Africa. It is bordered by Tanzania, Zambia and Mozambique, it has a surface area of 118,484 km<sup>2</sup> of which 94,276 square kilometres is land and the rest of which is mostly comprised of Lake Malawi, which is 475 km long (National Statistical Office, 2010). Although Malawi lies within the tropics the topography is so varied and the range of altitude so great that climatic conditions are complex with areas of the country ranging between dry and wet and hot and cold.

The Kamuzu Barrage project site is located in Liwonde on the Mangochi/Liwonde rift valley plain. The topography of the project area can be divided into three distinct categories, which include the rift valley floor, the plain north of the Barrage and the hilly forested Machinga Forest Reserve that lies south of the Barrage towards Zomba.

#### 5.1.2 Administrative Context

The country is divided into three regions Northern, Central and Southern regions. Malawi has twenty-eight districts, six in the north, nine in the central region and thirteen in the south.

For the purposes of the socio-economic survey, eight districts were sampled, namely Salima, Mangochi, Machinga and Balaka, Blantyre, Chikhwawa, Zomba and Nsanje (see Figure 2). These districts are located adjacent to the Shire River, and Lakes Malawi and Malombe in the Project area. Balaka, Mangochi and Salima districts are located upstream of the Barrage. Machinga, Zomba, Blantyre, Chikhwawa and Nsanje districts are located downstream; with Chikhwawa and Nsanje being located furthest from the Project site.

Within each of these districts there are formal and informal institutions. Formal institutions include the District Councils, headed by District Commissioners.

The informal institutions are headed by Traditional Authorities whose areas of jurisdiction are known as Area Development Committees, headed by chiefs. Each of these traditional authorities is "composed of villages which are the smallest administrative units, and the villages are presided over by village headmen" (National Statistical Office, 2011).

### 5.2 Socio-Economic Profile of Project Area

The socio economic survey undertaken for this project covered 520 households who live along the shorelines of the Shire River and Lakes Malombe and Malawi. The households are mostly within rural areas, with only six located in the semi-urban area of Machinga. Of the total households surveyed, 156 households are located upstream of Kamuzu Barrage with the remainder located downstream. The results of the survey were used to supplement published socio-economic data to describe the socio-economic profile of the project area.

#### 5.2.1 Demography

##### 5.2.1.1 Population

The 2008 Census recorded the population of Malawi as 13,077,160 with an annual average growth rate of 2.8 percent (National Statistical Office, 2009). Table 5 shows the population of the eight surveyed and

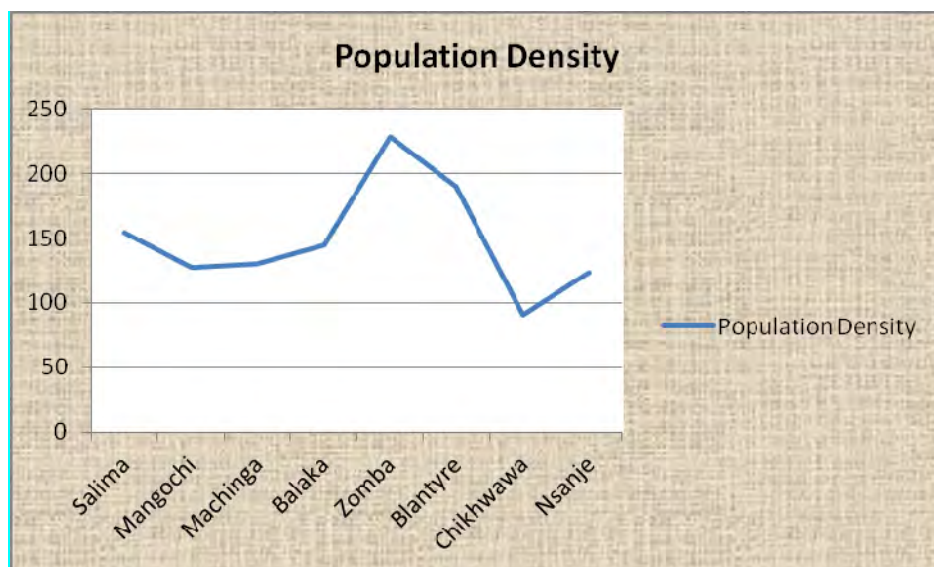
potentially impacted districts. From this it can be seen that Mangochi is the largest district in terms of population with around 22 percent of the total population of all eight districts.

TABLE 5. POPULATION OF PROJECT IMPACTED DISTRICTS

Districts	Population		Population Density (per km <sup>2</sup> )
	Male	Female	
Salima	165,015	172,880	154
Mangochi	380,174	416,886	127
Machinga	233,385	257,194	130
Balaka	152,056	165,268	145
Zomba	276,650	302,989	228
Blantyre	164,766	153,200	190
Chikhwawa	215,598	219,050	91
Nsanje	115,219	122,884	123
<b>Total</b>	<b>1,702,863</b>	<b>1,810,351</b>	<b>148.5</b>

Source: National Statistical Office, 2009: Population and Housing Census; National Statistical Office, 2010: Demographic and Health Survey.

In terms of population density, Zomba and Blantyre have the highest density and only Chikhwawa has a population density of less than 100 persons/km<sup>2</sup>. Figure 4 depicts the population density of project impacted districts surveyed as part of the socio-economic survey undertaken for the Project.



Source: National Statistical Office, 2009: Population and Housing Census; National Statistical Office, 2010: Demographic and Health Survey.

Figure 4. Population Density

### 5.2.1.2 Age and Gender Distribution

Table 6 below indicates that in all districts the gender ratio is in favour of females for the population as a whole. In terms of age composition of households, around 90% of household members (both male and female) are 45 years old or younger with half of these being 14 years old or younger (Table 6) reflecting a relatively young household population.

TABLE 6. AGE COMPOSITION OF HOUSEHOLDS

Households	Age Composition (%)			
	0-14	15-45	46-60	61+
Male	47	44	6	3
Female	46	43	7	4

Source: Socio-economic Survey, 2011

Household size is large with over 40% of households having 6 - 8 members and almost 50% having 3 -5 household members (Table 7).

TABLE 7. HOUSEHOLD SIZE

Households		
Number of Members	Frequency	Percentage
<= 2	48	9.2
3 – 5	249	47.9
6 – 8	223	42.9
Total	520	100.0

Source: Socio-economic Survey, 2011

The demographic characteristics reflect that the fertility and mortality rates are still high in these districts. Blantyre and Zomba districts report relatively lower fertility rates whereas Chikhwawa is the only district having mortality rate of less than 10. All other are above 10 and Blantyre and Mangochi report much higher mortality rates (Table 8). Infant mortality rate is one of the indicators of human development. Except for Blantyre and Balaka all other districts reported a very high rate of infant mortality. The higher mortality rate can be attributed to a number of factors including a higher incidence of poverty, lack of nutrition and postnatal care and lack of medical facilities.

TABLE 8. FERTILITY AND MORTALITY RATES

District	Fertility Rate	Mortality Rate*	Infant Mortality Rate
Salima	6.5	10.3	91
Mangochi	6.1	13.9	82
Machinga	6.1	10.8	77
Balaka	6.2	14.2	66
Zomba	6.0	12.6	80
Blantyre	5.4	13.3	69
Chikhwawa	6.2	9.2	82
Nsanje	6.8	10.9	83

\*Crude Death Rate in 2008

Source: NSO, 2010, PHC, Analytical Report: Volume 1; NSO, 2010, Malawi Demographic and Health Survey

### 5.2.1.3 Social Composition

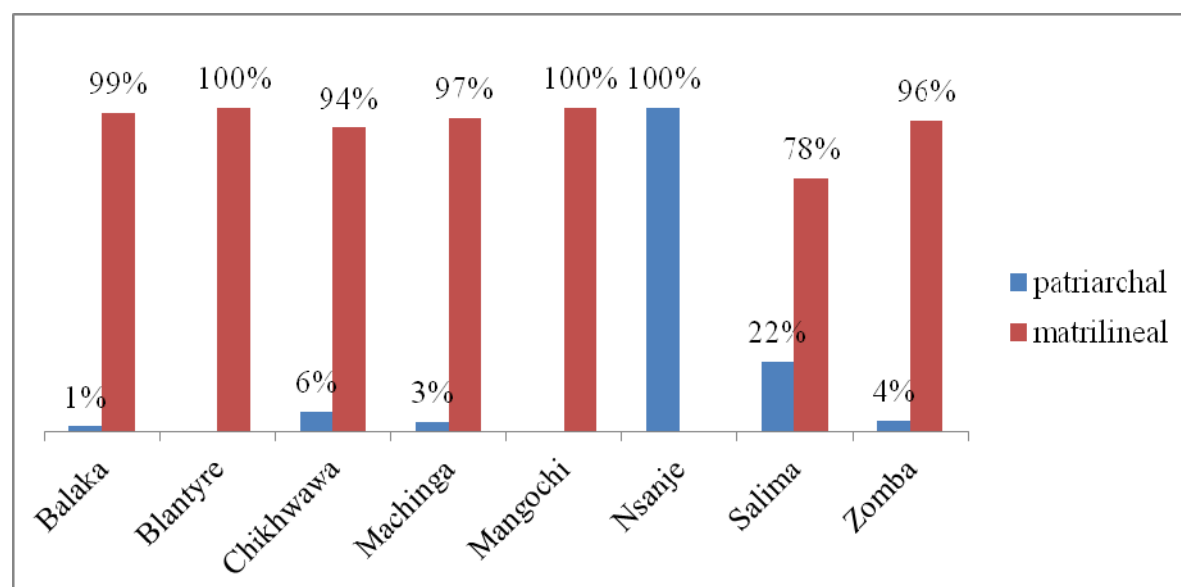
In Malawi, there are followers of two major religious groups, namely, Christianity and Islam. At a national level, about 82 percent of households follow Christianity and 13 percent follow Islam (NSO, 2009). Table 9 shows the division amongst surveyed households at District level within the Project area. Mangochi (79%) and Salima (53%) Districts reflect a much greater Islamic following than the national average.

TABLE 9. SURVEYED HOUSEHOLDS BY RELIGION

District	Type of Religion	Households	
		Frequency	%
Balaka	Christianity	35	50.7
	Islam	31	44.9
	Other	3	4.3
Blantyre	Christianity	46	93.9
	Islam	3	6.1
Chikhwawa	Christianity	42	84.0
	Islam	5	10.0
	Other	3	6.0
Machinga	Christianity	52	51.5
	Islam	49	48.5
Mangochi	Christianity	15	21.1
	Islam	56	78.9
Nsanje	Christianity	41	89.1
	Islam	2	4.3
	Other	3	6.5
Salima	Christianity	35	47.3
	Islam	39	52.7
Zomba	Christianity	34	60.7
	Islam	21	37.5
	Other	1	1.8

Source: Socio-economic Survey, 2011

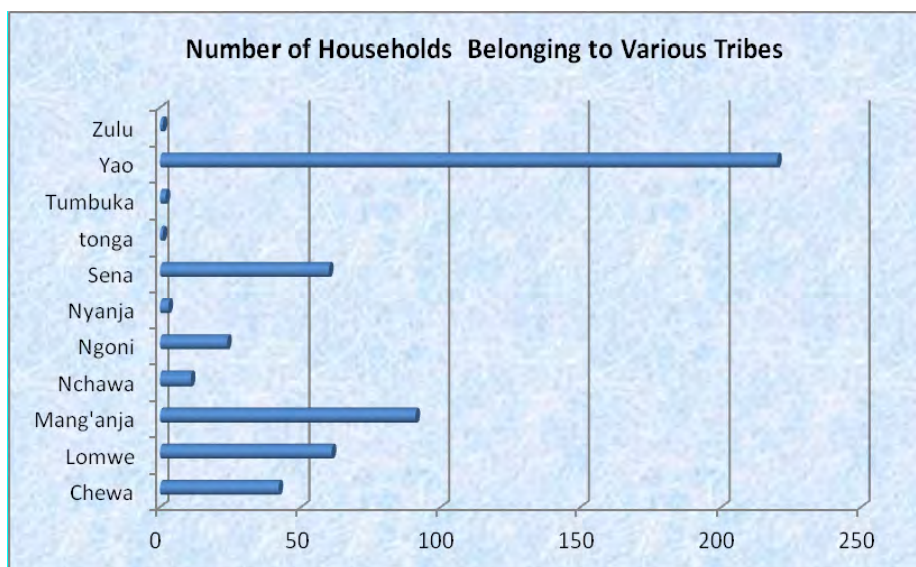
In terms of type of society followed in different districts and particularly along the lake shorelines more than 85 percent of households reported a matrilineal arrangement (Figure 5).



Source: Socio-economic Survey, 2011

Figure 5. Surveyed households by type of society in the study area

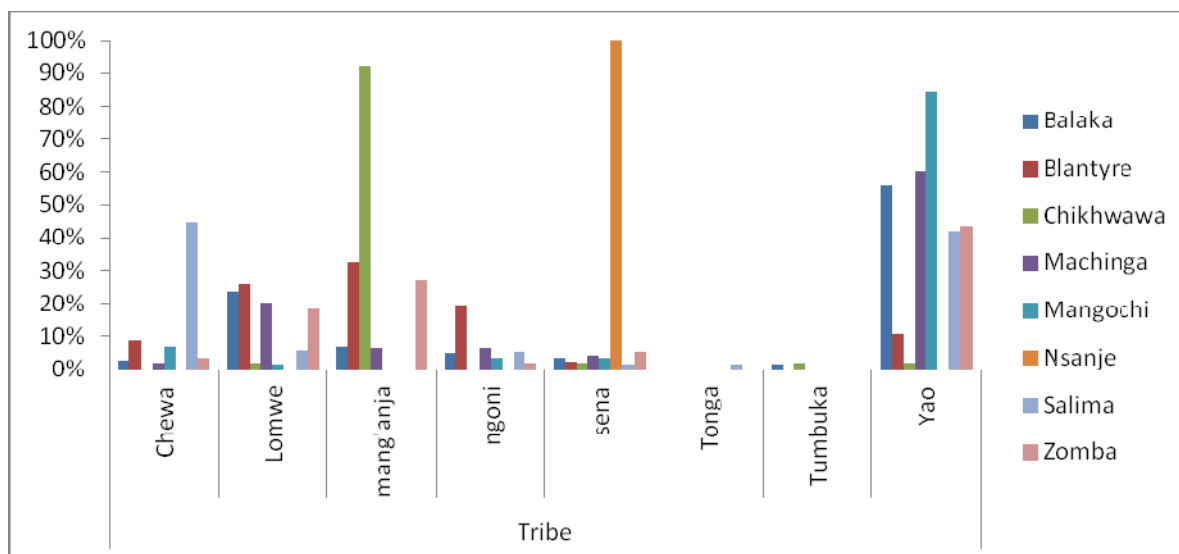
Although several tribes are found in the project area, the Yao are by far the dominant tribe followed by Lomwe, Chewa, Sena, Manganja and Ngoni tribes (Figure 6). Other tribes include: Nyanja, Tonga and Tumbuka. The composition of tribal lineage of surveyed households for each district surveyed is shown in Figure 7.



Source: Socio-economic Survey, 2011

**Figure 6. Tribal Lineage of Households**

Yawo and Ngoni are the main local languages. Chichewa, which is a common language in Malawi, is spoken by almost everybody.



\* n for households= 520

Source: Socio-economic Survey, 2011

**Figure 7. Tribal composition of households**

The Yao, Lomwe, Nyanja and Ngoni ethnic groups have earlier had distinct cultural traditions and beliefs but due to religion, intercultural marriages and mixing of ethnic groups most cultural aspects and beliefs are mixed with the exception of Muslims who follow Islamic laws and beliefs (Malawi Government, 2001).

Amongst these ethnic groups the Yao, Sena and Lomwe still enforce initiation ceremonies for their children (both boys and girls) in order to develop good cultural and moral behaviour as is required by their respective cultures. For the Yao, Mang'anja, Lomwe, Chewa and Ngoni inheritance over chieftainship and property is matrilineal while the Sena follow the patrilineal system whereby inheritance follows the male line and the wife moves and stays in her husband's village.



Generally, the people in Machinga, Mangochi and Balaka districts follow the matrilineal marriage system whereby the men follow and live with their wives, (Malawi Government 2001). The woman's brothers exercise more control over property and the children than the husband.

#### 5.2.1.4 Gender and Educational Attainment

Mangochi has 239 primary schools and 34 secondary schools. The project area TA Chimwala and TA Chowe on the eastern side has the highest primary school dropout rates in the district between 2004 and 2007, (Malawi Government, 2010).

Machinga district has 145 primary schools and 17 secondary schools. The enrolment rates of boys and girls in primary school are 51% and 49% respectively.

Balaka District has District has 17 secondary schools and 154 primary schools. The district has low literacy levels (76%) and a pupil dropout rate of 3.6%. The primary school enrolment rate for boys and girls is almost equal (Malawi Government 2010).

Table 10 presents the household education levels disaggregated by Districts based on the socio-economic survey. In the case of female literacy, Blantyre has the highest rate of above 85 percent followed by Zomba at 75 percent. In terms literacy rate for males, Zomba and Blantyre again top the table with above 88 percent. These two districts fall in one of the developed areas of Malawi. Among the upstream districts, Salima has the higher rate of literacy in comparison to Mangochi for both males and females. There were no clear gender differences in literacy rates.

Despite the relative high literacy rates, educational attainment significantly declined with higher education levels in all districts. Few household members (<1%) had an education level at high school or above.

#### 5.2.2 Settlement

Settlement patterns include dispersed (though by no means isolated) dwelling nucleated villages and small urban centres. Houses are often constructed on both sides of the road. Buildings in the dense centres of the large villages face the road, but are set back at least ten to fifteen metres. Outside the centres, houses are oriented away from the road. Trading activities of fruits and small shops are located in village centres. Religious facilities such as churches and mosques are found almost in all village centres. Rural parts of the villages have their own morphology with many internal paths and tracks.

Most households have access to health facilities, although access is poorest in households located within Mangochi, Balaka and Zomba Districts, with distance to health units as a likely constraining factor (Table 11).

With the exception of households in Machinga and Nsanje, a high percentage (>67%) of households have access to grazing lands (Table 11).

As would be expected, access to recreation facilities is highest for households located in Salima (82%) and Mangochi (73%) which are closest to Lake Malawi and Lake Malombe (Table 11).

TABLE 10. EDUCATION LEVEL OF HOUSEHOLD MEMBERS

District	Sex	Education Level of Household Members (%)						
		Illiterate	Primary	Secondary	High School	Graduate	Vocational	Other
Balaka	Male	20.00	66.04	13.29	-	0.43	-	-
	Female	17.07	68.83	13.54	-	0.56	-	-
Blantyre	Male	7.65	82.25	10.10	-	-	-	-
	Female	7.63	79.27	13.10	-	-	-	-
Chikhwawa	Male	19.11	71.95	8.13	-	-	0.61	0.20
	Female	19.56	73.13	6.29	-	-	0.51	0.51
Machinga	Male	11.00	70.24	18.28	0.29	-	0.19	-
	Female	13.14	68.80	17.05	0.67	-	0.33	-
Mangochi	Male	16.82	74.89	8.30	-	-	-	-
	Female	16.47	72.25	11.27	-	-	-	-
Nsanje	Male	19.89	68.72	11.39	-	-	-	-
	Female	20.20	70.13	9.67	-	-	-	-
Salima	Male	13.39	75.32	10.69	0.60	-	-	-
	Female	15.37	74.49	9.32	0.82	-	-	-
Zomba	Male	22.06	75.16	2.78	-	-	-	-
	Female	20.68	76.06	3.26	-	-	-	-

Source: Socio-economic Survey, 2011

TABLE 11. AVAILABILITY OF SOCIAL UTILITIES IN THE STUDY AREAS

District	% of Households with Social Utilities Available				
	Grazing Land	Playground	Health Facilities	Recreation Facilities	Graveyard
Balaka	67	74	51	42	100
Blantyre	96	96	70	72	100
Chikhwawa	72	90	78	42	86
Machinga	46	79	90	54	98
Mangochi	94	96	49	73	100
Nsanje	53	90	74	25	98
Salima	87	100	87	82	100
Zomba	91	96	57	41	96

Source: Socio-economic Survey, 2011

### 5.2.3 Housing

Most of the houses in the households surveyed have brick and cement walls with grass thatched roofs. There were 183 brick and cement-wall houses and 229 grass thatched houses downstream of the Barrage. Upstream of the Barrage there were 72 houses with brick and cement walls and 117 grass thatched houses. In total there were 30 bamboo walled houses and 159 houses were built with unburnt brick walls. Only two of the households surveyed had tiled houses (Table 12).

TABLE 12. TYPES OF HOUSES OWNED BY HOUSEHOLDS

Type of House	Material	Location			
		Upstream		Downstream	
		Frequency	%	Frequency	%
Floor	cement/concrete	53	27.3	37	11.4
	mud	141	72.7	287	88.6
Wall	burnt brick & cement mortar	85	43.8	182	62.1
	mud with bamboo poles	7	3.6	23	7.8
	compacted soil	17	8.8	14	4.8
	unburnt bricks	85	43.8	74	25.3
Roof	corrugated iron sheets	63	32.5	91	28.0
	grass thatched	129	66.5	234	72.0
	tiles	2	1.0		

Source: Socio-economic Survey, 2011

## 5.2.4 Household Assets Owned

Table 13 lists the assets owned by households surveyed excluding landholdings which are shown in Table 14. The most common asset owned was a radio (56.5%) closely followed by bicycles (50%) and chickens (49.4%). The next most common asset owned was a cell phone. Few households (less than 10%) owned furniture such as sofas, beds, televisions and fridges. Cattle ownership was also not common with less than 5% of households owning them. Car ownership was very low with only 4 households owning one. This was the least common asset owned. The type of assets owned reflects the poor socio-economic state of the households surveyed.

TABLE 13. ASSETS OWNED BY HOUSEHOLDS

Assets Owned	Frequency	Percent (%) of Households
Chickens	257	49.4
Goats	204	39.2
Cattle	25	4.8
Radio	294	56.5
Television	30	5.8
Cell phone	231	44.4
Sofa set	32	6.2
Beds	151	29.0
Refrigerator	11	2.1
Bicycle	260	50.0
Car	4	0.8

n= 520; Source: Socio-economic Survey, 2011

Land holdings owned by surveyed households are very small at two hectares or less with more than half being less than one hectare in size (Table 14).

TABLE 14. LAND HOLDINGS OWNED BY HOUSEHOLDS

District	Land size (ha)	Frequency	%
Balaka	<1.00	37	55.2
	1.00 - 2.00	30	44.8
	Total	67	100.0
Blantyre	<1.00	28	56.0
	1.00 - 2.00	20	40.0
	>2	2	4.0
	Total	50	100.0
Chikhwawa	<1.00	28	57.1
	1.00 - 2.00	20	40.8
	>2	1	2.0
	Total	49	100.0
Machinga	<1.00	68	68.7
	1.00 - 2.00	30	30.3
	>2	1	1.0
	Total	99	100.0

District	Land size (ha)	Frequency	%
Mangochi	<1.00	44	63.8
	1.00 - 2.00	24	34.8
	>2	1	1.4
	Total	69	100.0
Nsanje	<1.00	17	36.2
	1.00 - 2.00	30	63.8
	Total	47	100.0
Salima	<1.00	54	75.0
	1.00 - 2.00	18	25.0
	Total	72	100.0
Zomba	<1.00	40	71.4
	1.00 - 2.00	15	26.8
	>2	1	1.8
	Total	56	100.0

### 5.2.5 Basic Household Facilities

Table 15 describes basic facilities used by households. Overall, few households have direct access to power, water supply and sanitation in their homes. Only 16 households had electricity although they use alternative sources including open fires, torches and candles. Less than 3 percent of households had direct access to drinking water and most sourced their water from communal boreholes, lake and rivers. Sanitation facilities were also low with only 4.2 percent of households reporting they had a toilet within the home. Toilet outside house but within yard, and use of neighbour's toilet and bush were the more commonly used facilities.

TABLE 15. AVAILABILITY OF BASIC FACILITIES

Facilities	Number of Households	Alternatives used (when facility not available)
Electricity	16 (3.1%)	Open fire, torch, candles
Drinking Water	12 (2.3%)	Communal borehole, tap, lake, river
Toilet	22 (4.2%)	Toilet outside house but within yard, use neighbour's, use bush

Source: Socio-economic Survey, 2011

Most households obtained their water from bore wells (Table 16).

TABLE 16. HOUSEHOLD WATER SOURCES

District	Source of Water	Households Accessing Water	
		Frequency	%
Balaka	Bore well	61	88.4
	River or lake	3	4.3
	Piped water	1	1.4
	Other	4	5.8

Blantyre	Bore well	35	71.4
	River or lake	9	18.4
	Piped water	2	4.1
	Stream	1	2.0
	Other	2	4.1
Chikhwawa	Bore well	41	82.0
	River or lake	1	2.0
	Piped water	8	16.0
Machinga	Bore well	61	61.0
	Piped water	35	35.0
	Stream	1	1.0
	Other	3	3.0
Mangochi	Bore well	50	70.4
	River or lake	5	7.0
	Piped water	9	12.7
	Other	7	9.9
Nsanje	Bore well	43	89.6
	River or lake	2	4.2
	Piped water	1	2.1
	Stream	2	4.2
Salima	Bore well	57	81.4
	Piped water	11	15.7
	Other	2	2.9
Zomba	Bore well	52	92.9
	River or lake	4	7.1

In the absence of access to electricity, most households used either firewood and to a lesser extent charcoal as energy sources (Table 17).

TABLE 17. HOUSEHOLD ENERGY SOURCES

District	Source of Energy	Households Using Energy	
		Frequency	%
Balaka	Charcoal	4	5.8
	Firewood	65	94.2
Blantyre	Firewood	50	100.0
Chikhwawa	Charcoal	7	14.0
	Firewood	43	86.0

District	Source of Energy	Households Using Energy	
		Frequency	%
Machinga	Charcoal	9	9.0
	Firewood	91	91.0
	Total	100	100.0
Mangochi	Charcoal	5	7.0
	Kerosene	1	1.4
	Firewood	65	91.5
Nsanje	Charcoal	1	2.1
	Firewood	47	97.9
Salima	Charcoal	7	10.4
	Kerosene	1	1.5
	Firewood	59	88.1
Zomba	Charcoal	1	1.8
	Firewood	55	98.2

### 5.2.6 Infrastructure, Services and Movement Patterns

Postal services are found at district headquarters. Telephone services are available throughout the Project area. Airtel and TNM mobile phone networks are the main networks available though in some places the signal is weak.

There are minibuses operating all along the road from Lilongwe and Blantyre to Mangochi, Balaka and Machinga. There are also buses operating in the project area connecting to different town centres. Field observations indicate very little traffic turning onto or off the highway from the relatively few side roads.

Traffic mainly comprises small commercial vehicles – minibuses, small lorries used for freight and pickups although bicycles, motorcycles, donkey/cow carts and human porters/carriers were also observed along local roads. The road passing over Kamuzu Barrage is a major traffic route both locally (the town of Liwonde is located either side of the Shire River) and regionally and is part of the SADC Regional Trunk Road Network.

The most common form of transport used by households is bicycle taxi followed by mini bus (Table 18). Households in Mangochi, Nsanje, Salima and Zomba also use boat transport.

