ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE PROPOSED UPGRADING OF SANGO MARKET ON PLOT NO. 889, BLOCK "U" LOCATED AT SANGO MTAA, NYASUBI WARD IN KAHAMA MUNICIPALITY, SHINYANGA REGION

FINAL REPORT

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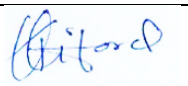
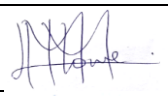
1.	Rosemary C. Nyirenda	Environmental Expert and ESIA Team Leader	NEMC/PC/EIA/2021/0075	
2.	Magdalena L. Mlowe	Environmental Specialist		
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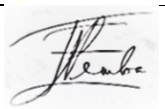
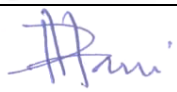
4.	Dr. Edmund Temba	Legal and Policy Framework		
5.	Dorcas Ephraim	Economist		

EXECUTIVE SUMMARY

The Final Environmental Impact Statement (EIS) for the Upgrading of Sango Market on Plot No. 889, Block "U" located at Sango Street, in Nyasubi Ward, Kahama Municipality, in Shinyanga Region.

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Background and location

Kahama Municipal Council was established in January, 2021, after being officially declared as a Town Council on Government Notice No. 174 and published on the 17th of June 2011 in the Local Government (Urban Authorities) Act, (CAP.288) by the Order Made under Section 5 (3). On 28th January 2021 the town council was upgraded and declared to be a Municipal Council by the late President John P. Magufuli. Kahama Municipal Council is in the North-Western plateau of Tanzania.
It lies approximately 3^0 15" and 4^0 30" South of the Equator and Longitudes 31^0 30" and 33^0 00" East of the Greenwich meridian. It is found along the Isaka-Benako-Rusumo trunk road, about 986.12 Kilometers from Dar es Salaam, 267 Kilometers from Mwanza, and 109 Km from Shinyanga Town. Kahama Municipal Council borders Nzega District to the East, Msalala District Council to the North. Bukombe and Mbogwe to the West and Ushetu District Council to the South.

The TACTIC Projects

Kahama Municipal Council as the Implementing Agency (IA) is part of the LGAs which will be implementing the WB finance project through TACTIC. The objective of the proposed TACTIC project is to strengthen urban management performance and deliver improved basic infrastructure and services in participating urban local government authorities. At its core, the project aims to promote economic development of Tanzania's cities and towns and its enabling infrastructure. Investments and technical assistance under the project are intended to promote urban development that is productive, inclusive, and resilient. The project will support 45 urban Local Government Associations (LGAs) spread geographically across all regions of Tanzania, ranging in population from 26,402 to 416,442 (2012), divided into three tiers based on population and growth rate. Kahama Municipal Council is grouped in Tier 1 as among the 12 larger, fast-growing LGAs.

The TACTIC project will provide funding to cover for the following projects in Kahama:

1) Improve infrastructures at Sango Market
2) Improvements of Roads at CBD
3) Construction of a New Bus Terminal at Mbulu
4) Improvements of Storm Water Drainage

5) Improvement of infrastructure at Zongomela Industrial Park (Roads, Market and Mini-bus stand)

This report's main focus is on Improvement of Sango Market.

Project Summary

The project will focus on the upgrading of Sango market located at Sango Street in Nyasubi Ward in Kahama Municipality's Central Business District area. Sango Market is located between 2Km to 3km from CBD and approximately 500m from the proposed site for the construction of Mbulu Bus Terminal. The market currently hosts over 400 traders who operate under a very poor working environment due to dilapidated market infrastructure. Varieties of commodities including vegetables, grains, and industrial products are sold in the market. The site can be accessed through a rough road about 500m from the Shinyanga Kahama trunk road.

Policy and Legal Framework

The policy framework which are in conformity with the proposed project activities are environmental policy of 1997, land policy of 1997, gender policy of 2000 and HIV and AIDS Policy of 2001. The legal framework for the proposed projects includes the environmental management Act of 2004, and its Regulations, the Land Act of 1999, The Occupational Health and Safety Act of 2005, HIV and Aids Act of 2008.

Apart from country policies and legislation the World Bank Environmental and Social Framework (ESF) which describes ten (10) Environmental and Social Standards (ESS) will also be used. The ten ESSs as per the WB ESF are: ESS 1: Assessment and Management of Environmental and Social Risks and Impacts; ESS 2: Labor and Working Conditions; ESS 3: Resource Efficiency and Pollution Prevention and Management; ESS 4: Community Health and Safety; ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities; ESS 8: Cultural Heritage; ESS 9: Financial Intermediaries; and ESS 10: Stakeholder Engagement and Information Disclosure. Given the nature of activities of this project, with the exception of ESS 9: Financial Intermediaries almost all the ESSs will be relevant.

Stakeholders Consultation and Design Recommendations

Stakeholders consulted included Kahama Municipal Council including the Municipal Director and the entire team (legal, community development, environment, physical planning, engineering), Kahama Water and Sewerage Authority (KUWASA), TANESCO, Kahama Office, Association of people with disabilities, Association of Traders in Sango market, Representatives of Sango Traders, Association of vendors at Sango market, Association of Mama Ntilie at Sango market, Office of the Mayor of Kahama Municipal Council, Nyasubi ward and Sango Street offices. Some of the design concerns from stakeholders are: i. The proposed developments should be designed in a way that they are manageable and affordable by the Kahama residents especially the Sango Market, ii. Involvement and consideration of the needs of people with disabilities in the proposed project, iii. The challenges and deficiencies with the current infrastructure design is inclusivity. The need for people with disabilities were not considered like putting wheelchair ramps in

buildings, iv. If there will be no proper destination/disposal point of storm water, the proposed drainage construction will have a negative impact. Hence, there is a need to have a reliable destination/ end point of the storm water in drainage to avoid stagnation and flooding to people's homes, v. The Municipal Council, contractor and consultants should cooperate with TARURA to ensure a smooth undertaking of the projects and the office is ready to offer a helping hand and their views, vi. The PIU needs to consult KUWASA prior construction to know of the water supply network where the project will cover and if they can be affected and what should be done, vii. The proposed buildings should have wheelchair ramps for easy access, viii. Important signs, there should be a translator for the deaf, Braille/tactile system for the blind in buildings and roads to render easy use for them, ix. Make available space/frames for the PwDs to carryout businesses. Space for their bajaj for business and shops.

Environmental and social impacts and their mitigation measures

Some of the identified impacts and their mitigation measures are:
Positive social impacts during preparatory stage are the creation of job to local communities. Negative social impacts include Disruption of Economic and Social Activities and Services while its mitigation measures include, awareness rising to community within the project core area; and inclusion of local leaders (Ward/sub-ward chairpersons/executive officers or /and councilors. Potential negative environmental impacts during preparatory stage include exploitation of Borrow Pits/Quarries and Other Natural Resources. Its mitigation measures are exploitation of construction materials will be from the authorized source only; and restoration of the borrow pits/quarries after use constituting levelling the area and seeding or planting of trees and/or grasses will be done in association with local government (natural resources department) and local environmental NGOs. If appropriate the levelled area will be left for natural re-vegetation. Negative environmental and social impacts during construction phase include Occupational Safety and Health Impacts (its mitigation measures: Appropriate working gear (such as nose, ear mask and clothing) and good construction site management shall be provided by the contractor), labour and poor working Conditions (mitigation measures: develop Labour Management Procedures to guide the employment of all workers), Impacts on receiving bodies such as air, land and water (mitigation measures are: prevent possible leakage from machines such as oil, and inspect the machines to reduce air emissions). Potential negative environmental and social impacts during operational phase and their mitigation measures include spread of diseases (mitigation measure: a safety, health and environment induction course shall be conducted to community members and workers, putting more emphasis on HIV/AIDS, which has become a national disaster), Risk of SEA/SH at the market **(**mitigation measures: the identification of SEA/SH risks during operation will be considered further as part of the GBV Action Plan), pollution to the air and water due to waste generation (mitigation measures: reduce generation of waste and manage properly the exiting waste by establishing proper waste management plan). During decommissioning there will be loss of employment and revenues (mitigation measures: provide a chance for a new bigger and better project which will increase revenue), waste generation from the demolished structures (mitigation measures: proper waste management plan). An Environmental and social management and monitoring plan has been designed to ensure that the identified impacts are properly managed.

Summary, Conclusions and Recommendations

The findings from this environmental and social impact assessment report can be summarized as follows: The project is generally accepted at the community, district, regional and national levels, based on its potential socio-economic benefits. The potential long-term social and economic benefits that the project is likely to bring are much greater than the negative impacts that can be managed to acceptable levels. Given the above findings, it can be concluded that the proposed project activities from design, construction to operations stage will have manageable/ reversible negative impacts on the biophysical and social-economic environments, provided that the proposed mitigation measures are appropriately implemented. In this way, the project will have minimal environmental, socio-economic, and cultural concerns that would inhibit its implementation and development. It is anticipated that the project will potentially result in more positive than negative impacts in the long term. Subsequently, the report's findings support the development and operation of the proposed project because the KMC and other responsible parties implement the mitigation and enhancement measures recommended in this report. KMC is responsible for ensuring the overall implementation of the proposed ESMP and ESMP and conducting periodic environmental monitoring and audits. This ESIA report recommends that the proposed project be allowed to proceed on condition that the proponent implements the ESMP proposed in this report as appropriate and any other conditions imposed by NEMC, WB and other relevant authorities.

ACKNOWLEDGEMENT

The Kahama Municipal Council wishes to convey heartfelt thanks and appreciation to all stakeholders who in one way or other supported the completion of this work. Special thanks to the wards and mitaa leaders where the proposed roads are passing, assocition of people with disabilities, NEMC, TARURA, KUWASA, TANESCO and community representatives for provision of relevant information and for their prompt assistance during the fieldwork. The proponent would like to thank Dar Alhandasah JV Don Consult's team of Consultants, Ms. Rosemary C. Nyirenda (Lead Environmental Expert), Ms. Magdalena L. Mlowe (Environmental Specialist), Dr. Lillian G. Mulamula (Ecologist), Dr. Edmund Temba (Legal Expert), Italius Kavishe (Social and Gender Expert) and Dorcas Ephraim (Economist) for their great contribution in this project. Last but not least we thank all who in one way or another were part of the succesful completion of this report.

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ACRONYMS

BOQ	– Bill of Quantities
CBD	– Central Business District
EHS	– Environment Health and Safety
ESIA	– Environmental and Social Impact Assessment
ESF	– Environmental and Social Framework
EMA	– Environmental Management Act
EMO	– Environmental Management Officer
ESS	– Environmental and Social Standards
ESMP	– Environmental and Social Management Plan
ESCP	– Environmental and Social Commitment Plan
FYDP	– Five Year Development Plan
GDP	– Gross Domestic Plan
GIIP	- Good International Industry Practice
GRM	– Grievance Redress Mechanism
GRC	– Grievance Redress Committee
GN	– Government Notice
IE	– Implementing Agency
KMC	– Kahama Municipal Council
KUWASA	– Kahama Water Supply and Sanitation Authority
LGA	– Local Government Authority
MEO	– Mtaa Executive Officer
MKUKUTA	– Mkakati wa Kupunguza na Kuondoa Umaskini Tanzania
NEMC	– National Environmental Management Council
PwD	– People with Disability
RPF	– Resettlement Policy Framework
SEP	– Stakeholder Engagement Plan
TACTIC	– Tanzania Cities Transforming Infrastructure and Competitiveness Project
TANESCO	– Tanzania Electric Supply Company Limited
TARURA	– Tanzania Rural and Urban Roads Agency
WB	– World Bank
WEO	– Ward Executive Officer

CHAPTER ONE

INTRODUCTION

1.1 Background

Kahama Municipal Council was established on July 2012 after being officially declared as a Town Council on Government Notice No. 174 and published on the 17th June 2011 in the Local Government (Urban Authorities) Act, (CAP.288) by the Order Made under Section 5 (3).

