

# THE UNITED REPUBLIC OF TANZANIA



## MINISTRY OF WATER

### LAKE VICTORIA ENVIRONMENTAL MANAGEMENT PROJECT PHASE II

#### ENVIRONMENTAL IMPACT STATEMENT FOR CONSTRUCTION OF MUSOMA SEWERAGE SYSTEM AND WASTEWATER TREATMENT POND IN MUSOMA MUNICIPAL - MARA REGION

#### ANNEX I: ABBREVIATED RESETTLEMENT ACTION PLAN

<b>Submitted to:</b>  NATIONAL ENVIRONMENT MANAGEMENT COUNCIL PLOT 29/30 REGENT ESTATE P. O. BOX 63154 DAR ES SALAAM Tel: 255 (022) 2774852: Fax +255 22 277 4901 Email: <a href="mailto:nemc@nemctz.org">nemc@nemctz.org</a>	<b>Prepared by:</b>  UJAMAA IMPEX COMPANY LIMITED AZIKIWE/SAMORA AVENUE, Coronation House Appt 102, P.O. Box 78833, Dar es Salaam. Tanzania Tel: 0732 027357 Email: malipulasr2006@yahoo.com
---	---

16 June 2015

---

## TABLE OF CONTENTS

---

TABLE OF CONTENTS.....	ii
LIST OF TABLES.....	iv
LIST OF FIGURES.....	iv
ACRONYMS AND ABBREVIATIONS.....	v
1.0 INTRODUCTION.....	6
1.1 PROJECT BACKGROUND.....	6
1.2 PROJECT RATIONALE.....	6
2.0 PROJECT DESCRIPTION.....	7
2.1 PROJECT IMPLEMENTATION.....	7
2.2 PROJECT COMPONENTS FOR PHASE I.....	7
2.2.1 Components location.....	8
2.2.2 Component layout designs.....	9
2.2.3 Proposed works/activities.....	10
3.0 THE PROCESS OF PREPARING RESETTLEMENT AND COMPENSATION PLAN.....	12
3.1 Objectives of the Abbreviated Resettlement Action Plan.....	12
3.2 Approach and Methodology.....	13
3.2.1 Approach.....	13
3.2.2 Methodology.....	13
4.0 THE NATURE AND EXTENT OF RESETTLEMENT ISSUES.....	14
4.1 Collection Sewers pipelines.....	14
4.2 Sewage pumping stations.....	15
4.2.1 Mukendo Pumping Station.....	15
4.2.2 Kitaji Pumping Station.....	15
4.2.3 Iringo Pumping Station.....	16
4.3.4 Trunk Pumping Station.....	16

4.3.5	Conveyance main sewers .....	17
4.3.6	Wastewater Stabilization Ponds.....	17
<b>5.0</b>	<b>CONSULTATIONS AND STAKEHOLDERS PARTICIPATION .....</b>	<b>19</b>
5.1	Stakeholders identification.....	19
5.2	Stakeholders consultation .....	19
5.3	Stakeholders concerns related to resettlement .....	20
<b>6.0</b>	<b>VALUATION OF ASSETS AND LOSSES .....</b>	<b>22</b>
6.1	Sewer Pipe Network .....	22
6.2	Iringo Pumping Station .....	25
6.3	Kitaji Pumping Station.....	25
6.4	Mukendo Pumping Station .....	26
6.5	Trunk Main Pumping Station.....	26
6.6	Makoko WasteWater Treatment Pond.....	26
<b>7.0</b>	<b>MITIGATION AND COMPENSATION PROCEDURES .....</b>	<b>28</b>
7.1	Principles and procedures .....	28
7.1.1	Organisation Procedures and Scheduling .....	28
7.1.2	Implementation organization structure .....	28
7.1.3	Notification Procedure .....	29
7.2	Grievance redress mechanism.....	29
7.2.1	Institutional responsibility .....	29
7.2.2	Procedures for grievance redress .....	30
7.3	Compensations and entitlements.....	30
7.3.1	Categories of PAPs and their entitlements .....	30
7.3.2	Compensation for land.....	30
7.3.3	Compensation for household structures .....	30
7.3.4	Compensation for crops and trees .....	31
7.3.5	Compensation for community assets .....	31
7.4	Forms of Compensation.....	31
7.4.1	Compensation for land .....	31
7.4.2	Compensation for crops .....	33

7.4.3	Compensation for physical property .....	33
8.0	MONITORING .....	35
9.0	CONCLUSION AND RECOMMENDATIONS.....	38

### LIST OF TABLES

Table 1:	Project activities related to pumping stations and WSP. ....	11
Table 2:	Identified and consulted key stakeholders. ....	20
Table 3:	Detailed estimate values of crops and other features.....	22
Table 4:	Summary of Estimated Compensation Cost by project area .....	27
Table 5:	Summary of Estimated Compensation Cost by Category of Asset .....	27
Table 6:	Institution responsibility for implementation of ARAP .....	30
Table 7:	Forms of Compensation.....	31
Table 8:	Implementation Schedule of ARAP .....	37

### LIST OF FIGURES

Figure 1:	Location of sewage pumping stations a) within the collection network and b) along the conveyance mains with WSP at the end. ....	8
Figure 2:	Layout of pumping stations. ....	9
Figure 3:	Layout of the proposed WSP at Makoko.....	10
Figure 4:	Collection sewer network .....	14
Figure 5:	Observed environments at Mkendo P/S. ....	15
Figure 6:	Observed environments at Kitaji P/S site.....	15
Figure 7:	Observed environments at Iringo P/S site. ....	16
Figure 8:	Observed environments at Trunk P/S site. ....	16
Figure 9:	Observed environments at Makoko WSP site. ....	18
Figure 10:	Discussions with stakeholders. ....	20

**ACRONYMS AND ABBREVIATIONS**

---

EAC	East African Community
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMA	Environmental Management Act
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
GEF	Global Environmental Facility
LVBC	Lake Victoria Basin Commission
LVEMP II	Lake Victoria Environmental Management Project Phase Two
NEMC	National Environment Management Council
NPCT	National Project Coordination Team
RPCT	Regional Project Coordination Team
SIDA	Swedish International Development Agency
ToR	Terms of Reference
TRC	Technical Review Committee
URT	United Republic of Tanzania

## **1.0 INTRODUCTION**

### **1.1 PROJECT BACKGROUND**

The Lake Victoria Environmental Management Project Phase Two (LVEMP II) is a compliment and upscale of LVEMP I which ended in December 2005 with an implementation period of eight (8) years (2009-2013 and 2014-2018). It is a regional initiative and a multi-sector approach on the management of the Lake Victoria Basin implemented in the five East African Community (EAC) Partner States, Burundi, Kenya, Rwanda, Tanzania and Uganda. Lake Victoria Basin Commission (LVBC) coordinates the project regionally through the Regional Project Coordination Team (RPCT) based in Kisumu, Kenya. Respective countries coordinate the activities through the Ministries responsible for management of water resources which coordinates the implementation of the project of which in Tanzania is the Ministry of Water, The project became effective on 20<sup>th</sup> August 2009 in Tanzania, and it covers a total of 23 districts in Mara, Shinyanga, Mwanza and Kagera Regions. The Project is funded by the World Bank, Global Environmental Facility (GEF), Swedish International Development Agency (SIDA), Government of Tanzania and Communities.

### **1.2 PROJECT RATIONALE**

The town of Musoma is located on the eastern shores of Lake Victoria and about 250 km north of Mwanza. It has a total urban population of about 160,000. About 65% of the population is currently served with potable water by the Musoma Water and Sewerage Authority (MUWASA). The Musoma municipality water supply is rehabilitated and expanded, which will increase the water production from the current 10,000 m<sup>3</sup> per day to 36,000 m<sup>3</sup>. The water supply project implementation is Bukanga.

The municipality does not currently have a sewerage system for managing wastewater generated from the present and expanded water uses in the municipality, which is the responsibility of MUWASA. Therefore, untreated wastewater flows into Lake Victoria are contributing to the pollution of the Lake. Moreover, improper wastewater disposal is responsible for poor health situation from water borne and water related diseases. Given the apparent occurrence of water borne diseases like typhoid and cholera, improved sanitation services would notably improve the well being of the residents of Musoma Municipality. Towns with clean environment can easily attract local and foreign investors in industrial as well as tourism. In this aspect the project will be of great importance in poverty alleviation of the targeted population.

The sewerage system project in Musoma Municipality will therefore address the sanitation problem in Musoma, controlling pollution of the lake, improve health, livelihood and stimulate economic development by providing a healthy environment.

## **2.0 PROJECT DESCRIPTION**

### **2.1 PROJECT IMPLEMENTATION**

The overall implementation of this sewerage project is divided into two major phases:

- i) Phase I: 2012 – 2020
- ii) Phase II: 2020 - 2030

#### **Phase I (2012 – 2020)**

In this phase, the piped sewerage system will be constructed for the municipality only with the Wastewater Treatment Pond (WWTP) constructed at Makoko area to receive and treat the wastewater collected from the municipal centre. It comprises areas in Mukendo, Mwigobero, Irinquo and Kitaji Wards and a small portion of Kamunyonge Ward.

This phase implement the following:

- i) Construction of piped sewerage system and Waste Water Treatment Pond;
- ii) Sludge treatment and disposal system from on-site excreta disposal facility namely pit latrines, septic tanks, pit and cesspits; and also includes measures to improve services for collection and transportation.