TABLE 18. TYPE OF TRANSPORT USED BY HOUSEHOLDS

District	Type of Transport	Households Using Transport	
		Frequency	%
Balaka	Mini bus	12	17.9
	Bus	4	6.0
	Bicycle taxi	42	62.7
	Any other	9	13.4
Blantyre	Mini bus	28	58.3
	Bicycle taxi	17	35.4
	Any other	3	6.3

District	Type of Transport	Households Using Transport	
		Frequency	%
Chikhwawa	Mini bus	12	26.1
	Bicycle taxi	30	65.2
	Any other	4	8.7
Machinga	Mini bus	26	28.6
	Bus	4	4.4
	Bicycle taxi	47	51.6
	Any other	14	15.4
Mangochi	Mini bus	23	34.3
	Bicycle taxi	37	55.2
	Boat	1	1.5
	Any other	6	9.0
Nsanje	Mini bus	15	32.6
	Bus	5	10.9
	Bicycle taxi	20	43.5
	Boat	2	4.3
	Any other	4	8.7
Salima	Mini bus	19	28.4
	Bus	4	6.0
	Bicycle taxi	27	40.3
	Boat	5	7.5
	Any other	12	17.9
Zomba	Mini bus	6	11.5
	Bicycle taxi	32	61.5
	Boat	10	19.2
	Any other	4	7.7

Travelling to market is the main purpose of household travel followed by social occasions (Table 19). Other reasons for travelling include education and employment.

TABLE 19. MAIN PURPOSE OF TRAVELLING

District	Purpose of Travelling	Household Travelling	
		Frequency	%
Balaka	Social	5	8.1
	Market	39	62.9
	Education	1	1.6
	Employment	1	1.6



District	Purpose of Travelling	Household Travelling	
		Frequency	%
	Other	16	25.8
Blantyre	Social	3	7.0
	Market	32	74.4
	Employment	3	7.0
	Other	5	11.6
Chikhwawa	Social	6	14.0
	Market	30	69.8
	Employment	3	7.0
	Other	4	9.3
Machinga	Social	10	13.0
	Market	54	70.1
	Employment	2	2.6
	Other	11	14.3
Mangochi	Social	8	13.1
	Market	37	60.7
	Education	1	1.6
	Employment	3	4.9
	Other	12	19.7
Nsanje	Social	10	26.3
	Market	14	36.8
	Employment	3	7.9
	Other	11	28.9
Salima	Social	8	12.7
	Market	36	57.1
	Other	19	30.2
Zomba	Social	10	22.2
	Market	29	64.4
	Employment	2	4.4
	Other	4	8.9

### 5.2.7 Land Use

The most common land uses in the project area are agriculture, grazing, human settlement, commercial enterprises and tourist/recreational development. Lake shore areas are used for hotel and cottage development.

The greater part of the project area is cultivated with other areas being protected areas including forest reserves and National Parks. Commonly grown crops include maize, cassava, millet, sweet potatoes and sorghum. Tomatoes and onions are also grown closer to the river banks and are irrigated. All of the above are also cultivated on the river shore right after flood recession (known as *dimba* farming), which occurs in-

between the rainy and hot seasons. Livestock keeping is also practiced in wooded and open grasslands. Chickens and goats are the main type of livestock kept. However, it is frequent to find other livestock like cows, sheep, donkeys and horses in some areas along the river basin. Human settlement is found along roadways (linear settlement in nature). Pottery (containers/plates, etc.) artwork and small crafts (jewellery, key holders, picture framing etc.) and other handcrafts (particularly baskets and mats) are often seen along roads waiting for travellers to purchase these items. Deforestation (including firewood and charcoal for sale) and bush fires (for agricultural land clearing and hunting) are common practices in the Project area. The main land tenure system is customary, followed by government owned land and titled private land.

TABLE 20. MAIN OCCUPATION OF HOUSEHOLDS

Occupation	District															
	Balaka		Blantyre		Chikhwawa		Machinga		Mangochi		Nsanje		Salima		Zomba	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Agriculture	106	79.7	93	75	99	78	147	68.4	101	70.1	97	89	79	56	90	79.6
Landless Labour	6	4.5	9	7.3	8	6.3	10	4.7	4	2.8	-	-	11	7.8	6	5.3
Business	14	10.5	14	-	9	7.1	28	13	16	11.1	8	7.3	35	24.8	12	10.6
Government Services	1	0.8	-	-	3	2.4	10	4.7	1	0.7	-	-	-	-	1	0.9
Private Job	5	3.8	7	7.3	6	4.7	15	7	15	10.4	3	2.8	1	0.7	2	1.8
Fishery & Livestock	1	0.8	1	11.3	1	0.8	5	2.3	6	4.2	1	0.9	9	6.4	1	0.9
Bicycle Taxi	-	-	-	-	1	0.8	-	-	1	0.7	-	-	4	2.8	1	0.9
Other	-	-	-	-	-	-	-	-	-	-	-	-	2	1.4	-	-
<b>Total</b>	<b>133</b>	<b>100</b>	<b>124</b>	<b>100</b>	<b>127</b>	<b>100</b>	<b>215</b>	<b>100</b>	<b>144</b>	<b>100</b>	<b>109</b>	<b>100</b>	<b>141</b>	<b>100</b>	<b>113</b>	<b>100</b>

Source: Socio-economic Survey, 2011

TABLE 21. WOMENS INVOLVEMENT IN ACTIVITIES

District	Women's Involvement in Activities	Agriculture	Allied Activities	Forestry	Business	Agricultural Labour	Non Agricultural Labour	Household Work	Industry Work	Look after Children
		Frequency	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency
Balaka	Yes	68	35	42	43	32	27	69	1	67
	No	1	34	27	26	37	42	0	68	1
Blantyre	Yes	50	32	36	28	34	18	46	1	49
	No	0	18	14	22	16	32	4	49	1
Chikhwawa	Yes	50	33	29	22	25	9	47	4	45
	No	0	17	20	28	25	39	3	46	5
Machinga	Yes	101	46	59	61	56	40	99	11	98
	No	0	54	41	40	45	59	1	89	2
Mangochi	Yes	71	41	50	45	31	31	71	3	71
	No	0	30	21	26	40	40	0	68	0
Nsanje	Yes	47	27	36	38	30	15	49	1	46
	No	2	20	12	10	16	29	0	46	3
Salima	Yes	61	32	49	55	37	34	73	3	74
	No	13	41	25	19	37	37	1	67	0
Zomba	Yes	55	38	36	23	31	12	48	3	47
	No	0	14	17	30	24	40	6	50	7

TABLE 22. WOMENS INVOLVEMENT IN DECISION MAKING

District	Women Involved	Financial Matters		Education of Children		Health Care		Purchasing of Assets		Social Functions		Day to Day Activities		Local Governance	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Balaka	Yes	51	73.9	67	97.1	67	97.1	67	97.1	66	98.5	66	97.1	51	73.9
	No	18	26.1	2	2.9	2	2.9	2	2.9	1	1.5	2	2.9	18	26.1
Blantyre	Yes	40	80.0	45	90.0	48	96.0	48	96.0	50	100.0	49	98.0	41	82.0
	No	10	20.0	5	10.0	2	4.0	2	4.0	0	0.0	1	2.0	9	18.0
Chikhwawa	Yes	40	80.0	43	86.0	45	91.8	44	88.0	45	90.0	47	94.0	44	88.0
	No	10	20.0	7	14.0	4	8.2	6	12.0	5	10.0	3	6.0	6	12.0
Machinga	Yes	80	79.2	90	89.1	101	100.0	77	76.2	79	78.2	99	98.0	76	75.2
	No	21	20.8	11	10.9	0	0.0	24	23.8	22	21.8	2	2.0	25	24.8
Mangochi	Yes	57	81.4	67	97.1	98.6	98.6	68	97.1	69	98.6	66	94.3	55	78.6
	No	13	18.6	2	2.9	1.4	1.4	2	2.9	1	1.4	4	5.7	15	21.4
Nsanje	Yes	35	71.4	45	91.8	93.8	93.8	33	67.3	44	89.8	42	87.5	40	83.3
	No	14	28.6	4	8.2	6.3	6.3	16	32.7	5	10.2	6	12.5	8	16.7
Salima	Yes	53	71.6	73	98.6	74.0	100.0	71	95.9	74	100.0	74	100.0	59	79.7
	No	21	28.4	1	1.4	0.0	0.0	3	4.1	0	0.0	0	0.0	15	20.3
Zomba	Yes	47	83.9	52	92.9	53	94.6	56	100.0	55	98.2	55	98.2	54	96.4
	No	9	16.1	4	7.1	3	5.4	0	0.0	1	1.8	1	1.8	2	3.6

Source: Socio-economic Survey, 2011

## 5.2.8 Livelihoods and Employment

Kiosks and shops sell sugar, soap, matches, textiles and other goods brought from the regional centre of Lilongwe and neighbouring countries including Tanzania, Mozambique, Zambia and South Africa. Retail commerce is undeveloped, being confined to small shops and kiosks. The district headquarters are also administration centres for the respective districts, therefore they have hospitals, police, post offices, secondary schools, fuel stations, guest houses, hotels, bar and restaurants etc. The tourist hotels are located adjacent to beaches along Lake Malawi and the Shire River.

The fishing industry is reportedly one of the major sources of employment and income in the study area with 16,000 directly employed in the industry and 40,000 benefitting indirectly through fish trading, boat building, fishing gear making. Although commercial fishery in Lake Malombe collapsed in 1998 due to over exploitation, people still continue to fish the Lake because there are very few alternatives to gain income apart from *dimba* (wetland or flood recession) cultivation. As such, some fish landing sites are located along the shores of Lake Malombe. The importance of the fishery industry was not reflected in the main household occupations reported from the socio-economic survey.

According to the socio-economic survey results (Table 20) the main household occupation was agriculture in all eight districts surveyed, ranging from 56% (Salima) to 89% (Nsanje) of households. The next most common occupation was business followed by private job; landless labour; fishery and livestock; government services and bicycle taxi. The dominance of agriculture is shown in Figure 8. Eighty-two percent of households were reported to be engaged in agriculture. Only one of the surveyed households was engaged in providing transport (bicycle taxi). Machinga district had the largest number of households engaged in agriculture, followed by Mangochi, Machinga, Chikhwawa, Nsanje and Blantyre respectively. The highest number of government workers in the sample was in Machinga while the highest number of private jobs was in Balaka. Business was highest in Salima (17), followed by Balaka (5 households).

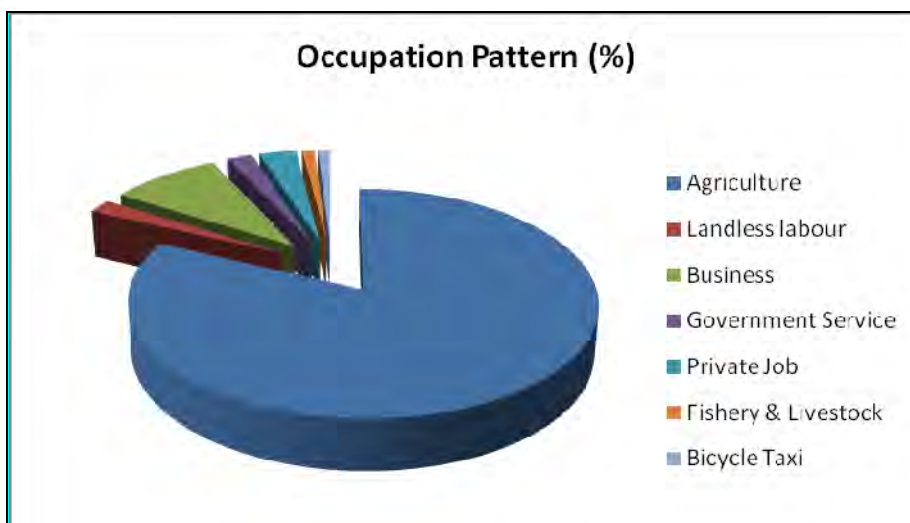


Figure 8. Occupational Pattern of Households

Other economic activities mentioned in the area include trading, craft industries (tailoring, carpentry, and basketry), transport and service. These are however on a small scale.

Women are involved in all activities undertaken by the household (Table 21). The more common activities undertaken by women are agriculture, household work and looking after children. Women are least involved in forestry and industry activities. The high rates of participation by women are also reflected in their involvement in household decision making in all areas including: financial matters; education of children; health care; purchasing of assets; social functions; day to day activities; and, local governance (Table 22).

### Employment

Mangochi district has agriculture and natural resources as the main sources of employment for about 85% of the people (Malawi Government, 2009). The major source of employment is commerce and includes the tourism industry, petty traders, and handcrafts makers making cane chairs and mats. Micro and small Enterprises (MSEs) provide a very good source of employment and include: manufacturing, trade, services,

production of crops, livestock, forestry products, fishing and mining, (Malawi Government 2009). MSEs employ 65% of the rural people, with men dominating this employment sector, (Malawi Government, 2009). Salima district has agriculture as its mainstay as more than 84 percent of households find employment in this sector (Table 23). Economic activities and livelihoods in Machinga district include: agriculture; fishing; bee keeping, mining; trading; manufacturing; tourism; businesses and employment, (Government of Malawi, 2001).

TABLE 23. ECONOMIC ACTIVITIES

District	Farming (%)	Self Employed (%)	Family Business (%)	Employed / Salaried	Landless Labour /Ganyu*	Other
Salima	84	7	1	5	2	2
Mangochi	76	10	1	7	1	5
Machinga	79	8	1	4	6	1
Balaka	81	8	1	5	0	4
Zomba	86	5	1	5	2	2
Blantyre	74	11	0	9	1	3
Chikhwawa	91	2	1	3	1	2
Nsanje	89	5	1	4	1	1

\*does piece work

Source: NSO, 2009, Welfare Monitoring Survey

Balaka district has its employment rate at 98 percent with a labour force participation rate of 99.1 percent. Most of this employment is in the informal sector and the formal sector adds to 2,860 of which 402 are women (Malawi Government, 2010). This means that there are gender inequalities in the employment sector. Chikhwawa reported the highest followed by Nsanje and Zomba for their dependency on farming in terms of people's engagement in these activities. As seen in Table 23, the dependency on farming is stark.

Of the total households surveyed, more than 80 percent reported to be unemployed and do not have a permanent source of employment throughout the year (Table 24). It was also found that less than 45 percent of households earn less than MWK 10,000 per month. However, a sizeable 30 percent earn more than MWK 40,000 per month.

TABLE 24. EMPLOYMENT AND MONTHLY INCOME

	Employment Status			Monthly Income			
	Year Round	Seasonal	Unemployed	Less than MWK 10,000	MWK 10,000 to 20,000	MWK 20,000 to 40,000	Above MWK 40,000
Percentage of Households	9.4	9.8	80.8	45	12	12	31

Source: Socio-economic Survey, 2011

Major produce in these districts include rice, cassava, bananas, tobacco, maize, groundnuts, tomatoes, sugar cane among others and these are offered for sale along main roads (Table 25). Most households divide their harvests, keeping some for home consumption and some portion for sale.

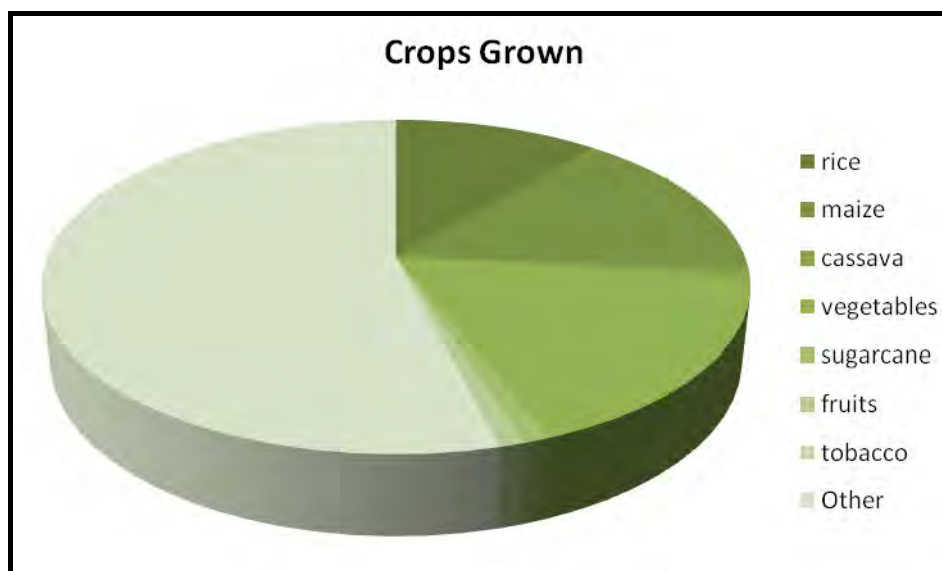
TABLE 25. CROPS GROWN BY HOUSEHOLDS

Crops Grown	Households Growing Crops	
	Frequency	%
Rice	89	9
Maize	475	47.8

Cassava	7	0.7
Vegetables	104	10.5
Sugar cane	14	1.4
Fruits	5	0.5
Tobacco	3	0.3
Other crops	297	29.9

Source: Socio-economic Survey, 2011

Households engaged in farming reported maize, rice and vegetables as major crops. Cassava, sugarcane, fruits and other crops were also reported. The share of different crops as reported is shown in Figure 9.



Source: Socio-economic Survey, 2011

**Figure 9. Crops Grown**

Table 26 reports the crop production area under irrigation versus rain-fed as well as income realised from production for households surveyed. The rain-fed crop area is much greater than the irrigated crop area.

**TABLE 26. CROP PRODUCTION UNDER IRRIGATION AND RAIN FED AS WELL AS INCOME REALISED FROM PRODUCTION**

District	Crop Area and Income	N	Mean
Balaka	Area with irrigated crops (ha)	21	0.4
	Area with rain fed crops (ha)	65	1.2
	Income earned from crops (MWK)	35	24,338
Blantyre	Area with irrigated crops (ha)	13	1.8777
	Area with rain fed crops (ha)	33	2.00
	Income earned from crops (MWK)	27	19,200
Chikhwawa	Area with irrigated crops (ha)	9	1.2
	Area with rain fed crops (ha)	30	1.6
	Income earned from crops (MWK)	31	36,129
Machinga	Area with irrigated crops (ha)	10	1.4
	Area with rain fed crops (ha)	73	1.7



District	Crop Area and Income	N	Mean
	Income earned from crops (MWK)	56	34,113
Mangochi	Area with irrigated crops (ha)	29	0.5
	Area with rain fed crops (ha)	67	0.9
	Income earned from crops (MWK)	33	27,121
Nsanje	Area with irrigated crops (ha)	6	0.9
	Area with rain fed crops (ha)	20	2.1870
	Income earned from crops (MWK)	25	16,092
Salima	Area with irrigated crops (ha)	6	0.6
	Area with rain fed crops (ha)	50	0.8
	Income earned from crops (MWK)	19	54,837
Zomba	Area with irrigated crops (ha)	22	0.8
	Area with rain fed crops (ha)	55	1.4
	Income earned from crops (MWK)	43	29,147

Source: Socio-economic Survey, 2011

A high number of households (69%) reported facing food shortages during the year (Table 27). Food shortages usually occurred during the rainy season when land for flood recession agriculture is limited highlighting the dependence on this type of agriculture for their livelihood.

TABLE 27. HOUSEHOLD FOOD SECURITY

District	Number of Households Facing Food Shortage (n=520)	Number of Households Facing Food Shortage in Different Seasons		
		Summer	Rainy	Winter
Balaka	46	9	37	0
Blantyre	36	16	20	0
Chikhwawa	40	26	14	0
Machinga	59	13	57	0
Mangochi	41	3	38	0
Nsanje	44	31	10	5
Salima	45	11	33	1
Zomba	47	5	43	0
<b>Total</b>	<b>358</b>	<b>114</b>	<b>252</b>	<b>6</b>

Source: Socio-economic Survey, 2011

The coping strategies utilised by households during food shortages are listed in Table 28. The most common strategy employed is to use household money to buy from the market followed by sourcing additional income from casual labour or obtaining assistance from relatives and friends. Obtaining credit or selling firewood and traditional medicines are amongst the least used strategies.

TABLE 28. STRATEGIES USED BY HOUSEHOLDS DURING FOOD SHORTAGE

Food Shortage Coping Strategy	Number of Households
Use own money to buy from the market	45
Source money from casual labour	36
Get assistance from relatives and friends	19
Source money by catching and selling fish	7
Do business to source money	7
Sell crops	7
Depend on salary	6
Sell livestock	6
Dry and cooked cassava	5
Boil mangoes	4
Sell charcoal	3
Starve family	3
Sell charcoal	2
Cooked bush leaves	1
Go to Mozambique to fetch for food	1
Get credit to buy food	1
Sell firewood	1
Sell traditional medicine	1
Dig roots	1

Source: Socio-economic Survey, 2011

Food and farm inputs accounted for most household expenditure (Table 29). The least amount of household expenditure was for health / medications. On a District basis, households in Salima tended to spend more on food, beverages, travel and health / medications.

TABLE 29. HOUSEHOLD EXPENDITURE ON VARIOUS ITEMS PER MONTH

Expenditure on Item (MWK)	Percent of Household							
	Balaka	Blantyre	Chikhwawa	Machinga	Mangochi	Nsanje	Salima	Zomba
<b>Food</b>								
less than 1000	10.3	14.6	15.6	13.1	4.2	23.9		14.5
1000 to 3000	39.7	25.0	42.2	35.4	9.9	43.5	12.5	32.7
3000 to 5000	30.9	14.6	20.0	18.2	32.4	19.6	22.2	34.5
above 5000	19.1	45.8	22.2	33.3	53.5	13.0	65.3	18.2
<b>Clothes</b>								
less than 1000	76.5	18.9	33.3	27.8	41.5	33.3	69.0	41.2
1000 to 3000	17.6	37.8	25.0	37.0	24.4	48.5	14.3	35.3
3000 to 5000	5.9	10.8	22.2	16.7	24.4	12.1	7.1	8.8
above 5000		32.4	19.4	18.5	9.8	6.1	9.5	14.7

Expenditure on Item (MWK)	Percent of Household							
<b>Beverages</b>								
less than 1000	90.9	79.5	73.0	87.0	80.3	76.9	81.0	79.1
1000 to 3000	9.1	15.9	21.6	10.1	13.6	19.2	6.9	20.9
3000 to 5000		2.3	2.7	1.4	4.5	3.8		
above 5000		2.3	2.7	1.4	1.5		12.1	
<b>Social Functions</b>								
less than 1000	80.0	66.7	56.7	83.0	63.8	67.7	66.7	66.7
1000 to 3000	16.0	15.4	26.7	13.2	23.4	16.1	23.8	29.6
3000 to 5000	4.0	7.7	13.3	1.9	10.6	6.5	2.4	3.7
above 5000		10.3	3.3	1.9	2.1	9.7	7.1	
<b>Education</b>								
less than 1000	90.6	81.0	68.8	84.4	71.9	81.6	63.8	92.5
1000 to 3000	5.7	11.9	12.5	9.4	14.1	18.4	22.4	5.0
3000 to 5000		4.8	6.3	1.6	6.3		6.9	2.5
above 5000	3.8	2.4	12.5	4.7	7.8		6.9	
<b>Farm inputs</b>								
less than 1000	50.0	19.0	25.0	25.4	27.1	66.7	41.0	25.0
1000 to 3000	25.0	28.6	46.9	19.4	25.0	15.2	10.3	35.0
3000 to 5000	11.4	11.9	15.6	10.4	12.5	12.1	17.9	12.5
above 5000	13.6	40.5	12.5	44.8	35.4	6.1	30.8	27.5
<b>Health/Medication</b>								
less than 1000	100.0	84.8	83.3	78.7	87.5	89.7	69.9	94.1
1000 to 3000		8.7	16.7	17.3	12.5	10.3	20.5	5.9
3000 to 5000		6.5		2.7			4.1	
above 5000				1.3			5.5	
<b>Travel</b>								
less than 1000	59.0	45.2	65.9	74.0	65.6	77.8	45.2	66.7
1000 to 3000	30.8	42.9	25.0	15.6	25.0	19.4	29.0	33.3
3000 to 5000	7.7	4.8	6.8	5.2	6.3	2.8	11.3	
above 5000	2.6	7.1	2.3	5.2	3.1		14.5	

Source: Socio-economic Survey, 2011

### 5.2.9 Impacts of Lakes Malawi and Malombe and Shire River on Households

Households considered that Lake Malawi and Lake Malombe and the Shire River were very important to them in terms of agriculture and fishing and to a lesser extent for transport (Table 30).

Conversely, households in all districts indicated that they were adversely impacted by flooding from Malawi and Malombe Lakes and the Shire River (Table 31). Adverse impacts from water animal attacks (crocodiles and hippopotamuses) were also considered as significant in all districts. Drought was the other adverse impact identified by households from all districts except for Mangochi, Nsanje and Salima.

TABLE 30. USEFULNESS OF SHIRE RIVER AND LAKES MALAWI AND MALOMBE TO HOUSEHOLDS

District	Usefulness	Fishing		Agriculture		Transport		Other Activities	
		Freq	%	Freq	%	Freq	%	Freq	%
Balaka	Yes	64	94.1	67	98.5	49	73.1	11	22.9
	No	4	5.9	1	1.5	18	26.9	37	77.1
Blantyre	Yes	40	80.0	49	98.0	26	52.0	8	16.0
	No	10	20.0	1	2.0	24	48.0	42	84.0
Chikhwawa	Yes	35	70.0	45	90.0	29	59.2	4	8.0
	No	15	30.0	5	10.0	20	40.8	46	92.0
Machinga	Yes	92	91.1	98	97.0	54	55.1	9	9.4
	No	9	8.9	3	3.0	44	44.9	87	90.6
Mangochi	Yes	69	97.2	63	88.7	42	59.2	23	32.4
	No	2	2.8	8	11.3	29	40.8	48	67.6
Nsanje	Yes	42	85.7	46	93.9	38	77.6	16	32.7
	No	7	14.3	3	6.1	11	22.4	33	67.3
Salima	Yes	73	98.6	21	28.4	54	74.0	54	91.5
	No	1	1.4	53	71.6	19	26.0	5	8.5
Zomba	Yes	54	98.2	55	100.0	52	94.5	9	75.0
	No	0	0.0	0	0.0	3	5.5	3	25.0

Source: Socio-economic Survey, 2011

TABLE 31. ADVERSE IMPACTS OF SHIRE RIVER AND LAKES MOLOMBE AND MALAWI ON HOUSEHOLDS

District	Impacts	Households Affected	
		Frequency	%
Balaka	Flooding	34	53.1
	Water animal attacks	22	34.4
	Drought	6	9.4
	Any other	2	3.1
Blantyre	Flooding	27	55.1
	Water animal attacks	20	40.8
	Drought	2	4.1
Chikhwawa	Flooding	45	91.8
	Water animal attacks	3	6.1
	Drought	1	2.0
Machinga	Flooding	60	60.6
	Water animal attacks	23	23.2
	Drought	12	12.1
	Any other	4	4.0
Mangochi	Flooding	41	60.3
	Water animal attacks	23	33.8
	Any other	4	5.9
Nsanje	Flooding	42	91.3
	Water animal attacks	3	6.5
	Any other	1	2.2
Salima	Flooding	40	64.5
	Water animal attacks	4	6.5
	Any other	18	29.0
Zomba	Flooding	41	73.2
	Water animal attacks	9	16.1
	Drought	1	1.8
	Any other	5	8.9

Source: Socio-economic Survey, 2011

## 5.2.10 Health Profile

### 5.2.10.1 Health Facilities

The project area is well serviced by government and private hospitals. There are also health centres in many parts of the rural communities. Mangochi district has four hospitals, 29 health centres, 2 health posts and 248 outreach clinics, (Malawi Government 2009). The average catchment population for a health centre is 10,000 but the lowest population that the health centres are servicing in the district is 28,112 (Malawi Government

2009). Some health centres located in the project area such as Chimwala in the Lake Malombe area has three health centres servicing a population of 107,673; while Chowe area on the western side of Lake Malombe also serves a population that is outside of the 5 km buffer zone, (Malawi Government, 2009). Balaka District has 23 health facilities and considering the population of the District there are capacity problems in terms of human resources and space.