1.2 Location

Kahama Municipal Council (KMC) is located in the North-Western plateau of Tanzania. It lies approximately 3^0 15" and 4^0 30" South of the Equator and Longitudes 31^0 30" and 33^0 00" East of the Greenwich meridian. It is found along the Isaka-Benako-Rusumo trunk road, about 986.12 Kilometers from Dar es Salaam, 267 Kilometers from Mwanza, and 109 Km from Shinyanga Town. Kahama Municipal Council borders Nzega District to the East, Msalala District Council to the North. Bukombe and Mbogwe to the West and Ushetu District Council to the South (**Figure 1**).

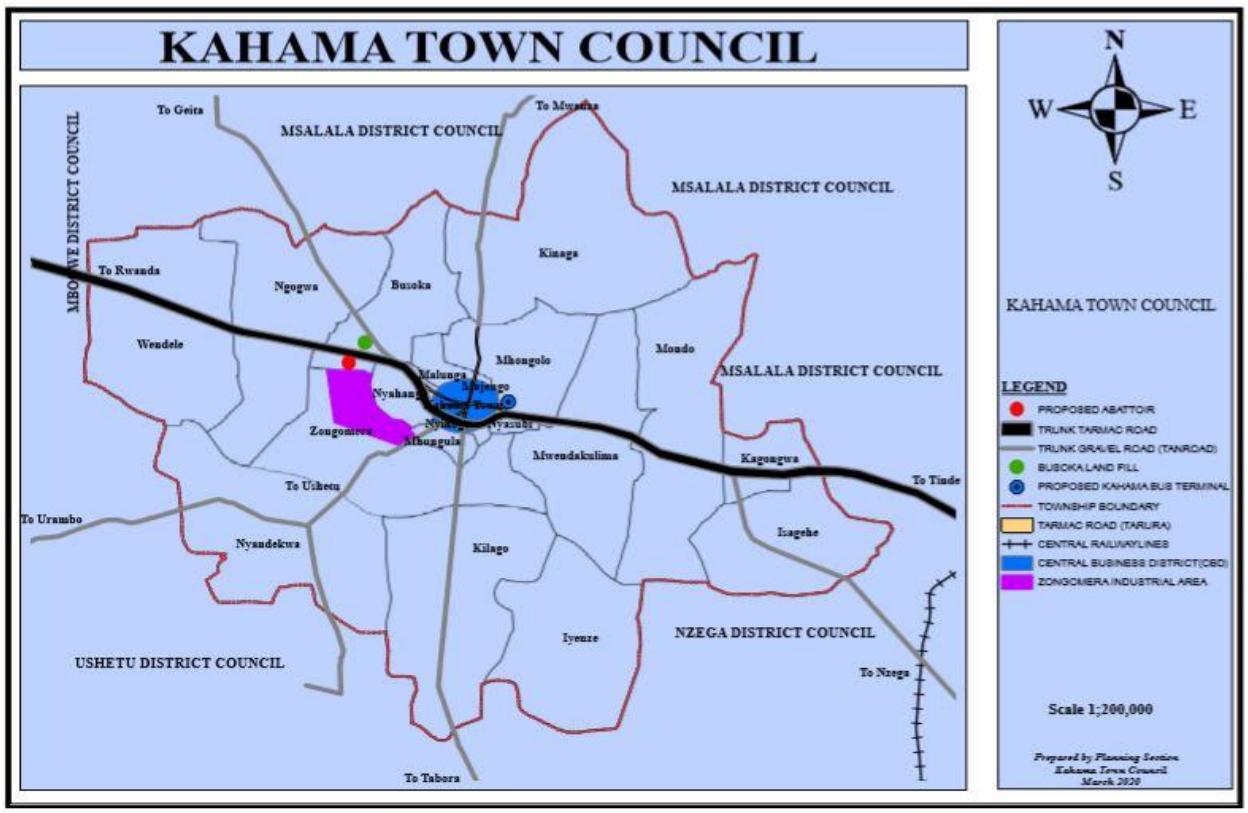

Figure 1: Map of Kahama Municipal Council

1.3 Population

According to the 2022 National Population and Household Census, Kahama Municipal Council had 351,957 people which are about 15.7% of the regional population (2,241,299). The male population was 172,459 while the male population was 179,498 (51.5%). The growth rate is 3.8% per annum and by 2019 Kahama Municipality was estimated to have a population of 312,349 (men

151,524 and women 160,825). The age distribution for Kahama Municipal Council shows that the young population under 15 years was 49.2 percent. For the working population of the age group between 15 to 64 years the proportion was 48.7%.

1.4 Kahama Municipal Council Strategic Plan

From the year 2016/17-2020/21 Kahama Municipal Council has planned to dedicate its efforts toward realization of its vision that state KMC is to be "*With Quality Services and Conducive Investment Environment for Sustainable Development*" and its mission is "*To Provide Socio-Economic Services and Create Conducive Investment Environment in Collaboration with Stakeholders using available Resources for Sustainable Development*".

The Kahama Strategic Plan took into account among other items aspiration of the government articulated in the Second Five Years National Development Plan (FYDPII2016/17-2020/21) whose theme is: "Nurturing Industrialization for Economic Transformation and Human Development" is intended to rally and align society's efforts towards realization of the development aspirations. Strategic Plan has also been prepared while considering reform measures currently being undertaken by the Fifth Phase Government, within the trademark Philosophy of "***Hapa Kazi Tu***". It contains useful information for our customers, various stakeholders and development partners.

1.5 The TACTIC Projects

Kahama Municipal Council as the Implementing Agency (IA) is part of the LGAs which will be implementing the WB finance project through TACTIC. The objective of the proposed TACTIC project is to strengthen urban management performance and deliver improved basic infrastructure and services in participating urban local government authorities. At its core, the project aims to promote economic development of Tanzania's cities and towns and its enabling infrastructure. Investments and technical assistance under the project are intended to promote urban development that is productive, inclusive and resilient. The project will support 45 urban Local Government Authorities (LGAs) spread geographically across all regions of Tanzania, ranging in population from 26,402 to 416,442 (2012), divided into three tiers based on population and growth rate. Kahama Municipal Council is grouped in Tier 1 as among the 12 larger, fast-growing LGAs.

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4) Improvements of Storm Water Drainage
5) Improvement of infrastructure at Zongomela Industrial Park (Roads, Market and Mini-bus stand)

The scope of this report focuses on the upgrading of Sango Market.

The internal environments of the proposed project sites are located at various areas within the Municipality on different Plots with respect to their area coverages. All the proposed projects will be implemented on areas/plots which are owned by Kahama Municipal Council and have the Certificates of Right of Occupancy. The proposed projects are also in accordance with Kahama

Municipal Council strategic plan as well as the Government vision and other strategic documents to reduce and eventually end poverty in coming few decades.

1.6 Environmental and Social Impact Assessment

This environmental and social finding covers for the upgrading of Sango market. The environmental and social study is conducted in accordance with the Environmental Impact Assessment and Audit Regulations of 2005 as amended in 2018 and the World Bank environmental and social framework (ESF). The ESIA study was conducted from January to December, 2022. While the ESF acknowledges country's capacity in managing environmental risks and impacts, the country regulations on the other side give mandate to NEMC to oversee the ESIA process, which culminates with an award of the ESIA certificate by the Ministry responsible for Environment. The ESIA certificate is among the prerequisite approvals required before the project takes off. This project will need this approval before it is implemented.

The environmental and social study is also conducted as part of the design works where by some of the mitigation measures will be rectified during finalization of the designs.

This ESIA was conducted by Dar Alhandasah JV Don Consult's team of Consultants, Ms. Rosemary C. Nyirenda (Lead Environmental Expert), Ms. Magdalena L. Mlowe (Environmental Specialist), Dr. Lillian G. Mulamula (Ecologist), Dr. Edmund Temba (Legal Expert), Italius Kavishe (Social and Gender Expert) and Dorcas Ephraim (Economist).

1.7 General and specific objectives of the environmental and social assessment

1.7.1 General Objectives

The environmental and social assessment has been conducted in accordance with the guidelines laid down by the Environment Management Act (EMA, 2004). Part IV of the ESIA Regulations GN No. 349 7 of 2005 which provides the general objectives for carrying out ESIA, among others. The list objectives include the following: -

i. To ensure that environmental considerations are explicitly addressed and incorporated into the development of decision-making process of the project;
ii. To anticipate and avoid, minimize or offset the adverse significant biophysical, social and relevant effects of developmental proposal.
iii. To promote development that is sustainable and optimizes resources' use and management opportunities.

1.7.2 Specific objectives of the environmental and social impact assessment

(i). To establish the baseline information on both natural and the built environment including socio-economic activities of the proposed project area.
(ii). To ensure that environmental legal requirements are met by Kahama Municipal Council prior and during implementation of the project.
(iii). To identify, predict and evaluate anticipated environmental and socioeconomic impacts, both beneficial and adverse, of the proposed investment.
(iv). Proposing effective measures to mitigate the negative impacts during the construction and operation of the entire project that aim at eliminating or minimizing the potential negative impacts and promote positive ones.

(v). Outlining an environmental and social management plan to manage the impacts.
(vi). Preparing environmental and social monitoring plan to keep track of the environmental performance of the project.

1.8 Scope of Work

The scope of this report is mainly the upgrading of Sango Market which is among the four (4) TACTIC projects to be implemented in Kahama Municipality and its activities are outlined in the ToR (**Appendix I**) and includes;

1. To identify, predict, evaluate and mitigate the significant environmental impacts (positive and negative)
2. To identify key social issues relevant to the project objectives, and specify the project's social development outcomes
3. To determine magnitude of adverse environmental and social impacts and identify the safeguards instruments as per Country laws and regulations
4. To predict and assess in quantitative terms as far as possible, the impacts from changes brought about by the project on the baseline environmental conditions.
5. To establish the mitigation measures that are necessary to avoid, minimize or offset predicted adverse impacts and, where appropriate incorporate these into Environmental and Social Management Plan (ESMP)
6. To identify stakeholders who affected and carry out stakeholder analysis to determine their role in achieving social development outcomes.
7. To inform, consult and carry out dialogues with stakeholders on matters regarding project design alternatives, implementation of environmental and social mitigation measures and to provide recommendations on project design that may require adjustments in project design
8. Provide an environmental and socio-economic profile of the population and available infrastructure facilities for services and community resources.
9. To assess the capacity of the implementing agencies and the mechanisms for implementing safeguard instruments, and recommend capacity building where appropriate
10. To develop monitoring and evaluation mechanism to assess effectiveness of mitigation measures including, resettlement outcomes during and after project completion.

