LVWATSAN – Mwanza Immediate Investment Plan (IIP) Environmental and Social Management Plan (ESMP) for Simplified Sewerage and Sewer Rehabilitation and Extensions in Ilemela and Nyamagana Districts – Mwanza Region

Prepared for:
Mwanza Urban Water and Sanitation Authority (MWAUWASA) / European Investment Bank (EIB)
P.O. Box 317
Makongoro Road, Mwanza

Prepared by:
Ally Salim (Registered Environmental Expert)
P.O. Box 175
Sengerema, Mwanza
Tel.: 0754432400, 0784998202
Email: ally.salim@gmail.com

Submitted to:
NEMC Lake Zone
P.O. Box 11045
Maji Igogo, Mwanza
Tel.: 0282502684
Email: nemcmza@gmail.com

June, 2016

Mott MacDonald

LVWATSAN – Mwanza

Immediate Investment Plan (IIP)

Environmental and Social Management Plan (ESMP) for Simplified Sewerage and Sewer Rehabilitation and Extensions in Ilemela and Nyamagana Districts – Mwanza Region in Mwanza City

June, 2016

Mwanza Urban Water and Sanitation Authority (MWAUWASA) /

European Investment Bank (EIB)

OPS/ASD/Technical Assistance Unit (TAU), 100 boulevard Konrad Adenauer, L-2950 Luxembourg

The technical assistance operation is financed by the European Union under the Cotonou Agreement, through the European Development Fund (EDF). The EDF is the main instrument funded by the EU Member States for providing Community aid for development cooperation in the African, Caribbean and Pacific States and the Overseas Countries and Territories.

Mott MacDonald, Demeter House, Station Road, Cambridge CB1 2RS, United Kingdom
T +44 (0)1223 463500 F +44 (0)1223 461007 W www.mottmac.com

Green corner – Save a tree today!

Mott MacDonald is committed to integrating sustainability into our operational practices and culture. As a world leading consultancy business we are always seeking to improve our own performance and reduce the environmental impact of our business. Meanwhile, many of our staff are committed to living sustainably in their personal lives – as an employee-owned company Mott MacDonald shares their concerns. We feel an ethical obligation to reduce our emissions and resource use and have committed to reducing our per capita carbon footprint by a minimum of 5% year on year.

We print our reports and client submissions using recycled, double-sided paper. Compared to printing single sided on A4 virgin paper, double sided printing on recycled paper saves the equivalent of two trees, over a ton of CO2 and a cubic metre of landfill space for every 100 reams. By choosing the greener path we have been able to achieve efficiencies benefiting both Mott MacDonald and our customers.

We would like to share some of the principles of our own ‘Going Green’ initiative:

- When possible we scan rather than print and consider what really needs to be on paper
- We use electronic faxing when practicable
- We work on e-forms
- We use recycled paper when possible and print on both sides
- Reducing paper in the office creates a better working environment for our staff and our clients

We believe that you, as one of our esteemed clients, will share our concern to conserve precious resources for the benefit of our planet and its inhabitants.

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
01	14 January 2016	MMD / UWP			Initial draft for internal review.
02	22 January 2016	MMD / UWP Ally Salim			Revised draft.
03	4 February 2016	MMD / UWP Ally Salim	Wandert Benthem	David Rogers	Final – for submission to NEMC for approval.
04	10th, June,2016	MMD / UWP Ally Salim	Wandert Benthem	Matthew Waterkeyn	Revised Final, including comments received from NEMC (on 28/4/2016) and Lender's Supervisor (on 23/2/2016) – for submission to NEMC for approval.

Content

Appendices

LIST OF TABLE

Figures

List of Abbreviations

AFD	French Development Agency
DED	Detailed Engineering Design
DEWATS	Decentralized Wastewater Treatment System
DoE	Department of Environment
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management/Monitoring Plan
EU	European Union
EUR	Euro
GoT	Government of Tanzania
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
HDPE	High Density Polyethylene
IIP	Immediate Investment Plan (for LVWATSAN)
LS	Lender's Supervisor
LVWATSAN	Lake Victoria Water and Sanitation (Project)
MCC	Mwanza City Council
MDG	Millennium Development Goals
MoWI	Ministry of Water and Irrigation
MWAUWASA	Mwanza Urban Water and Sanitation Authority
NEMC	National Environment Management Council
NGO	Non-governmental Organization
NSSF	National Social Security Fund
O&M	Operation and Maintenance
PFR	Project Formulation Report (for LVWATSAN)
PMC	Project Management Consultant (for LVWATSAN)
PMU	Project Management Unit (for LVWATSAN)
PPE	Personal Protective Equipment
PS	Pump Station
RMF	Resettlement Management Framework
RPF	Resettlement Policy/Planning Framework (for LVWATSAN)
SEP	Stakeholder Engagement Plan (for LVWATSAN)
SER	Supplementary Engineering Report (for LVWATSAN)
STD	Sexually Transmitted Diseases
STIP	Short-term Investment Plan (for LVWATSAN)
TAC	Technical Advisory Committee.
USD	United States Dollar
WSDP	Water Sector Development Project

Acknowledgement

The Mwanza Urban Water and Sewerage Authority (MWAUWASA) would like to acknowledge the assistance and guidance of compiling this Environmental and Social Management Plan (ESMP) for the proposed construction and operation of simplified sewerage and sewer rehabilitation and extensions in Mwanza City.

Special thanks are given to the Mwanza City Council and NEMC's Lake Zone staff for their vital contributions and their assistance during various project's consultations.

Executive Summary

Title and location of the project

Lake Victoria Water and Sanitation (LVWATSAN) – Mwanza: Immediate Investment Plan (IIP): Environmental and Social Management Plan (ESMP) for Simplified Sewerage and Sewer Rehabilitation and Extensions in Mwanza City

Name of the proponent and contact

Developer: Mwanza Urban Water and Sewerage Authority (MWAUWASA)
Contact Address: P.O. Box 317, Mwanza
Tel.: (255) 282500547
Fax: (255) 282503231
Email: mwauwasa@yahoo.com

Names and addresses of experts or firms of experts conducting EIA

Ally Salim Registered Environmental Expert
P.O. Box 175, Sengerema, Mwanza

Brief outline and justification of the proposed project

The LVWATSAN – Mwanza Project (2014-2019) aims at protecting the Lake Victoria environment and wellbeing of the population in the Lake Basin. The Project has several components, one being the preparation and implementation of an Immediate Investment Plan (IIP) for Mwanza City, that comprises three 'categories' i.e. (i) sanitation in selected schools and public places, (ii) water supply extension and rehabilitation of pipelines, and (iii) simplified sewerage and sewer rehabilitation and extensions. For Category (iii), and the focus of the present ESMP, five (5) sub-components have been selected, i.e. (i) existing sewerage network rehabilitation, i.e. along Makongoro Road and Kenyatta Road; (ii) existing pump station rehabilitation, i.e. Kirumba PS and Mwanza South Pump Station; (iii) existing Wastewater Treatment Plant upgrade at Ilemela; (iv) sewer extensions to areas with simplified sewerage systems, i.e. in Mabatini (Area A + B), Isamilo, Kilimahewa and Igogo; and (v) simplified sewerage in three pilot areas, i.e. Mabatini (Nyamanoro), Kilimahewa (Mbugani) and Igogo. The Category (iii) works are scheduled to be implemented between July 2016 and June 2017 (11 months), followed by a defect period of 12 months.

Brief description of the project environment

The targeted sewerage interventions are located in two municipalities/districts of Mwanza City: Ilemela and Nyamagana. Mwanza is Tanzania's second largest urban centre supporting a population of more than 700,000, and with major industrial and commercial activities. The area is densely populated in formal and informal settlement on and amidst sloping terrain, rocky outcrops and well-drained sandy loamy soils. The intervention sites are located in predominantly low-cost residential areas.

Explanation on why some impacts are not addressed

All impacts that, reasonably speaking, are usually associated with this type of low impact interventions have been identified and addressed.

List of developer, consultant, local planning authorities and other people and organisations consulted

The planned sewerage works have been planned and coordinated by a Sewerage Committee especially created for this Project component and its activities; its composition is provided in a table in Chapter 5.

Results of public consultation

Public consultation activities were conducted by the consultant in the period June-November 2015: all targeted interventions sites were visited and local residents, local authorities (city and municipality councils, ward leaders) were consulted by providing them with relevant information on the project and the proposed interventions, obtaining their views on possible issues and their involvement in planning and operation of the planned facilities. The Sewerage Committee comprises representatives of local authorities, relevant institutions and project partners. Questions asked and issues raised by the consultees included the Project scope, whether any compensation would be provided for lands or space lost, construction hindrances such a dust, noise and smell, risks of increased incidence of HIV/AIDS, employment opportunities, expected cooperation of the local community, adequate supply of water essential for proper operation of the sewerage systems. To the extent possible these concerns have been addressed in the design and management plans.

Description of the major significant impacts

Impacts of the proposed interventions will mostly be positive by improved health conditions in the targeted implementation areas and reduced inflow of raw untreated effluent into Lake Victoria. Negative impacts are mostly associated with the construction works, are of a temporary nature and of low significance, and relatively easily be mitigated at low cost with proper management. Biodiversity in the selected intervention sites is low and limited to common urban species that are neither threatened nor endangered.
Major significant impacts of the planned interventions are not expected. Tanzanian government legislation, particularly the *EIA and Audit Regulations* (2005) do not require the preparation of a full EIA study for this sort of local, small-scale and low-impact development, reason why the regulatory authority, NEMC, has instructed to prepare the present limited ESMP only. The EIB has indicated that for this sort of local, small-scale development in Europe usually no environmental or social assessment is needed.

Alternative considered

No alternatives to the planned interventions have been identified, other than doing nothing or delaying the works. The latter will not benefit anyone.

Environmental and social management

The core of the present report is the Environmental and Social Management Plan (ESMP), provided in Chapter 7 that outlines for each of the identified Project activities for the planned sewerage works what the expected negative impacts may be, which mitigation measures are recommended, and who is responsible for the implementation of these measures. This has been done for three distinct phases: construction, operation of the facilities, and decommission (closure). Negative impacts are considered to be of a local nature and small-scale, and can be mitigated through proper management and at limited costs.

Proposed monitoring and auditing

By using the ESMP as a base, for each identified Project activity associated with the planned sanitation works a monitoring matrix has been designed, which again for each of the three project phases, indicates who should perform the monitoring, what, and how often. Frequent monitoring of construction, operation and decommissioning of the sanitation facilities will help the users and authorities to learn from actions taken, and to adapt management of the facilities as may be needed.

Decommissioning

The decommissioning plan, outlined in Chapter 9, is specifically designed for the unlikely event that the construction works will need to be terminated prematurely (i.e. prior to operation of the facilities), and for demolition of the facilities at the end of their lifetime. The latter is not expected within the coming 25 years.

It is essential to include the present signed off and approved ESMP in the invitations to tender and contracts for construction; otherwise it is both difficult and expensive to get the contractor to implement any of the required environmental and social management measures respectively.

---

1. Introduction

1.1 Lake Victoria Water and Sanitation (LVWATSAN)

The Lake Victoria Water and Sanitation (LVWATSAN) Initiative was launched in 2004 by the ministers responsible for water from Kenya, Tanzania and Uganda with the aim of achieving the Millennium Development Goals (MDG) for water and sanitation in secondary centres within the Lake Victoria Basin.

The Water Sector Development Programme (WSDP; 2005-2023) established under the Ministry of Water and Irrigation (MoWI), under which LVWATSAN resorts, is the main financing mechanism for the water sector in Tanzania. Its past five year programme has foreseen almost USD 1 billion of funding for the WSDP. An Environmental and Social Management Framework (ESMF) and a Resettlement Management Framework (RMF) for the programme were prepared and completed in 2006.

1.2 LVWATSAN – Mwanza Project Preparatory Studies

Following a request from the ministers in 2009, the European Investment Bank (EIB) launched a project formulation study in 2010, with the aim to develop plans to scale up the UN-HABITAT-promoted LVWATSAN Initiative to the major settlements of Kisumu in Kenya, and Mwanza, Musoma and Bukoba in Tanzania together with three smaller satellite towns around Mwanza, i.e. Misungwi, Magu and Lamadi. This study, concluded by Atkins in August 2012, resulted in a Project Formulation Report (PFR) covering the six fore-mentioned Tanzanian shore towns. Volume 3 of the PFR deals with the proposed project interventions in Mwanza City. Supplementary studies were conducted by R-Solve, the findings of which are reflected in the Supplementary Engineering Report (SER, August 2012). Both the PFR and SER include sections on preliminary perceived environmental and social impacts of the interventions, which were regarded as mostly positive.

EIB's Environmental and Social Datasheet, of 5 February 2013, concluded for the LVWATSAN project that "the majority of the investments will need to be subjected to Environmental and Social Impact Assessments (ESIAs) at town level, with development of Resettlement Action Plans at intervention level tailored in accordance with the spatial footprint as ultimately determined".

1.3 LVWATSAN – Mwanza Project Implementation

Implementation of the LVWATSAN project, the Project, started in October 2014, with the engagement of a Detailed Engineering Design (DED) consultant, COWI, followed by UN-HABITAT being responsible for community liaison and starting in February 2015, and finally, a Project Management Consultant (PMC), Mott MacDonald, commencing in April 2015. Meanwhile, Halcrow had been contracted by EIB to develop a project-specific Resettlement Policy (Planning) Framework (RFP) in late-2014, whereas UN-HABITAT was entrusted with the task to develop a project-specific Stakeholder Engagement Plan (SEP) – the resulting RPF and SEP, meant to guide Project implementation, were endorsed by the MoWI on 8 January 2016.

Key deliverables of the COWI/DED consultant (October 2014 – mid-2016) include the following:

Immediate Investment Plan (IIP) – i.e. a study report and tender documents for planned interventions in Mwanza City for (i) sanitation in selected schools and public places; (ii) water supply extension and rehabilitation of pipelines; (iii) simplified sewerage and sewer rehabilitation and extensions.

Satellites Investment Plan – study report and tender documents for planned [immediate] water supply, wastewater and sanitation interventions in Misungwi, Magu and Lamadi.

Master Plan for Mwanza City – a water supply, wastewater and sanitation strategy for Mwanza and satellites covering the period 2015-2040 and including the Short-term Investment Plan (STIP) for proposed (i) funded and (ii) unfunded works.

With regard to item 1, 2 and 3 (above) and as part of the DED Consultant's responsibilities, COWI prepared for the planned project interventions in Mwanza City two 'project briefs/registration requests' on environmental and social impact assessment for rehabilitation and expansion works, i.e. on (i) sanitation and (ii) water supply & sewerage respectively, and submitted these to the National Environmental Management Council (NEMC), Dar es Salaam, on 18 February 2015. The rationale behind this submission being that (i) as per NEMC regulations planned interventions of this kind are to be registered and (ii) proposed interventions need NEMC approval prior to implementation.

Subsequently, NEMC responded by letters of 4 March 2015 that both works had been registered (under number **5034** and **5033**, respectively) but that as per the GoT Environmental Impact Assessment and Audit Regulations (2005) further EIA study would be needed.

The DED Consultant then requested, by letter of 9 April 2015, to proceed with so-called "Normal Practice" elements of the works, i.e. mainly maintenance and minor extensions works which could be implemented as soon as design and procurement are completed, in other words the IIP works, and simultaneously to the preparation of EIAs. The rationale for this being that these Normal Practice works are considered as minor works with minimal negative impacts but that will bring significant, immediate health and environmental benefits to the citizens of Mwanza City, and therefore are planned for speedy implementation.

Permission by NEMC to proceed with these IIP works without an EIA study been carried out was not given but following consultation with NEMC resulted in the agreement, concluded in December 2015, that the IIP works would not require full EIA studies but that for the planned IIP works in Mwanza City three (3) simplified Environmental and Social Management Plans (ESMP) would suffice, i.e. for the following components:

(i) Schools and public places sanitation (latrines) – see separate ESMP
(ii) Water supply extensions and rehabilitation of pipelines – see separate ESMP
(iii) Simplified sewerage in informal areas, together with some minor associated sewer extensions, and some sewer rehabilitation works – the current ESMP.

Minutes of the meeting between NEMC and PMC/UN-HABITAT held in Mwanza on 8 December 2015, as well as the agreed ESMP contents list, are provided in Appendix 1.

1.4 LVWATSAN – Mwanza Project Funding

The Project is financed under the European Union (EU) Africa Infrastructure Trust Fund within the overall context of the EU and Africa Strategic Partnership. The European Investment Bank (EIB) and the Agence Française de Developpement (AFD) have signed two loan agreements with the Republic of Tanzania for an amount of EUR 45m each for the financing of 86% of the investment costs associated to the extension and upgrading of water supply and sanitation in Mwanza City and satellite towns (Misungwi, Magu, Lamadi), as well as sewerage systems in the towns of Bukoba and Musoma. The total Project cost is estimated at EUR 104.5m, including EUR 14.5m provided by the Tanzanian government.

1.5 Scope of the Present ESMP and Methodology

The present ESMP deals *exclusively* with IIP category (iii) *simplified sewerage and sewer rehabilitation and extensions for Mwanza City*. Prior to and after submission by COWI of the draft designs (in October 2015) the proposed sites were visited, concerned stakeholders were consulted, and possible impacts were assessed. Reporting took place in November 2015 to February 2016.

2. Project Background and Description

General information on the LVWATSAN Project is provided in Chapter 1; this Chapter 2 exclusively describes the planned project interventions for the simplified sewerage and sewer rehabilitation and extensions that are part of the Immediate Investment Plan (IIP) for Mwanza City (see Section 1.3).