### 5.2.10.2 Common Diseases

Malaria is by far the most common disease in Mangochi district followed by respiratory infections, diarrhoea, anaemia and urinary infections such as bilharzia, (Malawi Government 2009). The high incidence of Malaria is due to the general abundance of standing water, combined with often inadequate prevention efforts, (Malawi Government 2009). The Malawi Government has currently increased efforts to reduce Malaria incidence in the district by 50 percent.

Mangochi district has also been experiencing an increase in number of new HIV infections and AIDS. According to the National AIDS commission (2003) sentinel surveillance survey Mangochi comes third after Blantyre and Lilongwe with an estimation of 14 percent of the population infected, (Malawi Government, 2009). The Demographic Health Survey (2005) puts the HIV/AIDS prevalence rate in Mangochi at 21 percent.

As of 2000, Machinga district had one referral hospital located in Liwonde Township and twelve health centres. The health services are not enough because most health centres are serving more than the 5,000 people within the five km radius, (Government of Malawi, 2001).

The most common diseases in Machinga District are malaria, respiratory infection, diarrhoea, skin diseases, STIs, worm infections, malnutrition, ear diseases, cholera, (Government of Malawi, 2001), with Malaria being the most common ailment.

The commonly occurring diseases in Balaka district are Malaria, waterborne diseases, eye infections, tuberculosis and acute respiratory infections. The current HIV/AIDS prevalence rate is 16.2%.

Table 32 lists the common diseases affecting households as recorded in the socio-economic survey. Malaria, diarrhoea and asthma were the most common diseases experienced by households which is similar to the District disease statistics outlined above.

TABLE 32. COMMON DISEASES AFFECTING HOUSEHOLDS

Type of Disease	Number of Households Affected
Malaria	220
Diarrhoea	34
Asthma	20
Leg problem	17
Stomach ache	17
Tuberculosis	14
Chicken pox	12
Blood pressure	11
Cough	11
Measles	10
Pneumonia	10
Rheumatism	10
Anaemia	8
Headache	8
Epilepsy	7
Tooth problem	6

Type of Disease	Number of Households Affected
Ulcers	6
Bilharzia	5
Rash	4
Cancer	2
Cholera	2
Dysentery	2
Blindness	1
Goitre	1
Tumour	1

Source: Socio-economic Survey, 2011

### 5.2.11 Cultural Heritage

There are few records of cultural heritage in the Project area. Within the construction footprint of the proposed project, there were no cultural or heritage items reported during the socio-economic survey which would be affected by the Project.

The environmental assessment prepared in 2003 (Norconsult 2003) as part of the feasibility study for the Upgraded Liwonde Barrage proposal mentions that a few graves were potentially impacted by the Project. These appear to be located at a higher level than is planned for the current upgrading of the Barrage. The ESIA does not mention any other cultural heritage items.

### 5.2.12 Key Information from Stakeholder Consultations and Participation

The most common issues cited by communities amongst those consulted had to do with access to basic services and food insecurity. A review of the socio-economic profiles made available to the assessment team revealed that the development issues mentioned have also been recognised by the District Councils and are part of the District Development Plans. In some communities, there appeared to be some disenchantment with the many requests by 'people like you' to prioritise community needs and yet nothing comes out of these suggestions.

The following list of issues recurred from community to community, with differences observed only in the rankings in order of priority.

- Lack of potable water: either water is salty when it is available in bore wells (Nsanje and Chikhwawa) or there are few water points.
- Limited access to social services: either facilities are too far or cannot be easily accessed because of lack of bridges on some of the main tributaries into the Shire River. These services were mainly health, education, maize mills, markets and others;
- Food insecurity: due to poor harvest, limited capability at household level to find money and other resources to purchase food when own production is inadequate and high food prices;
- Low literacy levels: either classes had been discontinued where they existed before due to lack of teachers as volunteer teachers drop out, or they had not been initiated yet;
- Insecurity of property: incidences of theft were reported, especially for cattle and other valuable household items. The communities felt there was need for police stations to exert a dissuasive influence on those that are bent on committing crime.

Within the communities consulted, poor access to socio-economic services and food insecurity are key issues. Consequently, should the upgrade impact negatively on these, the situation is likely to be exacerbated and attitudes towards the project would be poor.

## 6 Potential Impacts

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This section assesses the key impacts of the project both overall and those specifically relating to involuntary resettlement within the construction footprint. The overall positive impacts are outlined according to impact areas, the overall negative impacts have been assessed according to location-construction area, upstream of the barrage and downstream of the barrage. In this analysis it is recognised that social, economic and biophysical impacts are inherently and inextricably interconnected. A change in one domain may trigger impacts across other domains, and there are iterative or flow-on consequences within each domain. These impacts are aligned with the impact identification incorporated in the project's ESIA and ESMP. The specific negative impacts for those affected by involuntary resettlement have been further addressed using the outcomes of the census survey. Measures to address the negative impacts for those outside of the construction footprint have been discussed in Section 9: Continued Consultation and Dissemination of Information.

### 6.1 Overall Project Impacts

#### 6.1.1 Positive Impacts

##### 6.1.1.1 Employment Opportunities

Short term benefits will be presented through project developments, particularly employment opportunities offered during the planning and construction phases of the Project works, and economic opportunities to provide services to supply the needs of the contractors and workforce over such times.

##### 6.1.1.2 Economic Development

The potential for long-term economic benefits will present itself:

- An improved electricity supply to the country, and potentially to the areas – and thus to households and business enterprises – affected by the project. The greatest positive impact will be derived from a reliable supply of electricity to urban and rural installations/institutions such as water supply facilities, health centres and schools that deliver social services to the population. The provision of electricity will also lead to an increase in commercial activities, whilst facilitating the promotion and boosting of the production of small- and medium-size enterprises. For households, electricity will ease domestic tasks and improve leisure activities, and possibly reduce the cost of energy supply. In brief, a regular supply of electricity facilitates all-round economic growth, creates employment opportunities, and thereby increases income levels and reduces poverty.
- The potential for creating new economic activities through the implementation of livelihood restoration and other development measures.
- Higher incomes and improved employment opportunities may attract emigrants from the area to return to their families, re-introducing skills into the area, and establishing a more settled home environment.

##### 6.1.1.3 Improved Infrastructure and Service Provision

**Low Flow Risk Reduction-** The upgraded Kamuzu Barrage will improve urban water supplies by ensuring a consistently adequate minimum water level in the Shire River, so that the city of Blantyre and other towns can continue to obtain adequate water supplies through pumping from the River.

If the Shire River were to run dry again (as during 1908 - 1935), it would have disastrous implications for electricity generation, urban water supplies, irrigated and flood-recession agriculture, fisheries, and boat navigation, as well as the natural ecosystems and wildlife that still occur along the River.

**Reliable hydropower generation -** The upgraded barrage will help with the control and regulation of lake water levels and flow of the Shire River providing more reliable generation of hydropower nationally.



**Improved transport and communication** - The upgraded Barrage will be stronger and wider providing both motorists and pedestrians a useful, easy and safe access to health clinics, trading centres, markets and other places where they access goods and services. Upgrading the Barrage will enhance the benefits people are currently getting from the existing Barrage.

**Community skills development** - The many activities to be undertaken during Barrage upgrading works will likely require the contractor to train some local people as plant operators, technicians, electricians and mechanics, clerks and storekeepers. The acquired skills will benefit the individuals as well as communities in the project area during and after the project life.

**More efficient and effective weed collection** – the existing structure is ineffective and the new weed collection system will benefit ESCOM in its operation of hydropower plants downstream of the Barrage.

**Safer operation of Barrage** – improved safety for Barrage operators and other Barrage users. Currently operators have to stand in the traffic lanes, which will be separated, in the new structure.

**Improved hydro-meteorological information** – will result in improved downstream benefits for water users (irrigation and drinking water) through improved monitoring of water flows and discharges, water quality and sediment loads etc.

**Improved early warning system for Barrage operation** – Provision of a warning system (radio, sirens etc.) will warn for high or low water or sudden changes in discharge to minimise negative impacts and asset losses.

## 6.1.2 Negative Impacts

The most significant direct negative social impacts of the project include: the loss of land-holding and privately owned assets, including productive resources (such as crops and trees) and structures on the land; the loss of communal resources and assets; the loss of government property; impacts on the subsistence/livelihoods and income-earning capacity of those affected; and the loss of access to and/or increased pressure on existing services and facilities. Less direct affects include: impacts on social groups and social behaviour; and the vulnerability of some social categories as a result of the project.

The area of Project impact can be identified as falling into three broad areas:

- Construction areas (Liwonde area)
- Upstream of the Barrage (Shire River, Lake Malombe and Lake Malawi)
- Downstream of the Barrage (Shire River to confluence with the Zambezi River)

These areas are discussed below.

### 6.1.2.1 Construction Areas

These are the localised areas to be directly impacted by construction including: the Barrage site; approach road on both sides of the Shire River; temporary construction camp and equipment storage/staging areas; permanent operating complex; borrow pits, quarry and spoil disposal areas; River edge at coffer dam sites; and, weed boom anchor and collection points (Figure 11).

In general the negative impacts in the construction area include:

**Involuntary resettlement** – The specific outcomes of the census of affected areas is discussed in Section 6.2 below.

**Loss of Farmland**- The proposed borrow pits and quarry site are either sites currently in use or were used during the original construction of the Barrage. However, disposal sites for excavation material and other solid wastes are yet to be identified and may cover farm land making it temporarily unavailable for cultivation. The Contractor will be required to rehabilitate any sites used in accordance with the Project's ESMP so that these impacts will be minor and temporary.

**Traffic hazards during construction** – increased vehicle movements, especially heavy vehicles will lead to a temporary increased risk of accidents during the construction period.

**Health impacts** - Borrow pits if not reclaimed soon after construction works can fill up with water, which provides breeding grounds of water-borne vectors for malaria and bilharzia. Individuals can contract bilharzia as they swim and wash clothes in the stagnant water in the pits.

The influx of workers and job seekers into the area is likely to introduce new life styles and potentially increase the incidence of communicable diseases, such as HIV/AIDS. Drug and alcohol abuse may also increase in the project area with the increased affluence and higher population. If these impacts occur they are likely to be short and long term and moderate.

**Noise and vibrations** - The Barrage rehabilitation activities will include blasting, crushing and transportation of materials and personnel using heavy vehicles. Machines used in all these undertakings produce noise and vibrations. Impacts are expected to be short term and minor.

### 6.1.2.2 Upstream of the Barrage

This area includes:

- Upper Shire River / Liwonde National Park
- Lake Malombe
- Lake Malawi shoreline within Malawi, Mozambique and Tanzania

The existing Kamuzu Barrage has a control range corresponding to water levels of Lake Malawi, defined as "Lake Level", between 473.5 masl (LRWL) and 475.32 masl (HRWL). This range is much less than the historical recorded water levels in Lake Malawi which show Lake levels varying from a low of 470.0 masl in 1915 to a high of 477.2 masl in 1980 (NORPLAN *et. al.* 2002).

Although Kamuzu Barrage only influences a small range of Lake Malawi levels in comparison to the natural variation of the Lake as shown above, the effect of the refurbished Barrage will be to raise the long term mean water level so that there is an increase in the time when the water level will be above the present maximum regulated water level by up to 40 centimetres.

It is all the more difficult to predict the impacts upstream of the Barrage given that operation of the Barrage will depend on the natural Lake levels and flow in the Shire River which will vary from year to year. If the Lake level is high, the impacts of the current Barrage or the upgraded Barrage (raised regulation level) will be minimal as this is beyond the regulation level of the Barrage; and if the Lake is low there will be a minor increase to an acceptable median level. The impacts of the Barrage (both the regulation level and the release strategy) will be tempered by the fact that the Shire River accounts for only 15% of the overall water balance of the Lake so that natural inflows, rainfall and evaporation on the Lake account for the large variations in Lake levels and not the Barrage. Therefore it is unlikely that any structures would have to be relocated as a result of the Barrage as this would depend on high water levels on which the Barrage has little or no influence.

*Dimba* gardening (flood recession agriculture) is an important economic activity around Lake Malombe. Next to fishing, it is the main preoccupation for households residing close to the Lake. During discussions with both district officials and community members, it was learned that *dimba* gardening was important in four ways: a) for winter cropping that was an important source of income and food for households, where produce from the *dimba* gardens is either consumed or sold. Main crops planted include maize and horticultural crops such as tomato and various cabbages. When sold the money is used to meet other household needs such as school fees for children, clothes and farm inputs for upland farming; (b) some land was said to be rented out to other households who also used it for winter cropping. Rentals per year ranged from USD 40.00-80.00 per hectare, per planting season; (c) some households depend on buying and reselling produce, mainly at the district headquarters. It was estimated that almost all the vegetables such as cabbage and tomato that are consumed at the Mangochi district centre comes from around Lake Malombe, and, (d) during times of drought, beyond that within the immediate surrounds of the Lake, the bulk of the population depends on *dimba* gardening for food and money as it becomes the only source of food.

The rates per hectare for *dimba* land vary from place to place, but range from USD120.00 to USD200.00 per hectare. For instance, the recently concluded World Bank funded Community Based Rural Land Development Project (CBLRDP) or locally known as '*kudziguira malo*' implemented in Mangochi district was purchasing land at USD121.00 per hectare. This land was subsequently used to settle landless people.

Operation of the refurbished Kamuzu Barrage might result in spatial shifts during certain years of the land available for *dimba* (flood recession) agriculture. However, the variation (amplitude) between high and low water levels along the Shire River and Lakes Malawi and Malombe will not be significantly affected by the Barrage, such that overall *dimba* cultivation will be possible more or less to the same extent as at present.

Table 33 shows the predicted change in duration of inundation of *dimba* land for different Barrage refurbishment options based on detailed flow modelling and inundation maps undertaken by the Project Design Consultant as well as vegetation mapping undertaken by SMEC. *Dimba* land was identified as two distinct vegetation units ("seasonal floodplain under cultivation" and "seasonal marsh under cultivation" as shown in Figure 10) which were mapped through field assessment and GIS application. Details of the methodology and further explanation/interpretation of results can be found in the specialist vegetation assessment report in Volume 2 of the ESIA. Figure 10 provides an example of predicted inundation areas from Mponde (southern end of Lake Malawi) to Kamuzu Barrage corresponding to Lake Malawi water level of 476 masl.

TABLE 33. PREDICTED CHANGES IN DURATION OF INUNDATION OF "DIMBA" LAND FOR DIFFERENT BARRAGE REFURBISHMENT OPTIONS

Lake Malawi Water Level (masl) <sup>1</sup>	Duration of Inundation <sup>2</sup>			"Dimba" Area Inundated (ha)		
	Existing Barrage 475.32 masl (HRWL)	Barrage 475.52 masl (20cm increase HRWL)	Barrage 475.72 masl (40cm increase HRWL)	Mponda Upstream to Kamuzu Barrage	Kamuzu Barrage Downstream to Chigaru	Total
474	68% (248 days)	68% (248 days)	68% (248 days)	0.890	71.751	72.641
475	40% (146 days)	44% (161 days)	45% (164 days)	118.249	236.534	354.783
475.5	22% (80 days)	26% (95 days)	30% (110 days)	118.249	1,586.350	1,704.599
476	8% (33 days)	12% (40 days)	15% (51 days)	785.056	2008.187	2,793.243

1 Corresponding to high flow release of 300 m<sup>3</sup>/s from the Barrage; 2 In any given year

The predictions in Table 33 indicate that there is no change in the duration of inundation of *dimba* land for the existing Barrage compared to an increase in regulating height of either 20 centimetres or 40 centimetres when the level of Lake Malawi is 474 masl. The predicted changes in duration of inundation increase at higher Lake levels and when the Barrage's HRWL is increased by either 20 centimetres or 40 centimetres although the increases do not correspond to a significant loss of opportunity in utilising *dimba* land. At a Lake Malawi water level of 475 masl there is negligible difference between a 20 centimetre or 40 centimetre increase in HRWL of the Barrage. The differences are increased slightly at Lake levels of 475.5 masl and 476 masl.

### 6.1.2.3 Downstream of the Barrage

Impacts in the Lower Shire River and at the confluence with the Zambezi River are likely to be minimal since the Shire River's contribution to flows is low in comparison to the other tributaries along the system. However in the River section between the Barrage and Matope, operation of the refurbished Barrage may incrementally increase flooding in some years depending on operation of the Barrage and the "natural" flow conditions in the Shire River at the time (Table 33). During the community consultation undertaken as part of the RAP study, some residents have attributed increased flooding to current Barrage operations resulting mainly in losses of crops rather than buildings/structures.

It is important to note that the current release of 300 m<sup>3</sup>/s downstream of the Barrage is unlikely to change with the upgraded Barrage, only the time period that a certain minimum flow is guaranteed through the Barrage is increased.

An analysis of flow duration curves for differing release strategies indicates that extreme flows are rare and will be modestly impacted by the Barrage while extreme low flows are also outside the regulation capacity of

the Barrage. Consequently, Barrage influence is mainly on the selected flow regime, rather than the elevation of the Barrage. Barrage operation is the main determining factor of impacts downstream.

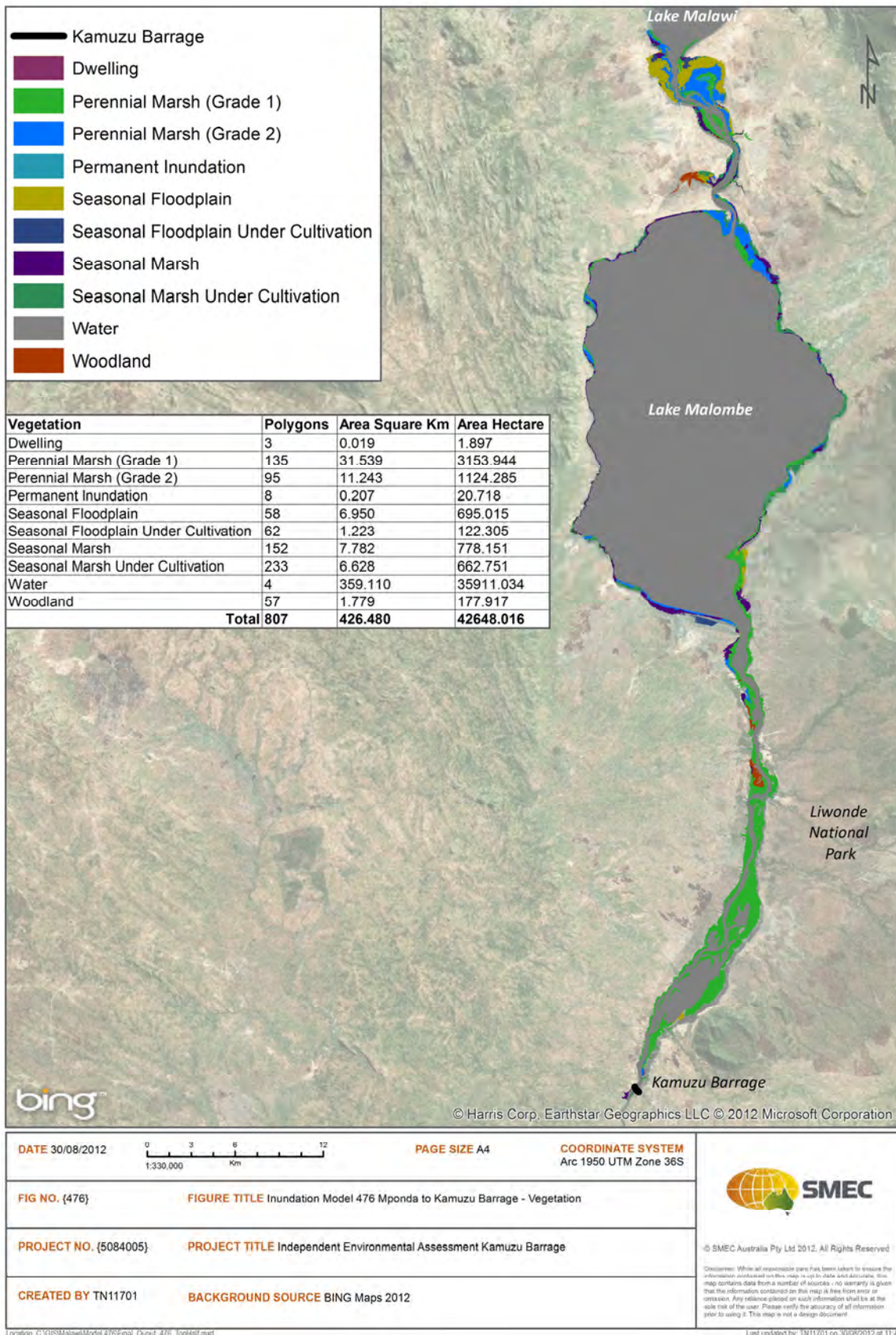


Figure 10. Predicted inundation areas from Mponde to Kamuzu Barrage corresponding to Lake Malawi water level of 476 masl.

## 6.2 Scope of Land Acquisition and Resettlement

Due to the fact that the high and low water levels (which signify the boundary areas for *dimba* (flood recession) agriculture vary each year and most such variation is natural and not attributable to the Barrage it is not feasible to identify specific PAPs upstream or downstream of the Barrage. The water-related issues faced by communities living upstream and downstream of the Barrage will be addressed through environmental and social mitigation measures specified in the Project's ESMP. The ESMP will specify:

- environmental and social boundary conditions for water releases from the Barrage, to help ensure that the future operating rules for the Barrage avoid scenarios that would exacerbate destructive flooding or other undesirable outcomes (to the extent the extremes of the possible release strategies would be able to cause this negative impact);
- an early warning system for short-term waves downstream of the Barrage due to (faulty) gate operation, as well as natural floods that are beyond the ability of the Barrage to control or regulate; and
- a strong social communications and information-sharing program (involving university/engineering bodies/CSOs/Ministries) on natural and Barrage-induced changes in water levels. The program includes training/capacity building training sessions to ensure effectiveness and consistency;
- a monitoring program for water-related issues faced by people upstream and downstream of the Barrage to feed into a revision of operating rules for the Barrage to minimise any adverse impacts.

A land requisition and involuntary resettlement census was undertaken, following discussions with the design consultant and site visits to the area, for those within the footprint of the construction area. A total of nine affected households were surveyed in 2012. A follow-up survey in June 2013 identified another five small businesses as being temporarily affected. In summary it was found that:

- Shiri Lodge (Figure 22), located on the southern end of the Existing Barrage, will be impacted by a coffer dam and the new road bridge;
- The new weed boom will permanently affect boat access for Shire Camp (Figure 23).
- A small shelter (Figure 16), owned by the Liwonde Town Assembly, located on the western approach to the Barrage will also have to be removed prior to commencement of construction activities. This shelter is currently being used by eight small business operators as a place to sell meat. This shed will be rebuilt following completion of the Barrage works;
- Three other small sheds in the vicinity of the shelter will also be temporarily impacted.
- A building owned by Mr Mwawa and rented to small business owners will be affected during construction (Figure 17).
- Land required for the weeds control facilities on both banks of the Shire River is Government owned (Figures 18 and 19).
- The permanent administration complex is located on land belonging to the Marine Police Unit (Figure 20). Also adjacent to this area is a designated tourist pick-up point used by Liwonde National Park. The Park Service has no objection to use of the site provided that an alternative site is made available as part of the Project;
- The temporary construction camp and equipment storage/staging area is located on land owned by two private developers and ESCOM. Part of the land is currently being used for maize cropping by a resident in the Marine Police Unit building (Figure 21);
- Minor structures such as fencing, drainage structures will also be impacted by construction activities and will need to be repaired/replaced;
- Except for a parcel of land used by Shiri Lodge, all land required for the new elevated roadway approaches to the Barrage is within the existing road reserve.

From the census survey it was found that no families will have to physically resettle as a result of construction activities for the Project, however, several small businesses will need to be relocated and/or compensated. Figure 11 shows the location of the assets and buildings to be impacted.

## 6.2.1 Land and Property Impacts

The land required for the project is a combination of government owned land and privately owned. Table 34 describes in summary the size, ownership and impact of the land required during the construction period. As can be seen the only private structures likely to be permanently affected are Shiri Lodge and Shire Camp. The market shelter on the approach to the Barrage is owned by the Liwonde Town Council and is currently used by eight small business operators, whilst it will be required during construction, thereby temporarily displacing those who are using it, it will be rebuilt upon the completion of the project. From the discussions with the design consultant, another privately owned property (belonging to Mr Mwawa), currently used for a number of businesses including a grocery business and barber shop, will be affected by the Project. Three other sheds used by small businesses will also be temporarily affected and therefore have been included in the asset survey.

In terms of government owned land required for the construction of the project, this includes the land for the temporary work camp, the weed anchorage points, the administrative building and the road reserve.

The temporary work camp is currently an undeveloped site owned by ESCOM and two private developers. It has been suggested that ESCOM delay the development of its land until Project construction is complete. Recent site visits have found that the plot of land is being cultivated with maize, this cropping is opportunistic use of the site. The current crop will not be impacted by the project, however measures need to be taken to ensure that those who are currently using the site are not cultivating maize when the project commences.

The area for weed boom anchorage points will need to be acquired, with the majority of land only needing to be required temporarily. These are owned by Ministry of Transport and Public Works on west bank and Liwonde National Park on the east bank. The east bank site has been used as pick up point for tourists; current plans are considering moving the tourist point further upstream but within the same plot of land.

Details of land requirements are presented in Table 34.

Although the Project will not physically impact on Shire River Camp buildings and site owned Mr. Billy Mphande, the construction of the weed boom will permanently affect the boat safari business by blocking boat access. Mr Mphande conducts boat tours upstream of the Shire Camp along the Shire River to Liwonde National Park.

The site of the Marine Police Unit building will be affected by the permanent administration block for the Barrage. However, it is planned that the new office building will have provision to house the Marine Police Unit premises.

## 6.2.2 Livelihood Impacts

Within the construction footprint there are 14 households/ businesses that are affected by the project construction (See Table 35). These are all within the Barrage approach areas except for Shire Camp which is located on the western bank of the Shire River between the Barrage and the western anchor point for the weed boom (Figure 11). These include the eight households currently using the market shelter owned by the Liwonde Town Council as a site for their business as butchers, three sheds used for small businesses, the owner of the Shiri Lodge as well Mr Mwawa who operates a grocery and barber shop and the owner of Shire Camp Mr Billy Mphande. With the exception of the Shiri Lodge and Shire Camp, the impacts on the other households/ businesses will be temporary. Those businesses located within the road reserve, those using the market shelter and those using Mr Mwawa's building will be relocated for the duration of the project.