1.9 Approach and Methodology

1.9.1 Desk Study

A desk study was done by collecting documents and other relevant information on the project. Documents, reports, and records were reviewed to obtain existing secondary data and relevant information relevant to Kahama Municipal Council where the project is implemented. The information gathered during the study included the project's WB framework documents such as the ESMF, SEP, ESHSG and RPF reports, Kahama Municipal Council background reports, socio-economic and investment profiles, development plans and project's preliminary study reports. The secondary data included various national policies and legislation, national strategies and plans that are applicable to the proposed project at Kahama Municipal Council.

1.9.2 Socio-Economic Baseline Survey

A socio-economic survey was undertaken with the overall objective of assessing the socio-economic impact of the project on people's lives and their properties. This involved an assessment of the living conditions of people, with the likelihood of being affected by project in terms of

income earnings and expenditures and occupation. This study also captured the insights of different stakeholders about the potential positive and negative impacts once the project is implemented. In terms of data collection procedure, the study use both quantitative and qualitative methods. The study therefore combines the advantages of both approaches of research to enable a detailed understanding of the socio-economic context and impacts of the project.

The sampling for the qualitative data was purposive, inclusive and participatory. A range of approved data collection tools were used during interviews. Secondary data were also used to document the legal framework underpinning the implementation of the project. Secondary sources of inform action include desk review of relevant documents, review of land laws and regulations on land and other existing policies regarding constructions in Tanzania. In addition, questionnaires were administered to the neighbors and other stakeholders in order to get their views on the potential impacts of the project to both natural and human environment.

1.9.4 Public and officials Consultations

These conducted through meetings with major stakeholders of the project. During the fieldwork, consultative meetings held with municipal, ward and Villages / hamlet authorities in the project areas within Kahama Municipal Council. More than 5 public consultation meetings with communities were conducted. The comments received and issues rose from these public participation exercises incorporated into the report and used in determining mitigation measures for the project.

1.9.5 Observation and Expertise Judgment

Observation method was used by the team to gather data on physical characteristics and human activities in the project host community. Field observations formed an integral part of the study as experts gathered considerable information through observations. This involved site visits and recording the situation on the ground. Observation was a key to establish the exact location of the project site, shape, size, terrain and soil type. Also, the neighborhood characteristics were assessed in terms of nature of properties dominating the area, their sizes and type, tenure, dominant owners, uses, and others. Observations were also used as a tool for validating the facts that were gathered through interviews and questionnaires.

1.10 Project Impact Assessment

Superimposing project elements/activities onto the existing social and environmental natural conditions has identified the potential environmental impacts of the proposed road development. The checklist method used to identify the impacts. Further, the environmental impact matrix method has been adopted to predict impacts of major concern. A key guiding assumption in this study is that the project will be designed, constructed, operated and maintained with due care for safety and environmental matters using current and practical engineering practice and/or Best Available Technology Not Entailing Excess Cost (BATNEEC). The implementation schedule of the mitigation measure summarizes in the Environmental Management Plan (EMP). The environmental assessment undertaken in close interact engineering, planning and design team. In this process, environmental impacts evaluated for various alternatives. Several project alternatives considered including that of not implementing the project. The fundamental environmental protection strategy and environmental considerations influencing engineering design incorporated. However, reasonable regard to technological feasibility and economic capability were taken into account.

1.10.1 Collection of Baseline Data

The collection of baseline data was conducted subsequent to defining the scope of the ESIA. These data allow the study team to determine whether more detailed information on environmental conditions at the development site and its surroundings are needed, where such information can be obtained, and how. Both primary and secondary data collected. Primary data collected by direct measurement, observations and using semi-structured interviews with respective and targeted parties (as explained in the previous section). Secondary data obtained from various relevant sources of information such as Municipal profiles, wards and streets reports, education and health reports and many other official and non-official documents.

1.10.2 Review of Policies, Legal and Institutional Framework for Environmental Management

This allowed the study team to update and enhance their understanding of National policies, legislation and institutional arrangements for environmental management in Tanzania and relevant international procedures to ascertain the optimal management of impacts.

1.10.3 Impact Identification and Evaluation

The Upgrading of Infrastructure cause a wide range of environmental and social impacts on a number of receptors. The ESIA identify these impacts for the purposes of mitigating the adverse ones or enhancing the benefits. Impact *identification* is a process designed to ensure that all potentially significant impacts are identified and taken into account in the ESIA process. A number of 'tools' are available to assist in impact identification. The simplest, and most frequently used, are *checklists* of impacts, although *matrices*, *network diagrams* and *map overlays* are also commonly used. In this ESIA *a matrix* were used. The matrix consists of a horizontal list of development activities against a vertical list of environmental factors. Thus it identifies impacts by methodically checking each development activity against each environmental consideration to ascertain whether an impact is likely to occur. Taking a step further, the ranking in all phases (mobilization, construction and demobilization/decommissioning) signified the magnitude of each and combined phases. As a result the more the score illustrated the severity the impact the road project or section has.

CHAPTER TWO

PROJECT DESCRIPTION

2.1 Project Location and Accessibility

The project will focus on the upgrading of Sango market located at Sango Street. The proposed project site is located at Sango Mtaa, Nyasubi Ward on plot No. 889, block 'U' (**Appendix IV**) in Kahama Municipality's Central Business District area. The designated Global Positioning System (GPS) coordinates for the project site are Latitude 03°49'56.2"S and Longitude 32°37'02.7"E at elevations of 4061ft and 7918ft from eye alt respectively.

The market currently hosts over 400 traders who operate under a very poor working environment due to dilapidated market infrastructure. Varieties of commodities including vegetables, grains, and industrial products are sold in the market. The size of the Sango market area is 29,278 Sqm. The site can be accessed through a rough road about 500m from the Shinyanga Kahama road (**Figure 2)**.

Figure 2: The location and accessibility of the proposed Sango market

2.2 Project components

2.2.1 The Upgrading of Sango market

At present the situation of town markets is too congested and not user friend to the population available, due to expansion of the town and the fast increase in human activities including social and economic development at Central Business District CBD (**Figure 3**). At the moment the markets serve more than 1000 people per day while the capacity is to serve 300 per day as a result the demand for the construction of market is very high and therefore the proposed project will be able to mitigate the problem in place. Currently residents of Kahama Municipal Council prefer to

go to the nearby markets of Kazaroho, Majengo, Nyahanga, and Mayila. Due to proposed Bus terminal to shift from central area of the town to Mbulu locality, the demand for Sango Market will increase since it is very close to bus terminal. The proposed upgrading of Sango market includes a connecting road from the Mbulu bus terminal. Currently the business at Sango market continues as usual although the market is not operating at full capacity (**Figure 3**). It is therefore very important to construct the market so as to cater the need of community.

Figure 3: Situation in other town market

2.2.2 The Rationale for the Sango Market Project

The project is very important both socially and economically. It will touch lives of many people as it intends to elevate trade activities which make up a major livelihood strategy in Kahama Municipality. The Market will increase economic activity within the town to facilitate economic progress and development. It will also expand current operations of the existing Sango so as to offer bigger services. To improve urban economies where the urban population will have more area for business and shopping. The construction of bus terminal will pull the need of nearby market.

Figure 4: Business continue as usual at Sango market

2.3 Project Description

The Council proposes to construct a normal modern market which will include market stalls for fruits, vegetables, fish, chicken, and cereals for retail purposes, Mama Lishe shade and other related activities for the market. The project will need to include construction of shelter, storm water drainage system, access road, trade area and public transport way/vehicle parking. During construction current traders will be temporarily relocated to a nearby open area located at Phantom, which is about 700m from the Sango market and was used by traders before moved to Sango market. The proposed project site is surrounded by environmental sensitive areas i.e., human settlements that are less than 10m away.

Sango market project summary

- ***Land Ownership:*** The Sango market area is owned by Kahama Municipal Council, Plot No.889 Block 'U'. The certificate of right of occupancy (CRO) is attached as **Appendix IV**.
- ***Vegetation and other biological features of an area:*** Sango market is covered with the small grasses within the market on one side which is not occupied by traders (**Figure 5).** The terrain of the market is flat. The area is also wet and water-logged during rainy season. The Kahama Municipal Council constructed the drain surrounding the market to reduce floods.
- ***Neighbouring land use:*** Sango market area is surrounded by settlements which are planned and surveyed.

- ***Natural Resources:*** Sango market is not surrounded by any natural resource such as river, lake, swamp, national park or a forest. But the area at the market is a water-logged area and normally flood during rainy season.

Figure 5: Vegetation at Sango Market

2.4 Project Design

2.4.1 Key Priority Features During Design

The proposed facilities at Sango market should consider sustainable environmental and social management. The design should come up with a sustainable built environment by considering key issues like use of energy, use of water, use of materials and resources, use of site, and also consider people with disabled.

Reduction of floods around Sango market

There was a concern from stakeholders that the market area that there are always flood water during rainy season. Adequate drains should be designed to collect water from the whole area and channel it to the proper receiving bodies.

Maintaining Aeration within the market facility due to warm climates

Stakeholders are concerned of the closed design of the market which will not allow adequate flow of air. The facility will accommodate large number of people at once therefore it's important to be well ventilated.

Efficient Use of Water

The design should consider efficient water consumption in all phases of the proposed infrastructures. Fresh water consumption could be reduced by the installation of water efficient equipment given. Sustainable solution for efficient water use includes installation of water saving fixtures i.e water efficient flush and flow fixtures. During operation the old and leaky parts of the water supply within the facilities should also be replaced with new equipment.

Easy to clean surface will reduce water consumption, floors in the two facilities can be chosen from materials that are easy to clean and that use minimal amount of water during cleaning. Considering design that will allow rainwater harvesting will improve water use efficient at the market. Rainwater harvest can provide water during dry season

Efficient use of Site

To use a site efficiently, it is necessary for designers to understand how humans will interact with the proposed market environment. In order to maintain the natural environment, unnecessary cutting of tree in an area where construction will not take place must be prevented. A building unit should be integrated with its site; this adds to the architectural quality and human wellbeing.

Consider People with Disabilities

Proposed project Designer should consider people with disabilities in all the facilities. The following issues should be considered during design: ramps, stair lift (where necessary), an elevator (if in multiple floors), bathing barriers should not be installed, toilet for the people with disability to be installed, hand rails in key areas should be installed and simplify access. Roads should have cable stones for easy use and those drains should be covered to avoid accidents from people with disabilities.

2.4.2 Site Layout Plan for Sango Market

As shown in **Table 1** on the proposed components and size, and **Figure 6** on the proposed lay out plan and **Figure 7** on the proposed architectural designs, the Sango market design will consist of retail section with the wide range of shopping facilities, shaded, semi shaded and opened market, area for refrigerators, mechanical and electrical services, security gates, storage, toilets, administration, open spaces and other features necessary for market operations. The market will consist of flat buildings with the total built area of 30,617 sqm, 0.5 plot ratio, 50% plot coverage with the capacity to serve up to 20,000 people.