2.1 Mwanza

Mwanza is in size the second largest town in Tanzania and is the Regional Headquarters for Mwanza Region. Mwanza is the key industrial and commercial centre in north-western Tanzania. In addition to many light and service industries, Mwanza accommodates large water-intensive industries including textile mills, leather tanning factories, bottling industries, vegetable oil factories, fish processing plants, soft drink manufacturers and cosmetic/soap factories. There are numerous institutions including hospitals, dispensaries and health centres as well as many primary and secondary schools and a university.

The Mwanza urban area comprises two districts i.e. Nyamagana and Ilemela. According to the countrywide 2002 census, the area of the two districts including rural and semi-rural areas had a population of 476,000. The census in 2012 stated that the population had reached 706,000. Located on the southern shores of Lake Victoria, some 72% are supplied with water and 23% are using sewerage services from MWAUWASA, the Mwanza Urban Water and Sewerage Authority.

The city is characterised by gently undulating terrain with isolated hill masses and rock inselbergs. It is also characterised by well-drained sandy loamy soil generated from coarse grained cretaceous rock. The vegetation cover is typical savannah with scattered tall trees and tall grass. Administratively, the city is run by councillors under leadership of the Lord Mayor. However, the day-to-day administration of the city is by the City Director, assisted by heads of departments and sections.

Many people in Mwanza live in unplanned settlements. These settlements, apart from lacking basic facilities like roads, schools and water, are located on steep rocky hills where providing basic sanitation is difficult. In recent times housing in Mwanza City has extended further and further up the hills in an uncontrolled manner. This has created numerous problems such as improper wastewater disposal. In such areas conventional sewer systems are difficult to establish and maintain due to the rocky nature, steep slopes, problematic pipe alignments due to uncontrolled house layouts, etc.

2.2 The Proposed IIP Sewerage Works in Mwanza

The proposed sewerage works of the Immediate Investment Plan for Mwanza City are described in two documents, i.e.:

COWI-IIP Study Report, Final (18/April/2016);
COWI-IIP Tender Documents, Volume V: Book of Drawings (5 January 2016);

These IIP sewerage works that are scheduled to be implemented between August 2016 and August 2017 (12 months) followed by a defect period of 12 months, are divided in five sub-components (Table 2-1):

(i) Existing sewerage network rehabilitation, i.e. along Makongoro Road and Kenyatta Road;
Existing pump station rehabilitation, i.e. Kirumba PS and Mwanza South PS;
Existing Wastewater Treatment Plant upgrade at Ilemela;
Sewer extensions to areas with simplified sewerage systems, i.e. in Mabatini (Area A + B), Isamilo, Kilimahewa and Igogo;
Simplified sewerage in three pilot areas, i.e. Mabatini (Nyamanoro), Kilimahewa (Mbugani) and Igogo.

As shown in Table 2-1 these sub-components are described in different sections on fore-mentioned COWI documents, i.e. Sub-Component 1 to 4 are described on various locations in the COWI IIP Study Report only, and Sub-Component 5 (pilot areas) in Volume 5 of the COWI IIP Tender Documents only.

Table 2-1. Proposed IIP sewerage works in Mwanza City

IIP Sub-Component	Works	Location	Described in	Pages
1	Existing sewerage network – rehabilitation	Makongoro Road Kenyatta Road	COWI IIP Study Report, Final (11/12/2015)	118-120
2	Existing Pump Station – rehabilitation	Kirumba PS and Mwanza South PS	COWI IIP Study Report, Final (11/12/2015)	117-118 120
3	Existing Wastewater Treatment Plant – upgrade	Ilemela	COWI IIP Study Report, Final (11/12/2015)	120-121
4	Existing sewerage network – extension	Mabatini A + B	COWI IIP Study Report, Final (11/12/2015)	112-113 121, 122
4	Existing sewerage network – extension	Isamilo	COWI IIP Study Report, Final (11/12/2015)	114 121, 123
4	Existing sewerage network – extension	Kilimahewa	COWI IIP Study Report, Final (11/12/2015)	115 121, 122
4	Existing sewerage network – extension	Igogo	COWI IIP Study Report, Final (11/12/2015)	116 121-123
5	Simplified sewerage – pilot area	Mabatini (Nyamanoro)	COWI Tender Documents, Volume 5: Book of drawings	
5	Simplified sewerage – pilot area	Kilimahewa (Mbugani)	COWI Tender Documents, Volume 5: Book of drawings	
5	Simplified sewerage – pilot area	Igogo	COWI Tender Documents, Volume 5: Book of drawings	

Source: COWI Study Report, 2015

2.3 IIP Sub-Component 1: Existing Sewerage Network Rehabilitation

Works will be conducted along Kenyatta Road and Makongoro Road and comprise the following:

Installation of a 55 m diameter 300 mm pipe along Kenyatta Road to connect two manholes, and replace 175 m existing pipeline diameter 300 mm along the NSSF Tower towards the roundabout;
Construction of manholes along Kenyatta Road and discouraging direct house connection to the sewer pipe;
Rehabilitation of all cracked manholes and chambers and replacement of manhole covers in cast iron;
Installation of 70 m new pipe, diameter 600 mm at Makongoro/Balewa to avoid polluting the river with sewage near the Central Pump Station (PS). Additionally a pipe of 107 m is added to replace the entire rusty existing steel inlet pipe to the Central PS;
Supply of 1000 interceptors for house connections for trapping sand before this enters into the sewer pipeline along Rufiji and Mkanyenye streets;
Supply of equipment and tools for improved operation and maintenance of wastewater facilities.

Costs of the above rehabilitation works are estimated at EUR 474,000 for the network rehabilitation and EUR 369,700 for supply of goods and O&M equipment.

2.4 IIP Sub-Component 2: Existing Pump Station Rehabilitation

These works are for the Kirumba PS, Mwanza South PS and Central PS and comprise the following:

Construction of grit removal chambers at the inlets to Kirumba and Mwanza South PS;
Supply and installation of one new pump in each of the three PS, including spare parts;
Supply and installation of automatic switch appurtenances at Kirumba PS;
Supply and installation of a new ultrasonic flow meter with data logger at the Central PS;
Supply and installation of two new check valves for each of the three PS, including spare parts;
Supply and installation of a manometer and pressure gauge at the discharge pipe in the Central PS;
Rehabilitation of outlet control chamber at the Central PS.

Costs of the above rehabilitation works are estimated at EUR 286,000.

2.5 IIP Sub-Component 3: Existing Water Treatment Plant Upgrade

The WTP is in good condition, reportedly, but will be provided under the IIP with the following:

Proper installation of polyethylene sheets in one of the ponds;
Supply of pump and hose for emptying anaerobic ponds for water and sludge, total volume 26,000 m^3.

Costs for this WTP upgrade are estimated at EUR 65,000.

2.6 IIP Sub-Component 4: Existing Sewerage Network – Extension

In five areas conventional sewers will be installed to prepare for future connections to areas where simplified sewerage systems (see Section 2.7, below) will be installed. These are: Mabatini A + B, Isamilo, Kilimahewa and Igogo where existing sewage networks will be extended. The pipeline routes for the conventional sewers to these areas have been surveyed and detailed designs were made; they will mainly be installed in murram/gravel roads under expected difficult conditions as there are many large rocks and stones in the roads. The sewers to the five areas amount to a total length of 4.4 km with diameters ranging from 225 to 400 mm (Table 2-2).

Table 2-2. Extension of existing sewerage network in five areas

Ward	Pipe length (m)	Pipe diameter (mm)	Potential population – conventional sewerage (inhabitants)	Potential population – simplified sewerage (inhabitants)
Mabatini A (school)	1,349 381	225 300	5,941	31,406
Mabatini B (police Qs)	450	225	188	1,905
Isamilo	907	300	2,833	14,672
Kilimahewa	843	225	1,605	8,023
Igogo	452	225	nil	14,015
Total	***4,382***		***10,567***	***69,754***

Source: COWI Study Report, 2015

Table 2-3. Mabatini Extension Area A specifics

	Extension of existing sewer network
Name	• Mabatini A (extension from Mabatini School)
Location	• Residential neighbourhood of single family homes and low-rise apartment blocks

	Extension of existing sewer network
	• Mabatini Ward
Purpose	• Extend wastewater services to area to include future areas with simplified sewerage • Expand MWAUWASA customer base
Beneficiaries	• 2012 Census population: 20,143 • 2015 Population projection: 23,825 • 2025 Population projection: 26,584 • 2040 Population projection: 37,347 within Mabatini A area (31,406 for simplified and 5,941 for conventional sewer)
Design parameters	• 2040 Wastewater generation: 1,423 m^3/d (residential) • Wastewater source: 80% of water consumed will be converted to wastewater • Water consumption for population provided with conventional sewers • 20% of population assumed to use 150 l/c/d • 45% of population assumed to use 90 l/c/d • 34% of the population assumed to use 50 l/c/d • Water consumption for population provided with simplified sewers • 100% of population assumed to use 40 l/c/d
Key facilities	• 1.73 km gravity pipes, corrugated HDPE of class SN8 • 34 manholes • The extended sewer line will be gravity

Source: COWI Study Report 2015

Table 2-4. Mabatini Extension Area B specifics

	Extension of existing sewer network
Name	• Mabatini B (around Mabatini Police Quarters)
Location	• Residential neighbourhood of single family homes and low-rise apartment blocks • Mabatini Ward
Purpose	• Extend wastewater services to area to include future areas with simplified sewerage • Expand MWAUWASA customer base
Beneficiaries	• 2012, 2015 and 2025: as above, for Mabatini area A • 2040 Population projection: about 2,093 in Mabatini B area (including 1,905 for simplified and 188 for conventional sewers)
Design parameters	• 2040 Wastewater generation: 74.2 m^3/d (residential) • Wastewater source: 80% of water consumed will be converted to wastewater • Water consumption for population provided with conventional sewers • 20% of population assumed to use 150 l/c/d • 45% of population assumed to use 90 l/c/d • 34% of the population assumed to use 50 l/c/d • Water consumption for population provided with simplified sewers • 100% of population assumed to use 40 l/c/d
Key facilities	• 0.45 km gravity pipes, corrugated HDPE of class SN8 • 11 manholes • The extended sewer line will be gravity

Source: COWI Study Report, 2015

Table 2-5. Isamilo Extension Area specifics

	Extension of existing sewer network
Name	• Isamilo Extension Area
Location	• Residential neighbourhood of single family homes and low-rise apartment blocks (with some opportunity for

	Extension of existing sewer network
	commercial/industrial development foreseen in the future) • Isamilo Ward
Purpose	• Extend wastewater services to area to include future areas with simplified sewerage • Expand MWAUWASA customer base
Beneficiaries	• 2012 Census population: 7,847 • 2015 Population projection: 8,600 • 2025 Population projection: 11,670 • 2040 Population projection: 17,505 (14,672 for simplified and 2,833 for conventional sewer)
Design parameters	• 2040 Wastewater generation: 609 m^3/d (residential) • Wastewater source: 80% of water consumed will be converted to wastewater • Water consumption for population provided with conventional sewers • 20% of population assumed to use 150 l/c/d • 45% of population assumed to use 90 l/c/d • 34% of the population assumed to use 50 l/c/d • Water consumption for population provided with simplified sewers • 100% of population assumed to use 40 l/c/d
Key facilities	• 0.907 km gravity pipes, corrugated HDPE of class SN8 • 22 manholes • The extended sewer line will be gravity

Source: COWI Study Report 2015

Table 2-6. Kilimahewa Extension Area specifics

	Extension of existing sewer network
Name	• Kilimahewa Extension Area
Location	• Residential neighbourhood of single family homes and low-rise apartment blocks • Nyamanoro Ward
Purpose	• Extend wastewater services to area to include future areas with simplified sewerage • Expand MWAUWASA customer base
Beneficiaries	• 2012 Census population: 4,565 • 2015 Population projection: 4,830 • 2025 Population projection: 5,830 • 2040 Population projection: 9,628 within Mabatini A area (8,023 for simplified and 1,605 for conventional sewer)
Design parameters	• 2040 Wastewater generation: 377 m^3/d (residential) • Wastewater source: 80% of water consumed will be converted to wastewater • Water consumption for population provided with conventional sewers • 20% of population assumed to use 150 l/c/d • 45% of population assumed to use 90 l/c/d • 34% of the population assumed to use 50 l/c/d • Water consumption for population provided with simplified sewers • 100% of population assumed to use 40 l/c/d
Key facilities	• 0,843 km gravity pipes, corrugated HDPE of class SN8 • 17 manholes • The extended sewer line will be gravity

Source: COWI Study Report, 2015

Table 2-7. Igogo Extension Area specifics

	Extension of existing sewer network
Name	• Igogo Extension Area
Location	• Residential neighbourhood of single family homes and low-rise apartment blocks

	Extension of existing sewer network
	• Igogo Ward
Purpose	• Extend wastewater services to area to include future areas with simplified sewerage • Expand MWAUWASA customer base
Beneficiaries	• 2012 Census population: 7,287 • 2015 Population projection: 7,200 • 2025 Population projection: 9,398 • 2040 Population projection: 14,015, all for simplified sewer
Design parameters	• 2040 Wastewater generation: 448.5 m^3/d (residential) • Wastewater source: 80% of water consumed will be converted to wastewater • Water consumption for population provided with simplified sewers • 100% of population assumed to use 40 l/c/d
Key facilities	• 0.45 km gravity pipes, corrugated HDPE of class SN8 • 12 manholes • The extended sewer line will be gravity

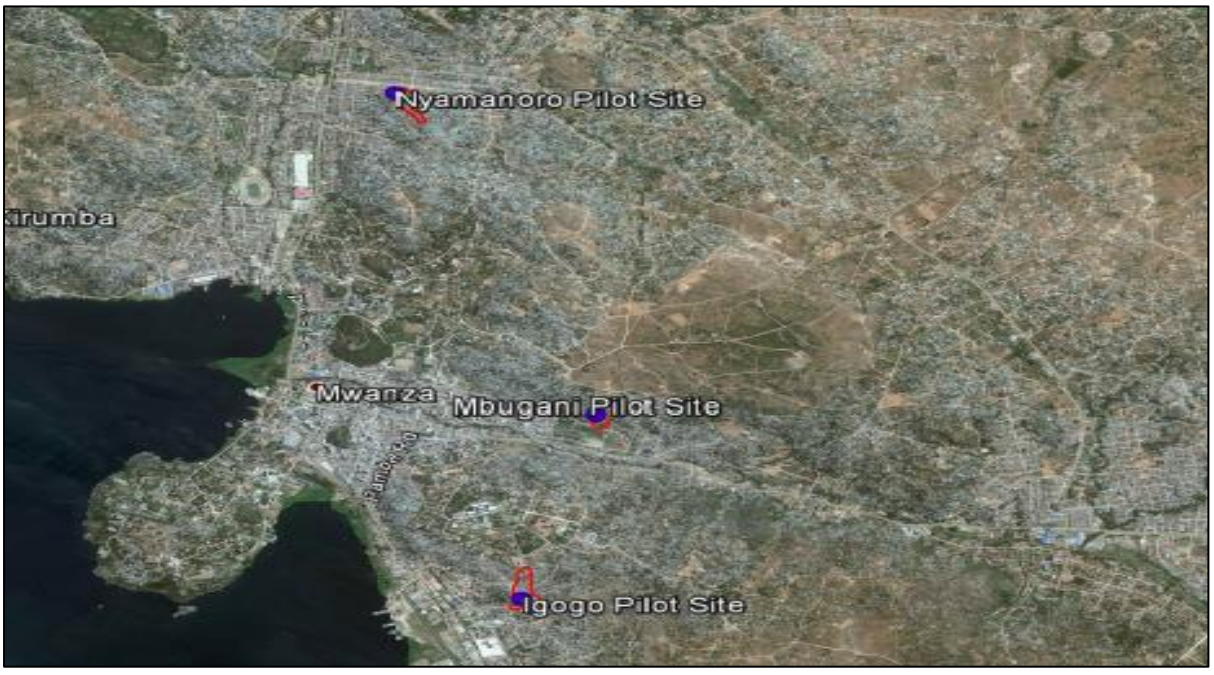
Source: COWI Study Report, 2015

Costs for the IIP works for extension of existing sewerage systems in the five areas are estimated at EUR 1.66 million.

2.7 IIP Sub-Component 5: Simplified Sewerage in Three Pilot Areas

Three hilly areas have been selected as pilot areas, where (alternative) simplified sewerage systems will be installed. These areas are located in Mabatini (Nyamanoro), Kilimahewa (Mbugani) and Igogo (Figure 2-1). As compared to conventional sewerage systems (wastewater connections from discharge points to a centralized wastewater treatment facility), simplified sewerage makes use of either septic tanks and soakaway pits or Decentralized Wastewater Treatment Systems (DEWATS). This will add cost to investment and also to cost for O&M due to the frequent sludge removal. In the three pilot areas all houses will be connected to main sewer lines (existing or to be installed under the IIP sewer extension works), and no DEWATS will be required.

Figure 2-1. Location of the three pilots areas where simplified sewerage systems will be installed



Source: COWI IIP Study Report, 2015

Volume 5 of the COWI Tender Documents provides further detail on the planned developments in these three pilot areas such as:

Generic oversight satellite images of the locations (Figure 2-1);
Detailed satellite images per location, with among others, catchment boundaries, existing and new sewers to be installed, existing and new manholes (Figure 2-2);
Detailed layout drawings of the simplified systems to be installed (Figure 2-3);
Detailed profiles per pilot area (Figure 2-4);
Standard drawings for the various elements of the simplified sewerage system, such as collection/inspection chambers, pipe supports, manhole details, squatting toilets (Figure 2-5).