Those using the market shed for business have been using the site for anywhere between three to six years, Mr Mwawa has been using his building for eight years and Shiri Lodge did not respond. Each of these businesses has between two to seven employees.

The income sources of the affected households are shown in Table 35. Three businesses have an income range from 30,000-40,000 MWK per month and four businesses have a monthly income of above 50,000 MWK per month, one business has a monthly income of 1,500,000 MWK per month, and one did not respond. There are eight households who are operating as shop owners selling meat, one as a barbershop and grocery store and one operating a hotel/restaurant. All of the households interviewed are headed by men.

TABLE 34. SUMMARY TABLE OF AFFECTED STRUCTURES, LAND AND PROJECT AFFECTED PEOPLE

Site	Land Requirement (m <sup>2</sup> )		Ownership	Affected Structures (number and type)		Affected People		Comment
	Total	Temporary/ Permanent		Temporary	Permanent	Temporary	Permanent	
<b>Barrage Approaches East Bank</b>	3,500	3,500 required for construction 1,600 permanently	This land is officially road reserve owned by the Ministry of Lands. However, 3,168 m <sup>2</sup> has been encroached upon by the Shiri Lodge	-	Reception building, bar, house, gate house and old restaurant	-	Owner of Lodge	Part of the structure will have to be demolished on road reserve side and also on the river side to provide for the construction of coffer dams and manoeuvrability of construction equipment. The part of the lodge that has to be demolished has been illegally built on government owned road and river reserve.
<b>Barrage Approaches West Bank</b>	2,500	2,500	Road Reserve  Liwonde Town Council  Mussa Mabuka  Innocent Sanudi  Adine Daudi	Building owned by Mr Mwawa  Market shelter (40 m <sup>2</sup> )  Bicycle shed  Chip shed  Meat roasting shed		Mr Mwawa' building and tenants  Liwonde Town Council and tenants- this shelter is currently being used by 8 community members to operate their private business.		Construction activities will temporarily affect access to Mr Mwawa's building.  The shelter will be demolished during construction and then rebuilt.  The three sheds will be rebuilt after construction is complete.
<b>Permanent Administration Centre</b>	3,500	154	Marine Police Unit, Liwonde	Marine Police Unit Building	-	-		Proposed design makes provision for the Marine Police Unit to be accommodated within the new administration complex.
<b>Weeds Control West Anchor</b>	6,000	6,000 Temporary	Ministry of Transport and Public Works	Fencing around the site.	Boat landing jetty, campsite owned by Shire Camp	-	Owner of Shire Camp	The anchor will be underground and the surface will be restored to original state after construction. Impacts are temporary.

Site	Land Requirement (m <sup>2</sup> )		Ownership	Affected Structures (number and type)		Affected People		Comment
	Total	Temporary/ Permanent		Temporary	Permanent	Temporary	Permanent	
								The weed boom will permanently affect boat access for Shire Camp owned by Mr Mphande.
Weeds Control East Anchor	7,200	3,400 Permanent 3,800 temporary	Liwonde National Park	-	Tourist boat landing	-	-	Park requires provision of alternate site for tourist boat landing. This will be provided under Project funding.
Temporary Contractor Site	24,460	24,460 temporary	ESCOM (3,500 m <sup>2</sup> ) Mr. Lucius Banda (10,098 m <sup>2</sup> ) Daniel Chipeta (2,500 m <sup>2</sup> )	None	None	ESCOM Mr. Lucius Banda Daniel Chipeta	-	ESCOM only owns one out of four or five plots, which have not yet been formally allocated to prospective developers. The town council can delay the allocation of these plots until after the completion of the project. ESCOM can also be requested to delay the commencement of their development.  Mr Lucius Banda owns undeveloped land which would be temporarily affected.  Officers from the Marine Police Unit are cultivating the land because it was still undeveloped. The officers said to be using the land during the rainy season.



There are also a few small businesses located on the Barrage approach, which were not surveyed and are unlikely to be affected directly but access to their businesses during the construction period will need to be ensured.

### 6.2.3 Impact on Crops

The construction of the Project will not impact on any permanent cropping areas. Within the households surveyed, none had any grazing land.

Within the sites to be affected, the land allocated for the temporary work camp, owned by ESCOM is currently cultivated with maize. The current crop will not be impacted by the project, however measures need to be taken to ensure that those who are currently using the site are not cultivating maize when the project commences.

### 6.2.4 Impacts on Access to Services

In the PAP census it was found that all households that responded to this section of the survey had access to services, such as health units, schools government and private hospitals.

Within those who responded all used piped water as their water sources and charcoal and firewood for cooking. The resettlement process for this project will not impact upon the surveyed households' access to these services.

### 6.2.5 Poor and Vulnerable Groups and Heritage Items

#### 6.2.5.1 Impacts on Poor and Vulnerable Groups

To ensure fairness within the resettlement process, poor and vulnerable groups were considered and assessed within the PAP census. The categories assessed were:

- Unmarried women or female headed households
- The elderly
- HIV and AIDS- infected and affected and chronically ill persons
- Orphans and child headed households
- Small scale farmers
- People with disabilities

Within those assessed there were no household heads identified as falling within this category.

#### 6.2.5.2 Loss of Heritage Items

The loss of heritage items such as gravesites, religious and cultural sites was considered and assessed during the census of the area impacted by the construction of the barrage. It was found that the construction of the Project will not impact any site falling under this category.

## 6.3 Monitoring of all Households

The information obtained from the PAP census, socio-economic survey and asset recording exercise has been entered into a Microsoft Excel spreadsheet (PAP census) and Statistical Package for the Social Sciences (SPSS) database (socio-economic survey). For the PAPs a dossier will be created which will contain, detailed personal information, number of persons within the household and/ or dependents, amount of land available to the person, assets - including structures, resources, crops etc. and their socio economic status. This information will be a useful resettlement-planning tool in subsequent project phases, and for monitoring impacts over the longer term. This will further facilitate the process of updating the displaced peoples livelihoods and standards of living information at the time of displacement.

TABLE 35. SOCIOECONOMIC CHARACTERISTICS OF BUSINESSES AFFECTED BY THE PROJECT

No	Name of business owner	Type of activity	No. of employees	Description property affected	Tenure status (titled owner, owner without documents, tenant, sharecropper, etc.)	Monthly income average (MWK)	Place of selling	Duration (years) of business in affected location	Comments
1	Damiyano Makina	Butcher	3	Concrete/ brick wall and floor, corrugated iron roof	Tenant (building owner Liwonde Town Council)	30,000-40,000	Liwonde, Balaka	6	Temporarily affected. Site can be rebuilt following construction
2	Joseph Master	Butcher	3	Concrete/ brick wall and floor, corrugated iron roof	Tenant (building owner Liwonde Town Council)	Above 50,000	Liwonde, Balaka	6	Temporarily affected. Site can be rebuilt following construction
3	Inusa Matola	Butcher	7	Concrete/ brick wall and floor, corrugated iron roof	Tenant (building owner Liwonde Town Council)	Above 50,000	Liwonde, Balaka	6	Temporarily affected. Site can be rebuilt following construction
4	Symon Laison	Butcher	2	Concrete/ brick wall and floor, corrugated iron roof	Tenant (building owner Liwonde Town Council)	30,000-40,000	Liwonde, Balaka	3	Temporarily affected. Site can be rebuilt following construction
5	Moote Jackson	Butcher	2	Concrete/ brick wall and floor, corrugated iron roof	Tenant (building owner Liwonde Town Council)	30,000-40,000	Liwonde, Balaka	3	Temporarily affected. Site can be rebuilt following construction
6	Francis Phiri	Butcher	2	Concrete/ brick wall and floor, corrugated iron roof	Tenant (building owner Liwonde Town Council)	Above 50,000	Liwonde, Balaka	3	Temporarily affected. Site can be rebuilt following construction
7	Shaibu Matemba	Butcher	Not provided	Concrete/ brick wall and floor, corrugated iron roof	Tenant (building owner Liwonde Town Council)	Not provided	Liwonde, Balaka	Not provided	Temporarily affected. Site can be rebuilt following construction
8	Aufi Daudi	Butcher	Not provided	Concrete/ brick wall and floor, corrugated iron roof	Tenant (building owner Liwonde Town Council)	Not provided	Liwonde, Balaka	Not provided	Temporarily affected. Site can be rebuilt following construction
9	Mussa Mabuka	Bicycle shed	Not provided	Concrete/ brick wall and floor, corrugated iron roof	Owner	Not provided	Liwonde, Balaka	Not provided	Temporarily affected. Site can be rebuilt following construction
10	Innocent Sanudi	Chips shed	Not provided	Concrete/ brick wall and floor, corrugated iron roof	Owner	Not provided	Liwonde, Balaka	Not provided	Temporarily affected. Site can be rebuilt following construction
11	Adine Mponde	Meat roasting	Not provided	Concrete/ brick wall and floor, corrugated iron roof	Owner	Not provided	Liwonde, Balaka	Not provided	Temporarily affected. Site can be rebuilt following construction

No	Name of business owner	Type of activity	No. of employees	Description property affected	Tenure status (titled owner, owner without documents, tenant, sharecropper, etc.)	Monthly income average (MWK)	Place of selling	Duration (years) of business in affected location	Comments
12	Felix Mwawa	Shops and house	2	Concrete/ brick wall and floor, corrugated iron roof	Owner	Above 50,000	Liwonde, Balaka	8	Temporarily affected. Access to site may be impacted during construction
13	Steve Njovuyalema Moyo	Hotel/ Restaurant	Not provided	Concrete/ brick wall and floor, corrugated iron roof	Owner Shiri Lodge	Not provided	Liwonde, Machinga	Not provided	Part of the structure will be permanently affected.
14	Billy Mphande	Accommodation/ Boat Tours	15	Boat access affected by weed boom	Owner Shire Camp	1,500,000	Liwonde	9	Weed boom will permanently affect boat access for the Camp

Source: PAP census, February 2012 and verification survey June 2013.



Source of map: Design Report (Norplan and Associate, 2012a) and SMEC.

*Figure 11. Barrage construction and work sites and location of businesses impacted by the Project.*

## 7 Entitlement Framework

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The Project will acquire privately owned, public and communal assets and resources for which appropriate compensation and/or mitigation measures are required. While part of the acquired land will be permanent, especially nearby the construction site, the project will further involve the temporary loss of access to land and income sources.

This Section defines who is eligible for compensation, and outlines the types and levels of compensation and other supplementary measures that will assist each category of eligible-affected people, and at the same time achieve the objectives of national (Malawian) legislation and policies as well as international best practice.

As stated by the World Bank, “in addition to being technically and economically feasible, the resettlement packages should be compatible with the cultural preferences of the displaced (affected) persons, and prepared in consultation with them”<sup>7</sup>. For this reason, an intensive public consultation process has taken place in preparation of this RAP, and specifically in determining the eligible PAPs and their entitlements.

### 7.1 Eligibility

Those who will be affected by asset loss and are eligible for compensation and other assistance, require definition and identification with criteria set for determining their eligibility. The types of losses that PAPs may suffer will include temporary loss of access to agricultural land, income, proximity to work, utilities and social amenities. Some of the PAPs may incur losses to a combination of the above.

#### 7.1.1 Determining Criteria

The key issue is how any project-affected persons (PAPs) could be determined upstream or downstream of the Barrage, other than those within the direct footprint of the construction-related activities. Based on the hydrological evidence from the Design Consultant, it has become increasingly apparent that it is not feasible to identify PAPs upstream or downstream of the Barrage (other than those within the construction footprint area) because:

- the high and low levels of the Shire River and Lakes Malawi and Malombe differ each year due to natural variation;
- this natural variation is much greater than any variation that would be attributable to Kamuzu Barrage operation, especially in relation to the current baseline, and;
- Operational releases from the Barrage will vary from year to year depending on the prevailing River and Lake levels upstream.

For this reason, the RAP focuses on the identifiable PAPs, i.e. the ones who are directly affected by construction works.

The water-related issues faced by people upstream and downstream of the Barrage have been addressed through environmental and social safeguards implemented through the Project’s ESMP. The ESMP specifies:

- environmental and social boundary conditions for water releases from the Barrage, to help ensure that the future operating rules for the Barrage avoid scenarios that would exacerbate destructive flooding or other undesirable outcomes (to the extent the extremes of the possible release strategies would be able to cause this negative impact);
- an early warning system for short-term waves downstream of the Barrage due to (faulty) gate operation, as well as natural floods that are beyond the ability of the Barrage to control or regulate;

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<sup>7</sup> World Bank (2007b). OP 4.12 - *Annex A: Involuntary Resettlement Instruments*.

- a strong social communications and information-sharing program (involving university/engineering bodies/CSOs/Ministries) on natural and Barrage-induced changes in water levels;
- a monitoring program for water-related issues faced by people upstream and downstream of the Barrage to feed into a revision of operating rules for the Barrage to minimise any adverse impacts.

The identification of persons eligible for compensation (there is no physical resettlement required) in the construction related footprint area was based on the following criteria:

- persons losing land with or without legal title;
- persons losing temporary or permanent access or rights to services;
- persons losing business or residential property;
- person with homes, farmland, structures or other assets within the proposed area for construction and in the vicinity of the Shire River;
- households whether men, women, children, dependent relatives, friends and tenants;
- members of the household who may not eat together but provide housekeeping or reproductive services, critical to the family's maintenance;
- persons that incur losses whether partial or total and whether they have their own land or rent land, including those that rent or occupy buildings individually or as a group for business or as households.

### 7.1.2 Identifying the Eligible

The World Bank considers all titled landowners, customary landowners, encroachers (who have settled before the cut-off date), persons affected by loss of access to sources of income and persons affected by loss of access to natural resources (water, wood, grazing areas etc.), as PAPs. Therefore, PAPs will be entitled to compensation based on the status of their occupation of the affected areas. The survey within the construction footprint for the project has identified PAPs as being landowners, tenants and shop owners. No physical relocation of PAPs outside their current area of residence is required based on the census outcomes of the PAP assessment and site visits undertaken as part of the Consultant's socio-economic survey.

Identification of those fitting the eligibility criteria was determined through consultation with the design consultant and a full census of the population in the affected areas and through asset and land verification surveys. Information on special groups, such as those that are vulnerable, was also identified through the surveys and included in this report (See Section 6.2.5.1).

All PAPs whose holdings will be affected by the Project shall have their claims settled in accordance with the provisions and procedures of the Resettlement Policy Framework for this Project, guided by OP/BP 4.12.

### 7.1.3 Unit of Entitlement

The construction activities of the Project will impact on a range of business operators and government owned land. A definition of the unit of entitlement is required for:

- compensation against the loss of land (when not government land) – the unit of entitlement is the landholder (as mentioned, requiring analysis, consultation and agreement, particularly given the complexity of land ownership in the affected area);
- privately-held assets and resources (including improvements to land) – the unit of entitlement is the owner/head of household;
- loss of employment or source of economic revenue – the unit of entitlement is the individual directly affected;
- rehabilitation assistance – the unit of entitlement is a household member. For example, where household subsistence and survival strategies may be disrupted through the loss of land or the relocation of business enterprises, rehabilitation measures may be extended to an adult household member or members other than the household head to support the restoration and diversification of household livelihoods;

- Renting of land/structures - compensation is payable to the owner (for loss of rental income) and the renter (for loss of business income).

The unit of entitlement for other losses will vary depending on the category of affected individual/ group.

## 7.2 Relocation and Entitlement Frameworks

The entitlements for PAPs are detailed here and summarised in the Entitlement matrix (Table 36). Land for land is considered to be appropriate for people whose livelihoods are land based. However, since this Project has limited impacts, cash compensation can be considered; consultations with potential PAPs also revealed that they are in favour of cash compensation.

The Ministry of Water Development and Irrigation will establish a property valuation committee. The property Valuation Committee will take into account the current market rate for compensation determining replacement value for the property and assets to be acquired. The unit price of land, if not slightly above the current market value, should definitely not be less than recent sales in the area or same amount or quality.

For this project the affected assets are government land and buildings as well as private businesses. For PAPs in this project whose businesses are affected, the reported income and employee wages are taken into consideration. For crops, the compensation will be calculated based on its market value between seasons. For fruit trees it is the value of production lost until replacement seedlings mature the entitlement matrix covers these dimensions. The Resettlement Policy Framework for this Project outlines the structure of entitlements, as described below.

### 7.2.1 Private Buildings/Land

The Ministry of Lands, Physical Planning and Surveys is responsible for carrying out the valuation of physical assets. The owner will be identified with the help of the Traditional Authority or Village Headman; or title documents will be used as evidence or proof of ownership for leased physical assets.

The Ministry of Lands, Physical Planning and Surveys or a qualified private valuer will value all affected buildings, bare land and other structures based on current market prices. Values for affected buildings and bare lands will be determined by taking into account the construction materials used, floor /surface area covered, age and location of building or property. The open market value of a similar building, in the same location will be used to calculate the compensation amounts.

For land compensations Local Leaders assist PAPs to locate land for resettlement (in cases of customary land) in consultation with District commissioners; and the Department of lands assists PAPs to locate land for resettlement in case of public land.

### 7.2.2 Government Land

The Malawi National Land Policy recognises Government land as a separate category of land and the Special Law Commission recommends that Government land be defined as "land acquired and privately owned by the Government and dedicated to a specified national use or made available for private uses at the discretion of Government."

According to the NWDP II RPF, for cases where land is being used by the public (for instance for grazing, settling or otherwise), the NWDP II will, in consultation with the Ministry of Lands, Physical Planning and Surveys identify suitable replacement land for use by the public and be expected to pay compensation to the community.

### 7.2.3 Preferential Employment Policy

A significant positive impact of the project will be the generation of employment from project activities, through:

- employment for the direct construction workforce; and
- contractual and work-related opportunities in the provision of direct support services to the construction works (procurement of goods and services).

In order for project-affected people to benefit from these opportunities, a preferential employment policy will be implemented by the consulting engineer through the contractor. This policy will be in line with national legislation around labour-related matters, and best employment practices.

In order to achieve the objective of optimising employment for project affected people through project related activities, the following measures are required:

- The MoWDI will develop an overall Project Employment Policy, including a Preferential Employment Strategy showing their commitment to the employment of project-affected people. Contained in the Strategy will be relevant procedures and mechanisms recommending: (a) selection criteria; (b) selection and recruitment procedures; and (c) preferential employment guidelines.
- Consideration will be given for the establishment of a committee; an independent body constituted and driven by relevant stakeholders, including the MoWDI, consulting engineer, project affected households, and contractor. This committee will give input into the Strategy, monitor the recruitment, working conditions and training of local labour for the duration of the project, and provide a channel for mediation. The relationship with this committee will be included in the Project Employment Policy.
- The MoWDI can only encourage a contractor to maximise opportunities for the employment of project affected people. To this end they will include the Project Employment Policy in tender documents, citing the Preferential Employment Strategy and calling for contractors to draw a certain percentage of the workforce from those affected. They can also request that all contracts indicate proposed steps to implement a preferential employment policy, including on-the-job training.
- An open and well-publicised process will be conducted by the MoWDI to inform the public about job opportunities. For example, the Ministry will take responsibility for the production and distribution of an Information Sheet to project-affected people well in advance of the commencement of construction, setting out: (a) the number of jobs available, the type of work/skills required, and the proposed length of contract for each job; (b) the job advertising, selection and recruitment procedures that will be followed; and (c) the time frame for the recruitment of job seekers. This will allow sufficient time for people to respond and apply for all jobs. Although the actual advertising of job opportunities and recruitment of a workforce is the responsibility of a contractor, a contractor should endeavour to ensure that recruitment procedures are in keeping with proposals contained by the employment committee.
- A full assessment of skills and training requirements and preferences of project affected households are required prior to the construction phase of the project. Although training will be offered by contractors and other training agents, the MoWDI will be responsible to ensure that it is provided through:
  - on-the-job training and skills transfer to project-affected people that are employed as the project's workforce; and
  - training to participate in the contractual work offering direct support services to the construction works.
- The policy of preferential employment will be assessed regularly by the MoWDI in conjunction with the employment committee; for example, compliance of project-related contracts will be monitored, as will related training programs.

### 7.3 Cut-off Date to Entitlements

It is necessary to determine, and publicly declare, a cut-off date, to define eligibility and thus entitlements. SRBMP and the stakeholder District Development Committees for the project area will establish the cut-off date.

Upon approval of the Project a legal notification of the Project development will be made. The cut-off date is then publicly declared, taken as the cut-off date to entitlements. Area Executive Committees and Local Leaders and community structures are made aware of the importance of such a date, and mandated early in the process to assist with the management of the project area to prevent/minimise the possibility of any attempt at speculative gains.



A verification exercise of the current affected assets assessment and compensation entitlements will be required immediately on publication of the notification in line with the cut-off date. Compensation cannot be claimed for structures constructed after the assessment procedure; the onus will be on a person who is not recorded in the verification studies to prove that they qualify for Project entitlements.

## 7.4 Valuation of Affected Assets

### 7.4.1 Inventory of Land

A land inventory is normally prepared for a project's Social Impact Assessment (SIA), obtaining information from mapping and land surveying, physically inspecting affected sites, undertaking census surveys, and consulting with relevant individuals and groups. Table 34 in Section 6 details the land required for the construction of the Project.

A formal survey of affected land is required for asset verification, in line with the cut-off date for eligibility to entitlements. At a minimum, the survey will record for each plot to be acquired:

- size of the land, and the area to be affected in proportion to the whole;
- land holder/s;
- usage of the land;
- crops, trees and other natural resources on the land;
- productive capacity of the land; and
- type of tenure systems in operation.

Open access or common property resources are included in a land inventory, which accommodates not only resident communities who have long-standing or customary rights to such land but also nomadic groups.

Given the complexity of land holding and land usage it is recognised that records of land registration may be incomplete or out of date, and disputes may arise in the process of surveying the land. Documentation for claims to usage or occupancy may not be on hand, such as for those who have traditional or seasonal rights to the land. Land records may be lost or destroyed. Inheritance may not have been recorded, registered landholders may be acting as surrogates for others, and agreements between users (such as 'shareholders') may have been reached but not recorded.

A comprehensive public consultation and participation process is thus required, not only to inform affected individuals of the process of the survey, but also to provide a platform where issues can be raised such as disputes around land tenure and land claims. In addition, land will be properly recorded and verified by a professional surveyor, the property holder and any other individual claiming rights to the land, a representative of the MoWDI, a delegated local government official, and additional community members (if requested).

The survey findings link with identifying those who will be eligible for benefits. Although the legal or customary landholder is compensated for the loss of the land, other people may be directly affected through loss of occupancy, loss of assets on the land, or loss of employment on the land and may qualify for alternative forms of compensatory assistance. In particular, categories of informal occupiers, such as encroachers on the land, may be eligible for assistance.

### 7.4.2 Inventory of Privately Owned Fixed Assets

An inventory of privately owned fixed assets, such as housing, business and other structures, applies the same principles as the land inventory:

- Information is initially acquired for the RAP, from mapping, traversing affected sites, the census/surveys, and discussions with stakeholders.
- An inventory of affected assets is required at the time of assets verification, in line with the cut-off date for eligibility to entitlements. All assets are properly recorded and verified by a professional surveyor, the owner, a representative of the MoWDI, and a delegated local government official. Information includes: the owner of each structure, its usage, size, area to be affected in proportion to the whole, and the materials from which it is made. As eligibility for compensation or other forms of

assistance is linked to the findings of the inventory, all those who may be directly affected by the loss also need to be recorded: that is, not only the owners of the property but others who occupy, reside or work in the affected structures, including tenants, renters and workers/employees.

- The whole process is rooted in the broader public consultation and disclosure of information campaign, informing people of what is occurring at each step of the way, and offering an opportunity for raising and discussing issues.

### 7.4.3 Inventory of Public Infrastructure and Social Services

An inventory of affected public infrastructure and social services is taken in the defined Project area to include not only those possibly lost to the development, but also those experiencing additional pressure due to a population increase in the area such as an influx of work-seekers to the Project.

Information was obtained for the RAP through consultation with local government officials, through the mapping of services according to the national census, and through specific questions on the utilisation of services included in the socio-economic survey. To supplement this, participatory methods (such as social mapping exercises and transect walks with affected communities) were used to confirm the status quo around service provision in the Project area.

## 7.5 Computer Database

It is essential that the SRBMP maintains a computerised database of all information acquired through the socio-economic and subsequent surveys, and the inventories of assets, not only for each affected household and business enterprise but also for affected communities and villages. Linked to a Geographic Information System (GIS) for the project, it ensures the collection and storage of valuable details of all those affected over time, and provides a baseline for a long-term monitoring and evaluation program.

## 7.6 Compensation Determination

The RPF under the NWDP II outlines detailed procedures to be followed in the determination of compensation, including payment of compensation.

The Project implementing agency is the Ministry of Water Development and Irrigation and it will have the responsibility of overseeing the compensation process. The composition and roles and responsibilities of the implementing body and structures are outlined in Section 8.

## 7.7 Delivery of Entitlements

The principles outlined in the entitlement matrix (Table 36) will apply to the notification of acquisition of land and associated assets, and the delivery of entitlements. The principles are consistent with the RPF for the NWDP II. Entitlements for compensation shall be based on the eligibility criteria and the various categories of losses identified through the PAP survey undertaken for the Project and which are included in Table 36.

Entitlements for government owned land and property (see Table 34) will be dealt with through intra-government agreement by way of a Memorandum of Understanding with the relevant organisation including Malawi Police (Marine Police Unit), ESCOM, Ministry of Transport and Public Works, Ministry of Lands and the Department of National Parks and Wildlife.