Table 1: Proposed design features and sizes for Sango Market

PROGRAM	**INITIAL PROPOSED AREAS**				
LOCAL MARKET FACILITIES	**Comments**	**areas/ m^2**		**Phase 1(update) areas/ m^2**	**potential future BUA extension (update)**
Retail with wide range of shopping facilities, clothes, beef & fish	200-300 MARKETS	6000		3875	

Shaded / semi shaded / opened open market (Vegetable, poultry, cereal)		10,250		8,500	1200
Refrigerators		250		315	0
mechanical & ELECTRICITY services		250		200	0
Security Gates	25*2	50		250	
Storages		750		125	0
TOILETS		250		250	
Administration + financial services & ATM		250		230	0
F&B (mama & baba lichee)		750		400	0
Landmark		50		50	
OPEN SPACE mixed ACTIVITIY ZONE		12000		12,000	
SHARED/ACCESS TRUCK LOADING ZONE					
PARKING ZONE					
TOTAL PLOT AREA m^2		**30,617**			
TOTAL BUA AREA in m^2 = 27% Plot coverage = 50% Plot ratio = 0.5		**8,600**		**5,645**	**0**
TOTAL SHADED ZONES		10,250		8,500	
TOTAL MARKET ZONE in m^2		**18800**		**14195**	**1200**
OPEN SPACE MIXED ZONE (OPEN SPACE, PARKING SPACES)		**12000**			
Note					
Calculation reference are based on urban planning (planning and space standards) regulations, 2018 for Tanzania. Benchmarking study and similar local markets = min PLOT BUA 18% Market is considered as a community service use serving (10,000 - 20,000 per market) Nyasubi population 2012= 20,181 pop.					
Administration				480	
Commercial				4640	
Entertainment				50	
Services				450	

Figure 6: Proposed lay out plan for Sango Market (Source: Consultant, 2022)

Figure 7: Proposed architectural designs for Sango Market (Source: Consultant, 2022)

2.5 Project Activities

2.5.1 Pre-construction/Mobilization Activities

This is the initial phase of project implementation; this phase will commence when all necessary permits and processes have been accomplished. In this case the required permits are the Environmental certificate from the National Environmental Management Councils (NEMC) and the preparation of environmental and social management plan (ESMP). During this phase the contractor shall recruit all necessary administrative and engineering staff for the project including transportation of construction equipment to the site. Mobilization phase also entails establishment of offices on site, assembling equipment, as well as construction of materials and workforce. The following are the main activities to be executed on the site during Pre- construction phase;

- **Topographical Survey** - Done by Surveyors to establish the boundaries and the ground levels.
- **Hydrology and Hudraulic study** - Done by hydrologists to determine determining design peak flood discharges across project roads. These peak floods will be the basis for the designs of the hydraulic structures with the required capacities (**Appendix VII**).
- **Geotechnical investigations** - done by the geotechnical engineers to determine the physical properties of rock and soil around the site (**Appendix VIII**) .
- **Architectural and Services Designs** - Preparation of Architectural drawings was done by Dar Al Handasah in joint venture with Don Consult Ltd architects to provide drawings which fits the Clients' requirements. Architectural Drawings provide in **Appendix X**.
- **Environmental Impact Assessment** (EIA) - This ESIA report part of the EIA for the project. It has been prepared according to EIA and Audit regulations of 2005 as amended in 2018.
- **Acquisition of various permits/ certificates** - Including building permit from relevant authorities.

The proposed project will have a total of 100 workers who will be skilled and non-skilled labor.

Duration

- The duration of this phase will be three (3) months.

2.5.2 Construction Activities

The major construction activities include excavation of foundation, transportation of the construction materials to the site, concrete work, vertical construction, structural work, installation of electrical and water conduits, finishing work, painting and other minor associated civil works. Main activities of the proposed project during construction will include but not limited to the following:

- Earthworks: This entails excavation of soil / earth to required foundation level, hauling away excavated material and depositing at the designated site for disposal, dewatering of excavated area, protection of excavated sites from falling, backfilling with the excavated material around the foundations and walls, hard-core filling.
- Acquisition and transportation of construction materials from tendered suppliers.
- Concrete works; Steel reinforcement, cutting, bending and fixing, concrete mixing, transportation, vibrating, curing, masonry walling and plastering.

- Roofing of the main structure and other supporting structures like power house, pump house and others.
- Metal and Glass works for the entire structure.
- Electrical installation works; lying of PVC especially for the construction of the market, conduits in structural members, electrical wiring and such other related works.
- Plumbing for the market and drainage works; installation of drain pipes, water distribution pipes, water tanks and general plumbing.

Duration

The duration of this phase will be two (2) year.

Materials to be used for construction phase

The materials that will be used for the construction of the proposed infrastructure at Sango market includes cement, sand, aggregates, steel reinforcement bars, timber, bricks, roofing sheets, water and sanitary ware; some components like power from TANESCO and water supply from KUWASA (Table 2). Most of materials to be used for the proposed building will be sourced from within the district and if not available from within the country. The exact quantities of materials needed will be specified in the later stages during detailed design and development of the Bill of Quantities (BoQ).

Table 2: Types and sources of project requirements during the construction phase

Requirements	**Type**	**Source**	**Quantity (Approx.)**
Raw Materials	Gravel	Mwendakulima, Nyandekwa and Lowa	As per the BOQ
	Hard Stone	Quarry in Zongomela	As per the BOQ
	Sand	Quarries in Zongomela	As per the BOQ
	Water	Dams in Kofija - Mbulu and Bijampola - Zongomela	500,000 L
	Bitumen	Contractors Apshalt plant	As per the BOQ
	Cement	Local Vendors	As per the BOQ
	Reinforcement bars	Local Vendors	60 tons
	Timber	Local Vendors	1-3 tons
Energy	Electricity	TANESCO (National Grid)/ Generators	As per the BOQ
	Fuel	Local vending stations	As per the BOQ
Manpower	Skilled	Contractor	25
	Unskilled	Local People along the road	75
Equipment	Dozer	Contractor	1
	Grader	Contractor	2
	Pay Loader	Contractor	2
	Excavator	Contractor	1
	Vibro Roller	Contractor	1
	Tandem Roller	Contractor	1

Requirements	Type	Source	Quantity (Approx.)
	Macadam Roller	Contractor	1
	Tire Roller	Contractor	2
	Dump Truck	Contractor	3
	Mixer Truck	Contractor	2
	Water Truck	Contractor	3
	Tractor w/Trailer	Contractor	2
	Tire crane	Contractor	2
	Cargo Crane Truck	Contractor	1
	Cargo Truck	Contractor	2
	Crusher Plant	Contractor	1
	Screen Unit	Contractor	1
	Concrete Batch Plant	Contractor	1
	Asphalt Plant	Contractor	1
	Asphalt Finisher	Contractor	1
	Asphalt Distributor	Contractor	1
	Air Compressor	Contractor	3
	Generator	Contractor	3
	Fuel Truck	Contractor	1
	Light Vehicle	Contractor	6

The list of materials to be used is in tandem with the **ESS 3 on Resource Efficiency and Pollution Prevention and Management** where raw materials will be sourced from the natural resources which upon their usage will cause pollution to various receiving bodies. As stated in the Environmental and Social Standards applicable to this project, implementation of most of the investment subprojects will involve construction activities that will source raw materials and generate dust, erosion, sediments, solid and liquid wastes that will be properly managed via ESIAs, ESMPs and WMP. More or less similar impacts are likely to be experienced during operation phases and will be managed by the same tools as well as operation and maintenance plans.

Machinery and Equipment

Various equipment and machinery will be used during construction activities at Sango market as shown in **Table 3**.

Table 3: Types of equipment and machinery to be used during construction

S/No	Machinery/Equipment	Activity required
	Construction Equipment: Type and Characteristics	
1.	Backhoe excavator	General earthworks, e.g., excavation of drains
2.	Bulldozer with ripper	General earthworks
3.	Wheel loader	General earth works and transport of concrete
4.	Motor grader	General grading works, including earth works
5.	Vibrating/sheep foot roller compactor	Compaction works
6.	Truck-mounted crane	Lifting of construction materials e.g., pre-cast culverts
	Construction Machines	
1.	Concrete batching plant	Preparation of concrete (batch concrete mixing)
2.	Concrete truck mixer (mobile concrete mixer)	Concrete mixing
3.	Concrete mixer	Concrete mixing
4.	Small site dumper	Transport of construction and waste materials
5.	Quarry dump trucks	Transport of stones and aggregates
6.	Dump trucks	Transport of construction materials and wastes
7.	Concrete batch plant	Concrete mixing in a concentrated way
8.	Equipment for geotechnical investigations	Geotechnical investigation works
9.	Concrete vibrator and poker	Vibrating concrete
10.	Dewatering pump	Dewatering to allow for waterless construction
11.	Generator, mobile workshop, welding facilities	Repair and maintenance of machinery and equipment
	Transport Facilities	
1.	Light duty vehicles	Transport of light construction materials, stationery machines, and staff
2.	Water tanker truck	Dewatering of earth surfaces to attain effective compaction, minimizing generation of dust
3.	Dump trucks	Transport of construction materials (sand, gravel, aggregated, cement etc.)

Source: Field visit, January 2022.

Labour to be used during construction

During construction, there will be manpower need which will comprise of skilled and unskilled labour as described in **Table 4**.

Table 4: Manpower needed for construction activities of Sango Market

Manpower	Skilled	25	Contractor	Social unrest and conflicts
	Unskilled	75	Local People	

Table 4 is also in tandem with the Environmental and Social Standard (ESS) 2 on Labour and working conditions. A number of project workers will be employed for the implementation of the project including construction of different investment subprojects. Project workers will be provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. The information and documentation will set out their rights under national labor and employment law (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation and benefits, as well as those arising from the requirements of this ESS. This information and documentation will be provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur.

In order, to ensure fair treatment of workers, the Project will ensure that terms and conditions of employment (hours, rest periods, annual leave, non-discrimination and equal opportunity in recruitment and employment), respect for workers organizations, inclusion of redundancy plans, the prohibition of forced labor and of worst forms of child labor, occupational health and safety, including use of Personal Protective Equipment (PPE), and operation of a worker grievance mechanism for workers to address employment-related concerns, including sexual harassment, are aligned with the requirements of national law and ESS2. To protect workers, the project will ensure the application and implementation of all appropriate Occupational Health and Safety (OHS) measures, to avoid and manage the risks of ill health, including in relation to COVID-19, accidents and injuries. Labour Management Procedures (LMP) have been prepared to ensure these requirements of ESS2 and national law are observed and included in the specifications for contractors. The project will manage any labor influx and work camps for project workers in accordance with the provisions ESS2 and ESS4. As the situation permits and depending on the public health circumstances, the project will ensure compliance with national law, policies and protocol requirements as well as World Health Organization and World Bank guidance[1] regarding the COVID-19 situation in relation to stakeholder consultations, project worksites and related areas. Table 12 shows the estimated types and the amount of labour forces which will be needed during construction phase.

2.5.3 Demobilization of construction phase

This phase involves activities related to the completion of the construction phase of the proposed project. Activities to be conducted during this phase include demolition of temporal structures that will be installed to support the construction phase, removal of installations and equipment from the workshop and transportation of all remain construction materials from site back to contractor

[1] World Bank Technical Note: Public Consultations and Stakeholder Engagement in WB-supported operations when there are constraints on conducting public meetings. March 20, 2020; and "ESF/Safeguards Interim Note: COVID-19 Considerations in Construction/Civil Works Projects", April 7, 2020.

office. Also, all machines used during construction phase will be removed from site. Trees will also be planted at this stage before operation of the infrastructures.