#### **Phase II (2020 – 2030)**

This phase will cover the remaining western and eastern areas of the municipality, which currently have low population densities. Land availability in these areas strongly favours the continual use of proper on-site sanitation systems as acceptable solutions for environmental and economical reasons.

This phase implement the following:

- i) Piped sewerage system and WWTP extension for Western District area;
- ii) Piped sewerage system and East WWTP for Eastern District area;
- iii) Collection, treatment and disposal of sludge from on-site sanitation systems for those households not exclusively connected to the piped sewerage systems of Phase I.

This ARAP is related with implementation Phase I covering only the proposed sewerage system and WWSP. Therefore, not part of the second sludge treatment and disposal is covered in this study.

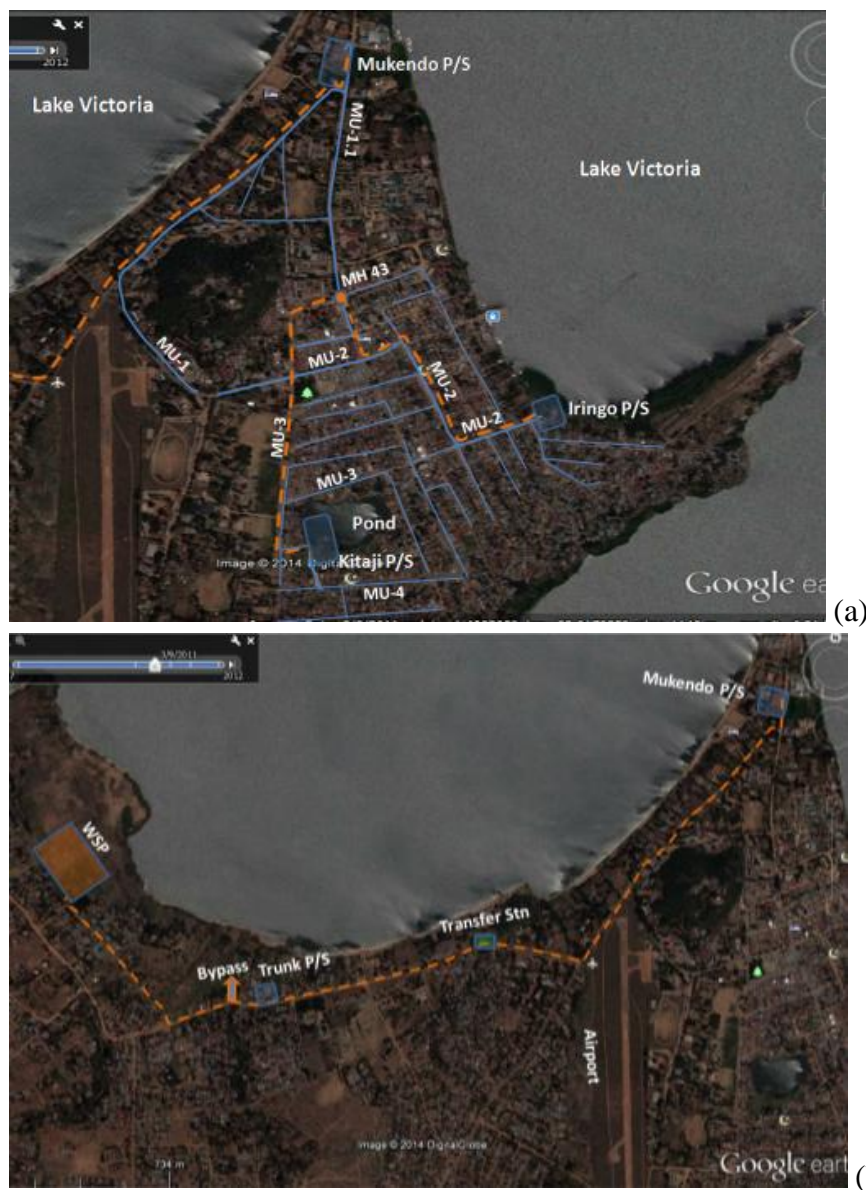
### **2.2 PROJECT COMPONENTS FOR PHASE I**

The Proposed Musoma Sewerage System Phase I will consist of four major components, which include the collection sewers, sewage pumping stations, conveyance mains and waste stabilisation ponds. The sewage pumping stations and WWSP will require land acquisition while sewers and conveyance mains will be located within the right of way (RoW) requiring only

permits from Musoma Municipal Council and TANROADS for using the road reserves. Therefore, only pumping stations and WWSP are described.

### 2.2.1 Components location

The design indicates a proposal of four (4) sewage pumping stations. Two stations located at the municipal centre will be used to pump sewage from sewerage network in the municipal centre to a transfer manhole MH 43 (**Figure 1a**). A third pumping station is proposed at Mukendo Peninsula to pump whole sewage volume received from MH43 towards WWSP. An intermediate booster pumping station will be located at Mwisenge North to boost up sewage pipe flow pressure to convey the entire volume to WSP at Makoko (**Figure 1b**).



**Figure 1:** Location of sewage pumping stations a) within the collection network and b) along the conveyance mains with WSP at the end.



## 2.2.2 Component layout designs

### 2.2.2.1 Sewage pumping stations

Two sewage pumping stations consist of 3 m<sup>3</sup> (Kitaji) and 4 m<sup>3</sup> (Iringo) sump wells (**Figure 2**) for provisional storage of sewage during pumping while the Mukendo station will have a 10 m<sup>3</sup> sump well and will be pumping the entire sewage from the project area around municipal centre drained into Mukendo Pumping Station to WWSP. An intermediate booster pumping station with a 10 m<sup>3</sup> sump well will be located at Mwisenge North to boost up sewage pipe flow pressure to convey the entire volume to WWSP at Makoko.

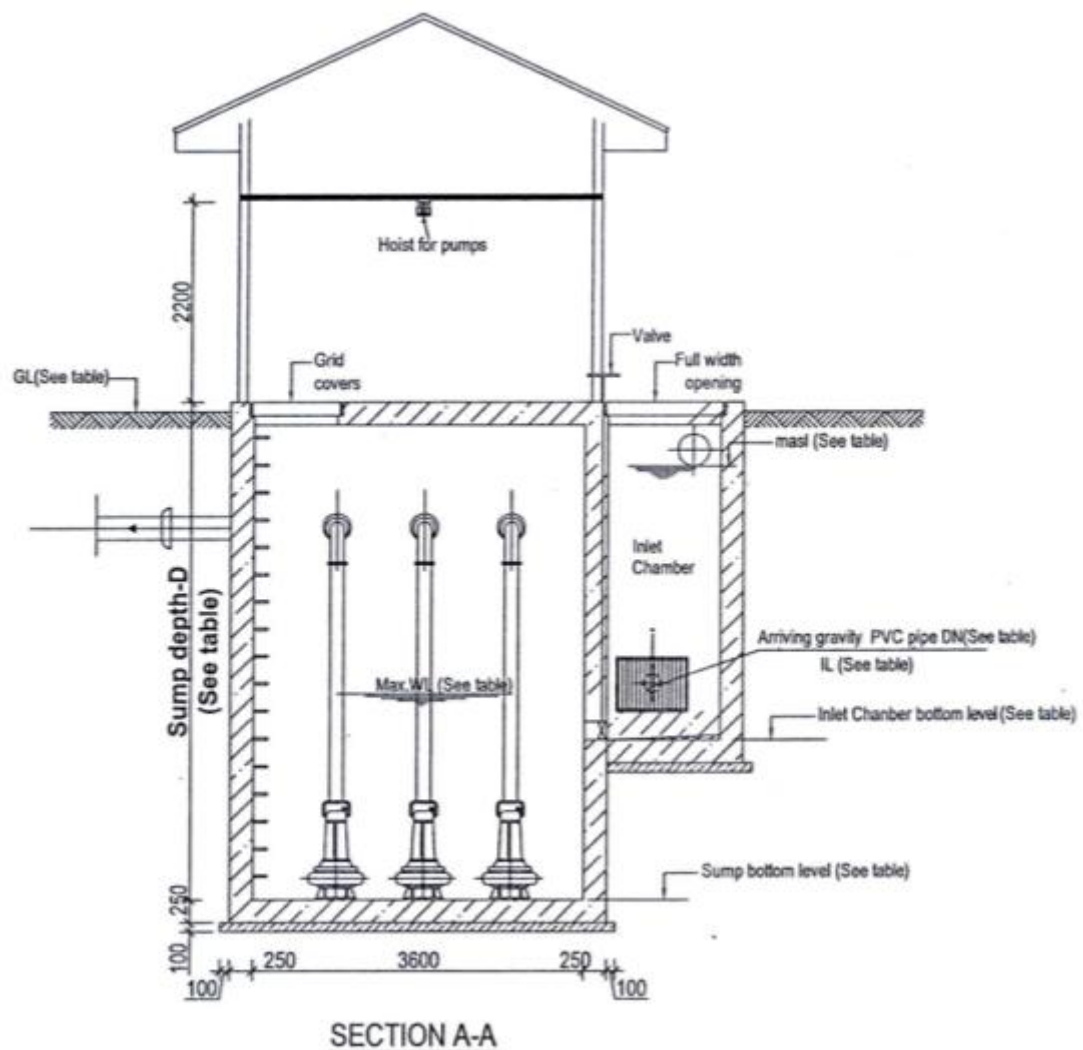
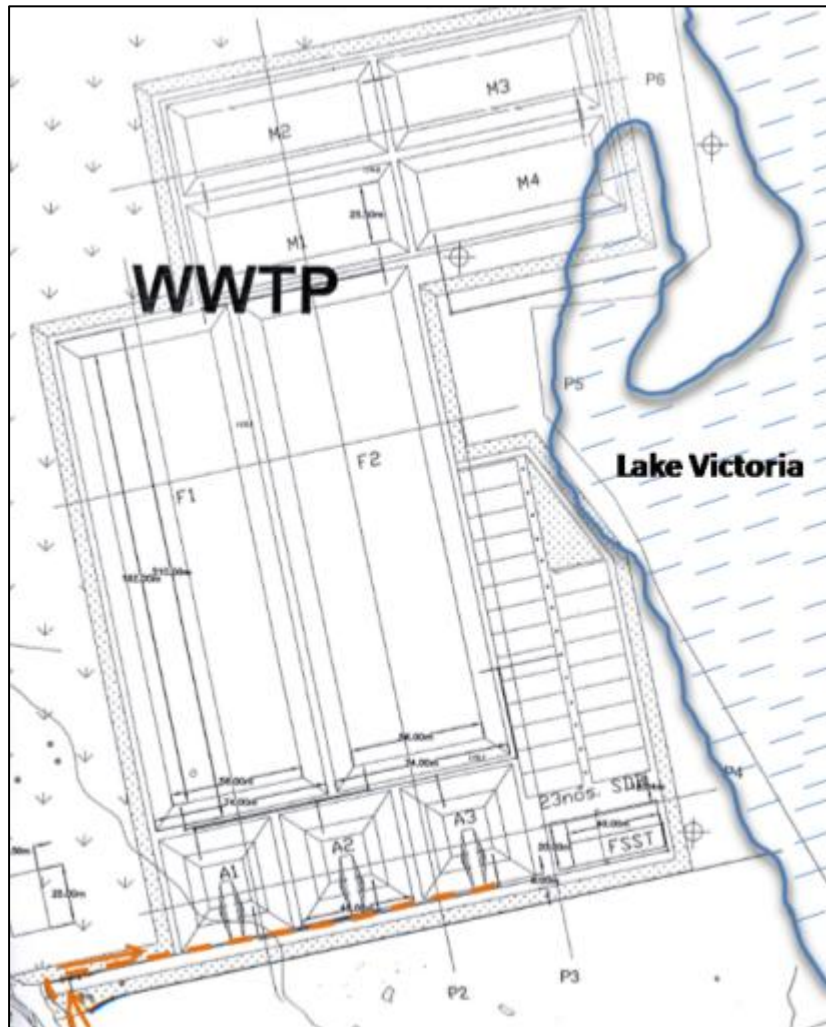