TABLE 36. PROJECT AFFECTED PERSON ENTITLEMENT MATRIX

Category of PAP	Type of Loss	Entitlements		
		Compensation for Loss of Structures	Compensation for Loss of Land and Other Assets	Compensation for Loss of Income / Livelihood
Property Owners (including those covered by customary law) <ul style="list-style-type: none"> <li>- Shiri Lodge</li> <li>- Shire Camp</li> <li>- Mr Mwasa</li> <li>- Liwonde Town Council</li> <li>- Mussa Mabuka</li> <li>- Innocent Sanudi</li> <li>- Adine Mponda</li> </ul>	Loss of Land	Costs at full replacement value	Land replacement at new site, plus land clearing by the Project	<ul style="list-style-type: none"> <li>- Cash compensation for crops / trees at replacement cost in scarce season;</li> <li>- Allow sufficient time to harvest crops;</li> </ul>
	Loss of Structures Residential or Business	Costs at full replacement value (not depreciated)	Fences (block work, wire, wood) Wells Stores Waste water facilities Connection to utilities Access roads	<ul style="list-style-type: none"> <li>- For lost income from rented property, pay lump sum cash payment of monthly rental per tenant until the building is replaced;</li> </ul>
Residential Tenant / Business Tenant <ul style="list-style-type: none"> <li>- Eight tenants of Liwonde Town Council Market Shelter</li> </ul>	Loss of Rental Accommodation	None	Replacement costs for non-movables	<ul style="list-style-type: none"> <li>- Disturbance assistance;</li> <li>- Transportation assistance, if relocating;</li> <li>- Rental up to three months</li> </ul>
	Loss of Premises	None	Replacement costs for non-movables if installation was agreed with owner	None
	Loss of Business	None	None	For loss of business, payment of lost income on a monthly basis based on the previous year's average monthly turnover until the shelter is replaced;
	Loss of Business Income	None	None	Payment of lost income on a monthly basis based on previous years' average monthly income until the shelter is replaced;
	Loss of Salary	None	None	Payment of lost salary on a monthly basis based on previous years' average monthly salary until the shelter is replaced;

Category of PAP	Type of Loss	Entitlements		
		Compensation for Loss of Structures	Compensation for Loss of Land and Other Assets	Compensation for Loss of Income / Livelihood
Encroachers (using land) - Users of the proposed temporary contractor site	Loss of shelter, assets, income revenues and land for cultivation where applicable	Cash compensation for assets and/or income revenue improvements as identified by the census of affected land	Where possible assistance in securing other access to land for growing crops, cash as income revenue subject to approval of Local Authorities – communities	<ul style="list-style-type: none"> <li>- Cash compensation for trees / crops at replacement cost in scarce season;</li> <li>- Allow sufficient time to harvest crops;</li> <li>- Allow sufficient time to relocate;</li> <li>- For street vendors on rights-of-way, cash compensation for loss of income allow possible access to other vending locations;</li> </ul>
Encroachers (living on site)	Loss of Shelter	Compensation at full replacement value for structure; Relocation to resettlement site, with payment of site rent;	None	<ul style="list-style-type: none"> <li>- Payment in lieu of wages while rebuilding;</li> <li>- Disturbance assistance;</li> <li>- Transport assistance if relocating;</li> </ul>
Community	Public Facilities	Compensation at full replacement value for structure; Relocation to resettlement site, with payment of site rent;	Land replacement at new site, plus land clearing by the Project; Waste facilities, connection to utilities and provision of access roads; access to basic infrastructure and social services;	<ul style="list-style-type: none"> <li>- For loss of business, payment of lost income;</li> <li>- Assistance to access to basic social services;</li> <li>- Provision of alternative temporary facilities during construction, where appropriate;</li> </ul>
	Sacred Sites and Graves	None	Land replacement at new site, plus land clearing by the Project	None

**Land owners:** Those who hold legal title to the land through official tenure or customary law. **Land tenants:** Those who are renting land. **Land users:** This refers to those that are freely using a piece of land but do not have legal title and are not renting the land from anyone. **Permanent building:** refers to structures constructed in durable materials such cement, bricks and steel. **Temporary buildings** are usually constructed with local materials.

## 8 Institutional and Organisational Framework

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The Ministry of Water Development and Irrigation (MoWDI), through the SRBMP will have the overall responsibility for coordinating and monitoring implementation of the RAP. This process requires both the coordination of involuntary resettlement activities and the establishment of Project related structures, involving stakeholders such as national and regional bodies, with input from other organisations as appropriate. This section outlines the proposed organisational framework for implementing resettlement, and defines structures involved in the RAP, including:

- The relevant body overseeing the implementation of the RAP;
- Implementation structures set up for the project, such as the SRBMP steering committee;
- Agencies and District bodies identified as having a role in the implementation of resettlement activities; and
- Capacity Building activities to be undertaken to ensure that those implementing the RAP have the requisite resources to do so.

### 8.1 Implementing Body

#### 8.1.1 Ministry of Water Development and Irrigation

The MoWDI is the implementer of the Project. All the activities proposed in the Project will be coordinated, monitored and evaluated by the Ministry. Where land acquisition is necessary, the Ministry have an obligation to ensure that no land is acquired against the will of any person(s), exercising rights over their land. As outlined in the Resettlement Policy Framework for this Project:

- The Government of Malawi or the implementing agency shall serve notice on the PAPs, clearly explaining the intention and purpose of land acquisition, the area of land required and the owner's or occupier's rights to compensation in accordance with the existing legislation, policies and this RPF;
- In the case of customary land, the competent authority shall ascertain from the traditional leaders, the persons who have rights over the affected land for accurate identification and fair compensation to affected persons;
- In the case of private land, the competent authority shall ascertain the correct registered owner of the land from the Lands Registry (MoWDI Resettlement Policy Framework dated 2<sup>nd</sup> February 2012).

### 8.2 Implementing Structures

#### 8.2.1 Shire River Basin Management Project Program Steering Committee

The Program Steering Committee provides direction and programmatic and strategic oversight to the Shire River Basin Management Project (SRBMP). The committee is composed of senior representatives from the following key Ministries:

- Ministry of Water Development and Irrigation (MoWDI);
- Ministry of Finance;
- Ministry of Development Planning and Cooperation;
- Ministry Agriculture and Food Security: Department of Land Resources Conservation;
- Ministry Natural Resources, Energy and Environment; and
- Department of Disaster Management Affairs.
- Department of Women and Social Affairs

Outside of these key members others may be invited as required. These might include Project Technical Committee Members and other technical advisors.

The primary responsibility of this steering committee is to:

- Facilitate preparation and implementation of the SRBMP from an integrated and multi- sectoral perspective;
- Ensure that the Project objectives are achieved to budget and schedule within the overall SRBMP framework
- Review and decide on recommendations made by various studies and the Program Technical Committee, focusing on their environmental, social, financial, policy and institutional implications;
- Provide guidance to the Project Technical Committee and Project Liaison Office on key policy and financial issues;
- Examine and facilitate follow up on Bank Mission findings;
- Provide feedback to respective sectoral agencies on the Steering Committees proceedings and any recommendations; and
- Review and approve annual work plans and budgets.

### 8.2.2 Program Technical Committee

The Project Technical Committee is an advisory and consultative body set up to provide a platform to review technical reports, produce and collate information and provide insight on Project preparation and implementation issues. The Committee is comprised of technical experts within their profession and who also have an understanding of policy context and knowledge of Project planning, development and implementation. This includes representatives from:

- Ministry of Water Development and Irrigation (MoWDI) from Department of Water Resources and Department of Irrigation;
- Ministry of Agriculture and Food Security from Department of Land Resources Conservation;
- Ministry of Natural Resources, Energy and Environment including those from Department of Forestry, Department of Energy and Environmental Affairs Department;
- ESCOM;
- Department of Climate Change and Meteorological Services;
- Department of Disaster Management (DoDM)
- Higher education institutions, including a specialist in water resource planning, hydrology or water management and a specialist in land resources conservation.

As with the Program Steering Committee other members will be included as appropriate. The primary responsibility of the Program Technical Committee will be:

- Provide technical guidance to ensure that project technical activities are achieved as planned;
- Review study reports and provide inputs and comments in line with Terms of Reference for the studies, objectives of the Project and good practice;
- Seek technical advice from teams and technical advisors in order to make informed decisions;
- Revise and advise on recommendations made by Project Consultants;
- Assist the Project Steering Committee on key issues to assist in implementation; and
- Review budgets and work plans.

### 8.2.3 Program Stakeholder Discussion Forum

The discussion forum will provide a structured process of stakeholder consultation on different aspects of basin planning, catchment management and prioritisation of investments. The Forum will have representatives from multiple stakeholders in basin management including:

- Government of Malawi;
- Civil society through Village Development Committees and Group Villages;
- Private sector such as small and medium scale traders, market intermediaries, outlet and chain store operators;
- Communities through for example Village Natural Resource Management Committees.

The Forum will serve as the platform for debate and information exchange and will represent the breadth of perspectives on river basin management.

#### 8.2.4 Program Multi-sector Technical Team

Led by a Project Coordinator from the MoWDI and based in MoWDI, its function is to ensure day to day coordination and management of the SRBMP-I. The Technical Team is a fully integrated project team which includes professional staff from the main government agencies involved in the SRBMP-I who are assigned full time to work on the Project. Staff would include:

- The Kamuzu Barrage Upgrading Component Leader / Client Representative as well as the Communication Specialist whose role will be to maintain the communication link with PAPs and other direct / indirect beneficiaries;
- Other professional staff – an environmental and social safeguards specialist, an institutions specialist, GIS and modelling experts, economist and water resources planner, financial management specialist, procurement specialist;
- Short term expertise in – planning and monitoring and evaluation, architecture, irrigation engineer, water supply, hydropower engineer, catchment management, civil engineer, facilitators, water quality, legal expertise, IT services, etc.
- Support staff – accountant, liaison officer, data entry clerk;
- External auditors.

#### 8.2.5 Second National Water Development Project Management Unit

The Project Management Unit (PMU) of the ongoing World Bank financed Second National Water Development Project (NWDP-II) will provide back-up and mentoring support to SRBMP-I, in particular for the procurement and financial management needs. After closure of the NWDP-II, the support provided to SRBMP-I by the PMU is expected to be provided from within the MoWDI.

### 8.3 Implementation of Compensation Activities

The implementation of the RAP and the various activities involved in this will be undertaken at various levels. The process will be overseen and coordinated by the Project Coordinator of the SRBMP and particularly by the Social Safeguards Specialist of the SRBMP. Specific activities at the District and Project activity level will be conducted by the District Council, and below that by the Area Development Committees and the Village Development Committees, but under close supervision of the Social Safeguards Specialist of the ESSU. The District Councils will be involved in consulting the public and notifying them of the intention of the MoWDI to implement the Project, the land acquisition process and monitoring compliance with the various environmental and social management measures. The Area Development Committees and Village Development Committees will be involved in ensuring that PAPs are notified, disseminating relevant information about the RAP, ensuring that the relevant PAPs have been included in census studies and have received entitlements. Table 37 below outlines the full scope of activities at each of these levels.

The involvement of NGOs in the RAP implementation process would provide some independence to the process. Their role could include community awareness about their rights regarding compensation and any other grievances that may arise. NGOs such as Population Services International in the project area may also play a role in sensitising communities on issues to do with HIV and AIDS prevention and services. However, their role has to be defined by the District Councils, with NGOs operating as partners to the Government.

TABLE 37. PROPOSED ROLES AND RESPONSIBILITIES FOR IMPLEMENTATION OF THE RESETTLEMENT ACTION PLAN

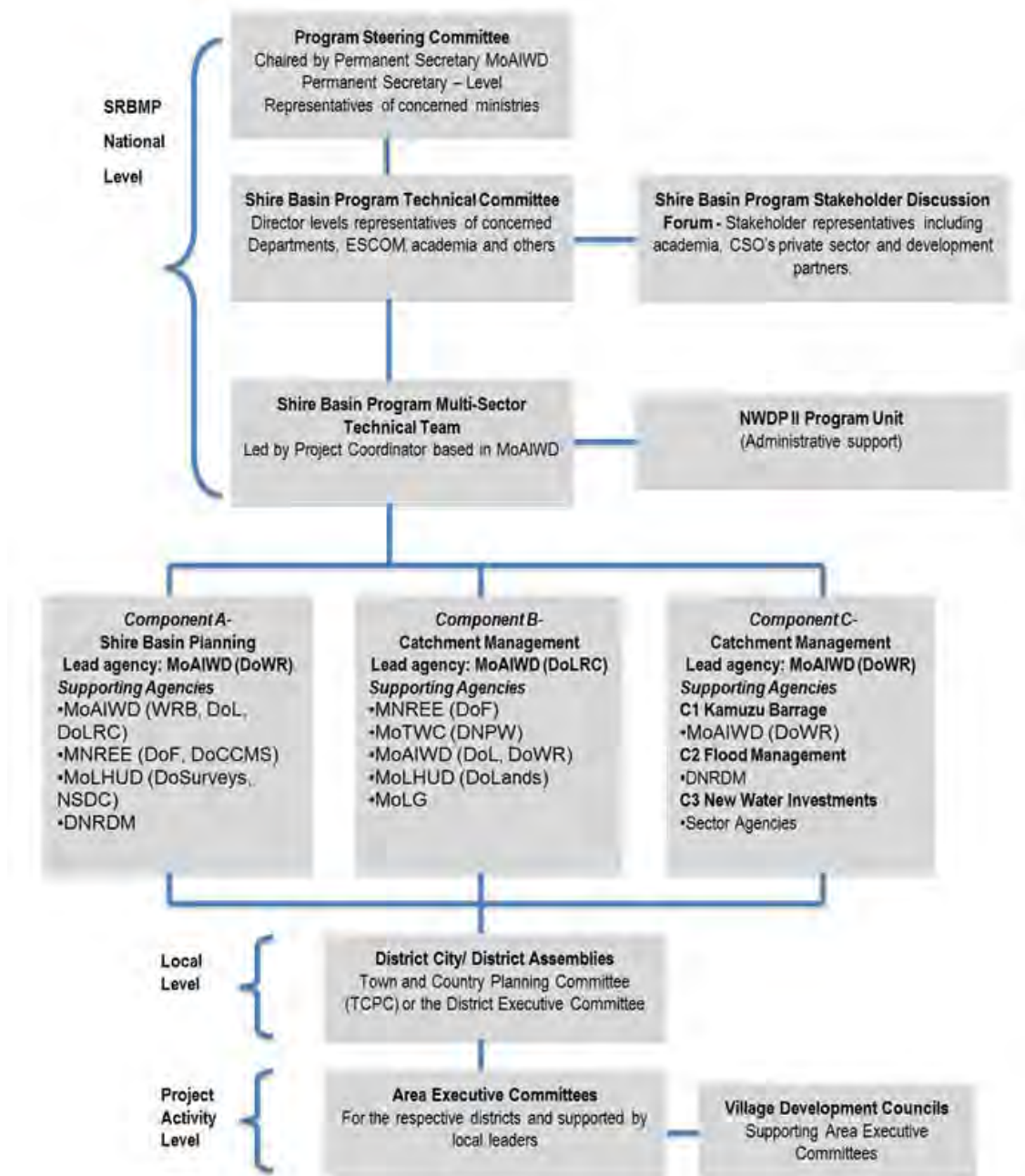
Level	Implementation Staff	Roles and Responsibilities
SRBMP	Project Coordinator	<ul style="list-style-type: none"> <li>• Oversee the preparation (by the consultants) of census, socio-economic survey, RAP, including land acquisition plan.</li> </ul>

Level	Implementation Staff	Roles and Responsibilities
	(particularly the Social Safeguards Specialist of the SRBMP)	<ul style="list-style-type: none"> <li>Oversee the progress of land acquisition through the District Council.</li> <li>Participate in the district level meetings to facilitate land acquisition.</li> <li>Coordinate with other Government line Departments for ensuring effective delivery of mitigation and rehabilitation support.</li> <li>Make budgetary provisions for Rehabilitation and Resettlement (R &amp; R) activities.</li> <li>Coordinate the implementation of R &amp; R activities with in-house and field staff.</li> </ul>
LOCAL LEVEL	DISTRICT CITY / DISTRICT COUNCILS	<ul style="list-style-type: none"> <li>Initiate land acquisition and secure replacement land. Prepare and maintain of records for the PAPs.</li> <li>Prepare plans on physical and financial needs on a monthly basis.</li> <li>Prepare monthly progress reports.</li> <li>Monitor the progress of R &amp; R., land acquisition and public consultations.</li> <li>Monitor compliance with applicable environmental and social management clauses in the construction contracts.</li> <li>Prepare terms of reference and facilitate the appointment of external agencies for monitoring and evaluation (M&amp;E).</li> <li>Develop terms of reference for any studies identified to enhance the implementation of R &amp; R and facilitate the appointment of consultants</li> <li>Coordinate the studies.</li> <li>Facilitate and monitor the progress of land acquisition.</li> <li>Ensure that the land acquired for borrow pits by the contractor is returned to the community within the stipulated time as per the agreement and ensure that the land has not been made unproductive or has been restored / rehabilitated.</li> <li>Define ToR/roles for involvement of NGOs.</li> </ul>
Project Activity Level	AEC/VDC	<ul style="list-style-type: none"> <li>Coordinate with the District Assembly to implement the resettlement and rehabilitation (R &amp; R) activities.</li> <li>Verify PAPs households and property listed in the RAP.</li> <li>Implement information dissemination campaigns and distribute the relevant information of the RPF to the PAPs.</li> <li>Ensure inclusion of those PAPs who may not have been covered during the census survey.</li> <li>Confirm the identity of the PAPs and their property.</li> <li>Carry out public consultations with the PAPs on a continuing basis during the implementation of the project.</li> <li>Establish linkages with inter-agency, e.g., financial institutions, Govt. departments, etc. for income restoration and R&amp;R services.</li> <li>Ensure that the PAPs have received their entitlements.</li> <li>Ensure the preparation of rehabilitation sites.</li> <li>Participate in the meetings organized by the Coordinator.</li> <li>Assist the Construction Supervision Consultant (CSC) in ensuring that the contractors are following the various provisions of the applicable environmental laws and regulations concerning worker's safety, health and hygiene, HIV and AIDS, women's issues and child labour issues.</li> <li>Submit monthly progress reports.</li> </ul>

Source: MoWDI SRBMP Draft Resettlement Policy Framework 2012

Figure 12 presents the various implementation levels for the Project.





Source: Organisational structure courtesy of MoWDI.

*Figure 12. Proposed Project Implementation Arrangements for the Shire River Basin Management Program*

## 8.4 Capacity Building Activities

For the successful implementation of the RAP and the SRBMP capacity-building activities will be undertaken with key stakeholders to enhance their knowledge and understanding. These training activities will include representatives of District Councils/ Town Councils and SRBMP who will then be responsible for training their staff and respective committees. Training will further be provided separately at a local level to Area Executive Committees and Village Development Committees. As set out in the resettlement policy framework, the training program for the two groups is similar and will include training on:

- Environmental and social impact assessment, water resources conservation, relevant policies and laws, impact and mitigation measure identification;
- Resettlement and compensation, including current valuation methods, rights to land, methods of land acquisition and how to conduct compensation agreements;

- Grievance redress procedures and resolving grievances without conflict;
- Public consultation and participation, awareness raising campaigns and record keeping; and
- HIV/AIDS impact and mitigation measures and Project implementation (MoWDI SRBMP Draft Resettlement Policy Framework 2012), especially in the areas of project-induced population influx.

## 9 Public Consultation and Participation and Disclosure of Information

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Public and other stakeholder consultation and participation is a vital component for the success of any development project, to ensure two-way communication between the Project proponent and relevant stakeholders, and to assure accountability and transparency in the development process. Not only is it regarded as best practice to undertake public consultation and disclose information about a project, on ethical and moral grounds, but it is widely documented as resulting in project developments that are more sustainable and cost-effective in the long term, and acceptable to all those who are affected directly and indirectly. Consultation provides stakeholders the opportunity to present their views and values and allows the for the discussion of mitigation measures, which enables PAP's to contribute to design and the implementation of Project activities. It is an ongoing process implemented throughout the project planning and implementation.

A comprehensive public consultation, participation and disclosure program is required to ensure that Project benefits are maximised and that the Project is implemented sustainably, particularly aspects relating to involuntary resettlement, with special attention given to the poor and most vulnerable groups.

In line with the above, the Consultant implemented a consultation program as part of the RAP preparation which included meetings with all interested parties directly impact by the project and further public meetings and focus group discussions in communities within the project affected districts. This consultation took place during the period of October to December 2011. Further consultation was undertaken for the PAP census and assessment during February through October 2012. An asset verification exercise was undertaken in June 2013 in association with a valuer from the Ministry of Lands.

### 9.1 Approach

Effective resettlement planning requires regular consultation with a wide range of project stakeholders. Broadly defined stakeholders include any individual or group affected by the project, either positively or negatively including the host community.

In this assignment, comprehensive consultation meetings with various stakeholders were carried out before and during the development of the Resettlement Action Plan. These consultations aimed to involve the stakeholders and seek their views on various aspects, in particular the potential resettlement issues arising within the construction footprint of the Kamuzu Barrage upgrade at Liwonde as well as potential project impacts up and downstream of the Barrage site. Consultation further included the assessment of resources and the type and level of support required during the resettlement process.

As consultation and the disclosure of information is an on-going iterative activity, consultation should be taking place at every stage:

- Project inception and planning;
- Screening process;
- Feasibility study;
- Preparation of project designs;
- Resettlement and compensation planning;
- Drafting and reading/signing of the compensation contracts;
- Payment of compensation;
- Resettlement activities (if any); and
- Implementation of after-project community support activities.

In the resettlement policy framework for this project (MoWDI SRBMP Draft Resettlement Policy Framework 2012) it is advised that:

- Public consultation and participation should take place through meetings, radio and television programs, request for written proposals/comments, completion of questionnaires/application forms, public readings and explanations of the project ideas and requirements.

- Public documents should be made available in appropriate languages at both national, and district levels. Public consultation measures should take into account the low literacy levels prevalent in the rural communities, by allowing enough time for discussions, consultations, questions, and feedback.

Thus far, the studies for the RAP have undertaken public consultation and participation through meetings, request for comments on designs, the completion of questionnaires and explanations of the project approach and requirements. The other communication methods listed above have been incorporated into Section 9.7 Continued Consultation and Dissemination of Information.

## 9.2 Objective of Public Participation and Consultations

The main objective of consultation is to:

- Introduce the Project to stakeholders, particularly potentially affected persons, and to share information about the proposed project, resettlement stages and related activities;
- Explain the resettlement and/or compensation principles to be applied;
- Understand the needs and priorities of PAPs regarding compensation, relocation and other RAP-related activities to be undertaken, as well as to solicit their feedback;
- Obtain the cooperation and participation of PAPs and other stakeholders in resettlement planning and implementation.
- Ensure transparency in all activities related to land acquisition, compensation, relations and livelihood restoration.

## 9.3 Stakeholders Consulted and Activities Undertaken

For this project a range of stakeholders were consulted, this included a general consultation with government officials before census and socio-economic survey of the Project Affected Persons (PAPs) was conducted. See Table 1 of Volume 2: Record of Consultation for a full list of stakeholders consulted. The following dissemination and consultation methods were used during the preparation of the ESIA and RAP. This included:

- Consultation with a range of government stakeholders, the design consultant and others to present the terms of reference for the ESIA;
- Meetings between design consultant, representatives from MoWDI, the Liwonde town council and others, to discuss Project impacts and mitigation measures as well as fieldwork activities;
- Meetings with the design consultant and MoWDI to identify impacts, project affected persons and organisational structures for implementation of the RAP;
- Meetings with District officials of the project affected districts- Balaka, Mangochi, Machinga, Blantyre, Zomba, Nsanje, Salima and Chikhwawa to notify and present the project as well as gain information about the area, land issues/ ownership and socio-economic characteristics including women's issues and land sale/transfer in case of customary rights;
- Consultation in the form of focus group meetings and public meetings with traditional chiefs, community based organisations, men and women, which enabled the collection of views and concerns about the project as well as livelihood sources. This process further mobilised community members to attend and participate effectively in the socio-economic survey, which also collected information about assets;
- Meetings and individual interviews were held with government and other stakeholders to inform them of the project and to obtain feedback and relevant information from them;
- A household socio economic survey of 520 households in potentially project affected areas around the shorelines of Lake Malombe, Lake Malawi and the Shire River;
- An asset recording exercise in Liwonde near to the Kamuzu Barrage Upgrade area, focussing solely on the PAPs to be affected by the construction works of the project; and

- An asset verification survey with the Ministry of Lands.

Full details of stakeholder outcomes are presented in Volume 2: Record of Consultation.

## 9.4 Consultation Process

The consultation process for the preparation of the ESIA and RAP focused on an exchanged of the following information:

- The consultation process, program and schedule;
- Project details, including location of the Project and areas of construction;
- Compensation process for assets acquired including land and structures, including forms of compensation and resettlement assistance, whether in kind (land) or cash;
- Project impacts (both beneficial and adverse) and mitigation measures. Including measures to mitigate any loss of livelihoods as a result of Project activities and where possible enhance livelihoods and living standards;
- Institutional and organisational arrangements by which displaced people can communicate their concerns to Project authorities and participate throughout planning and implementation;
- Grievance redress mechanisms so as to minimise any potential long-lasting risky disputes;
- Views, concerns and suggestions of affected communities; and
- Payment arrangements.

## 9.5 Consultation Outcomes

### 9.5.1 Attitudes towards the Project

Results from the consultation program showed that many of the communities consulted were not aware of the Kamuzu Barrage Upgrade project. Of those that were aware, information they had received was unofficial with some hearing a rumour about the Project and others hearing about the Project via the radio. The fact that so many communities had not heard about the Project highlights the importance of an effective communication strategy for the Project, which can demonstrate the positive benefits the upgrade of the Barrage can bring.

Once provided information about the Project, in general people were appreciative of the Project and understood the expected benefits, which would improve irrigation downstream, the availability of electricity, increased fishing opportunities and short-term employment during the construction period.

Within the communities consulted there was a perception that the current operation of the barrage had resulted in flooding downstream, negatively impacting the communities living, fishing and farming close to the river. There was a perception that these impacts were grater due to a lack of warning about barrage release times and volume. There was a consistent request from communities consulted that a more functional warning system be implemented to warn communities of release strategies, which would serve to mitigate negative impacts.

### 9.5.2 Key Issues Raised

During stakeholder consultation and participation, there were a number of key issues raised in relation to the project. A summary of these is provided below and a full presentation of the outcomes is in Volume 2: Record of Consultation.

#### 9.5.2.1 The Importance of the Shire River and Lakes for Livelihoods

The Shire River and lakes are important for agricultural activities, water for domestic use, as a source of fish for food and livelihoods as well as transport. Activities, which reduce these opportunities, would have a negative impact on communities, and conversely activities, which increase these opportunities, would have a positive impact.

### 9.5.2.2 Changes to Water Flow

Changes to water flow impact the availability of land and water for agricultural activities along the shoreline. There was a perception amongst communities consulted that the water levels have been receding in recent years, with a number of communities stating that they had experienced drought anywhere between two to four times in the last ten years. There were further concerns raised that with the type of occasional flooding occurring through the operation of the Barrage there could be some damage to crops as there is no warning system in place. This highlights the need for education and communication regarding periods when gates would be opened.

### 9.5.2.3 Impacts on Livelihoods and Employment Opportunities

There was an expectation that if livelihoods were affected up and downstream of the Barrage, then appropriate compensation should be provided. This could be in the form of food, cash or land depending on what is impacted upon. There was some concern that a rise in water levels would reduce *dimba* farming areas reducing the land available therefore affecting livelihoods of those farming the land and those renting the land. It was suggested that this potential impact be monitored.

Stakeholders also thought that there would be some positive impacts of increased employment opportunities brought by the project as well as increased business in the construction area.

### 9.5.2.4 Health and Safety

A number of health and safety issues were raised in relation to the project. This included concerns that changes in water levels downstream would mean that community members, particularly women collecting water for domestic use, would be at an increased risk to hippo or crocodile attacks. Communities provided a number of recent examples, which demonstrated this threat. Communities need to be able to voice their concerns and grievances on these issues to the government and support provided if the threat becomes real.

There were also concerns that an influx of workers could increase the number of diseases in the area, such as STIs. It was suggested that a more local workforce would mitigate this and that preventive measures such as training and awareness programs be put in place.

### 9.5.2.5 Resettlement and Compensation

Communities stated that those who are affected by the Project should be identified and compensated in accordance with laws, market value and guidelines for compensation. At various places, the communities indicated that they would like compensation paid at the open market rate of land structures. Those directly affected in the construction footprint stated that they would prefer cash compensation.