Activities

Demobilization of temporary structures will be done for proper restoration of the site. Other activities including;

- Rehabilitation of the site, workshop and stockpile yard, at least to the original condition;
- Clearance of all sorts of wastes including solid wastes (plastics, wood, metal, papers, etc.);
- Deposit all wastes to the authorized to the authorized dumping site; and
- Termination of temporary employment.

Duration

Demobilization stage will last for a period of three (3) month.

Project Labor Requirements

Types and sources of project requirements during the demobilization phase are shown in Table 5.

Table 5: Types, amounts and sources of project requirements during the demobilization phase

Requirements	Type	Source	Quantity
Manpower	Skilled	Contractor	12
	Unskilled	Local People	60
Equipment	Motor grader	Contractor	1
	Tippers	Contractor	1
	Plate compactor	Contractor	2

(**Source:** consultant's analysis 2022)

Transportation of Materials/Rubbles

Materials (fine and coarse aggregates) from quarries will be transported by trucks to the construction site. Water will be moved by water boozers. Other materials like cement, timber and reinforcement bars will be transported by Lorries to the construction site.

2.5.4 Operation Phase

This will include use of Sango market. The duration of use of the proposed project infrastructure is expected to be 30 years.

Activities

The activities that are expected to be executed during operational phase include:

- **Market-** The market facilities shall be open for use by vendors and the public in general.
- **Premises and facilities Maintenance -**The premises and associated facilities will be repaired and maintained regularly during the operational phase of the project. Such activities will include repair of building walls and floors, repairs and maintenance of electrical gadgets and equipment, repairs of refrigeration equipment, repairs of leaking water pipes, painting, maintenance of flower gardens and grass lawns, and replacement of worn out materials among others. This shall be the responsibility of the Council as per Operation and Maintenance Plan.

- **Good housekeeping of the area** - The buildings and other and premises shall be cleaned by a private cleaning firm commissioned by Kahama Municipal Council. Cleaning operations will involve the use of substantial amounts of water, disinfectants and detergents. A garbage collection station shall be within the premises of the market and that cleaning firm and council shall be responsible for colection and disposal to the collection point before being transported to the authorised dumpsite.
- **Occupational health and safety management**-The vendors and market staff shall be instructed on the operation of the equipment installed for safety purposes including appropriate use of fire extinguishers. This shall be the responsibility of the proponent.

Project requirements

Types and sources of project requirements during the operational phase are shown in **Table 6**.

Table 6: Types and sources of project requirements during the operational phase

Requirements	**Source**	**Quantity**
Water	KUWASA articulation system	1,200m^3/day (Based on 100 people (vendors and other users), water demand rate of 80L/capita/day)
Electricity	TANESCO (National Grid)	2,500-2,700MwHr/ month
Manpower	Skilled labour	5
	Unskilled labour	10

(**Source:** consultant's analysis, 2022)

2.5.5 Decommissioning Phase

Since the building lifespan will be 30 years with proper maintenance and service, therefore the activities that will be undertaken are to demolish all structures and propose a completely new structure or different development project. The area may also be used for other activities.

2.6 Waste Generation and Management

2.6.1 During construction Phase

Major wastes generation associated with the project construction and their treatment/ disposal methods are described in the **Table 7**.

Table 7: Waste Generation and its management during Construction Phase

Type of waste	**Sources**	**Disposal / Management procedure**
Debris and Rubble (overburden)	-Site clearance -Excavation for foundation and storm water channel especially for the market.	Collected and stockpiled near construction site and to be used as a base material in other construction works. Also, shall be used for site leveling after construction

Type of waste	Sources	Disposal / Management procedure
Biodegradable materials mainly domestic waste	-Construction crew - offices	Collected into area designed for temporary solid waste collection while waiting to be taken to authorized dump site (engage a
Non-biodegradable materials (Plastic, glass, cut piece of reinforcement bar)	-Construction crew	Collected into special area designed for hazardous waste temporary storage while waiting to be taken by authorized dealers for hazardous waste disposal
Domestic wastewater	Toilets and floor cleaning	Collected into septic tank for management and once it is full cesspit emptier truck will be employed to empty it to final disposal at nearest WSP.
Gaseous emission	Trucks delivering construction materials and machines used during	All used machines will be regular serviced its engine for avoiding incomplete fuel burning and used fuel will be one accepted by
Dust emission	Excavation, trucks passing on unpaved road and construction materials at site	Water spray practice shall be employed twice a day for all area where dust emission expected, All stockpiles found at site shall be covered

Source: Field work, 2022.

2.6.2 Operation Phase

-Solid Wastes

Solid wastes such as waste papers, packaging materials, plastics, oil leakage, market waste and other organic waste (vegetables/food waste) are expected during the operation phase. The project will ensure that all solid wastes are sorted at the source for proper solid waste management. Collected recyclables will be sorted out by type such as papers, bottles, plastics, food and general waste, paper, cardboard, and printer cartridges/ribbons. All decomposable waste will be taken into separate area designated at the market before collected by vendors to dump site while plastic bottles will be collected into separate chamber and taken bay authorized dealers for disposal.

-Liquid waste

Generated liquid waste will include domestic wastewater to be generated from washrooms, kitchen and toilets. Domestic wastewater will be directed into onsite septic tank for management and once a septic tank is full cesspit emptier truck will be employed to empty it for final disposal at nearest WSP owned by KUWASA.

-Hazardous waste

During project operation hazardous waste will include electrical equipment like bulb, damaged parts of learning machines for tannery process and other metal waste. Generated hazardous waste shall be collected into special dustbin named for hazardous waste collection into area designed for hazardous waste storage while waiting to be disposed by authorized dealer.

-Storm water management

There will be storm water drains in Sango market. After the construction phase, the project developer must ensure that the constructed area is covered with concrete pavement to allow storm water flows to the drainage systems more easily.

2.6.3 Decommissioning Phases

In the decommissioning phase much of demolition waste for the market will be generated, these will be demolished concrete from foundations, mild steels from piping network, electrical and firefighting equipment and some paint remains. The anticipated types of wastes to be generated at this phase are in **Table 8**.

Table 8: Wastes Generated during Decommissioning Phase

S/N	Types of Waste	Management
1	Mild steel	To be sold to authorized dealers registered by NEMC
2	Concrete	reuse for street road maintenance
3	Electrical wires	To be sold to authorized dealers registered by NEMC
4	Timber	Reused as fire wood
5	Plastics	Collected by authorized dealers for recycling
6	Scrap metal	To be collected and sold to authorized dealers for scrap waste management (with permits for scrap wastes collection and disposal)

CHAPTER THREE

LEGAL AND INSTITUTIONAL FRAMEWORK

3.1 Policy Framework

Environmental awareness in the country has significantly increased in recent years. The government has been developing and reviewing national policies to address environmental management in various sectors. Among others, the objective of these policies is to regulate the development undertaken within respective sectors so that they are not undertaken at the expense of the environment. The national policies that address environmental management as far as this project is concerned and which form the corner stone of the present study include the following:

3.1.1 National Environmental Policy (NEP) of 2021

Tanzania currently aims to achieve sustainable development through the rational and sustainable use of natural resources and to incorporate measures that safeguard the environment in any development activities. The environmental policy document seeks to provide the framework for making the fundamental changes that are needed to bring consideration of the environment into the mainstream of the decision-making processes in the country. The National Environmental Policy, 2021 serves as a national framework for planning and sustainable management of the environment in a coordinated, holistic and adaptive approach taking into consideration the prevailing and emerging environmental challenges as well as national and international development issues. It is worth noting that, effective implementation of this policy requires mainstreaming of environmental issues at all levels, strengthening institutional governance and public participation in environmental management regime. The long-term vision of this policy is geared towards realization of environmental integrity, assurance of food security, poverty alleviation and increased contribution of the environmental resources to the national economy.

The National Environmental Policy of 2021 replaces the NEP of 1997 whose objective was to provide for the implementation of a range of strategic interventions to address the identified priority areas of environmental concerns by involving Government sectors and other stakeholders. This approach was preferred on the understanding that all stakeholders would take priority actions to address the environmental challenges based on the fact that environment is a cross-cutting issue and as such environmental challenges affect all sectors. In order to implement the Policy, the Government enacted the Environmental Management Act (2004) to provide for legal and institutional framework for sustainable management of the environment. In addition to this, the Government in collaboration with other stakeholders implemented several strategies, programmes, plans and projects through which the policy objectives were implemented.

The specific objectives of the National Environmental Policy of 2021 are: i) To strengthen coordination of environmental management in sectors at all levels; ii) To enhance environmentally sound management of land resource for socio-economic development; iii) To promote environmental management of water sources; iv) To strengthen conservation of wildlife habitats and biodiversity; v) To enhance conservation of forest ecosystems for sustainable provision of environmental goods and services; vi) To manage pollution for safe and healthy environment; vii) To strengthen the national capacity for addressing climate change impacts; viii) To enhance conservation of aquatic system for sustained natural ecosystem; ix) To ensure safety at all levels of application of modern biotechnology; x) To

promote gender consideration in environmental management; xi) To promote good governance in environmental management at all levels; and xii) To ensure predictable, accessible, adequate and sustainable financial resources for environmental management.

3.1.2 The National Land Policy, 1997

The policy recognizes the need for protecting the environmental. It stresses protecting the environment and natural ecosystem from pollution; degradation and physical destruction. Important sections of the policy relevant to the proposed project are section 2.4 (on use of land to promote socio-economic development; section 2.8 (on the protection of land resources), section 3 (iii) and section 4 (on land tenure). This sub-section is relevant and guides the proponent in terms of occupancy, land use and land-use change at the project site. The proposed project implementation shall use existing land which planned for education use and generated waste (solid and liquid) will be managed where septic tank will be used for management of domestic wastewater and wastewater treatment plant will be constructed for treating effluent from workshop training.

3.1.3 The National Policy on HIV/AIDS, 2001

The Policy provides the framework for leadership and coordination of the national multi-Sectoral response to the HIV/AIDS epidemic. This includes the formulation by all sectors of appropriate interventions that are effective in preventing transmission of HIV/AIDS and other sexually transmitted infections, protecting and supporting vulnerable groups and mitigating the social and economic impacts of HIV/AIDS. The project proponent shall observe this policy by introducing awareness raising programmes, to protect workers and communities around the project area against HIV/AIDS, also the project contractor will coordinate with the HIV/ AIDs ant-activists.

3.1.4 The National Gender Policy, 2000

The key objective of this policy is to provide guides to ensure that gender sensitive plans and strategies are developed in all sectors and institutions. While the policy aims at establishing strategies to eradicate poverty, it puts emphasis on gender equality and equal opportunity for both men and women to participate in development undertakings and values the role played by each member of society. The project proponent shall ensure equal opportunities at all levels during project implementation including number of employment opportunities will consider gender issues.

3.1.5 National Transport Policy (2003)

The National Transport Policy (NTP) takes cognizance of the fact that fundamental requirement for effective transport system is an institutional framework which ensures that: - i) each fundamental element of transport is provided in the appropriate quality, quantity and form. ii) all elements of transport are combined in a technologically optimum way for each mode of transport iii) each mode is operated in a most efficient way; and iv) appropriate mechanisms exist to ensure effective intermodal coordination and communication between the user, the operator, the regulatory agency and the government on all transport questions and issues. The NTP strives to enhance transit trade by way of improving the infrastructure including facilities of the various transport modes, routes and interface points such as those at transshipments. Similarly, the NTP strives to enhance the other key issues such as security, environmental sustainability and gender.