Figure 2: Layout of pumping stations.

### 2.2.2.2 Waste stabilisation ponds

The designed for treatment of incoming sewage indicates there the overall layout of waste stabilisation ponds includes 3 parallel anaerobic ponds (A1 – A3) discharging into 2 parallel facultative ponds (F1 – F2), which are discharging into a series of 4 maturation ponds (M1 – M4). WSP effluents from the final M4 are discharged directly into Lake Victoria, which will be intersecting the proposed M4. The proposed WSP will occupy 9.91 ha (372.69 m × 265.90 m)

and together with its associated facilities will require an acquisition of available 17 ha of land space. An additional feature of the WSP system is the faecal sludge settling and thickening tank (FSST) adjacent to A3 and F2 (**Figure 3**) that will receive sewage from directly from septic emptiers.



**Figure 3:** Layout of the proposed WSP at Makoko.

### 2.2.3 Proposed works/activities

Implementation of the project components will involve carrying out several activities during their construction and operation. The major identified activities related to construction and operation of sewage pumping stations and WSP component of the sewerage system are given in **Table 1**.

**Table 1: Project activities related to pumping stations and WSP.**

Related activities	Component	
	Sewage pumping stations	Waste stabilisation ponds
<b>Mobilisation</b>	<ul style="list-style-type: none"> <li>- Land acquisition at proposed sites</li> <li>- Site clearance including demolition of buildings, vegetation removal</li> <li>- Transportation of construction materials to sites</li> <li>- Labour force mobilisation</li> </ul>	<ul style="list-style-type: none"> <li>- Land acquisition at Makoko site</li> <li>- Site clearance including removal of vegetation</li> <li>- Fencing of the site and construction of temporary office buildings</li> <li>- Transportation of construction materials to sites</li> <li>- Labour force mobilisation</li> </ul>
<b>Construction</b>	<ul style="list-style-type: none"> <li>- Excavations</li> <li>- Removal of water from excavations</li> <li>- Block and concrete works for pumping infrastructure and administration offices</li> <li>- Pipe fitting to the pump house</li> <li>- Pump installations</li> <li>- Electrical installations</li> </ul>	<ul style="list-style-type: none"> <li>- Excavation earthworks to remove unwanted clay soils from the WSP foundation</li> <li>- Transportation of construction materials</li> <li>- Filling earthworks to raise elevation of WSP to at least 1.54 m (1133.74 m) above the average ground altitude (1132.2 m)</li> <li>- Construction of pond embankments/dykes</li> <li>- Inlet and outlet pipes/structures construction</li> <li>- Construction of WSP fence</li> <li>- Construction of operations building</li> <li>- Removal of unwanted clayey soils from the site or its at site management</li> <li>- Site cleaning after construction</li> </ul>
<b>Operation</b>	<ul style="list-style-type: none"> <li>- Periodic maintenance of installed facilities (pumps, electrical system, pipes, slump well)</li> <li>- Maintenance of office buildings</li> </ul>	<ul style="list-style-type: none"> <li>- Periodic cleaning of ponds</li> <li>- Maintenance of fencing</li> <li>- Slope stability maintenance works e.g. re-grassing, filling of eroded soils, etc</li> </ul>

### **3.0 THE PROCESS OF PREPARING RESETTLEMENT AND COMPENSATION PLAN**

According to the terms of reference provided, the Consultant was required to prepare the Resettlement Action Plan (RAP) which includes assessment of compensations for affected people in areas where land will be acquired for the project. The Lake Victoria's Environmental Management Project II - Resettlement Policy Framework (RPF) 2008 need preparation of procedures and principles for land acquisition, resettlement and compensation for all subprojects funded under LVEMPII. This entails providing sufficient investment resources to meet the needs of the Project Affected Persons (PAPs) who may be displaced from their habitat and resources. It also requires adequate collaborative consultation and agreement with the PAPs to ensure that they maintain or improve their livelihoods and standards of living in the new environment.

According to the RPF, the issue of resettlement is of crucial concern to LVEMP II and its impacts on its activities if left unmitigated may jeopardise the implementation of Musoma Sewerage System and Wastewater Treatment Pond.

With reference to the LVEMP II the RPF (March 2008), Chapter 4.0 section 4.2- the process for preparing and approving resettlement plans states that "where the impacts on the entire affected population are minor (i.e. if affected people are not physically displaced and less than 10% of their productive assets are lost) or fewer than 200 people are displaced (economically or physically) per project, then the Bank may approve the preparation of an Abbreviated Resettlement Action Plan (ARAP)".

Assessment of the project impacts on land acquisition revealed less than 200 people will be resettled physically or economically, Thus ARAP is found sufficient to be prepared and address the issues of land acquisition in compliance with the requirements of LVEMP II-RPF.

According to the RPF, the contents of the ARAP are to be as follows:

- (a) A census survey of displaced (economically or physically) persons and valuation of assets;
- (b) Description of compensation and other resettlement assistance to be provided;
- (c) Consultations with displaced people about acceptable alternatives;
- (d) Institutional responsibility for implementation and procedures for grievance redress;
- (e) Arrangements for monitoring and implementation; and
- (f) A timetable and budget.

Thus this ARAP is prepared to ensure effective preparation and implementation of the land acquisition, resettlement and compensation process for the LVEMP-II

Having ARAP in place, the project will be socially acceptable and legitimate and will produce positive and sustainable outcomes. Therefore ARAP calls for the project to provide for greater involvement of all interested groups in a wider society. All stakeholders should be given opportunities to participate in the decision-making process through a fair, informed and transparent system.

#### **3.1 Objectives of the Abbreviated Resettlement Action Plan**

The main objective of this ARAP is to provide an agreed plan for the resettlement of Project Affected People (PAP) who will lose land, houses, economic property or assets as a result of

project implementation. Moreover, the plan will provide a road map for resettlement and compensations, by ensuring that grievances of PAPs are well addressed from the beginning of the project, and finally to ensure that the affected people will enhance or at least restore their livelihood to that of the pre-project level. The ARAP includes the institutional arrangements, schedules, and the budgets to facilitate resettlement process that will be necessitated as a result of this project.

## **3.2 Approach and Methodology**

### **3.2.1 Approach**

Preparation of this ARAP involved collection of information and data through an inventory of project affected farmers and their plot sizes within the expected Corridors of Impact (CoI) to provide benchmark data for measuring the achievement of the objectives of this ARAP. Various stakeholders were consulted to provide their views and ideas on how the Abbreviated Resettlement Action Plan should be designed and implemented. To encourage stakeholders' ownership of the process and understanding of the project objectives, consultative meetings with affected stakeholders (individuals or institutions) were organised and conducted in February and June 2014.