Figure 2-2. Existing and planned sewerage development in Igogo Pilot Area (detail)

Source: COWI IIP study report, 2015

Figure 2-3. Lay-out drawings of the simplified sewerage system to be installed in Nyamanoro Pilot Site (detail)

Source: *COWI IIP Study Report, 2015*

Figure 2-4. Profile, Google Earth, June 2015

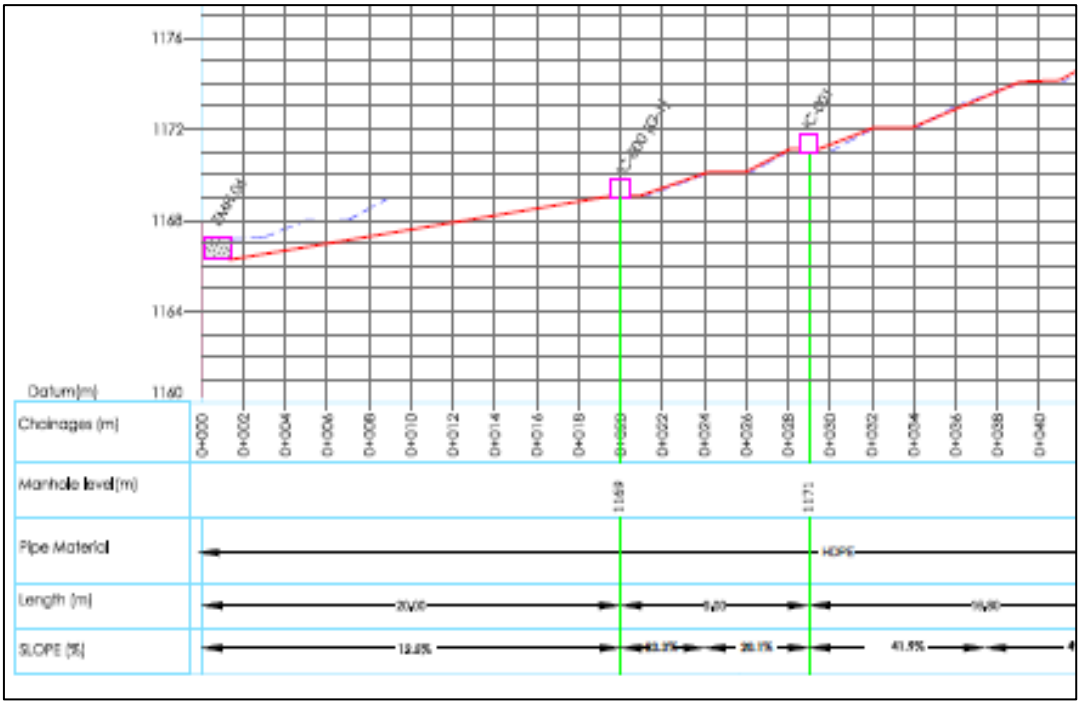
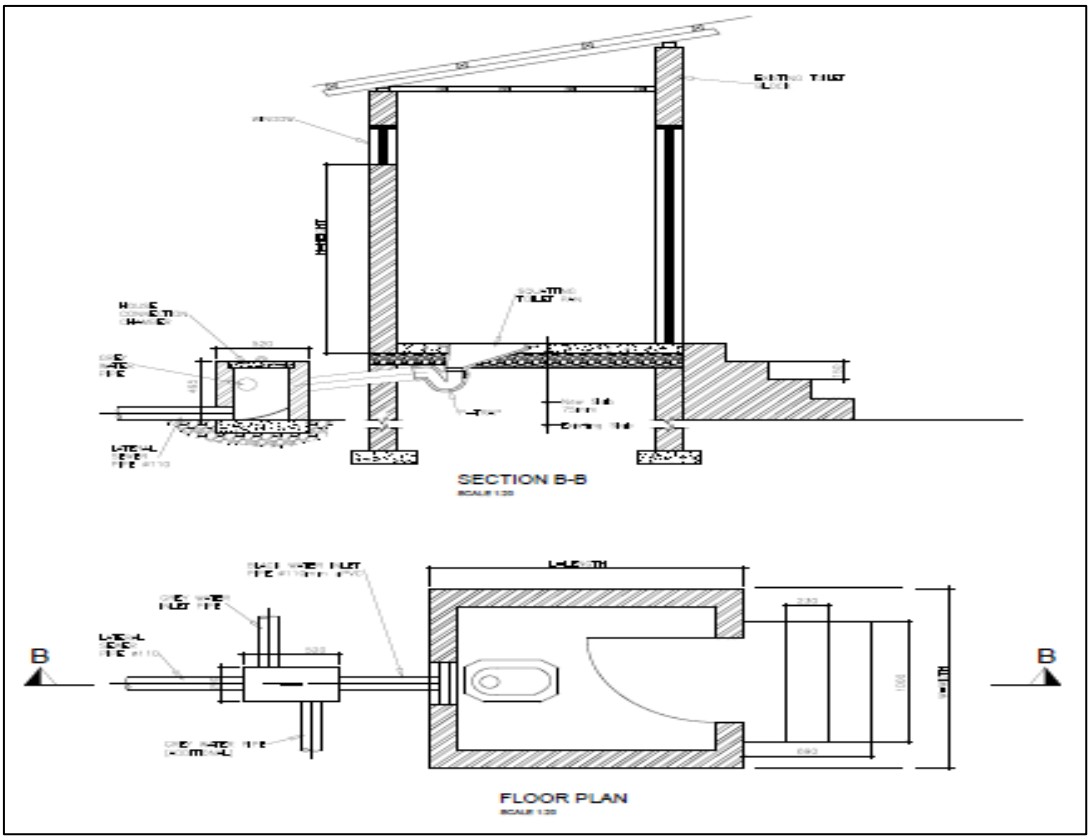


Figure 2-5. Squatting toilet



Source: COWI document, 18th April 2016

3. Policy, Administrative and Legal Framework

3.1 Tanzanian Government

3.1.1 Relevant Policies and Laws

Development and implementation of the LVWATSAN – Mwanza Project is a response to a number of international and national policies adopted by the Government of Tanzania that have been outlined in other project documentation, such as:

Agenda 21 of the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro (1992);
National Environmental Policy (1997);
National Water Policy (2002);
National Land Policy (1997);
National Human Settlement Development Policy (2000).

These have resulted in a number of laws, relevant for LVWATSAN, including the:

Local Government (District Authorities) Act Cap 287 (1982);
Occupation health and Safety Act No. 5 (2003);
Construction Industry Policy (2003);
Environmental Management Act Cap 191 (2004);
Urban Planning Act No. 8 (2007);
Land Use Planning Act No. 6 (2007);
Water Resources Management Act No. 11 (2009);
Public Health Act (2009).

Of particular relevance to preparing the present ESMP for the simplified sewerage and sewer rehabilitation and extensions works of the Immediate Investment Plan for the LVWATSAN are the *Environmental Impact Assessment and Auditing Regulations* (2005). These spell out when and how environmental and social assessment is to be carried out for what sort of development.

3.1.2 Institutions

The institutional arrangement for environmental management in Tanzania is provided in the Environmental Management Act (2004). There are seven (7) institutions mentioned by the act, as well as their responsibilities, of which the Minister Responsible for Environment is the overall in-charge for administration of all matters related to the environment. The legal institutions for environmental management in the country include:

National Environmental Advisory Committee;
Minister Responsible for Environment;
Director of Environment;
National Environment Management Council (NEMC);
Sector Ministries;

Local Government Authorities (Municipal, District, Ward, Village, sub-village "Mtaa / Kitongoji")
Environmental Management Regulation in Tanzania.

As the Project interventions on which the present ESMP is focusing are of a limited and low-scale nature only, not all of these bodies are relevance in this case; the most relevant are the following.

National Environment Management Council (NEMC) – its purpose and objective is to undertake enforcement, compliance, review and monitoring of EIA's and to facilitate public participation in environmental decision-making. According to the Environmental Management Act (2004) the NEMC has the following responsibility pertaining to EIA in Tanzania:

Registers experts and firms authorized to conduct EIA;
Registers projects subject to EIA;
Determines the scope of the EIA;
Set-ups cross-sectoral TAC to advise on EIA reviews;
Requests additional information to complete the EIA review;
Assesses and comments on EIA, in collaboration with other stakeholders,
Convenes public hearings to obtain comments on the proposed project;
Recommends to the Minister to approve, reject, or approve with conditions specific EIS;
Monitors the effects of activities on the environment;
Controls the implementation of the Environmental Management Plan (EMP);
Makes recommendations on whether to revoke EIA Certificates in case of non-compliance;
Promotes public environmental awareness;
Conducts Environmental Audits.

Concerning the LVWATSAN project, NEMC Lake Zone was responsible for registration of this project component (see Section 1.3), it determined the scope of the work to be conducted and recommended the preparation of the present limited ESMP, reviews the ESMP, and rejects or approves it.

Sector Ministries – These are required to establish Sector Environmental Sections headed by the Sector Environmental Coordinator. The Sector Ministries' Environmental Sections responsibilities are:

Ensure environmental compliance by the Sector Ministry;
Ensure all environmental matters falling under the sector ministry are implemented and report of their implementation is submitted to the DoE;
Liaise with the DoE and the NEMC on matters involving the environment and all matters with respect to which cooperation or shared responsibility is desirable or required;
Ensure that environmental concerns are integrated into the ministry or departmental development planning and project implementation in a way which protects the environment;
Evaluate existing and proposed policies and legislation and recommend measures to ensure that those policies and legislation take adequate account of effect on the environment;
Prepare and coordinate the implementation of environmental action plans at national and local levels;
Promote public awareness of environmental issues through educational programmes and dissemination of information;
Refer to the NEMC any matter related to the environment;
Undertake analysis of the environmental impact of sectoral legislation, regulation, policies, plans, strategies and programmes through strategic environmental assessment (SEA);
Ensure that sectoral standards are environmentally sound;
Oversee the preparation of and implementation of all EIA's required for investments in the sector;
Ensure compliance with the various regulations, guidelines and procedures issued by the Minister responsible for the environment and;
Work closely with the ministry responsible for local government to provide environmental advice and technical support to district level staff working in the sector.

With reference to the LVWATSAN project, the Environment Department under the Ministry of Water and Irrigation (MoWI) is responsible to ensure MWAUWASA complies with various regulations, guidelines and procedures during construction and operation of the Project.

Local Government Authorities – Under the Local Government Act of 1982 (Urban and District Authorities), Local Government Authorities include the City Councils, Municipal Councils, District Councils, Town Councils, Township, Kitongoji, Ward, Mtaa and Village. The Environmental Management Committee of each jurisdiction shall:

Initiate inquiries and investigations regarding any allegation related to the environment and implementation of or violation of provisions of the Environmental Management Act;
Request any person to provide information or explanation about any matter related to the environment;
Resolve conflicts among individual persons, companies, agencies non-governmental organizations, government departments or institutions about their respective functions, duties, mandates, obligations or activities;
Inspect and examines any premises, street, vehicle, aircraft or any other place or article which it believes, or has reasonable cause to believe, that pollutant or other articles or substances believed to be pollutant are kept or transported;
Require any person to remove such pollutants at their own cost without causing harm to health and;
Initiate proceedings of civil or criminal nature against any person, company, agency, department or institution that fails or refuses to comply with any directive issued by any such Committee.

Since initiation of the LVWATSAN – Mwanza Project, environmental management committees at all levels have been involved in every stage to understand the project's objectives as well as their level of participation during construction and operation phases. Under the Environmental Management Act (2004), the City, Municipal, District and Town Councils are headed by Environmental Inspectors who are responsible for environmental matters. The functions of the inspectors are to:

Ensure enforcement of the Environmental Management Act in their respective areas;
Advice the Environmental Management Committee on all environmental matters;
Promote awareness in their areas on the protection of the environment and conservation of natural resources;
Collect and manage information on the environment and the utilization of natural resources;
Prepare periodic reports on the state of the local environment;
Monitor the preparation, review and approval of EIA's for local investors;
Review by-laws on environmental management and on sector specific activities related to the environment;
Report to the DoE and the Director General of the NEMC on the implementation of the Environmental Management Act and;
Perform other functions as may be assigned by the local government authority from time to time.

Their involvement in the LVWATSAN – Mwanza Project will give an opportunity to schedule their time to advise and monitor the performance of the project especially during operation.

3.2 European Investment Bank

3.2.1 Relevant Policies and Regulations

Environmental protection and improvement, and benefits to people's welfare form key operational priorities for the European Investment Bank, the European Union's long-term lending institution. The EIB's environmental and social safeguard policies are based on the EU approach to environmental sustainability. The principles, practices and standards derived from these policies are highlighted in the Declaration on the European Principles for the Environment (EPE), agreed to by the EIB and four other European

multilateral financing institutions in May 2006. The general approach of the Bank is described in a number of public documents (Table 3-1).

Table 3-1. EIB documents presenting the general approach to environmental and social safeguards

Document	Date
Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment	2014
Environmental and Social Handbook	2013
The EIB Statement of Environmental and Social Principles and Standards	2009
European Principles for the Environment	2006
Environmental Statement	2004
The EIB and its Contribution to Sustainable Development	2002
The EIB Project Cycle	2001

Source: EIB 2015

The EIB aims to maximise the environmental benefits and to minimise the environmental costs of the projects that it finances through appropriate screening, mitigation and compensation measures.
Environmental considerations are taken into account at all stages of the project cycle. In the case of co-financing with other institutions, the EIB may agree to apply the environmental standards of the co-financing institution, where these are comparable to EU standards, in the light of local conditions. However, the EIB will always carry out is own independent assessment.

The EIB's environmental safeguard measures include that:

the Bank's approach to financing projects is based on the precautionary principle, preventative action rather than curative treatment should be taken, environmental damage should be rectified at source and the polluter should pay, according to the Treaty Establishing the European Community;
all projects financed by the Bank are the subject of an Environmental Assessment (EA), normally carried out by its own staff, but if by others according to the requirements of the Bank.

For this purpose, projects are screened into four categories, based on the guidelines of the EU Environmental Impact Assessment (EIA) Directive:

Category A Those for which an EIA is mandatory (Annex 1 of the Directive);
Category B Those for which the competent authority determines the need for an EIA according to specified criteria (Annex II of the Directive, with ref. to Annex III);
Category C For which a limited environmental assessment, if any, is required according to any likely adverse environmental impacts of the project (projects outside the scope of the Directive);
Category D No environmental assessment required.

All projects financed by the EIB are also screened according to their potential impacts on sites of nature conservation. Where the impacts are expected to be significant, a special biodiversity assessment is carried out, according to the principles and practices of the EU Habitats Directive (ref. Art. 6 of the Directive).

The main responsibility for scrutinising the environmental aspects of projects lies with the Bank's Projects Directorate, which has about 80 engineers and economists, all with adequate environmental skills, who undertake the environmental assessment of projects at the EIB. The project teams, made up of engineers, economists, financial experts and lawyers, have front-line responsibility for managing environmental issues. They bring together significant cross-sectoral and cross-regional resources, experience and

professional knowledge. However, environmental management is further reinforced by a number of dedicated support units to provide direction and advice on the Bank's environmental policy, ensure a consistently high quality of assessment, improve awareness and create stronger capacity for external dialogue with relevant third parties.

EIB's *Environmental and Social Handbook* (2013) provides generic guidance on performing EIA, and specific information on, among others, involuntary resettlement (in its Chapter 6), stakeholder engagement (in its Chapter 10 and Annex 6), and objectives and structure of an Environmental and Social Management Plan (ESMP) in its Annex 11. It states that the latter "can follow a decision on scoping or after a full EIA".

3.3 Comparison between GoT and EIB Standards – and Conclusion

NEMC's screening decision on the proposed water supply infrastructure and wastewater collection and treatment works in Mwanza City (of 4 March 2015) was for *all* water supply and sewerage works under the LVWATSAN Project (IIP and STIP and unfunded works), and this entails conducting an EIA study. However, for the simplified sewerage and sewer rehabilitation and extension works for the IIP in Mwanza City the preparation of the (present) ESMP suffices. Note is taken of the fact that the term "ESMP" does not appear in the GoT legislation, and that the First Schedule under the Regulations (2005) "Projects requiring EIA" *does* include Item 20(c) "municipal sewage" but the descriptions given are understood to refer to new, *large-scale* interventions such as the construction of 'plants', 'facilities', '(transfer, bulk) systems', while the "list of small-scale activities and enterprises that require registration (may or may not require EIA)" does not include any reference to the type of interventions covered by the present ESMP. This could mean that, legally, for implementation of the IIP activities there is no need for an EIA or ESMP.

EIB preparatory studies for the LVWATSAN Project have concluded that there is a need for EIA studies (see for example the LVWATSAN Environmental and Social Datasheet – 2013) but these refer to the *entire* project and not (sub)components hereof. Moreover, none of the developments listed in EU Directive, Annex I (requiring EIA) or Annex II (case-by-case examination of meeting threshold criteria) refers to developments of the nature and scale covered by the present ESMP. During the EIB progress mission, held in December 2015, the mission leader informed that in Europe the local and low-impact developments considered under this ESMP normally do not require any environmental or social assessment.

It is therefore concluded here that the purpose of the present ESMP is merely a systematic screening exercise to assess any specific adverse impacts that otherwise may be overlooked and for which adequate mitigation measures would be needed. It is furthermore noted that the present ESMP does include most of the elements of an ESMP as recommended in the EIB Handbook, but that some are not applicable in this case.

Finally, it is essential to include the signed off and approved ESMP in the invitations to tender and contracts for construction recommended, otherwise it is both difficult and expensive to get the contractor to implement any of the required environmental and social management measures respectively.