3.1.6 The National Employment Policy, 2008

To reiterate the afore-stated assertion, the development of our economy has been far from satisfactory. Such development has led to the reduction of employment opportunities and a growing state of not only poverty but also misery especially in rural areas. Based on the

National Development Vision 2025, the goal of the National Employment Policy is to achieve full and productive employment for all Tanzanians. The aim of this National Employment Policy is therefore to stimulate an adequate employment growth in our economy, in order to reduce Unemployment and Underemployment rates and eventually attain full, productive, and decent employment for all Tanzanians. The major aim of this policy is to promote employment, mainly for Tanzania citizens. Relevant sections of this policy are (i) 10, which lays down strategies for promoting employment and section 10.1 is particularly focusing on industry and trade sectors (ii) 10.6 which deals with employment of special groups i.e., women, youth, persons with disabilities and (iii) 10.8 which deals with the tendencies of private industries to employ expatriates even where there are equally competent nationals. The proponent shall abide by this policy by ensuring gender balance throughout the project implementation and give priorities to local people

3.1.7 The National Sustainable Industries Development Policy (SIDP), 1996-2020

The overall mission of industrial development in Tanzania over the coming two decades will be: to contribute towards the achievement of the overall national long-term development goals as enshrined in the overall national vision; and to enhance sustainable development of the industrial sector. However, the national goals towards which the industrial sector will be geared include: Human development and creation of employment opportunities; Economic transformation for achieving sustainable economic growth; External balance of payments; Environmental sustainability; and Equitable development. In order to achieve the above goals, the industrial sector needs to undergo a continuous structural orientation and enhancement of sustainable technologies progress. Therefore, going hand in hand with the objectives of the policy, the proposed project will help stir up the industrial development for economic growth of the country due to improved and increased infrastructure.

3.1.8 The National Water Policy, 2002

The National Water Policy recognizes that there is a growing scarcity, misuse and wastage of water resources in many places of Tanzania, which may become a serious threat to sustainable availability of the resource. The National Water Policy advocates that industrial performance depends, among other factors, on reliable water supply. However, the growth in the industrial sector has significant impact on water supply, and also in terms of potential pollution and degradation of water resources due to industrial solid wastes and effluents if not properly disposed of but are allowed into water bodies without adequate treatment. The National water policy requires all water users to avoid contaminating water sources. The policy also supports the application of the "polluter pays principle" and has a specific objective to "have in place water management system which protects the environment, ecological system and biodiversity". The proponent shall abide with the policy by using its waste management systems that ensures efficiency of the facility in management of its surrounding environment.

3.1.9 The National Investment Promotion Policy, 1996

The policy encourages investment of all possible commercial and alternative sources of energy with emphasis of utilization of domestic resources with aim of ensuring security and continuity of supplies as well as reducing dependence on biomass fuels. It also promotes adoption of system of production, procurement, transportation, distribution and end-use, which are efficient and not detrimental to the environment. The National Investment Promotion Policy encourages protection of environment in line with the countries socio-economic policies. Under the policy, investors are required to undertake activities in a manner that best contributes to consumer and environmental protection. The investors are also encouraged to use local raw materials/components where possible. This study is undertaken to ensure that the project operation abide by the relevant provisions of the policy to ensure compliance with the development.

3.1.10 National Human Settlements Development Policy (NHSDP), 2000

Among the objectives of this policy that touch the project is to improve the level of the provision of infrastructure and social services for the development of sustainable human settlements and to make serviced land available for shelter to all sections of the community. Such infrastructure and services constitute the backbone of urban/rural economic activities. Another objective is environmental protection within human settlements and protection of natural ecosystems against pollution, degradation and destruction. The NHSDP recognizes planning and management of human settlement areas as one of the broad human settlement issues for environmental management. Within this regard, the NHSDP identifies environmental protection as one of the strategic issues in human settlement planning and development. NHSDP also addresses the following issues: Lack of solid and liquid waste management, leading to environmental deterioration; Emission of noxious gases from vehicles and industrial activities as a major cause of air pollution in urban areas; Encroachment into fragile and hazardous lands (river valleys, steep slopes and marshlands) leading to land degradation, pollution of water sources, etc.; increasing dependence on firewood and charcoal as a main source of energy in human settlements leading to depletion of forest, environmental deterioration and air pollution; and Un-authorized sand mining in river valleys leading to environmental degradation. The project activities shall be carried out in such a way that pollution of any kind is avoided and the environment is protected. More-so, for all settlements which will be affected by the proposed project, the proponent will ensure they are rightfully compensated.

3.1.11 The Construction Industry Policy, 2003

This policy promotes among other things, application of cost effective and innovative technologies and practices to support socio-economic development including utilities and ensure application of practices, technologies and products which are not harmful to both the environment and human health. This EIA is undertaken to ensure that the project proponent uses technologies, materials and products not harmful to both the environmental and human health by providing appropriate mitigation measures. The construction team shall abide by this policy by using modern technology during construction but with emphasis on value for money for a cost-effective project.

3.1.12 Small and Medium Enterprises Development Policy, 2003

The Small and Medium Enterprises Development Policy (SMEDP) (URT, 2003) harmonizes the role of informal sector that constitute the bulk of the SMEs in Tanzania. The main objective of the SMEDP is to foster job creation and income generation through promoting the creation of new SMEs and improving the performance and competitiveness of existing ones to increase their participation and contribution to the Tanzania economy" (URT, 2003: 16). The Policy defines SME as entities mainly based on non-farm economic activities in manufacturing, mining, commerce and services, employing between 5 - 99 people with capital investment of Tshs. 5 million to 800 million (*ibid*: 4). The proposed projects Is likely to stimulate growth and spread of SMEs, that may be engaged in a variety of activities, including service provision and employment opportunities.

3.1.13 The National Trade Policy, 2003

In accordance with the National Development Vision 2025, the goal of trade policy is that of raising efficiency and linkages in domestic production and building a diversified competitive export sector as the means of stimulating higher rates of growth and development. Five specific objectives emanate from and reflect this goal. The first specific objective is to stimulate a process of trade development as the means of triggering higher performance and capacity to withstand intensifying competition within the domestic market. This includes the establishment of improved physical market-place infrastructure and stimulating dissemination of market

information and increasing access to the market. The second objective involves economic transformation towards an integrated, diversified and competitive entity capable of participating effectively in the MTS. The third objective entails the stimulation and encouragement of value-adding activities on primary exports as a means of increasing national earnings and income flows even on the basis of existing output levels. Fourth is the stimulation of investment flows into export-oriented areas in which Tanzania has comparative advantages as a strategy for inducing the introduction of technology and innovation into production systems as the basis for economic competitiveness. The fifth objective is the attainment and maintenance of long-term current account balance and balance of payments through effective utilization of complementarities in regional and international trading arrangements as a means of increasing exports combined with initiatives for higher efficiency in the utilization of imports. The ultimate target is to enhance income generation and the people's earning power at the grass-roots level as the key to poverty reduction in fulfilment of the fundamental human right of equal opportunity for all citizens as enshrined in the constitution of the United Republic of Tanzania. The proposed project is likely to facilitate trading activities as they are important infrastructure that help in increasing accessibility and fast movement between producers and consumers.

3.1.14 The National Economic Empowerment Policy, 2004

The National Economic Empowerment Policy of 2004 provides general guidelines which will ensure that the majority of the citizens of Tanzania have access to opportunities to participate effectively in economic activities in all sectors of the economy. In this regard, sector policies will give preferential treatment to nationals where necessary so as to enhance their bargaining position and opportunities. Among others, the Policy focuses on: - Improving efficiency in public service delivery; Raising skills and knowledge levels; Strengthening economic infrastructure and involving Tanzanians in infrastructure development; Encouraging and strengthening the development of cooperatives; Using land as a springboard to accelerate empowerment; and establishing a sound institutional framework for managing and supervising the implementation of the National Economic Empowerment Policy. Aligning with this policy, the proponent shall ensure that the local people in the proposed project area are given priority and equal opportunity when it comes to employment along with making sure the proposed project bring a positive impact by stimulating the city's economic development.

3.1.15 The Tanzania 2025 Development Vision

The Tanzania Vision 2025 aims at achieving a high-quality livelihood for its people attain good governance through the rule of law and develop a strong and competitive economy. Specific targets include:

1. A high-quality livelihood characterized by sustainable and shared growth (equity), and freedom from abject poverty in a democratic environment. Specifically, the Vision aims at: food self-sufficiency and security, universal primary education and extension of tertiary education, gender equality, universal access to primary health care, 75% reduction in infant and maternal mortality rates, universal access to safe water, increased life expectancy, absence of abject poverty, a well-educated and learning society.
2. Good governance and the rule of law moral and cultural uprightness, adherence to the rule of law, elimination of corruption.
3. A strong and competitive economy capable of producing sustainable growth and shared benefits a diversified and semi-industrialized economy, macro-economic stability, a growth rate of 8% per annum, adequate level of physical infrastructure, an active and competitive player in regional and global markets.

This proposed project is one of the most important agents to enable Tanzania achieve its Development Vision objectives (both social and economic), such as improving transport of passengers and quality of goods and services as well as working environment.

3.2 Legal Framework

This section addresses the legal and regulatory conditions that are relevant to the proposed project that shall be complied by Developer.

3.2.1 The Environment Management Act No.20, 2004

The Act provides legal and institutional framework for sustainable management of the environment in the implementation of the National Environmental Policy. It gives mandate to the National Environmental Management Council (NEMC) to undertake enforcement, compliance, review and monitoring of environmental impact assessments and the Division of Environment to coordinate and oversee its implementation; therefore, in complying with provision of this Act, the proponent is undertaking this ESIA study in accordance with ESIA and EA regulation.

3.2.2 The Land Act, 1999 Cap 113 R:E 2019

The fundamental principles of the National Land Policy which is the objective of this Act to promote and to which all persons exercising powers under, applying or interpreting this Act are to have regard to, are-

a) to recognize that all land in Tanzania is public and vested in the President, as trustee on behalf of all citizens;
b) to ensure that existing rights in and recognized long-standing occupation or use of land are clarified and secured by the law;
c) to facilitate an equitable distribution of and access to land by all citizens;
d) to regulate the amount of land that any one person or corporate body may occupy or use;
e) to ensure that land is used productively and that any such use complies with the principles of sustainable development;
f) to take into account that an interest in land has value and that value is taken into consideration in any transaction affecting that interest;
g) to pay full, fair and prompt compensation to any person whose right of occupancy or recognized long-standing occupation or customary use of land is revoked or otherwise interfered with to their detriment by the State under this Act or is acquired under the Land Acquisition Act:

Provided that, in assessing compensation of land acquired in the manner provided for in this Act, the concept of opportunity shall be based on the following-

(i) market value of the real property;
(ii) disturbance allowance;
(iii) transport allowance;
(iv) loss of profits or accommodation;
(v) cost of acquiring or getting the subject land;

Section 4(1), all land in Tanzania shall continue to be public land and remain vested in the President as trustee for and on behalf of all the citizens of Tanzania.
(2) The President and every person to whom the President may delegate any of his functions under this Act, and any person exercising powers under this Act, shall at all times exercise those functions powers and discharge duties as a trustee of all the land in Tanzania so as to advance the economic and social welfare of the citizens.