### **3.2.2 Methodology**

The study for the development of the ARAP was undertaken using various methods and techniques such as stakeholder consultations through meetings, key informant interviews, field observations and literature review. The main stakeholders consulted were; the residents of Iringo, Kitaji, Mukendo ad Makoko wards, MUWASA, Musoma Municipal Council, Ward Executive Officer.

The first stage in the process of preparing ARAP began with consultation with the main stakeholders, specifically the affected individuals. This was followed by land screening to identify the land acquisition and land use needs that will cause resettlement. The Ward Executive Officer (WEO) Musoma Municipal Land Officer in collaboration with the ARAP preparation team identified the project affected people; and together carried out a fairly field verification in the areas where various project infrastructure will pass. The resettlement and compensation plan was then prepared accordingly in collaboration with the affected people.

#### 4.0 THE NATURE AND EXTENT OF RESETTLEMENT ISSUES

In general, construction of Musoma Sewerage and Wastewater Treatment Pond will have a positive environmental impact on the Municipal and the immediate environment of Lake Victoria. It is expected to produce a long-term improvement in public health of the citizens of the Municipal as well as to significantly reduce a source of chronic water pollution of an ecologically valuable portion of Lake Victoria. Specific impacts that are anticipated or forecasted are discussed in greater detail in this section.

The most important adverse environmental effects of the project is the resettlement caused by land take for construction of piped sewer system, pumping stations, treatment Pond and the impacts on receiving water connected with disposal or use of the sludge and the treated water caused by; microbiological contamination, oxygen depletion due to high load of organic faecal matter and eutrophication of the lake caused by nutrients.

The Consultant performed field inspections at all possible sites for sewerage system facilities, such as piped sewer network; pump stations sites at Mukendo, Kitaji and Iringo; Truck pumping main near Mwisenge primary school; and Wastewater Treatment Pond at Makoko area.

Using holistic approach, these resettlement issues emanating from the project will include losses at household and community level (public assets, commercial assets, and communal assets). These resettlement issues as identified in the Environmental and Social Impact Assessment include:

#### 4.1 Collection Sewers pipelines

The Consultant inspected the various streets of Musoma Municipality area particularly the municipal centre, which is highly populated with various utilities. The nature of the houses around the site is scattered widely with large distances in between the proposed pipe sewer route, road shoulder and houses allowing for construction of the sewer pipe. All streets in this central area have drainage channels for storm water and some space varying in size between houses and the road embankment.

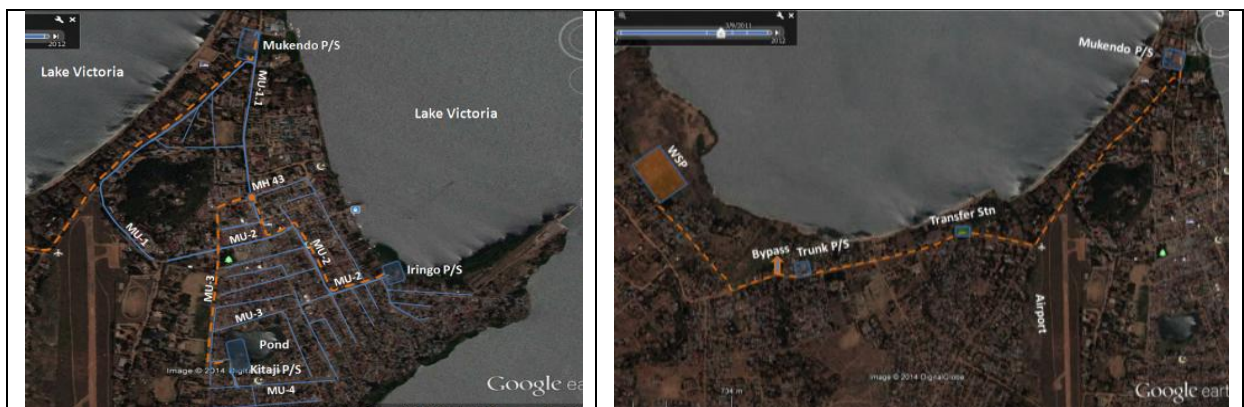


Figure 4: Collection sewer network

## 4.2 Sewage pumping stations

### 4.2.1 Mukendo Pumping Station

Mukendo pump station is located in the northern part of municipality at Mukendo Peninsula in Mukendo Ward. It will receive wastewater from its secondary sewers, Kitaji and Iringo pump stations which are will be pumping to a transfer manhole, after which sewage will flow by gravity to Mukendo pump station. The area is currently an unconstructed open space surrounded by residential houses and fish processing industries on the other side of the road.

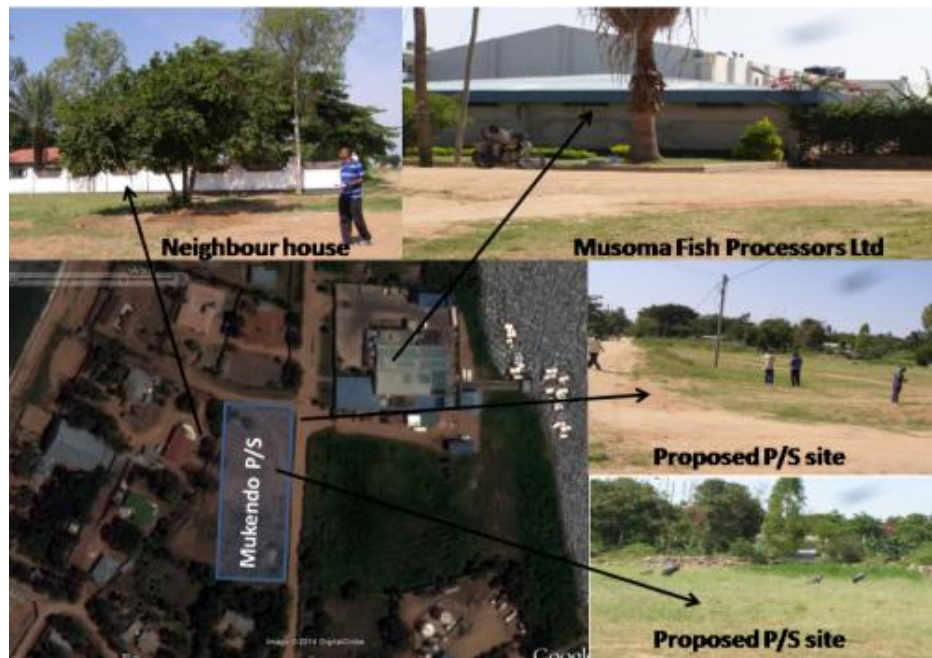


Figure 5: Observed environments at Mukendo Pumping Station

### 4.2.2 Kitaji Pumping Station

The pumping station will be positioned at the lowest possible location so as to be able to catch all incoming sewage at the same time minimizing the depth of the sump. In case the pumps are not functioning, the flow will be by-passed to the outflow of the pumping station through an emergency by-pass chamber provided within the pump well. The area which is seen to be an open land is a surveyed land and allocated to several people. The area frontage of nearby houses namely, plot Nos 112, 114 and 116 Block 'R' Kitaji. At this site there is some limited amount of sugarcane and vegetable gardens.



Figure 6: Observed environments at Kitaji Pumping Station site

### 4.2.3 Iringo Pumping Station

The proposed Iringo pump station which is located within Mwigobero ward along Lake Victoria shore close to AICT church have the boundaries clearly demarcated separating the church land and a space identified for the construction of pump station. This land is currently being used as a vegetable garden having beds of vegetable at nursery stage, fruit trees and few shades tree. It is owned by AICT church. The sewerage pipe to the pump station will pass through AICT church area where the church's ablution block stands and it will affect some few mature trees within the church compound.



**Figure 7: Observed environments at Iringo Pumping Station site**

### 4.3.4 Trunk Pumping Station

The area which was proposed for construction of the truck pump station in the detail engineering design report has already been utilized by building residential house. The new proposed area is located at the junction from the tarmac road to earth road which goes to Makoko WWTP. The area is a swampy area which is not utilized for buildings. The area is used for cultivation of paddy. During Construction stage the supervising engineer shall investigate and discuss with the owners of the area for mutual agreement on compensations.