4. Baseline / Existing Conditions

4.1 Physical Environment

4.1.1 Climate

Mwanza City lies at an altitude of about 1,100 m above sea level. Mean temperature ranges between 25 and 30°C in the hot season and 15 and 18°C in cooler months. The area experiences between 700 and 1000 mm of rainfall annually, falling in two fairly distinct seasons i.e. between the months of October and December and between February and May.

4.1.2 Geology and Structure

The Municipality in general is characterised by gently undulating granites and granodiorite physiography with isolated hill masses and rock inselbergs. It is also characterised by well-drained sandy loamy soil generated from course grained cretaceous.

4.1.3 Topography and Land Use

The locations for the proposed works (simplified sewerage and sewer rehabilitation and extension) are generally on sloping terrain, and have sandy loamy soils that are well-drained. All proposed works are located on non-private land, typically sited in densely populated residential areas. Existing sewers that will be rehabilitated or extended are located underground, usually in existing roads; simplified sewerage systems in the pilot areas will be installed along narrow footpaths on (steeply) sloping rocky terrain and will need therefore to be installed above ground level (Figure 4-1).

Figure 4-1. Road (left) and footpath on rocky slope in pilot area

Source: COWI document, 18th, April, 2016

4.1.4 Surface Water Catchments

Lake Victoria is the main nearby surface water body for Mwanza City, in which all surface drains discharge. The lake is considered as one of the most important shared natural resources by the East African

Community (EAC) partner states and is a major source of water and fisheries in the region. The ecosystem around the lake is comprised of savannah, forests and wetlands.

4.1.5 Groundwater

Groundwater in Mwanza is generally found at varying level beneath the surface, depending on local topography and time of the year (dry/wet season). However, 28 % of the population in Mwanza City depends on water from groundwater sources such as wells and boreholes.

4.2 Biological Environment

4.2.1 Biodiversity

All proposed sewerage intervention sites are intensely used; there is no natural, undisturbed vegetation onsite, however most localities have to a smaller or larger extent shrub or trees. These, as well as the roofs of existing dwellings in compounds and in the surroundings support some birdlife, but all of these are common species that are normally associated with urban settings in Tanzania and none of these is regarded as threatened or endangered.

4.2.2 Air Quality and Noise

Air quality and noise levels are results of normal human activities and are all considered of acceptable levels.

4.3 Socio-economic Environment

4.3.1 Population and Key Stakeholders

The proposed Project sewerage works under the IIP for Mwanza City are expected to connect some 70,000 inhabitants to simplified sewerage systems and more than 10,000 to conventional sewerage systems up to 2040. Most of these inhabitants reside in the immediate surroundings of the proposed works – housing in these areas varies from high class housing along some roads to low class houses in densely populated areas up the hills where little space is available for laying pipes.

4.3.2 Water Supply

Mwanza, including the targeted schools, is supplied with water from the public network managed by MWAUWASA. About 72% of the Mwanza population is connected to public water supply network. The proposed project is expected to add 7.2% to the current water supply to the city population and thus contribute towards increasing the number of people connected to water supply while reducing the number of people depending on underground water sources.

4.3.3 Sewerage System

Some of the targeted areas have existing underground conventional sewerage systems but parts of these are in poor condition and need to be replaced. Residential areas in hilly terrain are usually not connected to a conventional sewerage system but many have shallow pit latrines, and some have septic tanks or no sanitary facility at all. Problematic in most of these cases is the emptying of latrines and tanks due to the inaccessible terrain. Often facilities do overflow during heavy rains. Connection for public sewerage system in Mwanza city covers 23% of the population.

4.3.4 Solid and Liquid Waste Management

The Municipality is responsible for providing solid waste collection and disposal services within its area of jurisdiction. This includes the periodical emptying of septic tanks.

4.3.5 Economic Activities

In the immediate surroundings of most Project intervention sites small businesses form a major economic activity such as shops, commuter transportation, food vendors, etc.

4.3.6 Health and Welfare

Good sanitation and hygiene conditions are indicators of community health and welfare. Currently, in most parts of the Municipality there are insufficient and unsanitary water supplies, low standards of communal hygiene, and poor knowledge on basic personal health care.

5. Stakeholder Consultation

5.1 Overview and Legal Requirement

Stakeholders entail those individuals and institutions that have an interest with the proposed project. Further, stakeholders may be defined as all those people and institutions that have an interest in the successful design, implementation and sustainability of the project. This includes those positively and negatively affected by the project (Hewlett and Nagu, 1997). Stakeholder involvement entails processes whereby all those with a stake in the outcome of a project actively participate in decisions on planning and management. They share information and knowledge, and may contribute to the project, so as to enhance the success of the project and hence ultimately their own interests. For effective environmental management of the project, stakeholder involvement is very essential as may have the impacts on the overall sustainability of the project both environmentally, socially and economically.

The process of stakeholder consultation and disclosure of information is an ongoing overarching requirement that applies to the ESIA -and in this case ESMP- process. The consultation was of critical importance in gaining insights into the key environmental and social issues, concerns of communities and other stakeholders, and in aiding the development of potential strategies for addressing these impacts.
Effective consultation with stakeholders is (i) key to understanding the concerns and requirements of affected communities/schools and ensuring their participation in the formulation and refinement of the project design; and (ii) a prerequisite for sustainable development of toilets and water tanks. Effective disclosure through the release of timely accurate and comprehensive information to stakeholders is essential to ensure that the likely impacts (both positive and negative) are understood by stakeholders and allow the stakeholders to provide feedback to the project. It also enables the consultant in:

Determining the scope of the ESIA / ESMP;
Deriving specialist knowledge about the site;
Evaluating relative significance of the likely impacts;
Improve project design and, thereby, minimize conflicts and delays in implementation;
Proposing mitigation measures;
Ensuring that the ESIA / ESMP report is objective, truthful and complete;
Facilitate the development of appropriate and acceptable entitlement options;
Increase long term project sustainability and ownership;
Reduce problems of institutional coordination;
Make the resettlement process transparent (if any);
Increase the effectiveness and sustainability of the facility, and improve coping mechanisms;
Monitoring any conditions of the development agreement.

The Environmental Management Act of 2004 requires that all ESIA Studies undertake public consultation as part of the study. The aim of public consultation and disclosure is to ensure that all stakeholders interested in a proposed project (including project beneficiaries and the general public in the vicinity of the proposed project) be identified and their opinions considered during project planning, design, construction, and operation and decommission phases. In compliance to the requirements of the regulations, the consultant conducted public consultation in the period June-November 2015.

5.2 Objectives and Methodology

The public consultations for the proposed IIP sewerage works have focussed on areas where the existing sewerage systems will be rehabilitated or extended and on the pilot areas were simplified sewerage systems will be installed. The main objective of the consultations was to inform involved communities involved on:

Impacts related to land disturbance resulting from construction of the conventional/simplified sewerage systems;
Social relations resulting from activities onsite, presence of people on the site and health and safety impacts from the operation of the facility including , infectious diseases such as HIV/AIDS, social conflicts, property theft;
Impacts on air quality (pollution) resulting from construction of the sewerage system such as dust, oil, etc.;
Noise and vibration resulting from construction of the works;
Impacts on surface and groundwater quality during construction and operation (e.g. oil spillage and waste generated);
Disruption of norms and values due to interaction of workers onsite;
Obtained concerns and perceptions of the population and their representatives regarding the project;
Costs anticipated during operation of the project.

Consultation at Municipality levels included discussions with the Sewerage Committee (Table 5-1), specialists and other knowledgeable people through roundtable discussions. Both Municipal Council authorities in the project area (Mwanza Region) were covered in discussions. The discussions were conducted through direct, personal discussions and interviews where clarification was sought. The agenda included:

Brief introduction of the Project;
Presenting the proposed selection criteria;
Discussing recent experience in the Region/Municipal Councils with similar criteria and impacts to the community;
Obtaining from the authorities their environmental and socio-economic concerns and perceptions regarding the proposed project;
Discussing the role of authorities in public information dissemination, monitoring and management.

Table 5-1. The Sewerage Committee that was created for the LVWATSAN Project in Mwanza

SN	Name	Position
1	Mr. Hamisi A.Maulid	Regional Education Officer (REO)
2	Mr. Boniface P. Guni	NEMC/SEMO
3	Exaud Humbo	Regional Hydro-Geologist
4	Mr. Danny Temba	Ag. Regional Medical Officer (RMO)
5	Mr. Meck Manyama	MWAUWASA
6	Wilbert Bujiku	Eng. MWAUWASA
7	Mr. Kasawalala Benjamin	Economist- PORALG
8	Mr. Deogratius K.	Mwanza City Council
9	Mr. Misana A. Bihemo	Ilemela Municipal Council

Source: MWAUWASA 2015

5.3 Responses from the Public Consultation

People in the study area are eager to get proper sewerage systems constructed. They expect that the planned interventions bring the following improvements to their localities:

Removal of liquid waste at minimum cost as well as raising hygienic status of the area.
Ending the current unhealthy situation (scattered human excrements; spread of disease).
Improved roads and streets necessary for sludge management and regular maintenance.
Added value to houses and increased rent.
Employment opportunities to local people (youths and women) either directly or indirectly during construction.
Improved technology and skills resulting from interactions between workers and residents.

In general the improved sewerage systems are expected to have great positive impacts on the wards and to some extent on Mwanza City's economy as well.
Respondents also vented concerns about the proposed sewerage works which have been listed in Table 5-2, below.

Table 5-2. Stakeholders' concerns about the planned IIP sewerage works in Mwanza City

Nr	Issue	Response/Advice
1	What will be the coverage of the project?	Simplified sewerage will be installed in three pilot areas that have been selected based on criteria; if successful the project will be scaled up to other informal areas.
2	Will there be compensation to community members affected by the project?	The project does not have the budget for compensation. Also the project intends to use the simplified technology to collect and transport waste water to main sewers which will not require land acquisition. In case the pipes need to cross in someone's compound, the owners need to be persuaded to allow the pipes to pass.
3	During construction dust Is likely to affect both human beings and properties.	Contractors will be instructed to water the earth regularly to minimize dust.
4	Since the area has granite rocks noise will be intense during crushing stones so it should be minimized.	Contractors will be instructed to blast rock using modern technology to minimize noise.
5	Vibration: houses and other buildings may be affected by heavy equipment and blasting during sewerage construction.	Contractors will be instructed to use light machines and blast granites using modern technology to minimize noise.
6	There will be spread of HIV/AIDS and other sexually transmitted infections, especially the relationship between community and construction workers as the workers have ''disposable" money.	Workers camp (If located in the study area) should be the focus for HIV campaigns. Identify local capacity in dealing with HIV/AIDS. Contactors should arrange for HIV/AIDS prevention programme targeting both the construction workers and local communities. Positive discrimination (HIV Testing) in favour of resident workers to minimize risk of increased infection among local population. Programme on HIV/AIDS should target groups at risk such as commercial sex workers (specifically in the study area), barmaids as well as food vendors, and business women at the construction area NGOs and CBOs working for HIV/AIDS prevention in the area should be consulted during the implementation of HIV prevention.
7	Temporary employment opportunities. The contractor should give the priority of employment to the people hailing from the project area. The community may be involved in the some activities as labourers during the construction phase.	Sewerage system construction may stimulate individual's income for those who will be employed by the project. Contractors will be persuaded to use local casual labourers. Skills acquired during recruitment and construction will remain as asset to community members. Youth and women will benefit from doing business with construction workers selling foods, drinks ,etc. Expenditure of workers will add to community income.
8	What kind of cooperation does the project want from the community?	Community members need to (i) devote some of their time to the project(attending to project meetings); (ii) be ready to allow the project infrastructures to pass through their land (when needed); (iii) be ready to connect their toilets to the sewer; (iv) form a mechanism for supervision and management of the project. (v) provide security to

Nr	Issue	Response/Advice
		project infrastructure and materials; (vi) keep the environment clean.
9	There have been rumours that residents in informal areas will be relocated. Now by bringing this project here does this mean that we will not be moved?	UN-Habitat is not in position to respond to this, but we will take this matter to the municipal director for clarification.
10	How will the project accommodate households of those who cannot afford the connection fees?	From the main sewer there will be other pipes channelled closer to the houses (approx 50m) and houses will connect to these channelled pipes. So the connection fees will be affordable since the pipe needed for connection will be short and house hold the cost of pipe can be shared by 3-4 HHs.
11	For the simplified sewerage system to function at its best it requires the users to have access to water. So how is this system going to work here since we do not have reliable water supply?	The sanitation team will take this matter to MWAUWASA
12	What is causing the delay to implement the project till September?	Although this technology has been used in other countries, in Tanzania and Mwanza in particular it is new. We need to examine it in detail and made it to conform to our situation. Also there are some processes need to be completed before the actual construction begins such as survey the area and establish the route of which the pipes will be laid, prepare tender documents and procurement of the contractor.
13	How much size of acquittal space will the pipe for a simplified sewerage require?	By law the pipe for sewerage has its acquittal space. But for now we are not in a position to answer this. But we will take it up to MWAUWASA.
14	The first sanitation project covered only the houses that are facing the main road, now this EIB-project is going to cover only the residents that are living up in the hills. So what about the houses in between?	The law demands that all houses that are within the distance of 30m from the sewerage network to connect their waste water to the existing network.
15	What happens when the pipes that crosses in the private compounds bursts?	The project will establish a O&M framework that will manage the project.
16	How will a community member benefit for giving land for project?	The benefit will be that the connection box is at his yard thus reducing costs of connection.
17	Many areas do not have water supply, so how is the proposed technology going to work?	The project will first be piloted in an area with water supply.

Source: MWAUWASA 2015

5.3.1 Willingness and Affordability to Pay for Sanitation Services

Willingness and ability to pay was explored during the consultations to determine how committed communities are to improve their sanitation through simplified sewerage and also whether they will be able to afford it. Main findings are that (i) although incomes are relatively low it is acceptable practice to pay for sanitation services parallel with clean and safe water, and (ii) easier access to proper sanitation services would reduce social conflicts and communicable diseases. These observations lead to the conclusion that, the communities are willing and able to pay for improved sanitation as long as charges are reasonable and in line with current economic situation. A clear indication of this willingness is that people in the communities concerned pay water bills relatively promptly and the sewerage system will negate the charges paid for construction of pit latrine which is about TZS 300,000 (most latrines last for less than two years).

6. Assessment of Impacts and Identification of Alternatives and Mitigation Measures

This chapter describes the expected positive and negative impacts that may arise as a result of the proposed project interventions, i.e. per phase of the Project: pre-construction, construction and operation of the facilities, as well as alternatives for interventions that have or may have significant adverse impacts.

6.1 General

Based on the public consultations conducted and expert judgement, positive and negative impacts associated with the planned sewerage developments in Mwanza City were identified, i.e. for each of the five (5) sub-components of the planned sewerage works of the IIP for Mwanza City, and for both the construction phase as well as the operational phase of the works (Table 6-1).

Table 6-1. Project activity / impact matrix for the planned IIP sewerage works in Mwanza City

	Construction					Operation				
Potential impact on	SC1 - Sewerage NW – rehabilitation	SC2 - PS rehabilitation	SC3 - WTP upgrade	SC4 – Sewerage NW – extensions	SC5 – Simplified sewerage in 3 pilots	SC1 - Sewerage NW - rehabilitation	SC2 – PS rehabilitation	SC3 – WTP upgrade	SC4 – Sewerage NW - extensions	SC5 – Simplified sewerage in 3 pilots
Surface water						+			+	+
Groundwater										
Soil	--			--						+
Air (dust, fumes, noise)	--			--		+			+	+
Biodiversity										
Population						+			+	+
Economy / employment	+			+	+	+			+	
Traffic	--			--						
Land use / loss					--					
Health	--			--	--	+			+	-- / +

Safety	--			--						
Education / skills	+			+						

+ = positive impact; -- = negative impact

Positive impacts of the planned IIP sewerage works for Mwanza City are mostly associated with the Operational Phase of the interventions, and with some activities of the Construction Phase. First and foremost improved sewerage and sanitation conditions will lead to improved health in residential areas, and reduced inflow of nutrients into Lake Victoria. Other positive impacts include some employment to local labour and improved construction skills, and revenue for communal service providers (Table 6-1).

Some negative impacts are resulting from several project activities but these are mostly of a local, low-significant and temporary nature that all can be mitigated through proper and adequate management.

As is shown in Table 6-1, no negative impacts are expected from Sub-Component 2 (rehabilitation of the pump stations) and Sub-Component 3 (upgrade of the water treatment plant) as these works comprise almost exclusively the installation or replacement of equipment and parts, and therefore these two sub-components are not further considered in this ESMP. Both sub-components are however expected to improve operation of the sewerage systems and have therefore, indirectly, a positive impact.

No impacts (positive or negative) of the planned works are expected on groundwater, provided the systems are properly installed, and operated and maintained, and be leakage-proof. Significant impacts (positive or negative) on the local biodiversity are not expected, although the improved sewerage systems may improve to some extent lakeshore habitats.

6.2 Sub-Component 1 & 4: Existing Sewerage Network – Rehabilitation & Extension

These two sub-components basically entail the replacement of some 400 m of existing and installation of 4.4 km of new pipes in various diameters, and the construction of manholes, and other components. These works require excavation of soil and crushing of rock, temporary storage of excavated material, and backfilling. Once installed these elements do not require other inputs than periodical checking and maintenance. As these sub-components require the same sort of activities they have here been combined.

Construction Phase

Positive Impacts

(i) Economy / employment – The works will or may (depending on the contractor) provide some temporary employment to local residents, which will support the local economy. It is expected that most of the unskilled labour (50-100) and some of the skilled workforce (10-20) will be hired from the local community. This will increase their income and to some extent their living conditions. In addition, local people will be selling food and other merchandise to the construction workforce and hence raise -although temporarily- their income. A family with sufficient and regular income is more likely to afford paying the cost of education and health services for its members apart from getting enough to eat.