### 9.5.2.6 Project Impacts on Transport

Communities discussed how the lakes and rivers are used by different communities as a means of transport to different points along the rivers. Communities suggested that if the project impacts docking points or transport routes then the relevant stakeholders should be communicated relevant information about this, so that potential disruption to services and impact on livelihoods can be mitigated.

### 9.5.2.7 Communication

Consultations also revealed the various communication channels used to communicate information between them and government authorities. This process follows a decentralized framework. Issues work through the villages or areas to the local leaders (Village or Group Village Headperson), to the Traditional Authority (TA) or Sub-Traditional Authority (STA), and to the District Commissioner. The underlying institutional structure is the Village Development Committee (VDC) that operates at a village level combining a group of villages; the Area Development Committee (ADC) that aggregates issues at the TA/STA level before being channelled to the District Council. Information would ordinarily pass through the same channels back to the community.

Communities commented that this communication channel can be slow and non-functional on some issues. Communities also commented that there are often delays in getting feedback from Government officials. For communications regarding the operation times of the Barrage and release volumes a more effective strategy needs to be devised.

### 9.5.2.8 Perceived Positive and Negative Impacts

In summary the perceived positive impacts of the project are:

- Employment and business opportunities for local residents;
- Increased fishing opportunities;
- Increased water levels downstream which may facilitate farming and increase agricultural production; and
- National benefits of increased hydropower and control of water flows.

Key concerns are:

- Loss and/or damage to agriculture *dimba* gardens close to the River if water levels rise;
- Damage to buildings at Barrage site;
- Increase in animal/human conflict, especially hippopotamuses and crocodiles as the River extends;
- Increase in health issues with the influx of workers; and
- Loss of income from garden rentals by owners.

### 9.5.3 Consultation with National and District Government Officials

The Consultant held individual meetings with relevant national and district officials as well as focus group meetings of the eight Project affected districts. The discussions mainly covered: importance of the Shire River; landholding system; causes of flooding; Project effects on Shire River and Lakes; *dimba* gardens close to the Shire River; handling of disputes. Overall these stakeholders recommended that those affected be appropriately compensated, that there should be greater notification about the Project and that those in flood and drought prone areas be closely monitored. They further recommended the enforcement of the river buffer zone. A full presentation of these outcomes is provided in Volume 2: Record of Consultation.

### 9.5.4 Consultation with Communities

The consultations held with communities revealed similar perceptions across the communities. Concerns amongst the communities focused on impacts on crops and agricultural activities, risk to safety from crocodiles and hippopotamuses as the river extends, increase risk of STIs in the Project site. Perceived benefits of the Project included increased irrigation and fishing opportunities, increase in business and employment during construction for those close to the Project site and improved electricity supply. Communities commented that those farming and fishing on the river would be most affected however due to the nature of reliance on the River, for livelihoods, transport and food, any impacts on these would affect the whole community. A full presentation of these outcomes is provided in Volume 2: Record of Consultation.

## 9.6 Addressing Stakeholder Concerns

The community consultation undertaken as part of the ESIA and RAP process has enabled the collection of important community views, concerns and suggestions about the Project. These concerns and suggestions as well as the Projects methods of addressing these have been summarised and are included in Table 38.

TABLE 38. STAKEHOLDER CONCERNS

Key Stakeholder Concerns	Community and District Council Suggestions	Addressing Stakeholder Concerns
<b>Livelihoods</b> Potential impacts of the Project on 'dimba' cultivation crops, grazing land, and properties located	<ul style="list-style-type: none"> <li>• Provide compensation for those affected by the Project and involve the local leaders in its implementation.</li> <li>• Monitor impacts of the Barrage upgrade up and</li> </ul>	This has been assessed and addressed in the following sections: <ul style="list-style-type: none"> <li>• <b>Section 6</b> of this RAP provides details of project-affected persons within the construction footprint of the Project.</li> <li>• <b>Section 7</b> of this RAP outlines the entitlement and</li> </ul>

Key Stakeholder Concerns	Community and District Council Suggestions	Addressing Stakeholder Concerns
close to the River.	downstream.	<p>compensation frameworks for those affected.</p> <ul style="list-style-type: none"> <li>• <b>Section 8</b> of this RAP provides the details of the institutional and organisational framework of this process, specifically how local leaders and District Councils will be involved in the implementation process for compensation as well as training activities to provide them the skills and understanding required to complete this work.</li> <li>• <b>Section 11</b> of this RAP provides details on the monitoring and evaluation methods to be undertaken for the RAP. <b>Section 5</b> of the Environmental and Social Management Plan (ESMP) further describes how the monitoring program will address water related issues and feed into the revision of operating rules for the Barrage to minimise adverse impacts.</li> </ul>
<p><b>Health and Safety</b> Increase in animal/human conflict: especially hippopotamuses, which destroy crops and crocodiles, which harm and kill people as the river extends.</p>	<ul style="list-style-type: none"> <li>• Advised the need to closely monitor impacts</li> <li>• Suggested that designated points to collect water be provided to communities, as this would reduce accidents and deaths from crocodiles.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Section 11</b> of this RAP provides details on the monitoring and evaluation methods to be undertaken for the RAP. Section 5 of the ESMP further describes how the monitoring program will address water related issues and feed into the revision of operating rules for the Barrage to minimise adverse impacts.</li> <li>• <b>Section 12</b> of this RAP provides details on how communities and project affected persons can make grievances about the Project and its related impacts.</li> <li>• <b>Section 9.7</b> of this RAP outlines the further consultation and dissemination processes that need to be undertaken as part of this Project, including the dissemination of grievance procedures to project affected persons.</li> <li>• The provision of water collection points will be further investigated.</li> </ul>
<p><b>Health and Safety</b> Increase in STIs, including HIV with the influx of workers into the local population close to the barrage</p>	<ul style="list-style-type: none"> <li>• Suggested that education programs be provided as part of the Project.</li> <li>• Give priority to local people when employing workers (Machinga)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Section 4</b> of the ESMP addresses this potential impact and mitigation measures, including: <ul style="list-style-type: none"> <li>○ Ongoing HIV/AIDS and STI education campaign targeting all project workers, both national and international, complemented by easy access to condoms at the workplace as well as to voluntary counselling and testing.</li> <li>○ The preference for locally based workers where applicable</li> </ul> </li> </ul>
<p><b>Communication and Barrage Operating Times</b> Lack of warning</p>	<ul style="list-style-type: none"> <li>• Suggested barrage gates should be opened from December- March giving people time to harvest</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Section 9.7</b> of this RAP provides details of the further consultation and information dissemination strategies to be undertaken for this Project including:</li> </ul>



Key Stakeholder Concerns	Community and District Council Suggestions	Addressing Stakeholder Concerns
<p>about barrage opening times and increased water levels, increasing risk of accidents and damage to crops.</p>	<p>and prepare their land for the next cultivating season.</p> <ul style="list-style-type: none"> <li>• Communicate about barrage operating schedule and identify a quick way to disseminate information to communities to avoid accidents.</li> <li>• Notify the public about the Project.</li> <li>• Suggested that the disaster management structures at the district level (District Civil Protection Committee, Village Civil Protection Committees, etc.) be involved in managing any unexpected damage to property that may be caused by the project and operation of the barrage.</li> </ul>	<ul style="list-style-type: none"> <li>○ The establishment of an early warning system, involving Malawi's civil protection committees, designed to provide communities with adequate warning of increased water levels due to the barrage operation, short-term waves and natural flooding and impacts.</li> <li>○ A strong communications and information sharing program on changes in water levels as well as the establishment of a community steering committee involving SRBMP staff and different water users designed to feedback on barrage operation.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Section 5</b> of the ESMP provides details and mitigation measures for the environmental and social boundary conditions for water releases from the Barrage, to help ensure that the future operating rules for the Barrage avoid scenarios that would exacerbate destructive flooding or other undesirable outcomes (to the extent the extremes of the possible release strategies would be able to cause this negative impact);</li> </ul>
<p><b>Transport Routes</b> Disruption to transport routes and inundation of boat docking points.</p>	<ul style="list-style-type: none"> <li>• Communicate and monitor effects on transport and boat docking points.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Section 9.7</b> of this RAP provides details of the further consultation and information dissemination strategies to be undertaken this includes: <ul style="list-style-type: none"> <li>○ A strong communications and information sharing program on changes in water levels as well as the establishment of a community steering committee involving SRBMP staff and different water users designed to feedback on barrage operation and impacts.</li> </ul> </li> </ul>
<p><b>River Buffer Zone</b> People raised concerns about lake of awareness of River reserve zone, leading to closer crops to the river increasing risks to safety and crops</p>	<ul style="list-style-type: none"> <li>• Suggested that education programs about the River buffer zone be conducted and that the law be enforced. This would reduce accidents and crop damage.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Section 5</b> of the ESMP provides details and mitigation measures education programs on the River buffer zone and how it will be communicated with communities.</li> </ul>
<p><b>Weed Boom</b> Concern that increase of weeds will</p>	<ul style="list-style-type: none"> <li>• Recommended that the control of weeds be factored into the Project as increasing water levels will mean more aquatic</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Section 4</b> of the ESMP provides details and mitigation measures for how the weeds will be controlled for the Project. This includes: <ul style="list-style-type: none"> <li>○ Construction of a floating steel boom</li> </ul> </li> </ul>

Key Stakeholder Concerns	Community and District Council Suggestions	Addressing Stakeholder Concerns
increase siltation and sedimentation and cause sand bars	weeds e.g. <i>Typha</i> reeds, water hyacinth, upstream	upstream of the Barrage to control floating weeds and improve the weed management system overall.
<b>Temporary Work camp site</b> Concerns were raised about the size of the site and location, commenting that it is too close to residential houses.	<ul style="list-style-type: none"> <li>Suggested an alternative site be found.</li> </ul>	<ul style="list-style-type: none"> <li>The site for the temporary work camp has been chosen based on its proximity to the Barrage and through the fact that it is vacant land owned by the Town Council. Other sites were assessed but this site was chosen as it had the least potential impacts on the community surrounding the site.</li> </ul>
<b>Railway Line</b> Potential impact on the railway line	<ul style="list-style-type: none"> <li>Identify impacts.</li> </ul>	<ul style="list-style-type: none"> <li>The Project does not impact on the railway line.</li> </ul>
<b>Environmental and Social Impacts</b> Potential impacts to the existing environment.	<ul style="list-style-type: none"> <li>Called for the development of an environmental management plan detailing positive and negative impacts, particularly as so many rely on the Shire River.</li> </ul>	<p>A detailed Environmental and Social Impact Assessment has been undertaken investigating potential impacts to all aspects of the existing environment including water levels, water quality flora and fauna and social impacts. Mitigation measures have been proposed for all Project activities, which have the potential for significant negative impacts on the existing environment.</p> <ul style="list-style-type: none"> <li><b>Section 5</b> of the RAP report provides baseline information for social conditions; Section 5 of the ESIA provides baseline information for the existing environmental and social conditions.</li> <li><b>Section 7</b> of the ESIA provides a detailed assessment of potential impacts and mitigation measures.</li> <li><b>Section 8</b> of the ESIA summarises the proposed mitigation and monitoring measures proposed in order to reduce potential impacts. These are described in detail in the Project's ESMP.</li> </ul>

## 9.7 Continued Consultation and Dissemination of Information

Continued consultation and dissemination of information throughout the project process is important, not only for those who are affected directly by the construction of the project but also for those along the shoreline of the Shire River and the Lakes Malombe and Malawi.

This RAP undertook a census of households/ business affected by construction activities including the refurbishment of the Barrage, new temporary and permanent roads, and other ancillary work sites including material storage and handling sites as well as temporary work camp. However, as part of the community consultation and socio economic baseline data for the project, further study was completed in eight districts affected by the project. The information gained is useful as a baseline and to facilitate continued consultation

and information dissemination about the project. This is important due to the nature and scope of the potential impacts associated with the refurbished barrage:

- As far upstream as Lake Malawi will be affected by the operation of the upgraded Kamuzu Barrage. Although it has been empirically established the Barrage only influences a small range of Lake Malawi Levels within the natural variation of the Lake and hence the variations that would be caused due to the raising the height of the Barrage by 40 centimetres would be much less than the natural variations, consultation and information dissemination will still need to be undertaken;
- The operation of the Barrage could cause a significant impact on Lake Malombe's foreshores due to the Lakes relative shallowness. As a result a sudden drawdown could strand irrigation pumps, making foreshore access difficult and impacting on fisheries (especially during the breeding season), which would impact on the livelihoods dependent on the Lake's fishery. In addition to this, a significant number of people living close to the Lake rely on *dimba* (flood recession) agriculture as a source of food and income. The operation of the refurbished Kamuzu Barrage might result in spatial shifts during certain years of the land available for *dimba* (flood recession) agriculture. If this land were to decrease, it could negatively impact upon those households relying on this agriculture; and
- Downstream of the Barrage, those using and living close to the Shire River- farmers, hydropower stations and other water users are dependent on regulated flow releases from the Barrage. Therefore different release strategies will have differential environmental and social impacts. The operation of the refurbished Barrage may incrementally increase flooding in some years depending on operation of the Barrage and the "natural" flow conditions in the Shire River at the time. During the community consultation undertaken as part of the RAP study, some residents have attributed increased flooding to current Barrage operations, which have resulted mainly in losses of crops rather than buildings/structures. Barrage operation is the main determining factor of impacts downstream and communicating and monitoring this is an important element of mitigating impacts.

These upstream and downstream social impacts will be managed through safeguard recommendations (through the Projects ESIA and ESMP) on release strategies, early warning systems and a comprehensive awareness program rather than compensation. This section will outline the specific measures needed to be undertaken as part of the continued consultation and dissemination of information, which needs to be managed and coordinated by the implementing agency in regards to the project:

- Notification procedures and dissemination of information, including awareness program;
- Continued consultation and participation with stakeholders
- Institutional and process development, including early warning system and community coordination committee.

### 9.7.1 Notification Procedures and Dissemination of Information

In relation to the RAP, MoWDI, as the implementing agency of the SRBMP will be responsible for disseminating information and notifying the public of procedures.

#### 9.7.1.1 Notification Procedures

Public notices about the projects intention to acquire land earmarked for the project shall be made through the Press (daily newspapers, Malawi television and radio broadcasting stations). As outlined in the Resettlement Policy Framework for this project, these notices shall provide the information on the:

- Government's proposal to acquire the land;
- The public purpose for which the land is needed;
- Availability of the proposal or plan to be inspected at the SRBMP offices or the offices of the District Councils in the respective districts, during working hours;
- Right of any person affected to object to the transaction giving reasons for doing so, by written notice, to the SRBMP with copies to the District Council (DC), TA and Chief's Headquarters within 14 days of the first public announcement or appearance of the notice (MoWDI SRBMP Draft Resettlement Policy Framework 2012).

### 9.7.1.2 Dissemination of Information

In addition, MoWDI through SRBMP will be responsible for disseminating further project information including:

- Maps of location and inundation;
- Project updates in the form of public meetings, information sheets and workshops to the relevant stakeholders.
- The Executive Summary of the RAP in English and Chichewa or any other local language that people easily understand. The Resettlement Policy Framework states that the RAP will be disclosed to the public by the placing of a hard copy of both Executive Summary and the full document in the offices of the appropriate District Councils and/or with the Local Leaders (MoWDI SRBMP Draft Resettlement Policy Framework 2012).

This information will be disseminated at the local level by District Councils and local leaders.

This dissemination process included a workshop (held in November 2012) to present the draft RAP and ESIA, enabling stakeholders to provide opinions and comments as well as consider the institutional requirements for public consultation in further project stages and discuss risk factors (time delays, non-participation, and inadequate dissemination of information).

Further information on the structure of this process and responsibilities of those involved is presented in Section 8: Institutional and Organisational Framework. Section 8 also discusses how the implementing agency will provide sufficient personnel and resources, including capacity building of relevant personnel to ensure that activities related to consultation, information dissemination and compensation are properly implemented and managed.

### 9.7.2 Continued Consultation with Stakeholders

The results from the consultation already undertaken through the project has revealed the existing mechanisms for communication between communities and Government authorities and the importance of involving both traditional leadership and local government structures to disseminate information. As discussed in Section 9.5.2.8 Communication, this process follows a decentralized framework. Issues work through the villages to the local leaders (Village or Group Village Headperson), to the Traditional Authority (TA) or Sub-Traditional Authority (STA), and onto the District Commissioner. The underlying institutional structure is the Village Development Committee (VDC), a traditional authority mechanism that operates at a village level combining a group of villages. Information flows from this to a higher level of traditional authority- the Area Development Committee (ADC), which aggregates issues at the TA/STA level before being channelled to the District Council. Information would ordinarily pass through the same channels back to the community. For continued consultation with stakeholders, this existing framework will be used.

As a part of this consultation process, the Project will continue to consult with stakeholders, including:

- Further site visits upon the completion of the hydraulic model and inundation maps to assist in estimating any loss of opportunity in utilising 'dimba' land along Lake Malombe and whether it would be significant;
- Consultation with government officials over legal and administrative issues as well as the provision of support services;
- Consultation and workshops with communities and relevant officials, including Regional Lands Authorities, District/ town Councils, Traditional Leaders and affected individuals to finalise land acquisition and compensation procedures;
- Ongoing consultation with affected households/communities following the completion of project designs and hydraulic maps to further assess impacts;
- Further consultation and awareness raising activities, such as meetings to inform about the project, provide information on barrage operating schedule and release timing/strategy;
- Consultation and awareness raising of community grievance procedures.

### 9.7.3 Institutional and Process Development

Whilst it is recommended that the existing communication framework between village communities and district councils is used for continued consultation, there needs to be some institutional and process development to make this structure more effective and reduce delays in the dissemination of information to communities. This is in particular relation to two main issues:

- The request from communities for an adequate early warning system to warn villages of Barrage operation and release strategies (both in normal and emergency situations); and
- Engagement of different water users of the lakes and rivers to coordinate and communicate their different needs.

#### 9.7.3.1 Establishment of an Early Warning System

From consultation with stakeholders it was found that the operation of the Barrage and flooding in the past had caused damage to crops and gardens, which negatively impacts food security and livelihoods. This complaint was consistent amongst communities located downstream of the barrage. There was a sense that their needs were not important and it was requested that to mitigate these affects an early warning system be implemented which can serve to inform communities of the barrage release times and potentially the amount predicted to be released, thereby enabling communities to effectively prepare for the change in water levels.

To establish an early warning system into the dissemination of information process of the Project, it would be best to use an existing communication structure. Alongside the framework discussed in Section 9.10.2 there exist sub committees, under the Department of Disaster Management Affairs (DDMA) at each administrative level, namely district, area and village, which are responsible for directing and coordinating disaster management and preparedness. These sub committees work along the same process, with information flowing both up and down from village to area to district level (Figure 13 illustrates the organisation structure).

Within this structure, all organisations are meant to inform DDMA of any disaster risk management program that they would like to implement and during disaster response DDMA can call coordination meetings with stakeholders.

At the local level, the District Commissioner directs and coordinates the Civil Protection Committees (CPC), which are responsible for implementing each districts associated disaster contingency plan. These roles of the Civil Protection Committees are as follows (Nsanje District Assembly 2007):

- District CPCs coordinate the District response to floods through:
  - Assisting ACPC and VCPC to identify potential flood prone areas and populations at greatest risk.
  - Reviewing and revise flood contingency plans.
  - Affirming resource availability, and maintain working condition.
  - Identifying and seek alternative resources required for an emergency flood response, if required resources are not available or not in working order.
  - Briefing and training Area CPC and Village CPC.
  - Promoting community understanding of flood warnings and consequent actions to be undertaken by Area CPC and Village CPC.
  - Ensuring continuous lines of communication through regular District CPC meetings.
  - Selecting District CPC members to guide and assist the Area CPC and Village CPC during Flood assessments.
  - Assisting in the allocation of Area CPC and Village CPC resources.
  - Organising rapid flood assessments through Area CPC and Village CPC.
  - Mobilising resources to support assessment process.
  - Guiding and assisting Area DCP in the flood assessment process.
  - Consolidating and analysing data received on flood damage and relief requirements.

- Analysing data received from Area CPCs and verifying through triangulation and spot-check visits.
- Submitting summary assessment reports and estimated relief requirements to DDMA and NGOs working outside the District and to potential donors.
- Prioritising resource allocation within flood affected areas.
- Coordinating the delivery and distribution of relief supplies within the District.
- Arranging security provisions for the transport, storage and distribution of relief supplies.
- Monitoring the distribution of relief items within the district to the most vulnerable groups.
- Providing reports to DDMA and donors on relief item distribution; providing immediate rehabilitation assistance; and, services rendered to flood affected households.
- Area CPCs: coordinates the Area response to floods through:
  - Identifying potential flood prone areas and populations at greatest risk.
  - Providing information which will assist in the review and revision of the flood contingency plan in accordance with designated area.
  - Collecting and consolidating information from Village CPCs.
  - Maintaining, identifying and seeking resource availability at area level necessary to support an emergency flood response e.g. schools, churches, health facilities, water points.
  - Monitoring information on water levels, likelihood of flooding and communicating findings with the community.
  - Attending District CPC briefings and training sessions.
  - Facilitating community awareness on flood warnings and actions to be undertaken through the guidance of the District CPC.
  - Ensuring continuous lines of communication through regular meetings.
  - Communicating with the key holders of premises most likely to be used as an emergency shelter site by displaced people.
  - Organising area assessment according to guidelines provided by the District CPCs.
  - Consolidating and analysing data received from Village CPCs on flood damage and community requirements.
  - Identifying and prioritising assistance between localities within the area.
  - Submitting summary assessment reports and estimate relief requirements to District CPCs.
  - Coordinating and verifying the registration and preparation of beneficiary lists.
  - Coordinating the delivery and distribution of relief supplies within the area with Village CPCs.
  - Arranging security for the transportation, storage and distribution of the relief supplies in collaboration with the District and Village CPCs.
  - Monitoring the distribution of relief supplies to those registered on the beneficiary list.
  - Mobilising resources within the area.
  - Providing reports to the District CPCs on distribution of relief, rehabilitation supplies and the provision of services to displaced people and others.
  - Liaising with the key holders of premises used as shelter for displaced persons.
  - Other functions advised by the District CPC.
- Village CPCs: coordinates the Village response to floods through:

- Identifying potential flood prone areas and populations at great risk in collaboration with Area CPCs.
- Data collection at village level.
- Attending Area CPC meetings and briefing sessions.
- Facilitating community awareness on flood warnings at village level.
- Ensuring continuous lines of communication through regular meetings.
- Monitoring information on water levels, likelihood of flooding and community and HCPC.
- Organising village assessments.
- Coordinating and verifying registration and preparation of beneficiary lists.
- Distributing relief items.
- Arranging security for storage and distribution of relief items.
- Providing reports to Area CPCs and distributing relief, rehabilitation supplies and providing services to displaced people.
- Identifying premises to be used as shelter for displaced persons.
- Updating data pertaining to designated area for the District Flood Contingency Plan.
- Maintaining, identifying and seeking resource availability at area level necessary to support an emergency flood response.
- Monitoring information on water levels, likelihood of flooding and communicating findings with the community.
- Attending District CPC briefings and training sessions.
- Facilitating community awareness on flood warnings and actions to be undertaken through the guidance of the District CPC.
- Ensuring continuous lines of communication through regular meetings.
- Communicating with key holders of premises most likely to be used as an emergency shelter site, by displaced people.

Although this framework would be the most appropriate to disseminate early warning information for Barrage operation, in the communities consulted there were concerns that this channel of information flow was not functioning as effectively as it could be, with communities citing delays and lack of feedback from government officials. As a result, a more streamlined process that would enable faster communication between the project, the government at district level and communities in relation to this early warning issue needs to be in place.

It is proposed that to provide effective early warnings to communities about Barrage operating schedules and release strategies, information from the MoWDI, through the SRBMP about Barrage operating and release schedules be made available directly to district councils and thereby the associated district level civil protection committees (DCPC) in order to pass directly onto the village civil protection committee (VCPC) with enough warning time to enable villagers to prepare for change in water levels. This system proposes circumventing the area civil protection committees (ACPC), in the case of urgency, when there is not enough time to use the existing structure.

Once the VCPC is notified at the village head level, this communication can be passed onto village chiefs of individual villages who are then able to notify their villagers. Depending on the size of the village a variety of communication methods may be used:

- A public village meeting may be called to inform residents of Barrage operating times;
- Mobile phones may be used to distribute the information about operating and release schedules (this is appropriate for smaller villages only);
- Representatives of the village chief's office could disseminate the information around the village, going door to door.

- Whistle blowing that informs people for the need to gather at the identified gathering point in each village (usually, the highest point in the village, so to facilitate evacuation, if needed).

The implementation and success of this system would have to be monitored regularly, with avenues for stakeholders to make their grievances heard and acted upon by the relevant authorities. An effective early warning system would assist in mitigating negative impacts for communities alongside the Shire River as well as grievances about the project.

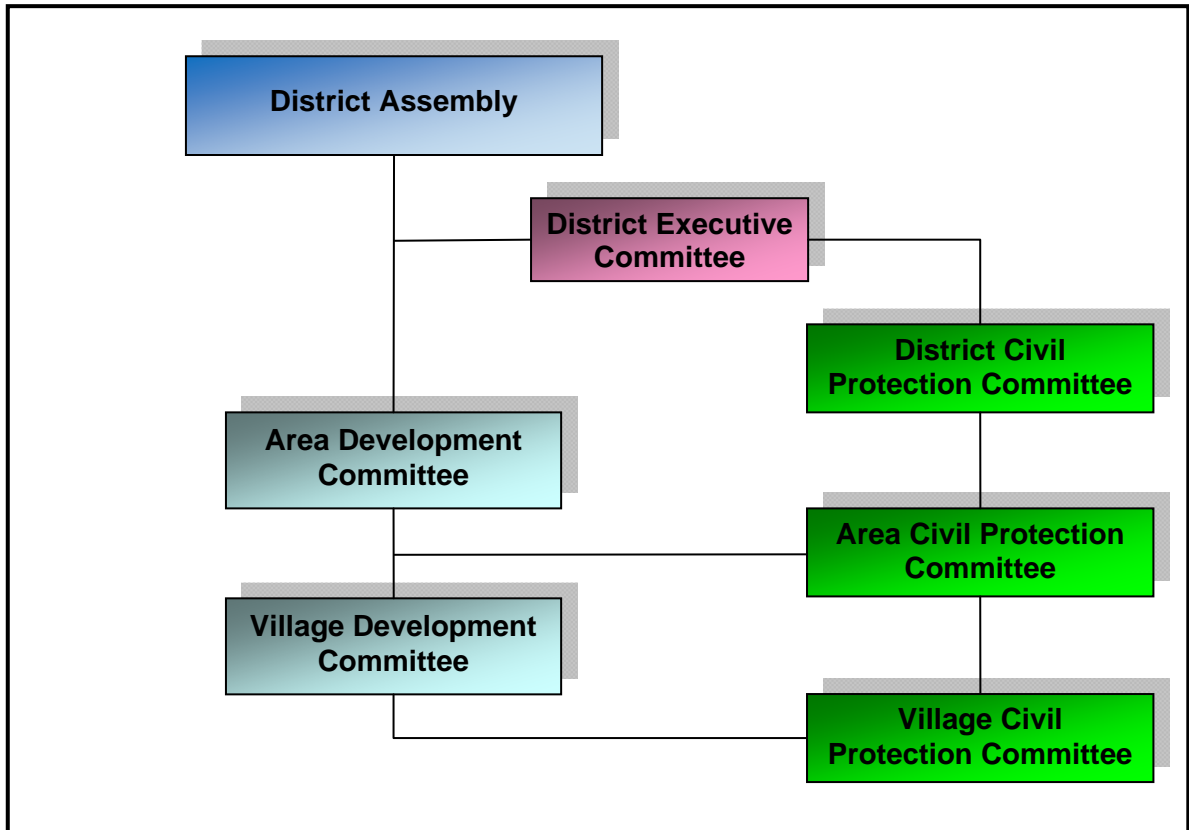


Figure 13. District Level Disaster Management Structure

### 9.7.3.2 Water Users Coordination Committee

Those up and downstream of the Barrage also have different water use needs, those who need a lot of water- ESCOM and SUCOMA Sugar Plantation and the communities living alongside of the river for whom large volumes of water and flooding would negatively impact upon their livelihoods and safety. It is therefore further suggested that a coordination committee be established with representatives from SRBMP and the different water users, including ESCOM, SUCOMA Sugar Plantation and village head representatives in order to discuss and revise Barrage operating and release rules, monitor impacts and establish a system which can meet the needs of the different water users along the River and Lakes. The implementation of this system would assist in minimising adverse impacts for those who rely on the Shire River and Lakes Malombe and Malawi.