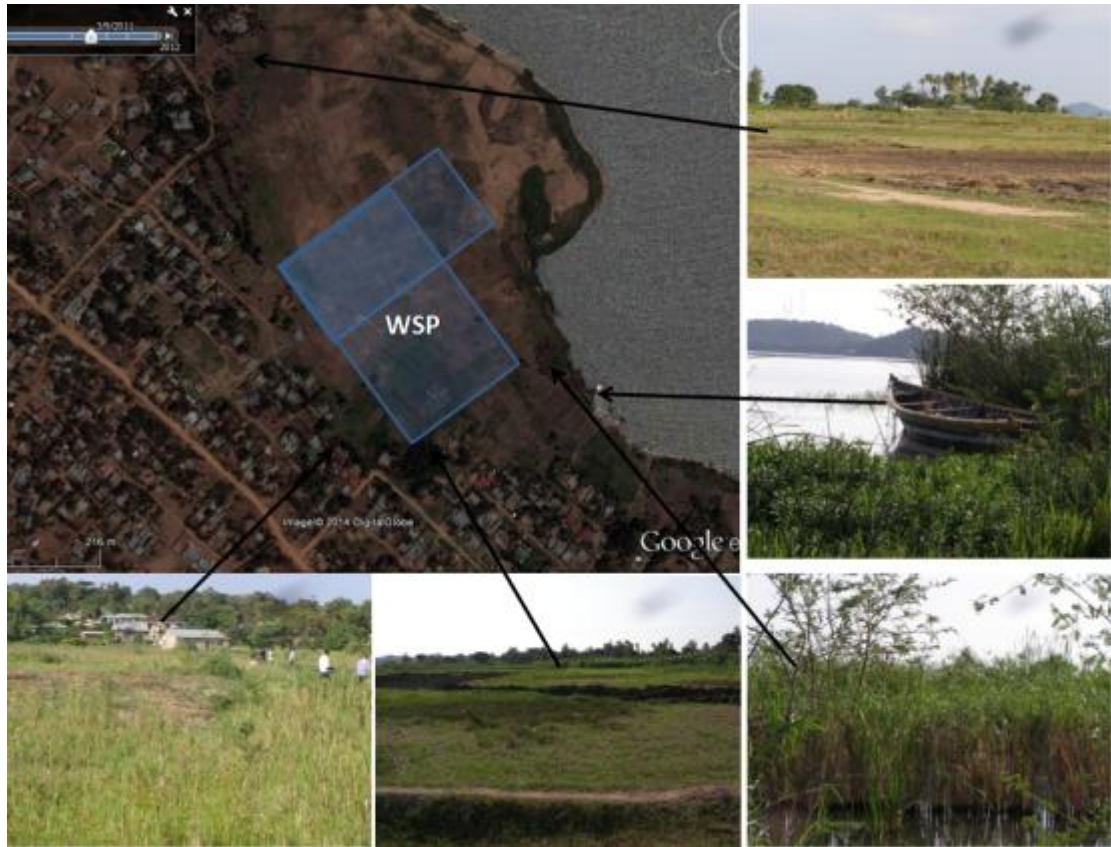
**Figure 8: Observed environments at Trunk Pumping Station site**

#### **4.3.5 Conveyance main sewers**

The conveyance gravity/pressure sewers (Kitaji/Iringo-Mukendo and Mukendo-Airport) will use same environments as collection sewers within the municipal central area. The conveyance sewers from airport to Makoko will use Mwisenge road and a street to the proposed WWSP site. The fieldwork identified availability of sufficient space within the road reserve on the right hand side moving towards Mwisenge (**Figure 17**). However, available space at the Mwisenge transfer chamber is limited and the terrain is a rock outcrop that might require blasting to establish required depth for laying the sewer.

#### **4.3.6 Wastewater Stabilization Ponds**

The area appears to have enough space to construct the wastewater treatment pond at Makoko area. It is estimated that the location in Makoko area has a potential of about 17 ha. Furthermore, Makoko area has a low land elevation and seems to have been a swampy area in the past. Currently, the land is being used by few people of Makoko having small portions of vegetable gardens (**Figure 9**). This area is a surveyed land with an approved plan and the whole land is already allocated to individuals.



**Figure 9: Observed environments at Makoko WWSP site.**

#### Land requirements for pumping stations

S/N	Pumping station	Plot size required (m)	Area (m <sup>2</sup> )	Remarks
1	Itingo	20.85x13.55	282.5	Including fencing
2	Kitaji	20.85x13.55	282.5	Including fencing
3	Mukendo	16.00x25.55	408.8	Including fencing
4	Trunk main pumping station	21.60x14.40	311.0	Including fencing

Source: Design report June 2014

## **5.0 CONSULTATIONS AND STAKEHOLDERS PARTICIPATION**

### **5.1 Stakeholders identification**

The definition of the spatial and institutional boundaries for the proposed development in Musoma Municipality provides the dimensions of defining stakeholders who will be involved in the EIA work.

During scoping and impacts assessment phases, various stakeholders were identified for consultations regarding different issues in relation to the proposed sewerage system construction project. Simple methods such as networks, literature review, site verification and interviews were used in the process of stakeholder identification. The stakeholders identified were generally

- i) Institutional stakeholders
- ii) Individual stakeholders.

#### ***Individual stakeholders***

Individual stakeholders referred to those owning, living or working within the immediate impact area either as individuals or interest groups that will experience the highest level of impacts resulting from project implementation. They include

- Owners of affected households within the project areas
- Owners of unaffected household within the project area
- Owners of properties within and adjacent the project area
- Occupants of buildings within and adjacent to project area
- Water users
- Farmers

#### ***Institutional stakeholders***

Institutional stakeholders were defined as those with which their offices are involved in decisions that might affect the proposed sewerage system construction project. They include central government ministries (Water; Lands, Housing and Human Settlement Development; Health and Social Welfare; Education; Natural Resources and Tourism; Infrastructure; Home Affairs), local governments (Musoma Municipal Council; Ward Council – Kitaji, Iringo, Mwigobero, Mukendo and Makoko) and other institutions (MUWASA; TANROADS; Regional Engineer; TANESCO; NBS; LVBWB; TMA; LVEMP; TAFIRI; Police; Water Supply Project Contractor – Spencon Kenya Ltd; Water Supply Project Consultant – Lahmeyer).

### **5.2 Stakeholders consultation**

The consultation process for identified stakeholders is divided into two consultation periods, scoping consultations and impacts stage consultations. The first consultations aim at understanding whether these stakeholders have knowledge of the sewerage system project, what is the level of their knowledge of the project, what are their views related to implementation of this project and what do they see could be impacts of the project to their normal activities and

livelihoods. Therefore, some stakeholders were selected for scoping period consultations (**Table 2**) in order to obtain their view and generate issues of concern in relation to project implementation.

**Table 2: Identified and consulted key stakeholders.**

Individual stakeholders	Institutional stakeholders
Makoko wetlands farmers, Iringo AICT Church resident personnel, Consultant for Water Supply Project – Lahmeyer	MUWASA, Ministry of Water, LVBWB, LVEMP, Musoma Municipal Council (MMC) (Municipal Executive Director, Land Office, Public Health office, Natural Resource Office, Office of the Municipal Engineer, Municipal Community Development Office), RAS Mara, Ward Council (Bweri, Makoko)

To obtain relevant information from these stakeholders, it was considered important to have face to face meetings and therefore the main method used was personal interviews with individuals and key personnel of selected institutions (**Figure 10**). The consultation process also use a network/chain type whereby the team was connected to another stakeholder from the ones participating in the discussion.



**Figure 10: Discussions with stakeholders.**

The second round of consultations was carried out during impacts assessment stage targeting all identified stakeholders. For those consulted during the scoping consultations, unforeseen issues of concern that were not indicated by them but identified by the EIA team were raised during impacts assessment consultations while the rest of un-consulted stakeholders aired their views and discussed views already raised by others.

### **5.3 Stakeholders concerns related to resettlement**

In respect of the intended project activities, the stakeholders that were consulted raised concerns on a number of issues that need attention. The issues are grouped into:

***Concerns on physical environments***

- i) Land unavailability for installation of sewers since most streets are narrow with gravel/tarmac lanes and wide surface runoff drains

***Concerns on biological environments***

- i) Loss of lake biodiversity from lake pollution once WSP operate at lower than intended/estimated efficiency and the need to look for an alternative site
- ii) Loss of Ponds/vegetation at locations where sewers are passing and at WSP site

***Concerns in socio-economic and cultural environments***

- i) Employment mainly during construction
- ii) Compensation for properties and land that will be acquired from the community
- iii) Compensation process from who does the evaluation, evaluated amounts to timing of actual compensation
- iv) Land availability for those displaced from the acquired land

## 6.0 VALUATION OF ASSETS AND LOSSES

### 6.1 Sewer Pipe Network

Table 3: Detailed estimate values of crops and other features

ITEM TYPE AND LOCATION	QTY	GROWTH %	RATE PERCENT	ESTIMATED VALUE
<b>Mu 1</b>				
Shade trees	23	100%	20,000	460,000
Pine trees	3	100%	40,000	60,000
Flower trees	12	100%	40,000	480,000
Flowers	6	100%	40,000	240,000
Ashok trees	4	30%	15,000	18,000
Thorn trees	30	40%	3,000	36,000
			<b>Sub Total</b>	<b>1,294,000</b>
<b>MU 1.1</b>				
Shade trees	12	100%	20,000	240,000
Pine trees	2	100%	20,000	40,000
Flower trees	2	100%	40,000	80,000
Flower trees	2	100%	40,000	80,000
Thorn trees	1	100%	3000	3000
Shade trees	2	50%	20,000	20,000
			<b>Sub Total</b>	<b>463,000</b>
<b>MU.1.1.1</b>				
Shade trees	25	100%	20,000	<b>500,000</b>
<b>MU1.1.2</b>				
Shade trees	5	100%	20,000	100,000
Thorn trees	1	100%	3000	3,000
Flowers	7	100%	40,000	280,000
Pine trees	1	100%	20,000	20,000
			<b>Sub Total</b>	<b>403,000</b>
<b>MU.1.2</b>				
Shade tree	1	100%	20,000	<b>20,000</b>
<b>MU1.4</b>				
Shade trees	4	100%	20,000	<b>80,000</b>
<b>MU-2</b>				
Shade trees	27	100%	20,000	540,000
Shade trees	4	75%	20,000	60,000
Shade trees	3	40%	20,000	24,000
Pawpaw trees	2	100%	10,000	20,000
Mango tree	1	100%	83,000	83,000
Cypress trees	3	40%	20,000	24,000
Cypress	2	100%	20,000	40,000
Neem trees	3	100%	25,000	75,000
Pine tree	9	100%	20,000	180,000
Pine tree	1	40%	20,000	8,000
Black plum tree(mfuru)	1	30%	2600	780