(ii) Education / skills – It is expected that the utilization of local skilled labour will somehow cause diffusion of knowledge from the skilled workers and hence open the door to the possibility of acquiring employment elsewhere.

Negative Impacts

(i) Soil excavation and rock crushing – Construction will imply excavation of soil -and as applicable rock- at the construction sites. This material will either be redistributed onsite or transported elsewhere on a mutually (Municipality, contractor) agreed location. Given the limited quantity, the

impact of these excavations and transportation and material redistribution is expected to be local, and low to insignificant.

Mitigation measure:

Excavated material (soil and rock) can either be re-distributed onsite (e.g. to fill eroded localities) or be transported elsewhere but in that case in a way (preventing dust, spillage en route) and at a public or private location that has been agreed with the local authorities or owner, respectively, and in an environmentally sound way.

Soil erosion and unintended washing away at excavation and disposal sites will need to be avoided.

(ii) Generation of dust, fumes, noise – Air quality may be affected by fumes and dust generated by (i) the movement of vehicles transporting equipment and materials to and from the site, (ii) excavation of soil and rock. These activities may increase fumes and dust at project sites or along roads during materials' transportation. Noise can be expected to result from excavations and other construction works, notably pressurised hammering at rocks, if on-site. However, during construction, use of equipment such as diesel generators and vehicle movement will increase noise levels in the project area. The impact is expected to be moderately significant, site-specific, and short-term.

Mitigation measure:

Air and noise pollution shall to the extent possible be minimized.

Construction equipment with minimal noise emission shall be used.

Vehicles carrying construction materials shall be restricted as much as possible.

Water sprinkling shall be applied to open earth construction faces to reduce dust emission.

Operators of equipment emitting significant noise shall be equipped with ear masks.

(iii) Traffic – Substantial hindrance may be expected as a result of the excavation works, particularly if pipes need to be replaced or installed in or along roads, due to excavators and other vehicles placed on or along roads, and movement and storage of excavated material.

Mitigation:

Contractors are required to develop and implement a traffic management plan that minimizes to the extent possible traffic congestion. This will include signposting, signalmen, and providing alternative routing of traffic.

(iv) Health – Part of the pipes to be replaced contain asbestos, reportedly. Handling or disturbing (uprooting) asbestos cement pipe through cutting, drilling, breaking and other activities may result in elevated levels of airborne asbestos fibres which, if inhaled, increase the risk of cancer and lung disease.

Mitigation:

To avoid the risk of cancer and lung disease there are basically two options: (i) leave the pipes untouched and install new pipes somewhere else; (ii) have the pipes removed by a certified firm specialized in the removal, handling and disposal of asbestos containing material. This requires special training of workers, special personal protective equipment (PPE), and specific requirements for transport and disposal. Once removed, asbestos containing material is to be packed before it is transported, and usually materials are disposed of underground and covered by earth or inside concrete containers. Handling, transporting and disposal of asbestos containing materials require permits and is always time-consuming and costly. Therefore, the LVWATSAN Project is advised to leave asbestos containing pipes untouched.

(v) Safety – Excavation trenches for pipe removal and laying and dumps of excavated materials may impose risks to workers, bystanders, other people and traffic as persons and vehicles may fall into the trenches or collide with dumps or parked equipment.

Mitigation:

Contractors are required to provide proper signboards and safety tape around excavation areas and have these adequately marked with lights at night.

(vi) Soil and Groundwater Pollution

Pollution of the soil and groundwater at the proposed construction sites may occur from (i) fuel spills from leaking vehicle tanks, (ii) accidental spills of oil, diesel or petrol during machinery operations, and (iii) onsite refuelling. The impact is highly site - and contractor specific, and depends on the quality and professionality of the contractor, particularly with regard to its safeguards standards. Therefore, the likelihood of occurrence of such events will vary anywhere between high and low probability.

Mitigation measure:

The contractor will adequately prevent the pollution of soil and water by applying proper waste management and disposal means.

(vii) Solid and Liquid Waste Generation

The construction works will generate limited volumes of solid (e.g. pipe material) and solid waste. Solid and liquid waste collection and disposal is managed by the Municipality through trucks and registered waste collection and disposal contractors. For waste generated in the site the contractor will be supposed to arrange good mechanisms of collecting, storing and disposing them

Mitigation measure:

Contractors shall agree with local authorities on how to dispose of construction wastes (i.e. either by the regular waste collectors or by the Contractor). If the Contractor is responsible for disposal of their construction solid and liquid wastes (spills, leftover stone, planks, cement, etc.), the way in which this is to be conducted, as well as an agreed location, shall be agreed with the municipality authorities.

Operation Phase

Positive Impacts

(i) **Surface waters –** The improved sewerage networks will be better equipped to handle sewage volumes and therewith are expected to contribute to better wastewater treatment, reduced inflow of nutrient into Lake Victoria and therefore help in a healthier environment.

(ii) **Smell / eyesore** – The improved sewerage network and wastewater treatment facilities will help reducing smell and other unpleasant characteristics associated with the current systems.

(iii) **Population** – People living and working in the areas where sewerage systems will be improved will benefit from a healthier and less polluted environment.

(iv) **Economy / employment** – Living and working conditions will be improved by better working sewerage systems.

(v) **Health** will be improved by better functioning sewerage systems.

Negative Impacts

No negative impacts are expected from the operation of rehabilitated or extended sewerage systems.

6.3 Sub-Component 5: Simplified Sewerage in 3 Pilot Areas

These systems will be constructed in three pilot areas on steeply, rocky and densely packed with low-cost housing, and high population density. In most places there are no roads, but only narrow uneven and rocky footpaths. The systems to be installed will comprise of enclosed squatting toilets and grey water collectors located at each house, connection chambers, aboveground HDPE lateral pipes with concrete supports, grit traps and manholes, and connections to main sewer pipes. Concrete stairs will be provided on some steep slope sections as well.

Construction Phase

Positive Impacts

(i) **Economy / employment** – Employment will be generated if contractors conduct the works with local labourers. This will stimulate the local economy.

(ii) **Education / skills** – Installation of the simplified sewerage systems with local labourers will help them to get skilled in managing, operating and maintaining the systems and to do repairs.

Negative Impacts

(i) **Land use / loss** – Installation of the simplified sewerage systems will take some space that in some instances may limit to some extent the area available for footpaths and near or around houses. It is understood from the consultations conducted that people generally provide access to their premises because they are provided with toilets and sewerage systems.

Mitigation:

It may be considered to incorporate laterals and/or larger sewer pipes into the concrete stairs that will be constructed – this will provide some protection to the pipes and reduces the risk of pipe weakening or damage.

(ii) **Health** – Influx of workers may increase the risk of HIV/AID and other STD infections. Workers may have a bad effect on residents, particularly children.

Mitigation:

Contractors are required to impose a Code of Conduct on their workers and assure that these comply to it.

Operation Phase

Positive Impacts

(i) **Surface waters –** Collection of wastewater through operation of the simplified sewerage systems and connection of these to existing conventional systems and water treatment facilities will reduce the inflow of nutrients into Lake Victoria and help improve environmental conditions in the lakeshore

(ii) **Soil** – The simplified sewerage systems will result in less pollution of the soil in the areas concerned.

(iii) **Smell / eyesore** – The simplified sewerage systems are expected to greatly improve the sanitation conditions in the targeted pilot areas.

(iv) **Population** – People will benefit from the systems installed by improved sanitation conditions around their houses and along access paths.

(v) **Health and safety** – Apart from improved sanitation conditions, the incidence of falls and injury of the slippery slopes, particularly during rainy periods.

Negative Impacts

(i) **Health –** Crucial for maintaining enhanced sanitary condition in the area is that the simplified sewerage systems are properly operated and maintained.

Mitigation measure:

People in the area must be trained properly on how to operate the systems. This includes instructions on what can and cannot be disposed of; the latter includes all sorts of solid waste that will quickly block and fail the systems completely. Training is to include how to check and maintain all elements for which the residents are responsible, such as grit traps.

Table 6-2: Environmental Impact Matrix for the Simplified Sewerage Project in Mwanza City

ITEMS FOR IMPACTS	TIME FRAME																			
ACTIVITIES	Construction Phase											Operation Phase				Decommission Phase			
IMPACTS	Recruitment of staff and casual labourers	Staff and labourers retrenchment	Delivery of construction equipments	Excavation and delivery of construction materials	Demolition of buildings and infrastructures	Digging of trenches	Movement of heavy machineries and trucks	Solid and liquid waste management	Mixing and compaction of soils and gravels	Site maintenance and repair.	Traffic movement	Levelling and measuring	Fencing of the sites	Transportation of materials	Management of solid and liquid waste	Staff and labour retrenchment	Management of debris and all sort of site waste	Management of spoil materials	Demolition of temporary built structures
PHYSICAL ENVIRONMENT																			
1.Land degradation	0	0	-1	-2	-3	-2	-1	-1	-3	0	-1	0	0	-1	-1	0	0	+2	0

2.Soil erosion	0	0	-1	-3	-1	-2	-1	-2	-3	0	-1	0	0	-1	-1	-2	-1	-1	-1
3 Noise	0	0	-2	-2	-3	-2	-3	-1	-3	-1	-3	-2	-1	0	0	0	0	-2	0
4. Increased pressure on the source of water	0	0	-1	-1	-2	-3	-1	-3	-3	-1	-1	-1	-1	0	-1	-1	0	-2	-1
5. Ground water quality	0	0	0	-2	0	-3	0	-3	-1	0	0	-1	0	0	-2	0	0	-1	-2
6. Air quality/air pollution	0	0	-1	-1	-2	-2	-3	-3	-1	-2	-2	-1	-2	-2	0	0	0	-2	-2
7.Increased surface water runoff	0	0	-1	-2	-3	-3	-1	-2	3	0	-1	-2	-1	0	-1	-1	0	-2	-1
NATURAL ENVIRONMENT																			
8. Loss of vegetation	0	0	-1	-2	-3	-3	-1	-3	-3	0	-1	-2	-1	-1	-2	-1	0	-2	-3
SOCIO-ECONOMIC ENVIRONMENT																			
9. Benefit to local and national economy	+3	-3	+1	+1	-2	+2	0	+1	-2	0	-2	+2	+2	+2	+2	0	-3	+2	+2
10.Employment opportunities	+3	-3	+2	+2	-2	+3	+2	+2	+1	+2	-2	+1	+3	+2	+2	0	-3	+2	+1
11. Education skills	+3	-3	+1	+2	-3	-2	+1	+3	-2	-2	-2	+2	+2	+2	+2	0	-3	+2	+1
HUMAN HEALTH																			
12.Hazards of HIV/AIDS	-3	-3	-1	-1	-3	-3	-2	-3	-1	0	-1	-2	-3	0	-1	0	-2	-1	-2
13. Dust and Air pollution	0	0	-1	-2	-3	-2	-2	-3	-1	-2	-2	-1	-2	-2	-1	0	0	-1	-3

Key:
+3 Very high positive impact *0 No impact* *-3 Very high negative impact*
+2 High positive impact *-2 High negative impact*
+1 Minor positive impact *-1 Minor negative impact*

6.4 Impacts Evaluation Criteria

To determine the significance of impact of the proposed simplified sewerage project, the criteria below stipulates the impacts basing on specified criteria shown in the impact evaluation matrix. The criteria for evaluation of impacts were based on the following factors:

- *Type of impact-whether positive of negative*
- *Its effects-whether direct, indirect or cumulative*
- *Intensity – whether low, intermediate or high*
- *Magnitude- whether site specific, local or regional*
- *Duration-whether permanent, or temporary; short term or long term;*
- *Reversibility – reversible or irreversible.*
- *Significance-whether low intermediate or high.*

The frequency of occurrence of each factor for a given impact has been used to obtain the characteristics of impacts as shown in the matrix (Table 6-2) above. The results indicate that most of the impacts are:

- *Negative.*
- *Indirect.*
- *Have low intensity;*
- *Site specific;*
- *Temporary (Short term)*
- *Reversible.*
- *Have no significance, low, medium, high or very high.*

The most important output in this analysis is the significance of impacts, which is determined by considering intensity, magnitude and duration.

6.5 Project Alternatives

Only one alternative may be considered.

6.5.1 Do Nothing or Delay Implementation

Clearly it is in nobody's interest not to construct the planned development or to delay its implementation. There is a great need for improvement of sanitation conditions in the targeted pilot areas, and funds are available through the GoT and EIB. Failure to complete the works within the relatively limited project duration may result in no improvement being realized for considerable time to come.

7. Environmental and Social Management Plan

This chapter provides a description of recommended measures to mitigate the identified negative impacts during construction, operation and closure (decommissioning) of the interventions in a matrix for environmental management, as well as an indication of responsibilities for organisations, institutions or individuals for implementation. The Plan comprises section of impacts, mitigation and enhancement measures, time to take action, institutional responsibilities as well as the relative costs to be used. The proposed costs are only indicative and the developer will have to work out actual costs and include them in the overall cost of the project. With reference to EMA Act (URT, 2004), the National Environmental Management Council (NEMC) will be responsible to ensure compliance of all the agreed conditions as stated in the Environmental and Social Management Plan (ESMP) for authorization.

Mitigation is the process of providing solutions to prevent impacts, or reduce them to acceptable levels. The objectives of mitigation are to:

Enhance the environmental and social benefits of a proposed development;
Avoid, minimize or remediate adverse impacts; and
Ensure that residual adverse impacts are kept within acceptable levels.

In general, environmental and social impacts that will occur through implementation of the proposed sewerage works include both positive and negative impacts that may emerge in the short, medium and/or long term. The various impacts have been presented in the previous chapter.

Responsibility for most of the mitigation measures during construction and decommission is with the respective contractor and costs involved are expected to be part of and be included in the contractor's contracts. Likewise, some operational measures are the responsibility of the municipality and/or MWAUWASA and any costs for implementation of these are considered to be part of their respective regular operational expenses.

Table 7-1. Environmental and Social Management Plan (ESMP)

Nr	Impact	Project Phase	Mitigation /Enhancement measure	Responsible institution	Mitigation cost ($)
1	Excavation and soil removal	Construction	• Minimize the area of disturbance by limiting excavation works. • Use excavated stockpiles for rehabilitation around trenches after construction to reduce volume of earth remaining in stockpiles or transport to other areas. • As applicable (off road/footpath conditions): re-vegetate as soon as possible to encourage reestablishment or organic topsoil layer and to overcome soil erosion around the facility.	Construction contractor	3000
		Operation	N.a.		-
		Closure	• Leave asbestos containing materials (cement pipes) untouched to avoid risk of airborne asbestos fibres that may cause cancer or lung disease. • Disturbed areas to be filled with earth materials, contoured and re-vegetated as soon as possible to encourage natural tillage through root development.	Decommission contractor	3000
2	Air and noise pollution	Construction	• Disturbed area to be kept to a minimum • Number of trips required for construction materials, especially sand and aggregate movement from collection points to the site to be minimized to the extent possible • Regular water spraying around construction sites • All activities to be carried out in accordance with the OSHA Act to minimize health and safety effects • All machinery operators be provided by appropriate PPE • Provide site holding around the construction area	Construction contractor	4000
		Operation	• Check for leaks and maintain manholes covers; conduct repairs as needed.	MWAUWASA	3000
		Closure	• Water spraying around the demolished area/structures • All demolition activities to be carried out in accordance with the OSHA Act to minimize health and safety effects • Appropriate PPE to be provided to all workers	Decommission contractor	2000
3	Soil and groundwater pollution	Construction	• Proper handling of soil excavation and rock demolition, i.e. redistribution on site or transport to agreed disposal areas. • Proper collection and disposal of construction spoils and solid waste at designated disposal sites.	Construction contractor	3000

Nr	Impact	Project Phase	Mitigation /Enhancement measure	Responsible institution	Mitigation cost ($)
			• Restrict refuelling of trucks and machines on site. • Liquid-tight installation of pipes and other elements of the sewerage system.		
		Operation	• Timely and frequent inspection and maintenance of the sewerage systems • Prevent and or provide immediate repairs of leaking sewage pipes.	MWAUWASA	2000
		Closure	• Proper collection of and disposal of demolition spoils and solid waste at designated disposal sites.	Decommission contractor	2000
4	Water supply	Construction	• Use water efficiently	Construction contractor	-
		Operation	• Use water efficiently	Residents	-.
		Closure	• Use water efficiently.	Decommission contractor	500
5	Solid and liquid waste	Construction	• Reduce the generation of unnecessary solid waste by reusing the construction materials where necessary.	Construction contractor	1000
		Operation	• Training on unnecessary water consumption to limit the volume of wastewater generated.	MWAUWASA Municipality	1000
		Closure	• Provide in advance arrangements for solid and liquid waste management.	Municipality	1000
6	Injury to people due to falling into pits and trenches or collision with roadside storage sites	Construction	• Backfill trenches & pits immediately; provide proper signposting, safety tape around excavation and storage sites, and lighting at night.	Construction contractor	2000
		Operation	• N.a.		-
		Closure	• Demolish / uproot and backfill trenches and pits immediately.	Decommission contractor	1000
7	Injuries from work related activities	Construction	• Provide adequate PPE and awareness.	Construction contractor	3000
		Operation	• N.a.		
		Closure	• Provide adequate PPE and awareness.	Decommission contractor	3000
8	Employment creation	Construction	• Employ local labour	Construction contractor	-
		Operation	• N.a.		-
		Closure	• Employ local labour	Decommission contractor	-

8. Environmental and Social Monitoring Plan

This chapter provides a description of recommended monitoring activities for implementation of the Environmental and Social Management Plan (ESMP – see Chapter 7). i.e. during construction, operation and closure (decommissioning), as well as an indication of responsibilities for organisations, institutions or individuals that will conduct the monitoring. The chapter describes the mitigation and monitoring measures that will be carried out throughout the Project to mitigate the impacts and enhance the benefits discussed in the previous chapter. The Environmental Management Act. No. 20 of 2004 and EIA Audit and Regulations No. 349 of 2005 set a clear link between mitigation and monitoring of outcomes in the EIA process. In this regard, therefore, NEMC is mandated by the law to undertake monitoring of such the project activities in collaboration with relevant sectors and other stakeholders.