## 10 Gender and Vulnerable Groups Mainstreaming

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Women, especially female-headed households can be more vulnerable to the effects of involuntary resettlement. This is because they may depend on subsistence farming and assistance from families for their daily needs, leaving them (along with other highly vulnerable groups, such as the elderly and youth) more susceptible to displacement if that which they depend on is impacted. In this project, the special needs of this group will be taken into consideration. In order to address the impacts identified, measures will be taken to proactively implement gender and vulnerable groups mainstreaming at the concept, planning, implementation, monitoring and evaluation stages of the Project thereby integrating gender sensitive initiatives into all Project phases. Gender and vulnerable groups mainstreaming will be addressed through provisions under the entitlement framework developed for this Project.

The following principles will be adhered to:

- Incorporation of legislative requirements of gender equality in all aspects of the Project. Equal opportunity for all men and women land holders (including unmarried/married women).
- Raising awareness levels of all relevant stakeholders, and engaging in advocacy to ensure that gender issues are identified and addressed.
- Creating partnerships with gender-sensitive NGOs, on implementation of aspects of the RAP, to address gender at the grass roots level.
- Working with local community based organisations that have an interest in/insight into gender issues, such as groups with female membership, particularly the Women's Associations at village and district levels. Besides ensuring greater participation, it would provide support during implementation.
- Including gender and vulnerable group issues into all relevant ToR and contracts in RAP implementation.
- Actively including women in the consultation process, and ensuring that their participation is sought during implementation and monitoring.
- Gender-sensitive project monitoring and evaluation, using gender indicators.

## 11 Monitoring and Evaluation

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Monitoring and evaluation will form an integral part of project implementation, providing the necessary information about the involuntary resettlement aspects of the project, measuring the extent to which the goals of the RAP have been achieved and the effectiveness of mitigation measures. Problems and successes will be identified as early as possible so that timely adjustment of implementation arrangements can be made. The monitoring and evaluation plan will be consistent with the RPF for the NWDP II. The process needs to be undertaken "for a reasonable period after all resettlement and related development activities have been completed"<sup>8</sup>. A final evaluation will be completed as part of the construction completion process after all Project construction activities have been completed.

Specifically, the monitoring and evaluation system will ensure that:

- Land acquired from PAPs, for the purposes of the project, has been replaced;
- Compensation payments have been completed to the satisfaction of the PAPs
- That where replacement seedlings have been given to PAPs, they have survived.
- Lost or impacted assets have been replaced to the same or better condition and standards of living have remained the same or improved.

### 11.1 Indicators

Indicators and targets will be established for the project as a whole, in consultation with representatives of the affected communities and other key stakeholders. Indicators are usually grouped into the following categories:

- **Input indicators** – measure the resources (financial, physical and human) allocated for the attainment of the resettlement objectives, such as livelihood restoration goals.
- **Output indicators** – measure the services/goods and activities produced by the inputs. Examples include compensation disbursements for acquired assets.
- **Outcome indicators** – measure the extent to which the outputs are accessible and used, as well as how they are used. They also measure levels of satisfaction with services and activities produced by the inputs. Examples include the ways in which recipients used compensation. Although not measures of livelihood restoration in themselves, they are key determinants of well-being.
- **Impact indicators** – measure the key dimensions of impacts to establish whether the goals of the Resettlement Plan have been achieved. Examples are restoration and diversification of income levels and the sustainability of income-generating activities, as dimensions of livelihood restoration and well-being.
- **Process indicators** – measure and assess implementation processes. Examples are the functioning of liaison/participation structures, the levels of representation of different social categories/interest groups, and the processes by which conflicts and disputes are resolved.

Indicators will also be disaggregated to ensure that social variables are properly accounted for.

### 11.2 Monitoring Framework

Since this Project adversely affects only a small number of properties and PAPs, and there is only a temporary impact on land during the construction period, a simple monitoring mechanism for implementing this RAP is adequate. The monitoring program will involve the following:

- establishment of required institutional structures;

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<sup>8</sup> World Bank. 2007b. *Op cit.*

- operation of compensation, grievance and other necessary procedures;
- disbursement of compensation payments;
- development of livelihood restoration programs; and
- preparation and submission of monitoring and evaluation report.

Since few structures are affected and there is no resettlement, the implementing agency (MoWDI through the NWDP II) can conduct its own internal monitoring and submit reports to the Environmental Affairs Department (EAD) for an independent review.

### 11.3 Reporting

Reporting on the activities around involuntary resettlement forms an integral part of monitoring and evaluation, to: i) ensure early detection of conditions that necessitate particular mitigation measures, and ii) provide information on the progress and results of mitigation. Reporting methods of any resettlement activities on the project to date seem to have been limited to reports from consultants working on different aspects of the project. It is recommended that in the future all consultation and disclosure activities be reported in detail, internally and externally.

Reporting is to be undertaken on a monthly, quarterly and annual review basis and on Project completion. The RPF for NWDP II suggests that the Construction Supervision Consultant (CSC) has responsibility for monthly and quarterly reporting and NWDP II for the annual review. The NWDP II responsibility should be extended to include final reporting at project completion.

## 12 Grievance Redress Procedures

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Various legislation, including the Constitution of Malawi make provision for grievances to be addressed through the formal court system. This is a constitutional right but practice has shown that this can be a costly and time-consuming exercise. It is thus often advised to build on existing local conflict resolution mechanisms instead of first going to court. The complaints and grievances mechanism as outlined below is readily accessible to deal with complaints expeditiously. However if this fails the aggrieved party can refer the matter to the formal court system, as a last resort.

### 12.1 Grievances

At the time that the individual resettlement plans are approved and individual compensation contracts are signed, PAPs and households will have been informed of the process for expressing dissatisfaction and to seek redress. The grievance redress procedure will be simple and will be administered as far as possible, at local levels to facilitate access by PAPs. Since the implementing agency (MoWDI) of the Project would be a party to the contract it would not be the best office to receive, handle and rule on disputes. Therefore, all grievances concerning non-fulfilment of contracts, levels of compensation, or seizure of assets without compensation should be addressed to a local committee comprising traditional leaders of the affected area and representatives of the District Council.

### 12.2 Grievance Redress Principles

The following principles will apply to grievance management:

- Any procedure followed needs to take into account community and traditional dispute settlement systems. Historically people approached traditional leaders to resolve disputes – particularly in issues relating to use and ownership of land, trees and housing structures. Although it may be inevitable that, in the process of grievance management, project-affected people continue to follow customary procedures, they are likely to accept project-related structures if they are consulted on the matter and such leadership is incorporated into the structures.
- Information about all dispute and grievance procedures, including the functions of each structure and the processes to follow, need to be widely disseminated to all stakeholders, through project structures, governmental and non-governmental organisations, Community Based Organisations (CBOs), the Project Information Centre, and the media. This will not only fulfil the function of dissemination of information, but also transparency around project-related matters.
- Affordable and accessible procedures will be made available for the settlement of disputes arising from resettlement.
- Anybody assigned for reviewing grievances requires independence and impartiality, to foster the trust and confidence of all stakeholders.
- A written record of all disputes/grievances raised and dealt with on a project level will be kept by the appropriate body. The entire grievance resolution process will be recorded, and a copy made available to the aggrieved person/s.
- All records will be monitored regularly by SRBMP, and by an independent monitoring team and the Evaluation Panel appointed for the project, as part of an on-going monitoring and evaluation process. The Evaluation Panel's ToR will include the function of reviewing reported grievances and grievance management.

The principle of confidentiality needs to apply to all processes: confidentiality of the complainant, if so requested, and to information provided by any of the parties to a complaint.

## 12.3 Grievance Redress Process

All attempts shall be made to settle grievances amicably, often based on existing practice at the local level. Those seeking redress and wishing to state grievances will do so by notifying their Local Leader. The Local Leader will inform and consult with the District Council to determine validity of claims. If valid, the Local Leader will notify the complainant and they will be assisted. If the complainant's claim is rejected, the matter shall be brought before the District Councils for settlement. All such decisions must be reached within a full growing season after the complaint is lodged.

It has to be noted that in the local communities, people take time to decide to complain when aggrieved. Therefore, the grievance procedures will give people up to the end of the next full agricultural season, after surrendering their assets, to allow for enough time to present their cases. The grievance procedures will ensure that the PAPs are adequately informed of the procedure, before their assets are taken.

The grievance redress mechanism is designed with the objective of solving disputes at the earliest possible time, which will be in the interest of all parties concerned and therefore, it implicitly discourages referring such matters to the Tribunal for resolution. Contracts for compensation and resettlement plans will be binding under statute, and will recognize that customary law is the law that governs land administration and tenure in the rural areas. This is the law that most Malawians living in these areas, are used to and understand.

All objections to land acquisition shall be made in writing, in the language that the PAPs understand and are familiar with, to the Local Leader. Copies of the objections shall be sent to SRBMP and the Ministry of Agriculture, Irrigation and Water Development within 20 days after lodging the complaint. Channelling complaints through the Local Leader is aimed at addressing the problem of distance and cost the PAPs may have to face. The Local Leaders shall maintain records of grievances and complaints, including minutes of discussions, recommendations and resolutions made.

The procedure for handling grievances is shown in Figure 14 and is also described below.

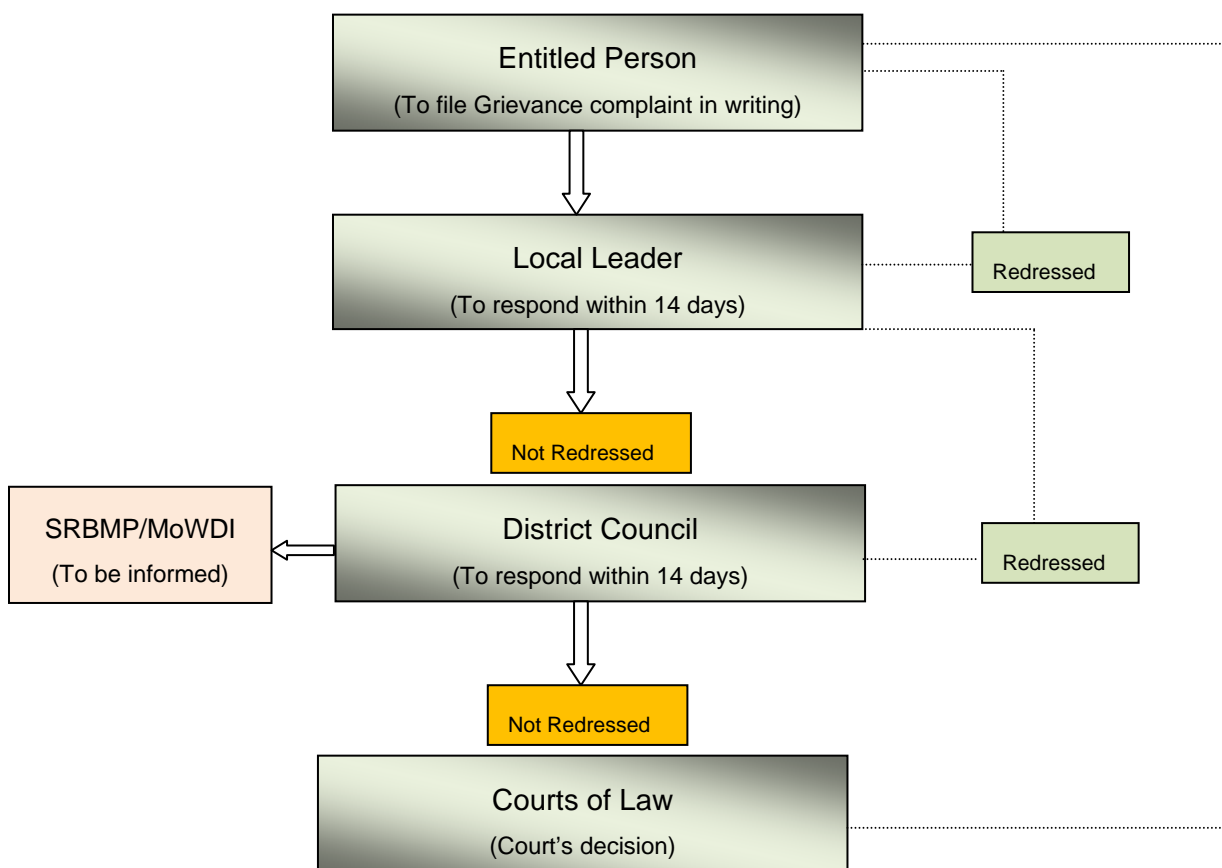


Figure 14. Grievance Redress Mechanism

- The affected person should file their grievance in writing (in English or the local language that with which they are conversant), to the Local Leader. The grievance note should be signed and dated by the aggrieved person. Where the PAP is unable to write, they should obtain assistance to write the note and emboss the letter with their thumb print.
- The Local Leader should respond within 14 days during which any meetings and discussions to be held with the aggrieved person should be conducted. If the grievance relates to valuation of assets, experts may be requested to revalue the assets, and this may necessitate a longer period of time. In this case, the aggrieved person must be notified by the Local Leader that the complaint is being considered. The Local Leader should try as much as possible, to use established mechanisms of grievance redress, which may include the presence of peers of the PAP and other local leaders.
- If the aggrieved person does not receive a response or is not satisfied with the outcome within the agreed time then they must lodge their grievance to the District Assembly and the District Assembly must inform the SRBMP of the complaint.
- The Council will then attempt to resolve the problem (through dialogue and negotiation) within 14 days of the complaint being lodged. If no agreement is reached at this stage, then the complaint is taken to the Courts of Law.

## 12.4 Consensus, Negotiations and Conflict Resolution

Consensus and negotiations are central to addressing grievances. In general, people are aware of their rights, their commitments to the country as citizens and their allegiance to village and family issues. For this reason, many Government funded community projects have been implemented without obstacles from PAPs.

However some projects have been known to stall due to delays in disbursement of compensation. Prior negotiations between Government representatives and project beneficiaries are therefore crucial to the success of the project. As a guiding principle, emphasis shall be placed on simplicity and proximity of the conflict resolution mechanisms to the affected persons, and the following shall be noted:

- a) Negotiation and agreement by consensus will provide the best avenue to resolving any grievances expressed by the individual landowners or households affected by community projects. These grievances shall be channelled through the Local Chiefs.
- b) SRBMP shall ensure that the main parties involved achieve any consensus freely. SRBMP or the relevant government representative shall clearly advise the general public, as to who is responsible for handling grievances or compensation claims.
- c) Grievances shall be addressed during the verification and appraisal process. If a suitable solution is not found, SRBMP shall defer consent of the project and the concerned project activities shall not be allowed to proceed.
- d) Grievances for which solutions have not been found shall be referred back to the community for discussion where the Local Leader and District Council will address the matter of concern to assist the claimants. The mediation process will be implemented according to traditional methods of mediation/conflict resolution. The resolution will then be documented on the relevant consent forms and verified.

If an agreement cannot be reached at community level the aggrieved party or parties shall raise their concerns to SRBMP who shall refer them to the respective District Councils, within 20 days of the verification meeting. Grievances that cannot be resolved at the Local and District level shall be officially communicated the SRBMP with copies to the District Council. Should grievances remain unresolved at this level, they can be referred to a court of law.

The steps provided below are presented to assist in following the grievance redress procedure:

**Step 1:** Approval of RAP by SRBMP after adequate consultation with PAPs.

**Step 2:** PAPs informed of the Grievance Procedure by SRBMP.

**Step 3:** Where there are grievances, PAPs present these to the Local Leader.

**Step 4:** The Local Leader informs and consults with the District Council.

**Step 5:** The District Council, in consultation with the Local Leader, resolves the grievances.

**Step 6:** Grievance that cannot be resolved at Step 5 above shall be presented to the SRBMP to resolve.

**Step 7:** Grievance that cannot be resolved at Step 6 above shall be presented to the Court of Law, as a last resort.

## 13 Implementation Schedule

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A broad implementation schedule for the Project is shown in Figure 15.

In order to facilitate the resettlement process given the proposed construction timing, the following key activities will be initiated immediately upon commencement of the Project:

- finalising the detailed configurations of the various project components (borrow areas, spoil disposal areas etc.) so that land acquisition requirements and recording exercises can be undertaken;
- appointing staff within MoWDI to commence with preparatory activities, including ongoing consultation with affected communities;
- establishing a Compensation Determination Committee to finalise compensation principles, norms and rates; and
- contracting suitable NGOs to assist with implementation of the RAP, including preparation of capacity building and skills enhancement programs.



Activity	Year 1												Year 2												Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6						
<b>Project Implementation</b>	[Shaded]																																			
Civil/Mechanical Works	[Shaded]																																			
<b>Mobilisation</b>	[Shaded]																																			
Mobilise PMU staff	[Shaded]																																			
Mobilise CSC	[Shaded]																																			
<b>Consultation &amp; Disclosure</b>	[Shaded]																																			
Establish consultation protocols	[Shaded]																																			
Appoint participating NGOs	[Shaded]																																			
Confirm consultation structures & mechanisms	[Shaded]																																			
<b>Asset Valuation &amp; Land Acquisition</b>	[Shaded]																																			
Finalise land acquisition requirements	[Shaded]																																			
Undertake formal asset recording/valuation & establish cut-off date	[Shaded]																																			
<b>Compensation Payment</b>	[Shaded]																																			
Establish Compensation Determination Committee	[Shaded]																																			
Finalise entitlements	[Shaded]																																			
Disperse compensation	[Shaded]																																			
Acquire land	[Shaded]																																			
<b>Livelihood Restoration</b>	[Shaded]																																			
Appoint participating NGOs	[Shaded]																																			
Determine restoration requirements	[Shaded]																																			
Develop/implement capacity building/training program	[Shaded]																																			
Develop/implement preferential employment strategy	[Shaded]																																			

Activity	Year 1												Year 2												Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6						
Monitoring	[Hatched pattern]																																			
Establish monitoring indicators & protocols	[Orange]	[Orange]																																		
Establish Panel of Experts		[Orange]																																		
Establish & implement internal monitoring		[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]	[Orange]

CSC: Construction Supervision Consultant;

*Figure 15. Resettlement Action Plan Implementation Schedule*

## 14 Cost Estimates

All costs for compensation and associated measures need to be included in the overall budget for the Project and need to be made available on a timely basis.

### 14.1 Budgeted Costs

This section details the cost estimates for the implementation of the measures detailed in the RAP. The cost estimates have been revised in June 2013 in accordance with the asset verification exercise described below. It is estimated that a total of MKW 272,118,525 (USD 777,482) will be required to implement this RAP, as outlined in Table 40.

### 14.2 Affected Assets Verification Exercise

Consultation meetings with PAPs were held from 25th – 28th June 2013 in the project impact area. The meetings were conducted by Mr Phula from the Ministry of Lands and Mr Kampira from SMEC. All the PAPs for the project were identified and verified and each PAP was consulted separately at their premises with the aim of verifying the affected properties and negotiating and agreeing on the compensation packages for the affected assets/businesses.

### 14.3 Details of Project Affected Persons and Affected Assets/Businesses

Mr Phula and Mr Kampira verified with the PAPs the actual property that will be affected by the project using a map and Project design details. Details of all PAPs are presented in Table 39. All PAPs were consulted in person except for Mr. Steven Njobvuyalema Moyo and Mr Lucius Banda and Staff and Management of Liwonde National Park who were consulted by telephone. They all indicated that they were willing to surrender their land for the project provided that they will be properly compensated. However, the PAPs were eager to know when the project would begin as this would assist them to reposition themselves properly. The Valuation team did not have an immediate answer to this request and only assured the PAPs that as soon as it becomes known as to when the project commences, the PAPs will be informed accordingly.

TABLE 39. DETAILS OF PROJECT AFFECTED PERSONS AND AFFECTED PROPERTY

Property Owner	Property Description	Items to be Affected
Steven Njobvuyalema Moyo	<b>Replacement of business structures</b>	
	Reception building	1
	Bar	1
	House	1
	Gate House	1
	Old restaurant	1
	Loss of business income during project construction period	1
Mr Billy Mphande	<b>Complete closure of business/replacement of boat landing area for Shire Camp</b>	
	Boat Safari	1
	Bar	1
	Restaurants	1
	Guest Rooms	5

Property Owner	Property Description	Items to be Affected
	Campsite	20
<b>Felix Mwawa</b>		
	Temporary loss of business due to construction activities	
	Shops	6
	Dwelling houses	1
<b>Malawi Police</b>		
	Maritime Police Office	
	Office building	1
<b>ESCOM</b>		
	Container office	1
<b>Liwonde Town Assembly</b>		
	Temporary loss of income from six business shelters for three years	
Inusa Matola	Loss of business for meat selling	1
Jackson Moote	Loss of business for meat selling	1
Shaibu Matemba	Loss of business for meat selling	1
Joseph Master	Loss of business for meat selling	1
Symon Laison	Loss of business for meat selling	1
Francis Phiri	Loss of business for meat selling	1
Damiano Makina	Loss of business for meat selling	1
Aufi Daudi	Loss of business for meat selling	1
Mussa Mabuka	Bicycle shed	1
Innocent Sanudi	Chips shed	1
Adine Mponda	Meat roasting shed	1
Lucius Banda	Rent for use of land for temporary contractor camp site and storage facilities for land amounting to 1.098 ha for three years	1
Daniel Chipeta	Temporary loss of bare land (0.25 ha) for the three years construction period	1
ESCOM	Temporary loss of bare land (0.35 ha) for the three years construction period	
Liwonde National Park	Replacement of tourist boat landing for Liwonde National Park	1
	Compensation for loss of business	1

## 14.4 Valuation Approach

The Projects entitlement framework was used in determining the appropriate method for calculating the compensation packages for the PAPs. For the project in question, the method of valuation used to assess the PAPs property factored in the Depreciated Replacement Cost (DRC), Profits Method, Comparison Method and investment method to derive a detailed compensation package for every PAP which is summarised in

Table 40. Further information of compensation calculations can be found in the valuation report prepared by Mr Phula from the Ministry of Lands (Phula, 2013).

TABLE 40. COSTS FOR COMPENSATION AND ASSOCIATED MEASURES

Property Owner	Property Description	Items to be Affected	Proposed Compensation Package (MWK)
Steven Njovuyalema Moyo	Replacement of business structures		37,500,000.00
	Reception building	1	
	Bar	1	
	House	1	
	Gate House	1	
	Old restaurant	1	
	Loss of business income during project construction period	1	
Mr Billy Mphande	Complete closure of business/replacement of boat landing area for Shire Camp <sup>1</sup>		55,000,000.00
	Boat Safari	1	
	Bar	1	
	Restaurants	1	
	Guest Rooms	5	
	Campsite	20	
Felix Mwawa	Temporary loss of business due to construction activities		5,000,000.00
	Shops	6	
	Dwelling houses	1	
Malawi Police	Maritime Police Office		These are government institutions and it will require interdepartmental discussions
ESCOM	Container office	1	These are government institutions and it will require interdepartmental discussions
Liwonde Town Assembly	Temporary loss of income from six business shelters for three years		2,310,000.00
Inusa Matola	Loss of business for meat selling	1	2,000,000.00

Property Owner	Property Description	Items to be Affected	Proposed Compensation Package (MWK)
Jackson Moote	Loss of business for meat selling	1	1,900,000.00
Shaibu Matemba	Loss of business for meat selling	1	2,000,000.00
Joseph Master	Loss of business for meat selling	1	2,300,000.00
Symon Laison	Loss of business for meat selling	1	1,900,000.00
Francis Phiri	Loss of business for meat selling	1	1,878,000.00
Damiano Makina	Loss of business for meat selling	1	1,825,000.00
Aufi Daudi	Loss of business for meat selling	1	1,825,000.00
Mussa Mabuka	Bicycle shed	1	1,095,000.00
Innocent Sanudi	Chips shed	1	1,277,500.00
Adine Mponda	Meat roasting shed	1	1,825,000.00
Lucius Banda	Rent for use of land for temporary contractor camp site and storage facilities for land amounting to 1.098 ha for three years <sup>2</sup>	1	3,500,000.00
Daniel Chipeta	Temporary loss of bare land (0.25 ha) for the three years construction period	1	1,250,000.00
ESCOM	Temporary loss of bare land (0.35 ha) for the three years construction period		These are government institutions and it will require interdepartmental discussions
Liwonde National Park	Replacement of tourist boat landing for Liwonde National Park	1	17,600,000.00
	Compensation for loss of business	1	
Administration costs for RAP implementation			35,000,000.00
Social communications and information-sharing program on natural and Barrage-induced changes in water levels			52,500,000.00
A monitoring program for water-related issues faced by people upstream and downstream of the Barrage			15,750,000.00
RAP Monitoring and evaluation			15,750,000.00
<b>Sub-total</b>			<b>259,160,500.00</b>
Contingency (5%)			<b>12,958,025.00</b>
<b>TOTAL</b>			<b>272,118,525.00</b>
Exchange rate at the time of calculating compensation packages: 1 US\$ = 350.00 MWK			

1 Based on owner reported average annual income likely to be lost due to proposed weed boom

2 Based on monthly land rental paid to Liwonde Town Council over 3 years

Note that once the RAP is approved, individual agreements/contracts between the MoWDI and the PAPs will be prepared and the PAPs together with the MoWDI will be required to sign the contracts to make the proposed compensation packages binding.

## 14.5 Funding Arrangements

Funding for the resettlement program will be provided by the MoWDI through the NWDP II. Disbursements based on budgetary requirements identified in Section 14.1 above will be made through the relevant District Assemblies in accordance with the RPF for the SRBMP.