3.2.3 The Occupational Health and Safety Act No. 5, 2003.

This Act provide for the protection of human health from occupational hazards. It requires the employer to ensure the safety of workers by providing personal protecting gears at work place. It specifically demands: the provision of regular medical examination of employees, safe means of access and safe working place; prevention of fire; supply of clean and safe water to workers; sanitary convenience; washing facilities, first aid kit with recommended facilities and trained first aider will be provided at the site. Proponent ensure that he will observe the requirement of the Act, where firstly he will register a working place at OSHA and procedures for acquiring a compliance certificate will be followed during project operation.

3.2.4 The HIV and AIDS (Prevention and Control) Act, 2008.

The Act provides for prevention, treatment, care, support and control of HIV and AIDS for promotion of public health in relation to HIV and AIDS. The Act also requires, provisions for appropriate treatment, care and support to people living with or at risk of HIV and AIDS. It requires the employer in consultation with the Ministry of health to establish and coordinate a workplace program on HIV and AIDS for employees under his control and such program to include provision of gender responsive HIV and AIDS education, distribution of condoms and support people living with HIV and AIDS. The project proponent / contractor will adhere with this Act by ensure that their workers will be aware of HIV /AIDs and other STDs, where special programmes about HIV will be provided.

3.2.5 The Environment Impact Assessment and Audit Regulation, G.N No. 349, 2005

The ESIA and Audit Regulation (G.N. No. 349) 2005 provides guidance on how the Environmental Impact Assessment should be carried out. It prescribes the procedure to be followed in carrying out the environmental assessment and provides the format for the preparation of the environmental impact statement. The Regulations prohibit the project proponent (including Kahama Municipal Council) from undertaking any construction project without carrying out an ESIA study required under the Environmental Management Act. This study has been prepared in line with ESIA and Audit Regulations of 2005.

3.2.6 Environmental Management (solid waste management) Regulations 2009

This Act has been made to control a facility or premises which generates waste to minimize the waste generated by adopting the following cleaner production principles: -

(a) Improvement of production process through conserving raw materials and energy by:
    (i) Eliminating the use of toxic construction materials within such times as may be prescribed by the Minister; and
    (ii) Reducing toxic emissions and wastes to a level prescribed in the applicable national environmental quality standards.

(b) Monitoring the product cycle from beginning to end by-
    (i) Identifying and eliminating potential negative impacts of the product,
    (ii) Enabling the recovery and re-use of the product where possible; and
    (iii) Reclamation and recycling.

The Act also requires any person intending to operate a hazardous waste treatment plant or disposal site or facility to apply to the Director of Environment for a license. The Project proponent will comply with this regulation by ensuring proper environmental management system within the project site during construction activities and operations of a project, where any generated hazardous waste shall be collected at a temporary storage area before disposed by authorized dealer.

3.2.7 Environmental Management Act (Air Quality Standards) Regulations, 2007

These regulations have been made under sections 140, 145 and 230 (2) (s) of the Environmental Management Act, 2004. They are aimed at setting minimum standard of air quality as well as prohibit emission of hazardous substances, chemicals and materials or gas. They also provide for emission limits, highest permissible quantity (emission), and special tolerance limits of emissions from special project which exhaust emissions.

The project proponent will be abiding by these regulations including adhering to permissible weight concentration (Emission limits) to the atmosphere as set out in the first schedule of the regulations.

3.2.8 Environmental management (Standards for Control of Noise and Vibrations pollution) Regulations, 2015

The objectives of these Regulations shall be to;

(a) ensure the maintenance of a healthy environment for all the people in Mainland Tanzania by regulating noise and vibration levels,

(b) prescribe the maximum permissible noise and vibration levels from a facility or activity to which a person may be exposed

(c) ensure protection of human health and the environment from various sources of noise and vibration pollution

Also, section 7 (1) of the Act says; no person shall made or cause to make any loud, unreasonable, unnecessary or unusual noise that annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and that of the environment.

3.2.9 Environmental Management (Solid Waste Management) Regulations 2016

These regulations have been made to control a facility or premises which generates waste to minimize the waste generated by adopting the following cleaner production principles: -

(a) Improvement of production process through conserving raw materials and energy by:

(i) Eliminating the use of toxic raw materials within such times as may be prescribed by the Minister; and

(ii) Reducing toxic emissions and wastes to a level prescribed in the applicable national environmental quality standards.

(b) Monitoring the product cycle from beginning to end by-

(i) Identifying and eliminating potential negative impacts of the product,

(ii) Enabling the recovery and re-use of the product where possible; and

(iii) Reclamation and recycling.

The Act also requires any person intending to operate a hazardous waste treatment plant or disposal site or facility to apply to the Director of Environment for a license.

Project proponent shall comply with this regulation by ensuring proper environmental management especially proper solid waste management where a temporary solid waste collection chamber will be constructed, sorting of solid waste will be done at site.

3.2.10 The Urban Planning (Use Groups and Use Classes), Regulations 2018

For the purposes of planning and the control of land use development, all uses of land and buildings are categorized in the use groups and use classes in the First Schedule

4.-(1) The planning authority may, under special permissible circumstances (Second Schedule); permit any use not classified under a separate use class in these regulations provided that such use is in the public interest.

5.-(1) The making of any change of use of any land or buildings from a purpose within any use class prescribed under Part I of these Regulations to the use thereof for any other purpose within the same use class shall not be deemed to be "development" as defined in section 2 of the Act
6.-(1) Change of land uses shall aim the following: -

(a) to maximize use of land and the existing infrastructure;
(b) to control urban sprawl;
(c) to allow for new investment;
(d) to create employment and income opportunities;
(e) to increase the number of good shelters; and
(f) to improve the environment.

For the proposed project site, the area is planned for Educational Building purposes only as per title dead provided as appended in appendix V.

3.2.11 The Land Transport Regulatory Authority Act, 2019

This is an Act to make provisions for the establishment of Land Transport Regulatory Authority, to regulate land transport sector, to repeal the Surface and Marine Transport Authority and for related matters. The Act establishes functions of the Authority which are: (a) to perform the functions conferred on the Authority; by sector legislation; (b) to issue, renew and cancel permits or licences; (c) subject to sector legislation to-(i) establish standards for regulated goods and regulated services; (ii) establish standards for the terms and conditions of supply of the regulated goods and services; and (iii) regulate rates and charges; (d) to coordinate land transport safety activities; (e) to register crew and certify drivers of regulated sector; (f) to certify worthiness of rolling stock and road worthiness of public service vehicles and goods vehicles; (g) to monitor the performance of the regulated sectors including- (i) levels of investment; (ii) availability of safe, quality and standards of services; (iii) cost of services; (iv) efficiency of production and distribution of services; and (v) other matters relevant to the Authority; (h) to facilitate resolution of complaints and disputes; (i) to disseminate information about matters relevant to the functions of the Authority; (j) to consult with other regulatory authorities or bodies or institutions discharging functions similar to those of the Authority in Mainland Tanzania or elsewhere; and (k) to perform such other functions as may be conferred on the Authority by this Act or any other law. (2) In the performance of its functions, the Authority shall not award or cancel a licence having a term of five or more years without prior consultation with the Minister and the relevant sector Minister. (3) The Minister may, for the purposes of securing the effective performance by the Authority of its functions, give to the Authority directions of a specific or general character.

3.2.12 The Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021

The Regulations applies to registration, categorization, practicing and conduct of environmental experts and firms of environmental experts registered and certified under these Regulations to conduct- (a) environmental impact assessment; (b) environmental audit; or (c) any other environmental study that may be required to be undertaken under the Act or its Regulations. The objectives of these Regulations are to- (a) establish a system of registration, categorization and practicing of environmental experts; (b) provide for qualifications for persons who may conduct environmental studies; (c) provide for a system of nurturing competence, knowledge and consistence of environmental experts in the carrying out of environmental impact assessment and environmental audits; and (d) provide for a code of conduct, discipline and control of environmental experts.

3.2.13 Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018

Based on Regulation No. 6(1) of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations G.N. No. 474 of 2018, the project falls under Type B2 of the third schedule of the regulations on which EIA shall be undertaken and can be done. This report has been prepared with reference to Regulation No. 6(1) of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations G.N. No. 474 of 2018, as a one step toward integrating Environmental concerns into development processes for sustainable development.

In this regard, proponent shall abide by the relevant provisions given in the Regulation. Being aware of the above, Proponent commissioned Dar Alhandasah in JV with Don Consult to carry out the Environmental Impact Assessment and submit an Environmental Impact statement report to the Council for review as Environmental Management Act, 2004 requires.

3.2.14 The Environmental Management (Hazardous Waste Control and Management) Regulations, 2021

These regulations shall apply to all categories of hazardous waste and to the generation, collection, storage, transportation, treatment, recycling, re use, recovery and disposal of hazardous waste and their movements into and out of Tanzania Mainland.

The proponent will adhere to the existing regulations by making sure proper ways are used to manage/ handle produced hazardous waste all its phases thus ensure the environment is protected from such harmful pollution.

3.2.15 Environmental Management (Control of Ozone Depleting Substances) Regulations, 2007

These Regulations shall apply to:

a) All persons dealing or otherwise handling or using controlled substances or products that contain, is made with or is dependent on, or designed to contain chemical substances that have the potential to destroy ozone molecules in the stratosphere and includes the products listed in the First Schedule to these Regulations;
b) Every importer and distributor of ozone depleting substances;
c) Every importer of technology which uses ozone depleting substances;
d) Every company and individual who services refrigerators, air conditioners including mobile and other ozone depleting substances technologies;
e) Every company or an individual using or servicing fire extinguishers.

The project proponent will abide to the given regulation to make sure ozone is protected from any ozone depleting substance.

3.2.16 The Land Use Planning Act, 2007

The Act provides for the procedures for the preparation, administration, and enforcement of land use plans; to repeal the National Land Use Planning Commissioning Act, and to provide for related matters. Among the objectives of the Act as given in Section 4 are to facilitate the orderly management of land use and to promote sustainable land-use practices. This proposed project aligns with the provisions of this act, any infringement on existing land use shall need a consultation with land use planning authorities.

3.2.17 The Urban Planning Act, 2007

The Act provides for control of urban and sub rural development while implementing a project for land development. Important aspects include the designation and allocation of adequate land for solid waste disposal in any urban and sub rural areas. The law empowers local authorities to enforce such schemes and punishments as stipulated in the Act. The law further

empowers neighbors and any individual to take to court anyone who injuriously affects others due to his/her unhygienic activities.

Urban Planning Act, 2007 stipulates that in planned areas, the construction of any building should start when the building permit has been issued by responsible land office. This permit will be issued after the site plan has been approved by City, Municipal or Town planner The Architectural plans with sanitation drawings need to be approved by an Engineer, an Architect and Health officer. Through this process, the issues of accessibility in case of emergency, emergency exits, proper ventilation and health and hygiene issues are usually taken seriously before the approval.

Therefore, the proposed project is approved by the authority that is the Kahama municipal Council and therefore it is in line with the objectives of this law. The project proponent will observe good solid and liquid waste disposal practice as required by the Act.