Implementation of the E&S Monitoring Plan is the responsibility of the developer / end-user on site to ensure compliance and implementation of the ESMP.

The objective of monitoring is two-fold:

To alert Project authorities by providing timely information about the success, or otherwise, of the environmental management process outlined in this ESMP in such a manner that changes can be made as required to ensure continuous improvement to the Project's environmental management process (even beyond the project's life).

To make a final evaluation in order to determine whether the mitigation measures incorporated in the technical design and the ESMP have been successful in such a way that the pre-project environmental and social condition has been restored, improved upon or is worse than before and to determine what further mitigation measures may be required.

Implementation of monitoring of the interventions, whether during construction, operation or decommission of the facilities, comprises primarily regular or periodical onsite visual checks and is considered to be part of the regular operational practices of either the project supervisor, MWAUWASA, municipality, etc. and therefore these inspections are not expected to add significant cost to the regular monitoring activities of these bodies.

Table 8-1. Environmental and Social Monitoring Plan

Nr	Impact	Project Phase	Monitoring location	Frequency	Parameters	Responsibility	Monitoring cost
1	Excavation and soil removal	Construction	Project site	Weekly	Soil erosion Safety	Supervising consultant	3000
		Operation	N.a.	N.a.	N.a.	N.a.	-
		Closure	Project site	Weekly	Soil erosion	Supervising consultant	
2	Air and noise pollution	Construction	Project site	Weekly	Dust (PM_{10}) Noise (dB)	Supervising consultant	3000
		Operation	Project site	Bi-annually, or responding to complaints	Smell	MWAUWASA	2000
		Closure	Project site / area	Weekly	Dust (PM_{10}) Noise (dB)	Supervising consultant	3000
3	Soil and groundwater pollution	Construction	Project site	Weekly	Oil and fuel leakage	Supervising consultant	4000
		Operation	Project site	Bi-annually, or responding to complaints	Sewage leaks Groundwater quality	MWAUWASA	3000
		Closure	Project site	Weekly	Oil and fuel leaks Groundwater quality	Supervising consultant	3000
4	Water supply to pilot areas to assure proper operation of simplified sewerage systems	Construction	N.a.	N.a.	N.a.	N.a.	-
		Operation	Pilot areas	Monthly	Peak Water Demand (m^3/hr)	MWAUWASA	-
		Closure	N.a.	N.a.	N.a.	N.a.	
5	Solid and liquid waste	Construction	Project site	Weekly	Contractor's waste collection/disposal	Supervising consultant	4000
		Operation	Project site	Monthly	Waste collection and disposal	Municipality	3000
		Closure	Project site	Weekly	Contractor's waste collection/disposal	Supervising consultant	2500
6	Injury to people due to falling into pits and trenches or collision with	Construction	Project site	Weekly	Immediate backfilling; fencing or safety tape	Supervising consultant	2500

Nr	Impact	Project Phase	Monitoring location	Frequency	Parameters	Responsibility	Monitoring cost
	roadside storage sites						
		Operation	N.a.	N.a.	N.a.	N.a.	
		Closure	Project site	Weekly	Immediate backfilling; fencing or safety tape	Supervising consultant	2000
7	Injuries from work related activities	Construction	Project site	Weekly	PPE to workers	Supervising consultant	2000
		Operation	Project site	During maintenance	Safety	MWAUWASA	2000
		Closure	Project site	Weekly	PPE to workers	Supervising consultant	2000
8	Employment creation	Construction	N.a.	N.a.	N.a.	N.a.	
		Operation	N.a.	N.a.	N.a.	N.a.	
		Closure	N.a.	N.a.	N.a.	N.a.	

9. Decommissioning

This chapter provides guidance to unlikely event that the construction works need to be terminated prematurely, or dismantled at the end of the lifetime of the constructions. The constructions are expected to have a minimal operational lifespan of 25 years. According to the Tanzania's EIA Guidelines and Procedures (2005), the proponent will be required to prepare a decommissioning report that will be submitted to NEMC for review and approval. All the costs pertaining to site rehabilitation and ecosystem restoration before the winding up the construction work will be borne by the proponent. The decommissioning procedures should always be undertaken within established guidelines and limits of the appropriate regulatory agencies. The decommissioning plan will remain a "living document," and revisions will be made throughout the operating life of the project. MWAUWASA (developer) and the selected contractor shall be responsible to monitor environmental impacts during and after project removal. The contractor shall remove the project components and ancillary structures safely and in a manner that minimizes environmental impacts, satisfy the proponent obligation to various policies and legal requirements and restore the site to a condition suitable for the other uses, pay all dues (workers, government, suppliers etc).

Decommissioning During Construction

In the event that construction activities and associated work cease prior to facility completion and commissioning (with no expectation of construction re-start) the constructions would need to be decommissioned in a manner as described below. Mitigation measures will also be implemented where appropriate (e.g. to stabilization of exposed soils).

Decommissioning after Ceasing Operation

Decommissioning activities will occur in the sequence indicated below.

Table 9-1. Summary of decommissioning plan

Nr	Activity	Impact	Mitigation measure	Timing	Costs
1	Excavation and removal of sewer lines	Injury to people and damage to vehicles	• Prior informing community / municipality on decommission works • Provide warning tape around activity area	tbd	3000
2	Emptying sewers and (temporary) pits	Smell nuisance to	• Arrange for sufficient trucks to collect	tbd	4000

Nr	Activity	Impact	Mitigation measure	Timing	Costs
		neighbouring community	and dispose of sewage within a short period of time		
3	Removal of pipes and demolished constructions	Dust, noise, injuries, solid waste generation	• Provide PPE to workers according to the use, i.e. nose & ear masks, safety goggles • Provide site holding fence • Sell materials for reuse if in good condition	tbd	5000
4	Filling of trenches and pits	Dust and noise generation, injuries to workers	• Provide PPE to workers according to the use, i.e. nose & ear masks, safety goggles	tbd	3000
5	Landscaping	Dust and noise generation, injuries to workers	• Provide PPE to workers according to the use, i.e. nose & ear masks, safety goggles	tbd	3000

10. Summary and Conclusions

In a joint effort, the Government of Tanzania and the European Investment Bank are implementing the Lake Victoria Water and Sanitation Project – Mwanza (2014-2019) with the main overarching aim to achieve the Millennium Development Goals (MDG) for water and sanitation in secondary centres within the Lake Victoria Basin, i.e. in Mwanza City, its three satellite towns of Misungwi, Magu and Lamadi, as well as the towns of Bukoba and Musoma.

One of the components of the Project is developing and implementing the Immediate Investment Plan (IIP) for Mwanza City, consisting of three 'categories', of which 'simplified sewerage and sewer rehabilitation and extensions' is the focus of the present report.

The planned IIP sewerage works for Mwanza City comprise five (5) sub-components, i.e. (i) existing sewerage network rehabilitation, i.e. along Makongoro Road and Kenyatta Road; (ii) existing pump station rehabilitation, i.e. Kirumba PS and Mwanza South Pump Station; (iii) existing Wastewater Treatment Plant upgrade at Ilemela; (iv) sewer extensions to areas with simplified sewerage systems, i.e. in Mabatini (Area A + B), Isamilo, Kilimahewa and Igogo; and (v) simplified sewerage in three pilot areas, i.e. Mabatini (Nyamanoro), Kilimahewa (Mbugani) and Igogo.

Although Tanzanian legislation and EIB regulations do not require a full Environmental (and Social) Impact Assessment for this sort of local, small-scale and low-impact development, the Tanzanian National Environment Management Council (NEMC) informed that for these interventions an Environmental and Social Management Plan (ESMP) is required, the present report has been prepared in accordance with the required scope and contents for such report.

The targeted developments will all be built in an urban environment that is characterised by densely populated low-cost residential areas or sites that serve a more public function. In these areas there is generally no surface water. Biologically, flora and fauna at these localities is typically limited to some shade trees and some common urban birdlife but species present are neither threatened nor endangered.

Public consultations on the planned interventions were conducted in the period June-November 2015. General agreement was achieved among a wide group of consultees on the selected sites where the constructions will be implemented. Concerns expressed during these consultations included a range of suggestions that to the extent possible have been incorporated in the design.

A systematic assessment of expected impacts of the interventions learns that the planned development is expected to lead to a number positive impacts notably improved sanitation in the targeted areas, reduced inflow of nutrients into Lake Victoria, some employment. Some negative impacts of the interventions are associated with the construction, operation and (whenever applicable) decommissioning phases of the constructions, that all can be management and mitigated to acceptable levels by the various parties for which responsibility has been indicated in the report.

11. References

Atkins, August 2012
Project Formulation Report (PFR) for LVWATSAN – Volume 3: Mwanza

COWI, 18 February 2015
Project Brief on environmental and social impact assessment for rehabilitation and expansion of water supply infrastructure, wastewater collection and treatment for Mwanza City

COWI, 11 December 2015
Study Report for Immediate Investment Plan for LVWATSAN – Mwanza City

COWI, 5 January 2016
IIP Tender Documents for sanitation in selected areas in Mwanza City (simplified sewerage in 3 pilot areas)

COWI, 12 January 2016
Sanitation Design Manual for LVWATSAN

EIB, February 2013
Environmental and Social Datasheet for LVWATSAN

EIB, 2013
Environmental and Social Handbook

EIB, 2014
Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment

EIB/Halcrow, December 2015
Resettlement Planning Framework for LVWATSAN

EIB/UN-HABITAT, December 2015
Stakeholder Engagement Plan for LVWATSAN

Howett, D.J.B. and Nagu, J. (1997). Agriculture Project Planning in Tanzania. Institute of Development Management Mzumbe, Tanzania and Development Project Planning Centre, University of Bradford, United Kingdom.

R-Solve, August 2012
Supplementary Engineering Report for LVWATSAN

Tanzania Ministry of Water, 2006
Environmental and Social Management Framework (ESMF) for Water Sector Development Programme

Tanzania Ministry of Water, 2006
Resettlement Management Framework (RMF) for Water Sector Development Programme

World Bank, 1996
Final project funding proposal for Lake Victoria Environmental Management Programme.

Appendix 1. Meeting Minutes NEMC-PMC

Record of meeting/discussion

Project title:	Lake Victoria Water & Sanitation – Mwanza	**Division**	IDD
Subject:	Meeting with NEMC to discuss MWAUWASA ESMPs	**Project No.**	350199
Location:	NEMC Office Mwanza	**Date of Meeting:**	8 December 2015

Present:			
	Anna Masasi	NEMC	(AM)
	Boniphace Paul Guni	NEMC	(BG)
	David Rogers	PMC/ Mott MacDonald	(DR)
	Joyce Ndesamburo	UN-HABITAT	(JN)
Absentees with Apologies:			

Recorded by	**Distribution**
DR	

Item	Text	Action on
	1 Purpose of the Meeting The meeting was held at the request of the PMC in order to clarify the requirements for the ESMPs currently being prepared for the MWAUWASA IIP (Immediate Investment Plan) project works. **2 Contents of the ESMP documents(s)** Mr Wandert Benthem, the PMC's International E&S expert, had sent a suggested draft contents list which he had also suggested could be one document covering all the components/sub-projects being considered. However AM said that the contents list in the EIA regulations was similar but the sequence differs, therefore the list in the EIA regulations should be used. AM noted that the purpose of the current exercise was only to provide environmental screening and mitigation measures so the contents of the documents(s) could be simplified with elaborate ESMP. It was confirmed that the document(s) to be prepared should be called "Environmental and Social Management Plans" or ESMPs as they were not required to be full ESIAs. (Copy of the required contents list attached). After discussion it was agreed that a total of three ESMP documents are to be prepared and submitted to NEMC, each covering a different category of the IIP project interventions. It was noted that all the works under IIP are in Mwanza only.	

MMF011 Jul 2009 - PM/108/01 Page 1 of 2 © Mott MacDonald 2009

Record of meeting/discussion

Project title:	Lake Victoria Water & Sanitation – Mwanza	**Division**	IDD
Subject:	Meeting with NEMC to discuss MWAUWASA ESMPs	**Project No.**	350199
Location:	NEMC Office Mwanza	**Date of Meeting:**	8 December 2015

Present:			
	Anna Masasi	NEMC	(AM)
	Boniphace Paul Guni	NEMC	(BG)
	David Rogers	PMC/ Mott MacDonald	(DR)
	Joyce Ndesamburo	UN-HABITAT	(JN)

Absentees with Apologies:	

Recorded by	**Distribution**
DR	

Item	Text	Action on
	1 Purpose of the Meeting The meeting was held at the request of the PMC in order to clarify the requirements for the ESMPs currently being prepared for the MWAUWASA IIP (Immediate Investment Plan) project works. **2 Contents of the ESMP documents(s)** Mr Wandert Benthem, the PMC's International E&S expert, had sent a suggested draft contents list which he had also suggested could be one document covering all the components/sub-projects being considered. However AM said that the contents list in the EIA regulations was similar but the sequence differs, therefore the list in the EIA regulations should be used. AM noted that the purpose of the current exercise was only to provide environmental screening and mitigation measures so the contents of the documents(s) could be simplified with elaborate ESMP. It was confirmed that the document(s) to be prepared should be called "Environmental and Social Management Plans" or ESMPs as they were not required to be full ESIAs. (Copy of the required contents list attached). After discussion it was agreed that a total of three ESMP documents are to be prepared and submitted to NEMC, each covering a different category of the IIP project interventions. It was noted that all the works under IIP are in Mwanza only.	

Record of meeting/discussion

Project title:	Lake Victoria Water & Sanitation – Mwanza	**Division**	IDD
Subject:	Meeting with NEMC to discuss MWAUWASA ESMPs	**Project No.**	350199
Location:	NEMC Office Mwanza	**Date of Meeting:**	8 December 2015

Present:			
	Anna Masasi	NEMC	(AM)
	Boniphace Paul Guni	NEMC	(BG)
	David Rogers	PMC/ Mott MacDonald	(DR)
	Joyce Ndesamburo	UN-HABITAT	(JN)
Absentees with Apologies:			
Recorded by	**Distribution**		
DR			

Item	Text	Action on
	1 Purpose of the Meeting The meeting was held at the request of the PMC in order to clarify the requirements for the ESMPs currently being prepared for the MWAUWASA IIP (Immediate Investment Plan) project works. **2 Contents of the ESMP documents(s)** Mr Wandert Benthem, the PMC's International E&S expert, had sent a suggested draft contents list which he had also suggested could be one document covering all the components/sub-projects being considered. However AM said that the contents list in the EIA regulations was similar but the sequence differs, therefore the list in the EIA regulations should be used. AM noted that the purpose of the current exercise was only to provide environmental screening and mitigation measures so the contents of the documents(s) could be simplified with elaborate ESMP. It was confirmed that the document(s) to be prepared should be called "Environmental and Social Management Plans" or ESMPs as they were not required to be full ESIAs. (Copy of the required contents list attached). After discussion it was agreed that a total of three ESMP documents are to be prepared and submitted to NEMC, each covering a different category of the IIP project interventions. It was noted that all the works under IIP are in Mwanza only.	

Record of meeting/discussion
Continuation sheet

Mott MacDonald

Project No. 350199 **Date of Meeting:** 21st July 2015

Item	Text	Action on
	The agreed **three ESMP categories** are: (i) Schools and public places Latrines (ii) Water supply extensions and rehabilitation of pipelines (iii) Simplified Sewerage in Informal areas, together with some minor associated sewer extensions, and some sewer rehabilitation works. For each of the 3 ESMPs, individual locations (for example for the different schools latrine sites) will be dealt with in the relevant ESMP report using tables and where necessary short sections to deal with specific environmental impacts or other relevant location-specific features. In addition to the ESMPs, **Project registration** documents are also to be provided for each of the three categories, following the template already provided. These should be submitted before submitting the ESMPs. It was confirmed that separate "**Project Briefs**" are NOT required, this information to be included in the ESMPs. There was a discussion about the use of soakaways associated with septic tanks where these are necessary at certain schools. Justification for these will be provided based on the basis of the unacceptable cost to the community of total reliance on tankers to empty the septic tanks. Information on local water supplies to be included. DR asked about the use of steps (infrastructure to support construction of sewer pipes) in the informal areas, AM replied that this would be a good idea but only provided that it has been confirmed that the informal areas are being considered legalised settlements. DR and JN thanked AM and BG for taking the time to make all the clarifications made as above.	