## 15 Conclusion

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No families are expected to have to resettle physically as a result of construction activities for the Project. However, one commercial operation (Shiri Lodge) will be significantly affected and may need to be demolished and re-established elsewhere. Consultation with the owner is ongoing. A small market shelter (owned by the Liwonde Town Assembly) located on the western approach to the Barrage will also have to be removed prior to commencement of construction activities as will three sheds used for small businesses. The market shelter is used by eight of small businesses. This shed will be rebuilt following completion of the Barrage works. Another property on the western approach, referred to as Mr Mwawa's property will be impacted by the Project throughout the construction period. The location of the new weed boom will permanently impact on boat access for Shire Camp which is located on the western bank of the Shire River between the Barrage and the new western anchor point of the weed boom.

Except for a parcel of land used by Shiri Lodge, all land required for the new elevated approaches to the Barrage is within the existing road reserve. Land required for the permanent administration centre for the refurbished Barrage and for the weeds control mechanism on both east and west banks of the Shire River is Government owned. Land required for the temporary contractor site is owned by ESCOM and two private developers.

Because of the difficulty in distinguishing between changes in flow regime and lake levels attributable to the refurbished Barrage to those attributable to "natural" variations it has been decided to manage the upstream and downstream social impacts through safeguard recommendations (through the Projects ESIA and ESMP) on release strategies, early warning systems and a comprehensive awareness program rather than compensation.

"Inform displaced persons of their rights, consult them on options, and provide them with technically and economically feasible resettlement alternatives and needed assistance, including (a) prompt compensation at full replacement cost for loss of assets attributable to the project; (b) if there is relocation, assistance during relocation, and residential housing, or housing sites, or agricultural sites of equivalent productive potential, as required; (c) transitional support and development assistance, such as land preparation, credit facilities, training or job opportunities as required, in addition to compensation measures; (d) cash compensation for land when the impact of land acquisition on livelihoods is minor; and (e) provision of civic infrastructure and community services as required"<sup>9</sup>. So says the World Bank, and in sum this is what the Resettlement Action Plan comprises.

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### DISCLOSURE OF THE INSTRUMENT

In order to meet international (including World Bank) standards, this Resettlement Action Plan will be made available in an accessible form to project affected groups and other stakeholders, in hard copy and in electronic format posted on the MoWDI's website, for public review and comments and also as part of the environmental review process by the Environmental Affairs Department.

This Report will also be publically disclosed through the World Bank's on-line InfoShop.

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<sup>9</sup> World Bank. 2007a. *Op cit*.



## 16 Reference Material

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### 16.1 References

- Environmental Affairs Department Malawi (1997). Environmental Impact Assessment Guidelines.
- Kraler, A. (2008). Agriculture in Dambos Around Mzuzu City, Malawi; a Sustainability Assessment. Honors Thesis. Amanda Klarer, International Development Studies and Environmental Science, Dalhousie University, Halifax, Canada.
- MoAIWD (2012). *Ministry of Agriculture, irrigation and Water Development Shire River Basin Management Project – Draft Resettlement Policy Framework*. February 2012
- National Statistical Office (2011). Malawi Demographic and Health Survey 2010.
- National Statistical Office (2009). Population and Housing Census Report 2008.
- Norconsult (1997). Malawi National Water Development Project Shire River Management Scheme: Environmental Assessment – Phase 1, Final Report March 1997.
- Norconsult (1997). Malawi National Water Development Project Shire River Management Scheme: Environmental Assessment – Phase 1, Appendices, Final Report March 1997t.
- Norconsult and Associates (2003). The Integrated Water Resources Development Plan for Lake Malawi and Shire River System “Lake Malawi Level Control” – Stage 2, Final Feasibility Report, Vol. III – Baseline and Study Process Papers, Part A – Environment and Water Resources. Report to Ministry of Water Development by Norconsult and Associates, December 2003.
- NORPLAN, DHI, COWI and Willy and Partners (2002). Feasibility Study for Shire River Flow Augmentation Project – Supplementary Report: Additional Simulations on River Flow and Lake Levels, September 2002, Report to Ministry of Water Development, Republic of Malawi.
- NORPLAN (2011a). National Water Development Project II: Phase 1 Report: Optimised Design for Detailed Design of the Upgraded Kamuzu Barrage, Volume 1 Main Report, NORPLAN May 2011.
- NORPLAN (2011b). Environmental and Social Assessment Report for the Detailed Design of the Upgraded Kamuzu Barrage. Report for the MoAIWD, September 2011.
- NORPLAN in Association with Willy and Partners Engineering Services (2013). Main Report for Detailed Design of the Upgraded Kamuzu Barrage. Final Report (Draft) to the Ministry of Water Development and Irrigation, National Water Development Project II, May 2013, Volume 1, Main Report.
- NORPLAN in Association with Willy and Partners Engineering Services (2012a). Detailed Design Report for the Upgraded Kamuzu Barrage. Report to the Ministry of Water Development and Irrigation, National Water Development Project II, July 2012, Volume 2, Drawings.
- Nsanje District Assembly (2007). District Flood Contingency Plan (2007-2008), October 2007.
- Phula, Mabvuto (2013). Compensation Assessment for Properties Affected by Kamuzu Barrage Project at Liwonde in Machinga District. Report to Secretary for Water and Irrigation Development, 24<sup>th</sup> April 2013.
- SMEC International (2010). *Technical Proposal: Independent EIA of the Upgraded Kamuzu Barrage*. December 2010.
- World Bank (1994a). Environmental Assessment Sourcebook, Volume I: Policies, Procedures and Cross-Sectoral Issues, Environment Department, World Bank Technical Paper No. 139, Washington, D.C.
- (1994b). Environmental Assessment Sourcebook, Volume II: Sectoral Guidelines, Environment Department, World Bank Technical Paper No. 140, Washington, D.C.
- (1994c). Environmental Assessment Sourcebook, Volume III: Guidelines for Environmental Assessment of Energy and Industry Projects, Environment Department, World Bank Technical Paper No. 154, Washington, D.C.

## 16.2 Websites

[www.worldbank.org](http://www.worldbank.org) – World Bank Environmental Guidelines and Operational Directives.

[www.earth.google.com](http://www.earth.google.com) – free satellite imagery, worldwide coverage.

[www.ra.org.mw/documents/environmental%20social20/](http://www.ra.org.mw/documents/environmental%20social20/) - Road Environment and Social Act

[www.unpei.org/programs/country\\_profiles](http://www.unpei.org/programs/country_profiles) - Poverty Environment Initiative

[www.malawi.gov.mw](http://www.malawi.gov.mw)- Malawi Government

## 16.3 Maps/Aerial Photos/Images

The following maps were obtained from the Department of Surveys, Lilongwe:

Malawi 1:50 000 topographic map sheet 1535 A1: Liwonde

Malawi 1:50 000 topographic map sheet 1435 C1: Lake Malombe West

Malawi 1:50 000 topographic map sheet 1435 C2: Lake Malombe

Malawi 1:50 000 topographic map sheet 1435 C4: Naifulu

High resolution colour aerial imagery for selected project areas in the form of ortho-imagery (15cm ground sample distance) and 0.25m contours was obtained from the Client on 30<sup>th</sup> November 2011. The aerial survey was undertaken on 22<sup>nd</sup> September 2011 specifically for the Project.



Figure 16. Liwonde Town Council Market Shelter- currently used as a butcher's shed on the Barrage approach, west bank.



Figure 17. Mr Mwawa's shop located on the Barrage approach - west bank, Shire River.



*Figure 18. Ministry of Transport and Public Works land - site for weed boom west anchor.*



*Figure 19. National Parks and Wildlife land- site for weed boom east anchor.*



Figure 20. Maritime Police Land- site for permanent administration building.



Figure 21. Land for the temporary construction work camp.



*Figure 22. Shiri Lodge development on the Shire River and road reserve, Liwonde.*



*Figure 23. Accommodation/boat safari enterprise (Shire Camp) located on the right bank of the Shire River between Kamuzu Barrage and the Weeds Control West Anchor Point.*

## Appendix 1: List of Consulting Staff

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### Foreign Key Professional Staff

Team Leader / EIA Expert Michael Holics

### Regional / Local Key Professional Staff

Water Resources / Hydrology Engineer Barasa Irenius Wandera

Civil Engineer Japhet Rutere

Fisheries Expert Fanuel Kapute

Wildlife Expert Cuthbert Nahonyo

Ecologist Michiel Karl Reinecke

Social Expert Anastella Kaijage

Legal Expert Titus Mvalo

### Administration Support Staff

Secretary Evelyn Mwasi

In order to support the Project Team and to complete the EIA study, the Consultant has also mobilised the following additional local staff:

EIA / Wildlife Specialist Felix Kalowekamo

Water Quality Specialist Austin Mtethiwa

Social Specialist Emily Kamwendo

Social Specialist Murphy Kajumi

Resettlement Specialist Lyson Kampira

## Appendix 2: Terms of Reference for Preparation of the Resettlement Action Plan

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Government of the Republic of Malawi

MINISTRY OF IRRIGATION AND WATER DEVELOPMENT  
SECOND NATIONAL WATER DEVELOPMENT PROJECT (NWDP II)  
IDA CREDIT NO. CR 4307-MAI AND GRANT NO. H294-MAI

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REQUEST FOR PROPOSALS  
RFP NO.: WRM/C/07

CONSULTANCY SERVICES FOR INDEPENDENT  
ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADED  
KAMUZU BARRAGE

Ministry of Irrigation and Water Development,  
Private Bag 390,  
Lilongwe 3,  
Malawi.

November, 2010



## Section 5. Terms of Reference

### INDEPENDENT ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADED KAMUZU BARRAGE

#### 1. INTRODUCTION

The Ministry of Irrigation and Water Development (herein referred to as client) requests proposals from qualified consultants to carry out detailed Environmental Impact Assessment (EIA) for the upgrading of Kamuzu Barrage at Liwonde under Lake Malawi Level Control subcomponent, in accordance with the requirements of Malawi's EIA process. The Ministry of Irrigation and Water Development intends to incorporate all practical and cost-effective measures into the project in order to avoid or minimize negative environmental impacts, capture environmental benefits and, overall, to ensure sound environmental management.

The potential for any Shire River regulation or control structure at Liwonde to upstream and downstream impacts makes it important to understand something of the ecology of Lake Malawi as well as the Shire River.

The preliminary environmental impact assessment which was carried out in 2003 by NORCONSULT for the Government of Malawi only focused on general impacts of the proposed project. The proposed EIA should therefore assess environmental impacts in detail in the direct impact areas and all impacts arising from associated activities of the project. These terms of reference for a detailed EIA have been produced to address issues where more information is needed and detailed analysis or studies required. They are based on the gaps identified from a review of the earlier environmental assessments.

Thus, the purpose of the EIA is:

1. To provide the Ministry of Irrigation and Water Development with advice on how the detailed project may be designed and planned to avoid or mitigate negative impacts and to better capture anticipated environmental benefits; and
2. To prepare an Environmental Impact Assessment (EIA) report acceptable to the Environmental Affairs Department and the World Bank

#### 2. PROJECT BACKGROUND

The Government of Malawi, through the Ministry of Irrigation and Water Development (MIWD), is currently preparing for the implementation of a National Water Development Project Phase II (NWDP II). Under Phase I of the NWDP, a number of studies were undertaken including: i) Water Resources Development Plan Study to identify future potential sources of water supply, ii) Catchment Rehabilitation and Protection Study, iii) Integrated Water Resources Management Plan for the Lake Malawi and Shire River Study, iv) Songwe River Stabilization Study and v) Strengthening of the Water Resources Board Study.

The Integrated Water Resources Management Plan for the Lake Malawi and Shire River Study (also known as the Lake Malawi Level Control (LMLC)) in Phase I was done to investigate alternatives for regulating Lake Malawi level and Shire River system. A number of options including no action option, construction of a high dam at Kholombizo, refurbishment of the Kamuzu Barrage at Liwonde, construction of a new barrage at Liwonde and construction of a pumping barrage at Samama, were proposed. A feasibility study was conducted to assess the options that should be taken to detailed design. The upgrading of Kamuzu Barrage at Liwonde and construction of the pumping scheme at Samama were selected as the best options.

The feasibility study indicated that lake levels should be maintained between 473.50 masl and 475.50 masl as an acceptable range. It was found that above 476 masl agriculture land, property, tourist facilities losses were expected. It was further concluded that problems for fisheries and lake transport were expected at lake levels below 473.50 masl. At 470 masl negative impacts on commercial fisheries and cichlid fish species were anticipated.

The findings and recommendations of this study partly formed the basis of the preparation of the Water Resources Management Component under NWDP II. The Water Resources Management Component of the NWDP II consists of the five subcomponents namely; Water Resources Management Institutional and Technical Support, Water Resources Investment Strategy, Pilot Catchment Management and Development, Lake Malawi Level Control and Enabling Legislation for National Water Policy.

*The objectives of the LMLC in NWDP II are:*

- a) To regulate Lake Malawi levels and Shire River flows;
- b) To enable more reliable power production in the Shire River power plants, with lower risks of flow shortfall during drought periods, as a result of improved flow regulation at the Kamuzu Barrage, Liwonde.
- c) To improve the aquatic ecology in the Lake Malawi and Shire River System (including a substantial increase in fish numbers and the fish catch), and consequently the livelihoods of communities that depend on it, through the provision of environmental flow releases, restoring in part the natural conditions of higher flows at the end of each wet season.
- d) To improve lake transportation between many lakeshore towns in Malawi as well as in Mozambique and Tanzania as a result of more stable lake levels.
- e) To modernize the barrage structure in order to improve the barrage operation efficiency and effectiveness.
- f) To establish and maintain an Integrated Water Resources Management System (IWRMS) for Lake Malawi and the Shire River, as a strategic framework within which the water resources planning, development, management and operation of the Lake and River system will be undertaken, and to provide basic tools such as hydrological modeling systems to enable fully informed planning and management to be undertaken within this framework;

Rehabilitation and upgrading of the present lake level control structure, the Kamuzu Barrage at Liwonde, is to be undertaken within the LMLC subcomponent in NWDP II. This upgrading of the Kamuzu Barrage will contribute towards reducing risks and stabilizing flows and Lake Malawi levels over a range of droughts and wet climatic sequences, but not for the most severe drought

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sequences. The effect of the barrage on the river flow fluctuations will be insignificant compared to natural long term and seasonal fluctuations.

The preliminary EIA by NORCONSULT indicated that a refurbished barrage at Liwonde may increase water levels up to a maximum of about 10-20cm but still maintained below the maximum level of 476 masl. Analysis of aerial photographs in the preliminary EIA showed that an estimated 62km<sup>2</sup> of land will be affected if the levels are increased by 20cm.

### 3. SCOPE OF WORK

While the scope of activities for the EIA studies of the barrage should be focused on the issues outlined below, the consultant may, in the course of proposal development, identify further concerns which should be addressed. These should be brought to the immediate attention of the Ministry of Irrigation and Water Development for consideration and possible inclusion in the study.

#### **The following tasks shall be undertaken by the consultant:**

- a) Review relevant literature but not limited to the following:
  - i) Feasibility Study for Shire River flow Augmentation Project Final Report, October 2001, prepared for the Government of Malawi by NORPLAN.
  - ii) The Integrated Water Resources Development Plan for Lake Malawi and Shire River System - "Lake Malawi Level Control" – Stage 2 December 2003, prepared for the Government of Malawi by Norconsult;
  - iii) The Integrated Water Resources Development Plan for Lake Malawi and Shire River System - "Lake Malawi Level Control" – Stage 2 Extension,
  - iv) An IWRMS Element: Strategic Plan for Pumping Barrage Implementation" August 2004, prepared for the Government of Malawi by Norconsult,
  - v) Shire River Management Project, Project Definition (ESCOM, 1996). Prepared for ESCOM by Piésold,
  - vi) Power System development Study and Operation Study (ESCOM, 1998). Prepared by Lahmeyer International-Knight Piésold,
  - vii) Shire River Management Scheme (SRMS 1997). Prepared for the Government of Malawi by Norconsult International AS,
  - viii) Documentation regarding trans-boundary water resources management in the SADC region e.g. ZAMCOM Agreement and the SADC Revised Protocol on Shared Water Courses
- b) Provide a full description of the nature of the project with respect to the name of the proponent, the postal and physical address, the spatial\location of the site for the project with aid of topographical and base maps of the area, the estimated cost of the project, the size of land for the project site, the number of people to work on the area, handling of waste especially dredged material and aquatic weeds.
- c) Examine the present baseline data on relevant physical-chemical, economic, social cultural and environmental characteristics of the study area, including Shire River and Lake Malawi and any other water bodies in the catchment areas that may be affected by the project. Baseline data should include but not limited to the following:

- i) Physical environment: geology; topography; soils; climate and meteorology; surface and groundwater hydrology; current water levels of the Lake and Shire River, ambient air quality, sedimentation;
  - ii) Biological environment: flora; fauna; rare or endangered species; sensitive habitats, including Lake Malawi National Park, Liwonde National Park, significant natural sites, etc.; species of commercial importance (e.g. chambo, hippos); and species with potential to become nuisances, vectors or dangerous.
  - iii) Socio-cultural environment including population; migration pattern land use; planned development activities; community structure; employment; distribution of income, goods and services; recreation/tourism; public health; cultural properties .
- d) Provide a site-specific map of the area (Scale 1:50,000 or larger) showing the proposed project site and scale site plans of (1:10,000 or larger) should also be provided.
- e) Provide a thorough and clear explanation of :
  - i) Existing *status quo* water release operating rules from the current barrage;
  - ii) Currently planned water release operating rules (to the extent that they may be already defined) from the upgraded barrage;
  - iii) Current and expected future institutional responsibilities for making the water releases and monitoring the impacts (including stakeholder advisory groups, if any);
  - iv) Various alternative options for water release operating rules from the upgraded barrage, with their respective environmental implications (physical, biological, and social); and
  - v) Recommended criteria and procedures for fine-tuning or otherwise modifying the water release regime in the future, based on adaptive management from lessons learned over time.
  - vi) Examination of the implications of maintaining a minimum Shire River flow that provides base-load hydropower generation at the existing downstream dams, while releasing additional flows during the wet season in the form of a controlled “environmental flood” that generally mimics natural patterns (while seeking to avoid most damage to infrastructure or human settlements).
  - vii) Careful assessment of water release options that could be problematic from an environmental standpoint, including:
    - Strong daily (or weekly) fluctuations in river flow that would seek to increase power generation at downstream dams during peak electricity demand periods;
    - Intentional high water releases (above normal base flows) during the dry (rather than wet) season; and

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- Rapid changes in water releases, such as abrupt increases that lead to accelerated river bank erosion and/or abrupt decreases that lead to large-scale stranding of fish.

- f) Describe the major activities to be undertaken during construction, operation and decommissioning of the project.
- g) Justify the suitability of the proposed site for the proposed project. Outline any alternatives under consideration; the alternatives include but not limited to siting, design, technology selection.
- h) Identify the environmental impacts (direct and indirect, short and long-term and cumulative) associated with the project at and around the site focussing on both positive and negative impacts as well as physical, chemical, social, economic and cultural components of the environment associated with the construction, operation and decommissioning of the project including but not limited to:
  - i) resettlement
  - ii) effects on floating aquatic weeds
  - iii) effects on wildlife and protected areas, etc.
  - iv) effects on the hydrology and water quality regimes of the River and Lakes
  - v) effects on fisheries resource (including cage farming)
  - vi) impacts of altering river flow regimes on the ecology
  - vii) impact on terrestrial and aquatic wildlife, by disruption of migration routes
  - viii) ecology and population impacts
  - ix) impact on soil erosion and siltation
  - x) safety of the public with regard to barrage upgrading for recreation, navigation, and fishing.

The environmental impacts to be assessed include not only those around the project site, but also upstream and downstream of the Kamuzu Barrage, including, among others, (i) increased flooding within the Liwonde National Park and (ii) any potential risks to Lake Malawi's aquatic biodiversity, such as the numerous endemic fish species that live only within the shallow waters of the Lake.

- i) Prescribe measures to eliminate, reduce or mitigate the negative effects identified above and measures to enhance positive measures.

Undertake public consultation to ensure that all interested and affected stakeholders are involved in the EIA process and incorporate their views into the EIA report. Ministry of Irrigation and Water Development intends that all concerned public and private stakeholders in the project have adequate input to its planning and detailed design, and that the project will be well-received by them. Evidence of consultation should be provided in the report. The consultant will propose an adequate programme of consulting the public during the EIA. Specifically, the consultant will propose an effective, comprehensive public consultation strategy which should include its objective, list of stakeholders to be consulted, methods for reaching these stakeholders, the scheduling of consultation activities, and how the consultation efforts will be analyzed.

Programme for consultations with the Tanzanian and Mozambican governments should also be highlighted with regard to aspects of the proposals which may affect them, and existing policies and programs along the lake.

- j) Describe the pertinent regulations, protocols and standards pertaining to the project and their implication on the project in Malawi and Mozambique as well as at international and regional level. In Malawi, reference should be made but not limited to the National Environmental Policy, Environment Management Act, The Malawi National Water Policy of 2005, Water Works Act, Fisheries Act, Fisheries Policy, Land Policy, Land Acquisition Act, Wildlife Policy, World Bank Specifications such as Environmental Assessment OP 4.01, Natural Habitats OP 4.04, Physical Cultural Resources OP 4.11, Involuntary Resettlement OP 4.12, and Projects on International Waterways OP 7.50) and other relevant legislation.
- k) Conduct an Assessment of regional relations and interests of riparian countries (Tanzania and Mozambique) including relevant scientific and other data generated for Lake Malawi.
- l) Prepare a Resettlement Plan for the project including number of people to be replaced, an inventory of all property and structures to be affected or lost due to the project and indicate the alternative place for relocating displaced people to ensure that people are not worse-off as a consequence of the project. This should be done in accordance to the Land Acquisition Act and other relevant legislation and guidelines, and the World Bank's Involuntary Resettlement Policy (OP 4.12).
- m) Propose a Conflict Management Plan that outlines formal mechanism for addressing grievances or complaints by project-affected persons and other procedures for conflict management.
- n) Propose an Environmental Monitoring Plan (EMP) covering performance monitoring and outcome monitoring of all mitigation measures recommended in the EMP. This should include the activities of the project, key socio-economic monitoring parameters, water quality (including aquatic weeds), environmental specifications for barrage construction and environmental rules for the contractor to follow, barrage operation (water release) recommendations that take into account environmental and related social concerns, the frequency of monitoring, resources required, authorities responsible for monitoring and Means of Verification.
- o) Propose an Environmental Management Plan (EMP) which should be in text as well as tabular form and should specify the predicted impacts, mitigation measures/enhancement measures and schedule of these measures. The consultant should estimate the costs of implementing this plan, including all capital, operating and training costs, and identify recommended funding sources for the costs that are recurrent. It must identify the information needed to guide management decisions. It should indicate clearly responsibilities for lead agencies, stakeholders and any training needs that should be undertaken to ensure its proper implementation.
- p) Prepare bills of quantities for monitoring mitigation and impact management to be included in tender documents

#### 4. RELATIONSHIP OF EIA TO PROJECT PLANNING AND DESIGN

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To maximize the opportunity for good environmental planning and design of the project, the consultant will work closely with the engineering team and other teams. As appropriate, the consultant will offer suggestions on how the project detailed design or plan may be changed to improve its environmental performance. Any changes accepted by Ministry of Irrigation and Water Development will be incorporated into the project detailed plan and design.

## **5. PROPOSED TEAM OF CONSULTANTS**

To adequately address the core issues of the study, it is advisable that the team should at least be composed of:

- (i) EIA Expert – Team Leader, with at least a Master of Science Degree in Environmental studies or its equivalent and at least 15 years of relevant experience in the assessment of the environmental impact assessment and mitigation plan preparation along the Lake and riparian areas of the Shire River.
- (ii) Civil Engineer with at least a Bachelor of Science Degree in Civil engineering or its equivalent and at least 10 years relevant experience (roads, bridges and spillway design, repair works of hydraulic structures etc).
- (iii) Water Resources/Hydraulic Engineer with at least a Masters degree in Hydraulic engineering or its equivalent and at least 10 years relevant experience in water management planning.
- (iv) Fisheries Expert with at least a first Degree in Aquaculture/Fisheries and at least 10 years experience in fisheries management.
- (v) A Wildlife Expert with at least a first degree in Wildlife studies and management and at least 10 years relevant experience in wildlife management and control in relation to water development projects.
- (vi) An Ecologist with at least a first Degree in Ecology and at least 10 years relevant experience in ecological management or related field and mitigation plan preparation.
- (vii) A Social expert with at least a first degree in Social Sciences and at least 10 years relevant experience for the social impact assessment and mitigation plan preparation.
- (viii) Legal Expert with a Degree in Law and at least 10 years experience in legal water requirements, resettlement and compensation issues.

## **6. RECOMMENDED FORMAT /LAYOUT OF THE EIA REPORT**

It is recommended that the preparation, presentation, structure of EIA report should as much as possible follow the format in the Guidelines for Environmental Impact Assessment in Malawi (December 1997) while meeting the environmental and social safeguards requirements of the World Bank (Annex B – Content of an Environmental Assessment report for category A projects, and Annex C – Environmental Management Plan) of the World Bank's Environmental Assessment Policy. It is also recommended that the EMP and the Resettlement Action Plan should be presented as separate volumes of the EIA Report.

## 7. EXPECTED OUTPUTS

The overall output of the consultancy is the EIA report. Specific outputs will include the following:

- i) An inception report that will detail how the assignment will be carried out in a work schedule
- ii) Draft Environmental Impact Assessment report
- iii) Final Draft Environmental Impact Assessment Report
- iv) Bills of quantities for monitoring, mitigation measures and impact management for inclusion in tender documents for all works
- v) Environmental Management Plan.
- vi) Resettlement plans
- vii) Public consultations reports (as Annex).

## 8. REPORTING ARRANGEMENTS

The consultant will submit quarterly progress reports on the work to the Ministry of Irrigation and Water Development, detailing work progress, constraints and solutions whilst carrying out the assessment. These will be due on the 15<sup>th</sup> of the subsequent month at the end of each quarter and 10 copies will be submitted to the client. The comments by the client and World Bank will be discussed at a consultative meeting within two weeks after submission of the report.

The consultant will submit 15 hard copies plus an electronic copy in MS Word format, of the outputs outlined in 7 above when they are due to the Ministry of Irrigation and Water Development. These will be reviewed and whenever necessary the client will call for a consultative meeting within two weeks of submission.

The consultant will also prepare the required numbers of hardcopies for meetings and workshops.

The Ministry of Irrigation and Water Development will then submit the Final EIA report to Environmental Affairs Department and World Bank. The report will be reviewed by the Technical Committee on Environment (TCE) and if the report is satisfactory it will be recommended to the National Council on Environment for Approval.

The lead consultant will make himself/ herself available for subsequent discussions about the EIA report with the client.

## 9. SUPERVISION



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The assignment shall be supervised by the Director of Water Resources. The consultant will report to the Deputy Director of Water Resources (Surface Water) and Team Leader of the Project Preparation Team for the Water Resources Management Component of the project.

#### **10. DURATION**

The consultancy assignment is expected to be conducted in 20 staff-months covering a period of 10 months. More significantly, the consultancy should:

- i) Encompass dry (low river flows) as well as wet (high flow) periods.
- ii) Broadly overlap with the period of detailed technical design to enable the incorporation of the consultancy findings into the technical designs and evaluate the final design from an environmental standpoint.