Nutmeg tree(kungumanga)	1	100%	13,000	13,000
Flower trees	5	70%	40,000	140,000
Thorn trees	30	30%	3000	27,000
			<b>Sub Total</b>	<b>1,234,780</b>
<b>MU 2.1</b>				
Shade trees	15	100%	20,000	<b>300,000</b>
<b>MU 2.1.1</b>				
Coconut tree	1	100%	160,000	160,000
Neem trees(muarobaini)	2	100%	20,000	40,000
Thorn trees	11	100%	3000	33,000
Thorn trees	30	40%	3000	36,000
			<b>Sub Total</b>	<b>269,000</b>
<b>MU.2.1.1.1</b>				
Shade trees	11	100%	20,000	220,000
Flower tree	1	75%	40,000	30,000
			<b>Sub Total</b>	<b>250,000</b>
<b>MU 2.2</b>				
Shade trees	15	100%	20,000	300,000
Shade trees	2	75%	20,000	30,000
Thorn trees	45	50%	3000	67,500
Ashork trees	1	50%	15,000	7,500
Flowers	5	100%	40,000	200,000
Palm oil tree	1	40%	31,200	12,480
Lemon tree	1	100%	13,000	13,000
Mangoe tree	1	100%	83,000	83,000
Flower tree	1	100%	40,000	40,000
			<b>Sub Total</b>	<b>753,480</b>
<b>MU 2.7.2</b>				
Shade trees	5	100%	20,000	10,000
Pine trees	1	100%	20,000	20,000
Flower trees	6	100%	40,000	240,000
Flowers trees	2	40%	40,000	32,000
			<b>Sub Total</b>	<b>302,000</b>
<b>MU 2.8</b>				
Shade trees	3	100%	20,000	60,000
Pawpaw tree	1	100%	10,000	10,000
			<b>Sub Total</b>	<b>70,000</b>
<b>MU 2.8.1</b>				
Shade tree	1	100%	20,000	20,000
Shade tree	1	100%	20,000	20,000
			<b>Sub Total</b>	<b>40,000</b>
<b>MU 2.10</b>				
Pawpaw trees	3	100%	10,000	30,000
Ashok trees	7	50%	15,000	105,000
Ashok trees	3	50%	15,000	30,000
cypress	1	50%	20,000	10,000
Flower tree	1	100%	40,000	40,000
Banana tree	1	20%	28,600	5720

Shade tree	13	100%	20,000	260,000
Shade tree	5	50%	20,000	50,000
			<b>Sub Total</b>	<b>530,720</b>
<b>MU 3</b>				
Neem tree (mwarobaini)	2	100%	25,000	50,000
Pine tree	1	100%	20,000	20,000
Thorn tree	12	50%	3000	18,000
Shade trees	16	100%	20,000	320,000
			<b>Sub Total</b>	<b>408,000</b>
<b>MU 3.1</b>				
Shade tree	6	100%	20,000	120,000
Flower trees	4	100%	40,000	160,000
flowers	2	100%	40,000	80,000
			<b>Sub Total</b>	<b>360,000</b>
<b>MU 4</b>				
Shade trees	6	100%	20,000	120,000
Lemon trees	3	100%	13000	39000
Neem trees	1	75%	25,000	18750
Pine trees	3	100%	20,000	60,000
			<b>Sub Total</b>	<b>237,750</b>
<b>MU 4.1</b>				
Shade trees	7	100%	20,000	140,000
			<b>TOTAL</b>	<b>7,252,730.0</b>

### OTHER FEATURES

FEATURES AND LOCATIONS	APPROXIMATE SIZE	SPORT VALUE
<b>MU 1</b>		
Stone drive way	6m <sup>2</sup>	60,000
<b>MU 2.2</b>		
Fencing wall of burnt bricks, plastered, welded square bars on top	5m length	400,000
Double leaf steel gate	3m length	500,000
	2.5m height	
	<b>Sub Total</b>	<b>900,000</b>
<b>MU 2.3</b>		
Flower fencing	16m length	320,000
Flower bed wall of burnt bricks, plastered	20m length	10,000
	<b>Sub Total</b>	<b>330,000</b>
<b>MU 2.7.1</b>		
Welded square steel bars fencing	2.0m length, 1m height	80,000
	<b>TOTAL</b>	<b>1,360,000</b>
<b>GRAND TOTAL FOR SEWER PIPE NETWOK</b>		<b>8,612,730</b>



## 6.2 Iringo Pumping Station

### BUILDING

ITEM TYPE AND LOCATION	QTY	GROWTH %	RATE PERCENT	ESTIMATED VALIUE
An ablution block constructed of:- Roof: corrugated iron sheers on timber frames Walls: Burnt bricks plastered and Rendered. Doors: Wooden battens Floor: Sand cement screened affixed with four eastern type w.c, drainage is through septic tank.  Condition: good Approximate area of building is 16.20m <sup>2</sup>				4,500,000
			<b>Sub Total</b>	<b>4,500,000</b>

### CROPS AND TREES

ITEM TYPE AND LOCATION	QTY	GROWTH %	RATE PERCENT	ESTIMATED VALIUE
Shade trees	8	100%	20,000	160,000
Lemon tree	1	100%	13,000	13,000
Shade tree	1	50%	20,000	10,000
Pawpaw trees	6	50%	10,000	30,000
Pawpaw trees	10	100%	10,000	100,000
Palm oil trees	1	50%	31,200	15,600
Eucalyptus	2	100%	45,000	90,000
Sugar cane	30	100%	2,080	64,000
Coco yams	20	100%	203	4,060
			<b>Sub Total</b>	<b>486,660</b>
	<b>GRAND TOTAL IRINGGO P/S</b>			<b>4,986,660</b>

## 6.3 Kitaji Pumping Station

This area seems to be an open land, however it is a surveyed land and allocated to several people. The area frontage of nearby houses namely, plot Nos 112, 114 and 116 Block 'R' Kitaji. The area is close to the permanent pond at the City centre. The land required for the pumping station is relatively small (3m<sup>3</sup>) for sump well. With the provision of fencing, the total land required for the pumping station is 282.5 m<sup>2</sup>. Acquiring one square meter of land in Musoma Municipal cost around **Tsh. 150,000/=**. Therefore a plot size of 282.5 m<sup>2</sup> will cost around Tsh **4,237,500/=**.

#### 6.4 Mukendo Pumping Station

This area seems to be an open land located in road reserve. The pump station at Mukendo area will have a 10 m<sup>3</sup> sump well and will be pumping the entire sewage from the project area around municipal centre drained into Mukendo pumping station to Wastewater Stabilization Pond at Makoko area. With the provision of fencing, the total land required at Mukendo pumping station can be estimated to be 408.8m<sup>2</sup>. Acquiring one square meter of land in Musoma Municipal cost around **Tsh. 15,000/=**. Therefore a plot size of 408.8m<sup>2</sup> will cost around **Tsh 6,132,000/=**

#### 6.5 Trunk Main Pumping Station

This area seems to be an open land used for vegetable gardening and small plots of paddy. With the provision of fencing, the total land required at the Trunk pumping main at north Mwisenge can be estimated to be 311 m<sup>2</sup>. Acquiring one square meter of land in Musoma Municipal cost around **Tsh. 15,000/=**. Therefore a plot size of 311 m<sup>2</sup> will cost around **Tsh 4,665,000/=**

#### CROPS

ITEM TYPE AND LOCATION	QTY	GROWTH %	RATE PERCENT	ESTIMATED VALUE (Tsh)
Neem tree	1	100%	25,000	25,000
Banana Ponds	20	100%	28,600	572,000
Sugar cane	50	100%	2,080	104,000
			<b>Sub Total</b>	<b>701,000</b>
			<b>Total</b>	<b>78,000,000</b>
			Add @5% disturbance allowance	3,900,050
			<b>GRAND TOTAL</b>	<b>81,900,050</b>

#### 6.6 Makoko WasteWater Treatment Pond

It is estimated that the Wastewater treatment Pond at Makoko area will require land of about 17 ha. The Makoko area has a low land elevation and seems to have been a swampy area in the past. Currently, the land is being used by few residents of Makoko having small portions of vegetable gardens. This area is a surveyed land with an approved plan and the whole land is already allocated to individuals. However during preparation of this ARAP the lists of individuals with the corresponding plot sizes were not readily available. The area is not yet developed for any infrastructure.

As revealed in recent survey of Musoma town ship, the proposed site for the Wastewater stabilization pond is a surveyed land which has been allocated to individuals for different uses. It is therefore recommended that the land be acquired legally for public interest, regardless of legality of title to the land.