NEMC's recommended ESMP outline

From Page 12 of the regulations:

Without prejudice to the generality of sub-regulation (1), the environmental impact statement shall closely be styled and contain the following information:
(a) Format of the environmental impact statement: (for our project, "**Environmental and Social Managament Plan – ESMP – as understood before**)

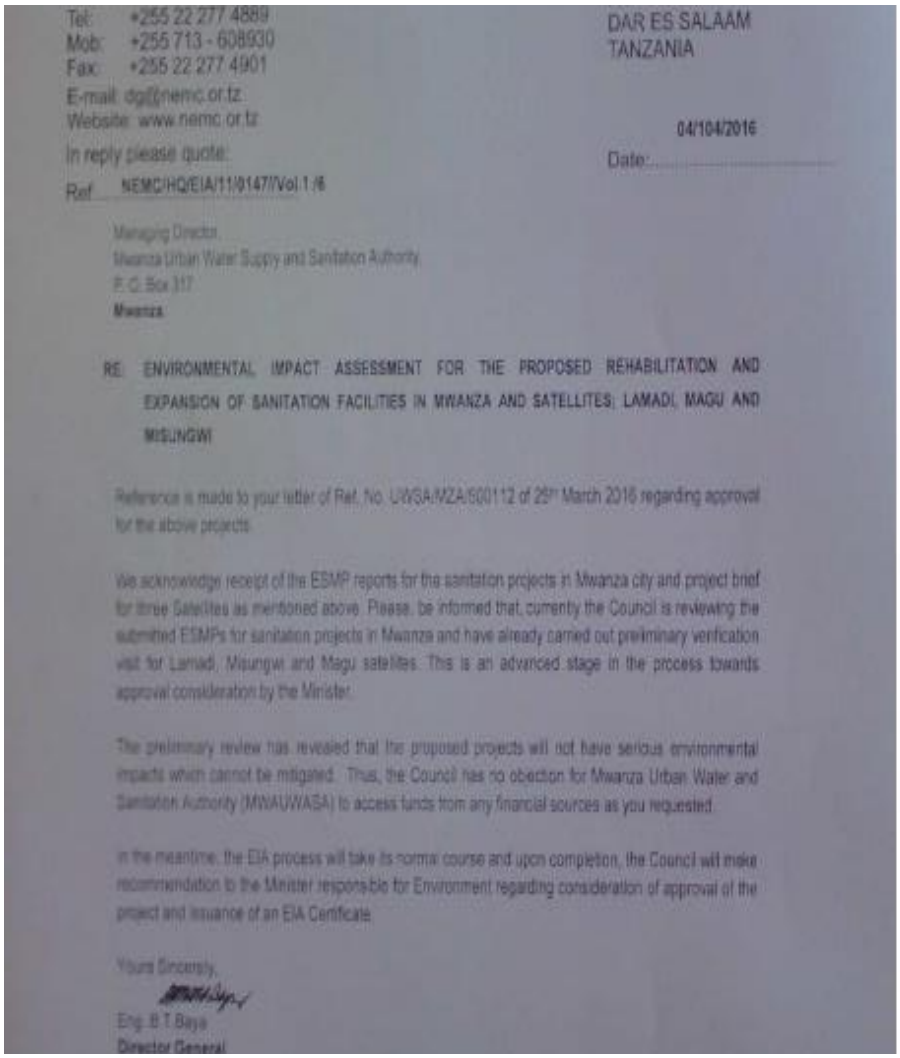
(i) executive summary;
(ii) acknowledgement;
(iii) acronyms;
(iv) introduction;

(v) project background and description;
(vi) policy, administrative and legal framework;
(vii) baseline or existing conditions;
(viii) assessment of impacts and identification of alternatives;
(ix) impacts management or environmental mitigation measures;
(x) environmental and social management plan;
(xi) environmental and social monitoring plan;
(xii) resource evaluation or cost benefit analysis;
(xiii) decommissioning;
(xiv) summary and conclusions
(xv) references;
(xvi) appendices;

(b) Cover page of the environmental impact statement: (**ESMP**)
(i) title of the proposed project;
(ii) location of proposed development;
(iii) developer;
(iv) lead consultants;
(vi) contact address and phone;
(vii) date of submission.

(3) Executive summary shall contain the following:
(a) title and location of the project or undertaking;
(b) name of the proponent and contact;
(c) names and addresses of experts or firms of experts conducting EIA;
(d) A brief outline and justification of the proposed project or undertaking showing-
(i) a brief description of the project environment;
(ii) project stakeholders and their involvement in the EIA process;
(iii) explanation on why some impacts are not addressed;
(iv) list of developer, consultant, local planning authorities and other people and organisations consulted;
(v) results of public consultation;
(vi) description of the major significant impacts;
(vii) alternative considered;
(viii) recommendations and plan for mitigation of the impacts;
(ix) environmental and social management;
(x) proposed monitoring and auditing;
(xi) resource evaluation or cost benefit analysis; and
(xii) decommissioning.

Appendix 2. NEMC's Letters



Tel: +255 22 277 4889
Mob: +255 713 - 608930
Fax: +255 22 277 4901
E-mail: dg@nemc.or.tz
Website: www.nemc.or.tz
In reply please quote:
Ref: NEMC/HQ/EIA/11/0147/Vol.1/6

DAR ES SALAAM
TANZANIA

Date: 04/04/2016

Managing Director
Mwanza Urban Water Supply and Sanitation Authority
P. O. Box 317
Mwanza

RE: ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED REHABILITATION AND EXPANSION OF SANITATION FACILITIES IN MWANZA AND SATELLITES; LAMADI, MAGU AND MISUNGWI

Reference is made to your letter of Ref. No. UWSA/MZA/500112 of 25th March 2016 regarding approval for the above projects.

We acknowledge receipt of the ESMP reports for the sanitation projects in Mwanza city and project brief for three Satellites as mentioned above. Please, be informed that, currently the Council is reviewing the submitted ESMPs for sanitation projects in Mwanza and have already carried out preliminary verification visit for Lamadi, Misungwi and Magu satellites. This is an advanced stage in the process towards approval consideration by the Minister.

The preliminary review has revealed that the proposed projects will not have serious environmental impacts which cannot be mitigated. Thus, the Council has no obection for Mwanza Urban Water and Sanitation Authority (MWAUWASA) to access funds from any financial sources as you requested.

In the meantime, the EIA process will take its normal course and upon completion, the Council will make recommendation to the Minister responsible for Environment regarding consideration of approval of the project and issuance of an EIA Certificate.

Yours Sincerely,

Eng. B.T.Baya
Director General

NATIONAL ENVIRONMENT MANAGEMENT COUNCIL (NEMC)
BARAZA LA TAIFA LA HIFADHI NA USIMAMIZI WA MAZINGIRA

Telephone: + 255-28-2541679
Facsimile: + 255-28-2541679
E-mail: nemcmza@gmail.com
Location: Lake Victoria Basin Water Board, Igogo.

Mwanza Zonal Office,
P.O. Box 11045,
MWANZA,
TANZANIA

In reply please quote:
Ref. No.NEMC/EA/01/Vol.1/16

Date: 28/04/ 2016

Managing Director,
MWAUWASA,
P.O.Box 317,
MWANZA.

RE: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR ESTABLISHMENT OF WATER SUPPLY (EXTENSION AND REHABILITATION OF PIPELINES IN MWANZA CITY)

Kindly refer the heading above.

National Environment Management Council (NEMC) Mwanza Zonal Office has reviewed the submitted ESMPs for afore mentioned project.

Following the review of your document the Council has noted that the ESMP is insufficient in that it cannot stand as a comprehensive tool to safe guard the environment during construction and operation phases.

Now therefore, to make it comprehensive you are directed the following:

1. Ensure that the project Background and all project activities are well addressed and associated impacts are identified.
2. For each identified impact ensure that feasible are practical mitigation measures are proposed.
3. Attach the documents indicating the legal ownership of the areas to be installed water storage tanks;
4. Ensure that the title of the project appears as Environmental and Social Management Plan for Establishment of Water Supply Extension and Rehabilitation of Pipelines in Ilemela and Nyamagana Districts - Mwanza Region
5. Ensure that all relevant stakeholders are consulted and their views views/concerns are documented and addressed in the final document.

Having incorporated all the directives, you will re submit the improved ESMP for approval.

Yours Sincerely,

Jamal Baruti
ZONAL COORDINATOR

Cc: Ally Salim
P.O. Box 175,
Sengerema - Mwanza

APPENDEX 3.Consulted Stakeholders and minutes of consultation meetings

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA SERIKALI YA MTAA KILIMAHEWA 'A' & 'B', 23 MEI, 2016

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	DOMINIC N. KORONGA —do—	MJUMBE	0753570222	[signature]
2.	SAMWELI JACOB	—〃—	0766046571	[signature]
3.	EUSTOCHIA - MOSES	MJUMBE	0744702188	[signature]
4.	ESTA CHACHA	M/Mtaa	0753 319639	[signature]
5.	Pendo william	mjumbe	—	P.W.
6.	Shabani Salum	Mjumbe	0653-702643	[signature]
7.	VEDASTUS - PIUS	MJUMBE	0759 658222	[signature]
8.	EPHRAIM JOEL	MJUMBE	0754540372	[signature]
9.	LAZARO-Jugwanza	Mjumbe	0757-445294	[signature]
10.	WILLIAM J. KANYANGA	—〃—	0768-769267	[signature]
11.	Julius MARUWEN	—〃—	0767339562	[signature]
12.	HALIMA ARON	—〃—	0762877597	H. Aron

MUHTASARI WA MKUTANO WA MTAA WA KILIMAHEWA A NA B KWA AJILI YA MRADI WA BOMBA LA MAJI TAKA. UNAFADHILIWA NA UN HABITAT 28/5/2016

1. KUFUNGUA KIKAO

- Mwenyekiti amefungua kikao Mnamo Muda wa Saa 10:30 jioni

2. UTAMBULISHO

- Wajumbe wa Serikali ya Mtaa wamejitambulisha pamoja na Mhandisi toka Mwauwasa na Mjumbe toka UN HABITAT

3. MREJESHO NI WAPI MRADI UMEFIKIA.

- Mhandisi toka Mwauwasa ameeleza kuwa hatua ya Mradi Sasa hivi tuko kwenye hatua za Mwisho. Kuna Mkandarasi tayari ambae ataanza kujenga, Mabomba yatapita kwa juu.

- Zimejitokeza alama kwenye baadhi ya Nyumba ambazo zitaunganishwa kwenye mradi. Kutakuwa na laini Mbili chini na juu. Lakini laini kubwa zitakusanya na kupeleka kwenye bomba la chini

- Inatakiwa kila Mwananchi kujua Utaratibu wa Mradi na baada ya Mradi.

- Isitokee Mtu akasema bomba lisipite hapa kwangu.

- Mradi Utaanza Mwezi wa Saba, Utaanzia eneo la Kilimahewa ni Mradi wa Majaribio.

- Imefikia hatua ya kutangaza Mkandarasi, baada ya kutangaza tenda ili aanze kazi

- Word Bank nao wana utaratibu wao kabla ya kutoa pesa kwanza kabisa wananchi wan-

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA SERIKALI YA MTAA KILIMAHEWA 'A' & 'B', 23 MEI, 2016

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	HAWA TWALIBU	MJUMBE	0752265340	Twalibu
2.	HAJIRI MSENGI	—"—	0688458226	hmsengi
3.	JORAM MJUMBI	—"—	0758984181	[signature]
4.	PASCHAL JIAGASA	—"—	0766250134	[signature]
5.	RAYMOND VICENT	—"—	0756637664	[signature]
6.	ROBERT JOHN	-"-	0766508631	[signature]
7.	ZAINABU-MAGESA	-"-	0762-465284	Zai
8.	Joyce Kamali	—"—	0765806337	J.
9.	Jovina Didas	"	0752220557.	Jovina.
10.	YERONIMO NICHOLAUS	-"-	0755-732941	[signature]
11.	JOYCE-MASHAURI	—"—	0757 121949	—
12.	PENDO EMANUEL	—"—	0752202770	[signature]

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA SERIKALI YA MTAA KILIMAHEWA 'A' & 'B', 23 MEI, 2016

SN	Jina	Nafasi/Cheo//Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	BENDA - NYANGARAGA	MJUMBE	0755-816905	—
2.	Wilbert Bujiku	Mhandisi - MWAUWASA	willybujiku@yahoo.com	[illegible]
3.	EKPARANSIA ARADINI	MJUMBE	0769160258	[illegible]
4.	MWIDINI - DAUDA	MJUMBE	0755-925105	[illegible]
5.	[illegible]	[illegible]	[illegible]	[illegible]
6.	JOSHUA - OPIO	MJUMBE	—	—
7.	SIHABA RASHIDI	— " —	0754 244213	[illegible]
8.	[illegible]	Mjumbe	[illegible]	[illegible]
9.	ANNASTAZIA Maleka	MJUMBE	0755-336530	[illegible]
10.				
11.				
12.				

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA WANANCHI MTAA KILIMAHEWA 'A' & 'B'

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	Joseph Mkumbo	Mjumbe	0754 614321	
2.	SHARIFA SHARIFF	mjumbe	0754-849434	
3.	Josephine mleh	mjumbe	0767625015	Amleh.
4.	Suma Kisanduze	MJUMBE	0758 007450	
5.	kaundime msabaha	mjumbe	—	Km,
6.	Amina masoud	mjumbe	— — — —	
7.	EDSON ZEPHANIA	MJUMBE	0759930485	
8.	MOHAMED S. MSONDE	Mjumbe	0753-360328	
9.	JENI - OBAS	MJUMBE	—	—
10.	EVELINA LENATUS	MJUMBE	—	ELenatus
11.	NYERE MAGIRE	MJUMBE	[illegible] 252959	
12.	HADIJA - NYAGIRE	MJUMBE	0766-564154	—

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA WANANCHI MTAA KILIMAHEWA 'A' & 'B'

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	VICENTI MAHEMBEKA	MJUMBE	0754972868	
2.	ABRAHAM-KAGENZA	MJUMBE	0786992702	—
3.	Gration-Mali	MJUMBE	0753 356100	Gmali
4.	Johnson Stella	Mjumbe	0769644502	
5.	HAPPINESS-GOZIBAT	MJUMBE	0757-484808	HAPPY
6.	MUSTAPHA ALLI	MJUMBE	0754-084602	
7.	EDINA KASHASHA	MJUMBE	0755 367728	EDINA
8.	DEUS, MBAGA	MJUMBE	0783 634639	
9.	MUSTAPHA VADASTUS	MJUMBE	—	—
10.	NYAMATHA PASCHAL	MJUMBE	0765 836832	—
11.	THEONESTINA JOSEPHU	MJUMBE	0765638905 ~~0765-8905~~	—
12.	MAIMUNA JUMA ANE	MJUMBE	—	—

MUHTASARI WA KIKAO CHA NDANI CHA SERIKALI YA MTAA YA KILIMAHEWA A NA B NA UN-HABITAT.

*AJENDA

1. Kufungua kikao
2. Utambulisho
3. Mrejesho wa mradi ulipofikia.
4. Majukumu ya serikali ya mtaa.
5. Kufunga kikao.

1. Kufungua kikao.

Mwenyekiti alifungua kikao mnamo saa 4:00 asubuhi alitumia nafasi hiyo kuwakaribisha wajumbe walihudhuria katika kikao hicho.

2. UTAMBULISHO:

Mwenyekiti aliwakaribisha wajumbe waweze kujitambulisha ili waweze kufahamiana kabla ya kuendelea na ajenda nyingine zilizopo mezani.

MWENYEKITI WA SERIKALI YA MTAA WA KILIMAHEWA 'B' KATA YA NYAMAGANA TAREHE 06/11/2024 S.L.P 735 MWANZA

3. MREJESHO WA MRADI ULIPOFIKIA:

Muhandisi maji kutoka MWAUWASA aliweza kufafanua kwa ufupi jinsi mradi unavokwenda. Mradi huu wa majitaka umegusa mitaa miwili unaanzia kilimahewa A hadi kilimahewa B.

Pia mwezeshaji wa masuala ya jamii kutoka kalika mradi wa UN-HABITAT alipata nafasi ya kuelezea ni wapi mradi umefikia. alisema:-

- Kazi ya kuandaa mchoro wa mradi tayari umekwisha kamilika na ramani alionyesha wajumbe wakaweza kuipitia.
- Tender zimeshatangazwa wo mchakato wa kumpata mkandarasi mwenye vigezo unaendelea.
- Kwa mategemeo endapo mambo yote yatakwenda kama yalivyokusudiwa mwezi wa Pisa mkandarasi atakua kazini.