The World Bank has set out a Resettlements policy framework for Lake Victoria environmental Project phase II (LVEMP II) with the aim of providing guidelines to deal with resettlement matters. However, for practical purposes the following should be done to assist implementation of resettlement plan and as pre-acquisition requirements.

- Identification of new area for resettlement of the displaced persons. This should be done by the Municipal Council Land Office in Collaboration with MUWASA;

- It is known that the land surrounding Musoma Municipal is not free from third party interests. Therefore the required land for the projects, equivalent size of land (17ha) can be established and arrangement for purchasing the same be made. Usually, at this stage prices are negotiable; and
- The Land, where resettled people must move to, will be planned by Municipal planner and later be surveyed by Municipal surveyor, ready for resettlement of the displaced people.

The Cost estimate for surveyed area in Makoko area is about **Tsh. 3 mil./acre** or 7-8 mil. per ha. Thus the cost of purchasing 17 ha of land for relocating resettled people at Makoko area is estimated to be around Tsh. 119 -136 millions.

**Table 4: Summary of Estimated Compensation Cost by project area**

S/N	PROJECT COMPONENT	TOTAL COST (Tsh.)
1	Sewer pipe network	8,600,000
2	Iringo pumping station	5,000,000
3	Kitaji pumping station	4,237,000
4	Mukendo pumping station	6,132,000
5	Trunk pumping station	4,665,000
6	Makoko Wastewater Treatment Pond	136,000,000
	<b>GRAND TOTAL</b>	<b>164,634,000</b>

**Table 5: Summary of Estimated Compensation Cost by Category of Asset**

S/N	FEATURES	ESTIMATED VALUE (Tshs)
2	Land	164,634,000
3	Crops and Trees	10,200,000
4	Other Utilities	1,200,000
5	Disturbance allowances at 5%	8,801,700
	<b>GRAND TOTAL</b>	<b>184,835,700</b>

## **7.0 MITIGATION AND COMPENSATION PROCEDURES**

### **7.1 Principles and procedures**

#### **7.1.1 Organisation Procedures and Scheduling**

Organisational procedures and scheduling of valuing assets will fit within the wider operational and implementation procedures and are outlined in this Chapter of ARAP.

- The Land Regulations 2001 require every assessment of the value of land and assets to be prepared by a qualified valuer. In addition compensation that is paid for by the Government or Local Government will be verified by the Chief Valuer of the Government and his representative.
- Affected persons will need to be consulted on the valuation of affected assets. They will be given the opportunity to provide their own estimate of the value of affected assets when the inventory is carried out. In particular they will be issued with Landform 59 and 70, which allows them to indicate what they expect to be compensated.
- They will also be consulted on the methods used to value the assets and most appropriate form of compensation.
- The implementation of all compensation and resettlement will occur in full prior to any acquisition of land or assets takes place.

After land is identified for project a notice of intention to acquire land for public interest will be issued. After grace period lapses affected persons will be identified and their properties valued for compensation purposes.

#### **7.1.2 Implementation organization structure**

- i) Government officials issue notice of intention to acquire land for public interest;
- ii) Local Authority officials identify the affected persons in their areas of jurisdiction;
- iii) The valuers, assisted by Local Authority officials, execute valuation exercise by identifying all properties owned by individuals which fall under project area;
- iv) Valuers will prepare a detailed valuation report and compensation schedule then submit to the Government Chief Valuer for approval;
- v) Payment of compensation to affected person by Paying Authority;
- vi) The cost for compensations should be included in the tender document; and
- vii) The whole process will be vested to the Supervising Consultant during construction.

The Ministry of Water and LVEMP II will ensure that the Abbreviated Resettlement Action Plan is publicly disseminated and that the project implementers have the required skills and knowledge and, where necessary, they have received appropriate training to implement the ARAP.

MUWASA shall take responsibility for implementation of ARAP in collaboration with Musoma Municipal Council and Ward Executive Offices. The Contractor will be required to prepare detailed list of affected persons and compensation plan during Construction.

Implementation of the ARAP shall require a number of steps including:

- i) A full understanding of the project components, particularly those requiring land acquisition;
- ii) Detailed property and asset valuation during Construction;
- iii) Preparation and approval of detailed resettlement plans;
- iv) Implementation and monitoring of the resettlement plans;
- v) Effective redress of complaints and grievances; and
- vi) Public consultations and awareness.

These steps will ensure that Musoma Sewerage project is satisfactorily and efficiently implemented to effectively address any adverse social, economic and environmental impacts so that PAPs are fairly treated on land acquisition and resettlement.

### **7.1.3 Notification Procedure**

Notification of acquisition needs to be provided to land 'resource' holders to the ward council. The council will be instrumental in identifying the property owners or land users. The users will be informed through both a formal notification in writing and if many people are illiterate, by verbal notification delivered in the presence of the Ward/Mtaa Executive Officer or his representative. In addition, the Ward Committees and individuals who control land will accompany the survey teams to identify sensitive areas.

The following approach is recommended to target individuals respective to their geographic area. MUWASA will use public notices to inform both the public and affected person of its intention to acquire land for the project. The notices shall state:

- i) The water authorities provide written notification to the affected persons to acquire the land;
- ii) The notification will include an explanation of the public purpose for which the land is needed, with the addition that either the Project Planning teams (from MUWASA and Musoma Municipal) will inspect the site during working hours;
- iii) Any person affected may object to the transaction in writing, giving reasons for doing so, to MUWASA with copies to Municipal Director and Ward Executive Officer within 14 days of the first public announcement or appearance of the notice. Assurances must be made that affected persons have actually received this information and notification. Where the affected persons are illiterate, MUWASA and the Municipality will make efforts to ensure that the affected persons understand the notice.

## **7.2 Grievance redress mechanism**

### **7.2.1 Institutional responsibility**

The institutions identified during the stakeholders meeting and their responsibilities with regards to this ARAP are as follows:

**Table 6: Institution responsibility for implementation of ARAP**

No.	Institution/ group	Responsibilities
1.	MoW, LVEEMP II	To disburse the compensation funds to project affected people. Employ the Consultant for Construction supervision including supervision for implementation of the environmental and social mitigation measures.
2.	MUWASA, Musoma Municipal Council	Employ the Contractor for construction Verification of individual plot sizes and owners in the project area proposed for construction of Musoma sewerage through participatory process which involves the affected farmers and the Ward and Mtaa Councils. Oversee the compensation process for the project affected people
4.	Affected People	Be paid compensation and vacate from land plots

## 7.2.2 Procedures for grievance redress

This Abbreviated Resettlement Action Plan for Musoma Sewerage System and Wastewater Treatment Pond is made to settle all grievances concerning non-fulfilment of compensations agreements before the project takeoff. The grievance procedure will be simple, administered as far as possible at the Municipal level because the size of the land to be taken up by the project falls under the jurisdiction of Musoma Municipal Council. All grievances will be addressed expressively and amicably through mediations and at the Regional, Ward and Street levels.

## 7.3 Compensations and entitlements

### 7.3.1 Categories of PAPs and their entitlements

(i) Household owners are entitled to additional allowances:-

- Transport allowance to transport their personal belongings to resettlement areas
- Accommodation allowance to rent an alternative house before resettlement house is completed,
- Alternative land for resettlement

(ii) Affected persons with business premises are entitled to additional allowance of loss of profit allowance, if conditions are met by the affected person.

(iii) Garden owners are entitled to compensation for land, crops and disturbance allowance.

### 7.3.2. Compensation for land

The affected person will be compensated for the size of land he owns. Rate per acre as approved by the Government Chief Valuer will be applied.

### 7.3.3. Compensation for household structures

Compensation depends on the size of the building, construction materials used, age of building, construction rate per square meter and depreciation rate accrued by the building.

### 7.3.4. Compensation for crops and trees

This depends on maturity level of a Pond or tree. Compensation rates provided by the Government Chief Valuer will then be applied.

### 7.3.5. Compensation for community assets

In case of religious community, compensation will be paid to the Registered Trustees of the community.

In case of other communities, compensation is paid to Administrators of the said community

## 7.4 Forms of Compensation

The main forms of compensation are in kind, cash and assistance where appropriate.

**Table 7: Forms of Compensation**

In-kind Compensation	Compensation may include items such as land, houses, other buildings, building materials, seedlings, agricultural inputs and financial credits
Cash Payments	Compensation will be calculated paid in Tanzanian shillings. Rates will be adjusted for inflation
Relocation Assistance	Assistance such as moving allowances, transport and labour
Social Assistance	Provision of assistance in the form of training, work experience and capacity building

### 7.4.1 Compensation for land

Minor (less than 10% of land affected):

Right of occupancy, recognised long standing occupancy, or customary land tenure:

Where less than 10% of the land is acquired, project affected persons and households with right of occupancy, recognised long standing occupation, customary land tenure, or claims to land that are recognised by the national laws would receive cash for the land and crops using replacement cost methodology.

Illegal occupancy:

Affected people that are occupying the land illegally (i.e. squatters, but not all informal settlements are living illegally) are eligible for the replacement cost of the affected crops and compensation for lost income but not the land itself.

The less than 10% rule might not hold if the plots are very small, in this situation even a minor acquisition might result in the entire plot being unviable. In this case the impact would be deemed significant and the compensation for significant impacts would apply.

Significant (more than 10% of land affected):

Right of occupancy, recognised long standing occupancy, or customary land tenure:

Project affected people and households with right of occupancy, recognised long standing occupation, or customary tenure that have more than 10% of their land acquired, and the land becomes economically unviable, are entitled to full in kind resettlement. In exceptional

circumstances where the affected person prefers they can be compensated in cash based on replacement cost method. In order to minimise this situation occurring, the community were involved in the decision on the location of facilities. Where resettlement occurs the community will be involved in identifying locally available land.

### **Illegal occupancy**

Where affected persons that do not have recognised rights to the land, and more than 10% is acquired and becomes economically unviable, they are entitled to compensation for all affected assets except the value of the land itself. Ideally the affected person should be provided with in kind compensation which would involve full resettlement rather than in cash. There are nebulous arrangements for land titling and documentation in the informal settlements consequently in this situation land regularisation should be considered.

### **In-kind compensation**

In kind compensation must comply with the following:

- i) New land should be equivalent to or better than the existing land which people are dis-placed from, in terms of location and productivity;
- ii) The new land should be located in reasonable proximity to the existing land;
- iii) New land should be free of any transaction costs;
- iv) It should also be prepared (cleared, levelled, and made accessible) for productive levels similar to the existing land (preferably the affected people should be paid to do this work);
- v) Any transaction charges and taxes;
- vi) Transport allowance; and
- vii) Accommodation allowance.

Where affected settlements are informal or tenure is not clear, regularisation should be considered.

### **Cash payment**

Where cash compensation is being applied, it will be based on Replacement Cost method. This includes:

- i) The value of the land at the market value of the land of equal productive potential or use;
- ii) The labour cost for preparing replacement land to levels similar to those of the affected land;
- iii) Any transaction charges and taxes;
- iv) Transport allowance; and
- v) Accommodation allowance.

Cultivated land can be categorised as rain fed or irrigated, and at the different stages of cultivation. These include “in cultivation”, “being prepared for cultivation”, or “cultivated during the last season”.

Costs will be paid in Tanzanian shillings at the prevailing market rates.



## 7.4.2 Compensation for crops

### Cashpayment

Cash payment will be provided for the value of all crops lost using Replacement Cost Method. Cash payment for crops will be based on the type, quantity and level of maturity of the crop, and will be valued by a qualified valuer using the most up to date crop values that are established by the Tanzanian Ministry of Land, Housing and Human Settlements. The most recent available rates at the time of writing this ARAP held by the Ministry of Land were those prepared in January, 2013. These rates have been used in preparation of this ARAP.

Cash crops: In addition to the value of the crop, compensation will be paid for lost income that would have been generated by affected crops during any temporary loss of access to land or during transitional periods until the farmer has regained sustainable pre project income levels.

Subsistence crops/ vegetable gardens: Where crops are used for consumption by the affected persons, rather than sale, until a replacement garden starts to produce, the displaced family will need to purchase vegetables in the market. Compensation for loss of vegetable gardens will be calculated based on the average amount that an average town dweller spends on buying vegetables over one year per adult in the local market. This calculation is based on the Ministry of Water - Water Sector Development Program Resettlement Policy Framework (2008).

Fruit Trees: The compensation rate will be based on the tree values set by the Ministry of Land, Housing and Human Settlements and the crop inventory prepared for each affected household. Compensation will include:

Replacement of trees, like for like;

- i) Cash compensation to replace pre-project income derived from the sale of produce until replacement trees produce the equivalent; and
- ii) If households choose to resettle they will be compensated for the labour invested in the trees they leave behind.

No compensation will be paid for minor pruning of trees. Compensation for removal of limbs will be based on the number of square metres of surface area removed. The total surface area of the tree will be calculated using the following formula:  $(\frac{1}{2} \text{ diameter of canopy})^2 \times 3.14$ . This calculation is based on the Ministry of Water - Water Sector Development Program Resettlement Policy Framework (2008).

## 7.4.3 Compensation for physical property

### In-kindpayment:

When acquisition of housing occurs, all affected individuals and households (regardless of tenure) will be entitled to resettlement. Buildings and structures will be replaced by an equivalent structure - like for like compensation for all structures, both permanent and non-permanent buildings will be provided. In exceptional circumstances, cash and/ or credits will be paid based on replacement costs if the affected persons prefer this approach.

Informal settlements: When acquisition of housing occurs where the land tenure of affected persons is unclear or where they are occupying land illegal, affected persons will be entitled to resettlement.

## **Cashpayment**

Where cash compensation is provided this will be based on replacement cost methodology. This will include the market cost of the materials required to build the structure, the cost of transporting building materials to the construction site, the cost of any labour and contractors' fees, plus the cost of any registration and transfer taxes, exclusive of depreciation (in line with OP.4.12).

Replacement values will be based on:

- Drawings of individual's household and all its related structure and support services;
- Property inventory;
- Actual replacement values of building materials;
- Costs for transporting and delivering these items to the building site;
- Costs of constructing new buildings including labour required;
- The cost of any registration and transfer taxes.

Tenants: Based on World Bank standards, tenants who rent residences that are affected, by the project are eligible for relocation assistance because they have to move. The relocation assistance will cover assistance in locating replacement housing, as well as in packing and moving; financial payment for the cost of the move and possibly for refitting the new residence; and follow-up services for the individuals in their new locations.

## 8.0 MONITORING

The arrangements for monitoring of ARAP will fit into the overall monitoring plan of the entire Project, which will be through MoW, MUWASA and Musoma Municipal Council. MUWASA will institute a reporting system that:

- a) alerts project authorities to the necessity for land acquisition in a project;
- b) provides timely information about the valuation and negotiation process;
- c) reports any grievances that require resolution; and
- d) documents timely completion of project resettlement obligations (i.e. payment of the agreed-upon sums, etc) for all permanent and temporary losses, as well as unanticipated, additional construction damage.

The objective will be to make a final evaluation in order to determine:

- (i) if affected people have been paid in full and before implementation of the project; and
- (ii) if the people who are affected by the project have been affected in such a way that they are now living at a higher standard than before, living at the same standard as before, or they are poorer than before.

MUWASA will maintain information on all individuals impacted by the projects' land use requirements including relocation/ resettlement and compensation, land impacts or damages. Each individual will have a compensation dossier recording his or her initial situation, all subsequent project uses of assets/ improvements, and compensation agreed upon and received.

A watch will be kept over process indicators and regularly reported through MUWASA to the Permanent Secretary of the MoW. These will include:

- i. Number of grievances and time and quality of resolution.
- ii. Relations between the project and the local communities.
- iii. Percentages of individuals selecting cash or a combination of cash and in-kind compensation.
- iv. Outstanding compensation contracts.
- v. Outstanding individual compensation or resettlement contracts.
- vi. Number of impacted locals employed by the civil works contractors.
- vii. Training of affected.
- viii. Use of payments.

The following indicators will be used in assessing the overall effectiveness of implementation of resettlement and compensation plans:

- i. Pre- project production versus present production (crop for crop, land for land).
- ii. Ability of individual and families to – re establish their pre- displacement activities, standard if living, and land and crops or other alternative incomes.
- iii. Outstanding compensation or resettlement contracts not completed before next agricultural season.
- iv. Grievances recognised as legitimate out of all complaints lodged.
- v. Communities unable to settle village-level grievances/compensation after two years.
- vi. All legitimate grievances rectified and time frame.

MUWASA and Musoma Municipal will maintain financial records to permit calculation of the final cost of resettlement and compensation per individual or household. Each individual receiving will have a dossier containing:

- i. Individual bio- data information;
- ii. Number of people he/she claims as household dependents; and
- iii. Amount of land available to the individual or household when the dossier is opened.

This framework is suggesting that the office of the National Environmental Management Council (NEMC), in Tanzania is involved in the approval process of the ARAP. This would give NEMC the mandate to carry out independent monitoring of the implementation of the resettlement and compensation plans at periodic intervals of quarterly or half yearly (as circumstances dictate) during the project life for verification. Their report would then be sent to MUWASA and Musoma Municipal and become part of the official documents of the project.

**Table 8: Implementation Schedule of ARAP**

No.	ACTIVITY	RESPONSIBLE	TIME FRAME										
			2015										
			J	F	M	A	M	J	J	A	S	O	
1.	Finalization of ARAP	Consultant											
2.	Submission of ARAP to the Client or comment	MoW											
3.	Approval of ARAP	MoW and LVEMP II											
4.	Disclosure of ARAP to the Country and WB infoshop	MoW, LVEMP II											
5.	Payment of compensations to affected people	MoW, MUWASA											
7.	Preparation of tender documents	Consultant											
8.	Tendering procedures and awarding Contract	MoW											
9.	Construction	Contractor/ MUWASA											

## **9.0 CONCLUSION AND RECOMMENDATIONS**

The issue of resettlement to provide room for construction of Musoma sewerage pipe network and wastewater treatment Pond will involve land take with very few housing infrastructure to be resettled. Most of the land is not developed but used for small vegetable gardening. It is expected that the project affected people will in general benefit from the abbreviated resettlement action plan due to the fact that most of them who occupy land in the intended project site have other land for residential and vegetable gardening elsewhere.

It is recommended that the client should acquire land for the project using the procedure set in the ARAP and compensate land owners before the project is handled over to the contractor. The Client should continue awareness to the community that will benefit from the piped sewer system and those that will be affected in one way or another.