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA WANANCHI MTAA KILIMAHEWA 'A' & 'B'

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	PATRICK GOWIKO NKUMBI	M/KITI WA MTAA KILIMAHEWA 'B'	patrickngumbi70@yahoo.com/0784638931	
2.	ABDUL-JAFFAR	KAIMU MWENYEKITI KILIMAHEWA'B'	0762-252947 -	
3.	~~Juma Habibu~~	MJUMBE MTAA KILIMAHEWA B	0767 959353	
4.	RUBIA VICENT	MJUMBE.	0752916988	
5.	ELIZABETH JOSEPH	"	0753162871	
6.	RAHERI SOLOMON	"	0769922698	
7.	SHARIFA ABDU	"	0764227746	
8.	JUMA MATIKO	"	0765539249	
9.	FRANSIS SUMUNI	"	~~0752389122~~	
10.	MALIKIA NURU	"	0752 389122	
11.	BERTWARD C. TIBALEKA	— " —	0629-52 8862	
12.	JUMA SHIMBA	— " —	0763899320	

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA WANANCHI MTAA KILIMAHEWA 'A' & 'B'

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	PRISCA B. CRISPINE	MJUMBE	0756 858208	[signature]
2.	PAULINA – FAUSTINE	MJUMBE	—	—
3.	JOSEPHAT – MAGESA	MJUMBE	0756-616062	[signature]
4.	PENDO – NYANDA	MJUMBE	0756-616062	[signature]
5.	MASENDE – MAGIGWA	MJUMBE	—	—
6.	PENDO EMANUEL	MJUMBE	0752202770	[signature]
7.	SARA MAKWAJA	MJUMBE	0753741646	[signature]
8.	Pendo William	mjumbe	0765847630	[signature]
9.	GODWIN WILLIAM	Mjumbe	0629-535794	[signature]
10.	NOVATH THEOPHIL	MJumbe	0755686516	[signature]
11.	FABIAN MWACHA	MJUMBE	0754607187	[signature]
12.	MUNDINI – DAUDA	MJUMBE	0755-925105	[signature]

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA WANANCHI MTAA KILIMAHEWA 'A' & 'B'

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	PATRICK FLOWIN NKUMBI	MWENYEKITI WA MTAA.	patrickngumbi70@yahoo.com. 0784 638931	
2.				
3.	BEATRICE GIDEON	AFISA MTENDAJI WA MTAA KILIMAHEWA A	0762074943	
4.	ABDUL - JAFARI	MJUMBE S/MTAA	0762-252947	
5.	TIMOTH KIHWGA	MJUMBE	0767353209	
6.	JUMA HABIBU	AFISA MTENDAJI MTAA WA KILIMAHEWA B	0767 959353	
7.	MUSTAPHA ALLY	MJUMBE	0754-084662	
8.	GRATION LWEBAHGILA	MJUMBE	0754 454361	
9.	HADIJA - MAGIRI	MJUMBE	0623359210	—
10.	ESTER DEOGRATIUS	mjumbe	0752-288831	—
11.	ROBERT JOHN	"	0766 508631	
12.	ABURAHAM KAGEMZA	MJUMBE	0762 362026	

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA WANANCHI MTAA KILIMAHEWA 'A' & 'B'

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	VEDASTUS MUSTAPHA	MJUMBE	0754 766 133	
2.	PASCHAL JIAGASA	MJUMBE	0766 250 134	
3.	BAHATI HUSSEIN	MJUMBE	—	—
4.	AJIRI – MSENGI	MJUMBE	0686258226	—
5.	JUSTA – JULIUS	MJUMBE	0769967053	J JULIUS
6.	KAUNDIME – MSABAHA	MJUMBE	0759 358983	Kmsabaha
7.	FELISTA LAZALO	MJUMBE	0753 944647	
8.	MGARA MALIMA	MJUMBE	—	
9.	JUMA MATIKU	"	0765539249	
10.	FILBETI LAZARO	MJUMBE	0755382861	
11.	JOSEPHINA MLELA	MJUMBE	0767625015	Jmlela
12.	JOYCE NDESAYUBURO	UN Habitat	0754 815 401	

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA WANANCHI MTAA KILIMAHEWA 'A' & 'B'

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	Cecilia Ungeli	CDS	0754 258512	
2.	SILVIDION S. KABUKIZA	MJUMBE/SERIKALI MTAA	0755382000/0688266760	
3.	DAUDI — JERADI	MJUMBE	0783882166	—
4.	UPENDO PHRAIM	MJUMBE	0768223819	Upendo
5.	ASIA MANKU	MJUMBE	0682928369	A. Manku
6.	KENEDY LUMBERY	MJUMBE	0754230419	
7.	Shanija Shamji	Mjumbe	0754 849434	Shanija
8.	Jovina Didas	MJUMBE	0752220557	Jovina.
9.	THEODEST — ERNEST	MJUMBE	0752-657116	
10.	MARIETHA KENEDY	MJUMBE	—	
11.	RESTUTA VICENT	MJUMBE	0765561232	
12.	SEWINA YUSTO	MJUMBE	—	

MRADI WA KUBORESHA HUDUMA YA MAJI SALAMA NA USAFI MWANZA - UNAOFADHILIWA NA BENKI YA UWEKEZAJI YA ULAYA NA SHIRIKA LA MAENDELEO LA UFARANSA
MKUTANO WA WANANCHI MTAA KILIMAHEWA 'A' & 'B'

SN	Jina	Nafasi/Cheo/Mtaa	Barua Pepe/ No. ya Simu	Sahihi
1.	ZYNABU MASINDE	MJUMBE	—	—
2.	GOODLUCK KITEGO	MJUMBE	0782222168	[signature]
3.	NIXSON LYOTO	MJUMBE	0765971300	[signature]
4.	ANANIAS MMUCONS	MJUMBE	0754812877	[signature]
5.	SILASON KABUKRA	MJUMBE/S.MTAA	0755382000/0688266760	[signature]
6.	MASHAKA ABDALLAH	—"—	0765983280/0717856103	[signature]
7.	DAUDI - GERADI	MJUMBE	0783 882126	DAUDI
8.	JUMANNE J. MANGI	—"—	0754539146	[signature]
9.	JOSEPHAT JOHN	—"—	0756616062	[signature]
10.	GRAISON LWEBANGILA	—"—	0754454361	[signature]
11.	PHILBERT R KABORA		0755382861	[signature]
12.	JASIN JUMA	—"—	0754810084	[signature]

Kubali Mradi ndio watoe pesa.

4. MAFUKUNYU YA WANANCHI KATIKA UTEKELEZAJI WA MRADI

- Ulinzi wa vile bomba linalopita Mtu asiharibu
- Watu wapewe elimu kwa ajili ya Mradi
- Mjumbe amependekeza kuwa watanlinda Mradi na kukusanya gharama kwa kushirikiana na Mwanwasa wananchi wote wameafiki.
- Gharama ya Maji Safi au Maji taka bzime iwe shirikishi.
- Wenye Mfumo wa Maji Safi kuwa wane lipa Maji taka Kusu ya Malipo ya Maji Safi
- Huku Mlimani wengi kowane Maji Safi

AZIMIO

- Wananchi wameazimia ili Mradi Uweze kuendelea kila Kaya ichangie Tshs 3000/= (Elfu Tatu Tu) kwa kila Mwezi.
(wamekubali Mradi na kupeke).

5. KUFUNGA KIKAO

- Mwenyekiti amefunga kikao Mnamo Muda wa Saa 1 jioni na kuwashukuru wajumbe kwa kuchangia hoja.

MWENYEKITI

MWENYEKITI WA SERIKALI YA MTAA
MTAA WA KILIMAHEWA 'B'
KATA YA NYAMANORO
TAREHE 18/06/2016
S.L.P 735 MWANZA

KATIBU

AFISA MTENDAJI WA MTAA
MTAA WA KILIMAHEWA
KATA YA NYAMANORO
HALMASHAURI YA ILEMELA

Appendix 4. Comments Received on Draft ESMP and PMC Response

This Appendix provides the comments received from NEMC (of 28 April 2014) and the Lender's Supervisor (of 23 February 2016), *in italics*, on the Draft ESMP of 4 February 2016, as well as PMC's responses, in normal font, on how these comments have been addressed in the current ESMP.

Comments of NEMC received on 28 April 2016

Nr	NEMC Comment	PMC's response
1	*Ensure that the project background and all project activities are well addressed and associated impacts are identified.*	Amended. Project background and planned project activities are already described in Chapter 2; impacts in Chapter 6.
2	*For each identified impact insure that feasible and practical mitigation measures are proposed.*	Amended
3	*Provide layouts of the existing and proposed extension of the sewer lines*	Amended
4	*Attach the documents confirming the acceptance of residents at the areas where interventions are aimed*	Attached
5	*Ensure that the title of the project appears as Environmental and Social Management Plan for Simplified Sewerage and Sewer Rehabilitation and Extensions Ilemela and Nyamagana Districts - Mwanza Region*	Amended.
6	*Ensure that all relevant stakeholders are consulted and their views /concerns are documented and addressed in the final document*	Amended

Comments of Lender's Supervisor received on 23 February 2016

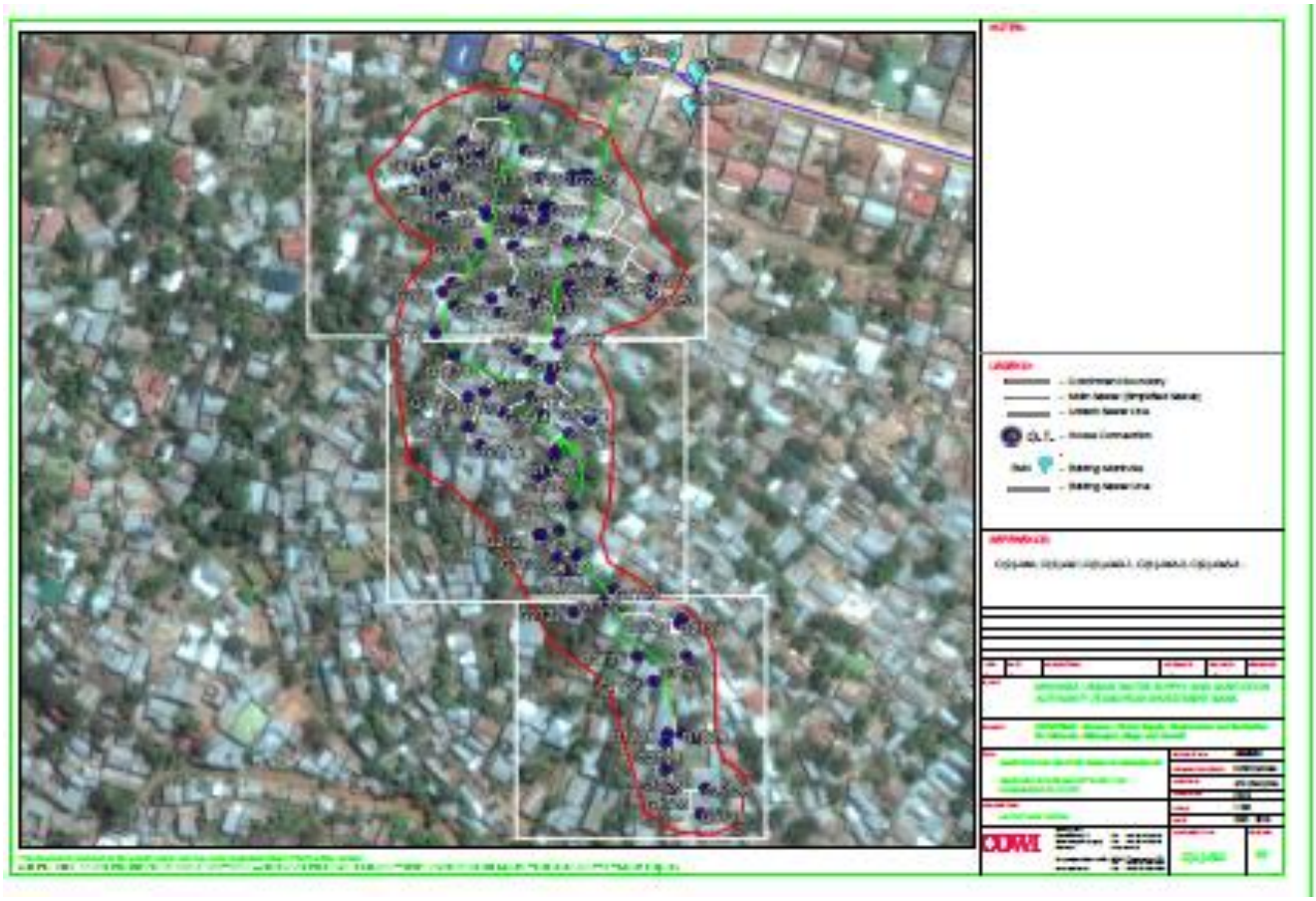
	General Comment	PMC's response
	The report is well written and covers most of the aspects required for this kind of report - ESMP. However, there are some substantial issues which still need to be addressed by the Consultant to further upgrade the quality of the report/ ESMP. In most sections, guidance has been provided on how to address the observed issues.	Noted, see below.
	Specific Comments	
1	*In the List of Abbreviations – pg iii, some of the abbreviations used in the report e.g. DEWATS are missing and the abbreviation for Sexually Transmitted Diseases is not STP.*	Corrected as directed
2	*There is an urgent need to consult the National Environment Management Council (NEMC) Lake Zone Office and HQ in Dar es Salaam (where the broader project(s) were screened and registered in March 2015) on the following:*	Consultation made with NEMC Zonal Office
2a	*To obtain a written confirmation that full EIA study was not required for the project but ESMP suffices. The letter should be appended to the report.*	See NEMC letter of "04/104/2016" as provided in Appendix 2
2b	*If the ESMP suffices, is it required to be submitted to NEMC for review and approval for issuance of EIA certificate or not?*	-
2c	*Subject to a & b, the ESMP will have to be revised in some sections to reflect the required changes as especially in (i) Executive Summary (Description of the major significant impacts) – pg vi; (ii) Section 1.3 (all paragraphs talking about NEMC) – pg 2; (iii) Section 3.3 – pg 15; and*	See present ESMP.

	General Comment	PMC's response
	(iv) Section 10 – pg 34.	
3	*Indicate source under all the figures and tables presented in the report.*	Added as directed
4	*In Section 3.1.1 – pg 11, add the following policies and laws: Construction Industry Policy (2003); Urban Planning Act No. 8 (2007); and Water Resources Management Act No. 11 (2009).*	Amended.
5	*In Section 4.1.5 – pg 17, you could ask MWAUWASA to provide you with an estimated percentage of the Mwanza City population that depends on groundwater sources (wells, boreholes etc) for their domestic needs.*	Amended
6	*In Section 4.3.2 – pg 17, find out from MWAUWASA, what percentage of the city population is connected to public water supply network?*	Amended
7	*In Section 4.3.3 – pg 17, find out from MWAUWASA, what percentage of the city population is connected to public sewerage system?*	Amended
8	*In bullet 6 under Section 5.1 – pg 18, the word "compete" should be changed to "complete".*	Amended
9	*From section 5 – pg 18-21, create an appendix for the consulted people/ stakeholders indicating date, name, position, institution, and contacts. The appendix should be appended to the report/ ESMP. If minutes of the consultative meetings were recorded, the minutes should also be appended to the report.*	Added
10	*In Table 5-2 – pg 20-21, in addition to Consultant's remarks given as responses to issues/ comments raised by stakeholders, the Consultant should use the same column to indicate in what sections of the report stakeholders' issues and comments are addressed.*	Amended
11	*From Table 5-2 – pg 20-21 and Section 6.3.2 {(A) Land Use/ Loss – pg 25}, the responses given on land related issues (see comment 2, 9 & 15 in the Table) appear somewhat unsatisfactory. It is not explicitly said under section 2.6 (IIP Sub-Component 4: Existing Sewerage Network – Extension – pg 5) and 2.7 (IIP Sub-Component 5: Simplified Sewerage in Three Pilot Areas – pg 7) about whether there will be need for land acquisition or not. The Consultant should consult MWAUWASA and provide a clear explanation in the report.*	Amended
12	*In Table 5-2 – pg 20-21, the Consultant should harmonize his responses to issue 11 and 17.*	Worked
13	*In Section 6.2.1 – 6.2.4, pg 23-26, consider numbering (either as 1, 2 … or i, ii …) the impacts instead of using alphabets.*	Added
14	*In Section 6.2.1 – pg 23, add "Income Gain among Local Suppliers" as another positive impact. The contractor(s) will source most of the construction materials locally in Mwanza City.*	Added
15	*In Section 6.2 and 6.3 –pg 22-25, make a clear characterization of all the identified positive and negative impacts in terms of their nature (positive or negative), their duration (long-term or short-term) and their area of influence (site specific, local or general area of influence); impact significance as "major impact", "moderate impact", "minor impact", and "no impact"; etc.*	-
16	*Although they appear in the ESMP (Table 7-1 – pg 28-29), the following possible negative impacts are not mentioned and described under Section 6.2.2 – pg 23-24 (i) soil and groundwater pollution; and (ii) solid and liquid waste generation.*	Added
17	*In section 6.2.3 (A) Surface waters – pg 18, consider renaming it to "improved sewerage and sanitation conditions" and link it to the*	Added

	General Comment	PMC's response
	comment made to Section 4.3.3 – pg 17, and say what % the proposed project will add to the current sewerage network coverage. Literature review could be a good attempt to establish how much this project will contribute to reducing the current nutrient loading of Lake Victoria from sanitation facilities unconnected to sewerage systems and wastewater treatment facilities.	-
18	*In Section 6.2.3 – pg 25, consider suggesting possible enhancement measures for the identified positive impacts and include the same in the ESMP, Table 7-1 – pg 28-29.*	Added as
19	*Impacts associated with Section 6.2 (Sub-Component 1 & 4: Existing Sewerage Network – Rehabilitation & Extension – pg 23-25) and Section 63 (Sub-Component 5: Simplified Sewerage in 3 Pilot Areas – pg 25-26) are very much similar. So the Consultant may consider combining them with clear explanation as even the ESMP in Section 7 (Table 7-1 – pg 28-29) has not separated them.*	-
20	*Impacts associated with Decommissioning/ Closure Phase are not described/ mentioned in Section 6 but they appear in the ESMP (Table 7-1 – pg 28-29). It's probably worthwhile making a highlight of it in Section 6 as it is separately covered in detail in Section 9 – pg 33.*	-
21	*Relative/ estimated cost for implementation of mitigation measures is not given or said any how in Section 7 – pg 27-29.*	Added
22	*Revisit the whole of Table 7-1 to incorporate the suggestions given in Section 6 as appropriate.*	Improved
23	*Consider including all identified positive impacts and their enhancement measures in Table 7-1.*	Added
24	*Relative/ estimated cost for implementation of monitoring plan (Table 8-1) is not given or said any how in Section 8 – pg 30-32.*	Added
25	*Consider revisiting the monitoring plan in line with the suggestions given in Section 6 and 7.*	This adhere as demanded
26	*In the first paragraph of Section 10 – pg 34, change Misungwe to Misungwi.*	Added
27	*In Section 11 – pg 35, add other relevant policies and laws as suggested in Section 3.1.1 – pg 11.*	Added
28	*Consider adding the following Appendices:*	
28a	*Appendix 2: NEMC letter (refer to comment 2a);*	Added
28b	*Appendix 3: List of Consulted Stakeholders; and*	Added
28c	*Appendix 4: Minutes of Consultative Meetings.*	Added

Layout Plans

1. Nyamanoro Site



2. **Mbugani Site**

3. Igogo site