3.2.18 The Tanzania Extractive Industries (Transparency and Accountability) Act (2015)

These Regulations may be cited as the Tanzania Extractive Industries (Transparency and Accountability) Act, 2015. It provided that every extractive industry company shall keep records of payments, beneficial ownerships information, costs of production, exploration, prospecting, award or transfer of licenses, capital expenditure at every stage of investment, volumes of production.

The contractor shall ensure that all extractive companies providing construction materials such as rocks, gravels and sand which shall be used in the project are have proper licenses and operate under this act.

3.2.19 The Investment Act (1997) Cap 38

This legislation governs investment activities related to, among other things, the conservation and management of land and natural (environmental) resources. Foreigners who want to invest on land in Tanzania must route their applications for allocation of land to the Tanzania Investment Centre (TIC). The TIC would issue land to successful applicants.

The derivative right of occupancy for purposes of investment is issued under section 20(2) of the Land Act. The law requires that a survey of land be carried out prior to granting a right of occupancy. For land that is intended for investment purposes, the process originates at the Ministry level, in the Directorate of Surveys and Mapping. Depending on the use to which the land is to be put, there must be consultation with the relevant Ministry. Local communities must be involved where land is under Customary Law.

The proposed project is an investment by the government which will facilitate other development activities. Measures to comply with this Act will be implemented as appropriate.

3.2.20 The Income Tax Act R.E 2019

An Act to consolidate provisions relating to tax administration with a view to easing the administration of tax and enforcement of tax laws by the Tanzania Revenue Authority; to introduce currency point system in tax administration; and to provide matters incidental thereto.

For resident employees with one employment the amount of tax to be withheld from employment income is based on the total income from employment for the year. The tax rates for individuals as per Paragraph 1 (1) of the First Schedule to this act are applied to calculate

the tax to be paid for the year with respect to the employment (the "annual tax liability"). The annual income is divided evenly over the twelve months period and the amount (PAYE) that should be withheld from the employee's taxable payments for each month is established. PAYE stands for Pay-As-You-Earn and it can be defined as a withholding tax on taxable incomes of employees. Under this system, an employer is required by law to deduct income tax from an employee's taxable salary or wages.

The proponent shall comply with this Act and ensure to abide with PAYE throughout the project phases.

3.2.21 The Village Land Act Cap 114 R E 2019

The Village Land Act 1999 ensures that there is an established independent, expeditious and just system for adjuration of land disputes which will hear and determine land disputes without undue delay and will recognize that all lands in Tanzania are public lands vested in the President as trustee on behalf of all the citizens. This law regulates the amount of land that any one person or a corporate body may occupy or use and ensures that land is used productively and in compliance with the principles of sustainable development. The project will ensure that it will be implemented in compliance with the principles of sustainable development. The proposed project shall be implemented on land that has been legally acquired by the project proponent by complying with conditions of occupancy of the subject land.

3.2.22 The Urban Planning (Planning Space Standards) Regulations, 2018

The Urban Space Standards Regulations of 2018 includes standards for residential areas, unplanned settlements, building lines and setbacks, plot coverage and plot ratio, health facilities, education facilities, recreation facilities, beach facilities, golf courses, passive and active recreation, public facilities by planning levels, public facilities by population size, parking and road width, and agricultural show grounds.

The project Architects have complied with the Regulations in considerations of the urban planning space standards.

3.2.23 The Environmental Management (Fee and charges) Regulations, 2021

These Regulations shall apply in relation to an act or service in respect of which fees and charges are payable under the Act and Regulations made thereunder. The major reasons for this amendment are to make all registered consultants and proponents responsible for what they are working for and sensitize on the environmental management practices. Fees and Charges have been categorized in the following components whose charges in each are well described in the Schedule provided for each project category and sector:

1. Fees and charges for environmental impact assessment;
2. Environmental experts' registration fees;
3. Environmental compliance monitoring and audit (Annual fees for Environmental Monitoring and Audit);
4. Fees for environmental quality standards;
5. Fees for ozone depleting substances;
6. Fees for hazardous waste permits;
7. Fees for electrical and electronic equipment waste permits;
8. Fees for health care wastes;

9. Fees for solid waste permits;
10. Fees for biosafety permits;
11. Fees for noise permits;
12. Fees for vibration permits; and
13. Other permits.

The project activities are subject to environmental fees and charges. The Developer has paid an Application for EIA TZS 50,000 and Submission of Project Brief/Scoping Report TZS 150,000. Section 14 of the Regulations prescribes fees for Environmental compliance monitoring and audit (Annual fees for Environmental Monitoring and Audit for Building and Civil engineering industries and for the case of this project it is TZS 50,000 which the Developer will pay.

3.2.24 The Environment Management (Prohibition of Plastic Carrier Bags and Plastic Bottle Cap Seals) Regulations, 2022

The Environment Management (Prohibition of Plastic Carrier Bags and Plastic Bottle Cap Seals) Regulations of 2022 shall apply to (a) the import, export, manufacturing, sale, supply, storage and use of plastic carrier bags within Mainland Tanzania; and (b) the import, export, manufacturing, sale and use beverages with plastic bottle cap seal. The objectives of these Regulations are to: (a) impose a total ban on the import, export, manufacturing, sell or offer for sale and use of plastic carrier bags regardless of their thickness; (b) impose a total ban on the import, export, manufacturing, sale and use beverages with plastic bottle cap seal; (c) protect human and animal health as well as the environment from likely adverse effects of utilization of plastic carrier bags, or plastic bottle cap seals; and (d) provide economic and financial incentives for the production and importation of alternative carrier bags. Part III Section 5 (Prohibition of plastic carrier bags) states that "All plastic carrier bags, regardless of their thickness are prohibited from being imported, exported, manufactured, sold, stored, supplied and used in Mainland Tanzania" and Section 6 (Prohibition of plastic bottle cap seals) states that a person shall not import, export, manufacture, store, distribute, supply, sell or offer for sale beverages with plastic bottle cap seals.

Part IV Section 10 (Exemption of plastic packaging) states that without prejudice to the provisions of regulation (5), plastic or plastic packaging for medical services or industrial products or construction industry or agricultural sector or food processing or sanitary and waste management are exempted from the prohibition. Section 11 (Management of waste exempted plastic packaging) provided that any person who imports, exports, manufactures, sells, stores, distributes, supplies, possesses or uses plastic packaging exempted under these Regulations shall ensure that the waste exempted plastic packaging are managed and disposed of in accordance with the Environmental Management (Solid Waste Management) Regulations, 2009 and the Environmental Management (Hazardous Waste Control and Management) Regulations, 2021.

The proponent shall see to it that the contractor for the proposed project ensures all the plastic waste materials are well managed i.e., that is collected, stored and disposed of properly in accordance to the NEMC guidelines.

3.3 World Bank Environmental and Social Framework

3.3.1 World Bank Environmental and Social Standards

The World Bank's Environmental and Social Framework sets out the Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social standards that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity. The E&S Framework comprises of: (1) Vision for Sustainable Development, which sets out the Bank's aspirations regarding environmental and social sustainability; (2) The World Bank Environmental and Social Policy for Investment Project Financing, which sets out the mandatory requirements that apply to the Bank; and (3) The Environmental and Social Standards, together with their Annexes, which set out the mandatory requirements that apply to the Borrower and projects.

The World Bank Environmental and Social Policy for Investment Project Financing sets out the requirements that the Bank must follow regarding projects it supports through Investment Project Financing. The Environmental and Social Standards set out the requirements for Borrowers relating to the identification and assessment of environmental and social risks and impacts and mitigation measures associated with projects supported by the Bank through Investment Project Financing. The E&S standards are expected to: (a) support Borrowers in achieving good international practice relating to environmental and social sustainability, (b) assist Borrowers in fulfilling their national and international environmental and social obligations; (c) enhance non-discrimination, transparency, participation, accountability and governance; and (d) enhance the sustainable development outcomes of projects through ongoing stakeholder engagement. The ten ESSs as per the WB ESF are: ESS 1: Assessment and Management of Environmental and Social Risks and Impacts; ESS 2: Labor and Working Conditions; ESS 3: Resource Efficiency and Pollution Prevention and Management; ESS 4: Community Health and Safety; ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities; ESS 8: Cultural Heritage; ESS 9: Financial Intermediaries; and ESS 10: Stakeholder Engagement and Information Disclosure. Given the nature of activities of this project, with the exception of ESS 9: Financial Intermediaries almost all the ESSs will be relevant.

Environmental and Social Standard ESS1 applies to all projects for which Bank Investment Project financing is sought. ESS1 establishes the importance of: (a) the Borrower's existing environmental and social framework in addressing the risks and impacts of the project; (b) an integrated environmental and social assessment to identify the risks and impacts of a project; (c) effective community engagement through disclosure of project-related information, consultation and effective feedback; and (d) management of environmental and social risks and impacts by the Borrower throughout the project life cycle. The Bank requires that all environmental and social risks and impacts of the project be addressed as part of the environmental and social assessment conducted in accordance with ESS1. ESS2–10 set out the obligations of the Borrower in identifying and addressing environmental and social risks and impacts that may require particular attention based on the proposed project activities. The World Bank Access to Information Policy, which reflects the Bank's commitment to transparency, accountability and good governance, applies to the entire Framework and includes the disclosure obligations that relate to the Bank's Investment Project Financing. Borrowers and projects are also required to apply the relevant requirements of the World Bank Group Environmental, Health and Safety Guidelines (EHSGs). These are technical reference documents, with general and industry specific examples of Good International Industry Practice (GIIP).

According to the TACTIC ESMF the proposed sub projects will apply the Environmental and Social Standards as described in **Table 9**.

Table 9: Application of World Bank's ESSs to the TACTIC Project

ESSs	Yes/No	Application
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Yes	The Project will exert site-specific environmental and social impacts which will be managed through this ESMF. Site-specific ESIAs and ESMPs will be prepared to recommend E&S measures to be incorporated into designs of the specific subprojects.
ESS 2: Labor and Working Conditions	Yes	A number of project workers will be employed for the implementation of the project including construction of different investment subprojects. Project workers will be provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. The information and documentation will set out their rights under national labor and employment law (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation and benefits, as well as those arising from the requirements of this ESS. This information and documentation will be provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur. In order, to ensure fair treatment of workers, the Project will ensure that terms and conditions of employment (hours, rest periods, annual leave, non-discrimination and equal opportunity in recruitment and employment), respect for workers organizations, inclusion of redundancy plans, the prohibition of forced labor and of worst forms of child labor, occupational health and safety, including use of Personal Protective Equipment (PPE), and operation of a worker grievance mechanism for workers to address employment-related concerns, including sexual harassment, are aligned with the requirements of national law and ESS2. To protect workers, the project will ensure the application and implementation of all appropriate Occupational Health and Safety (OHS) measures, to avoid and manage the risks of ill health, including in relation to COVID-19, accidents and injuries. Labour Management Procedures (LMP) have been prepared to ensure these requirements of ESS2 and national law are observed and included in the specifications for contractors. The project will manage any labor influx and work camps for project workers in accordance with the provisions ESS2 and ESS4. As the situation permits and depending on the public health circumstances, the project will ensure compliance with

ESSs	Yes/No	Application
		national law, policies and protocol requirements as well as World Health Organization and World Bank guidance[2] regarding the COVID-19 situation in relation to stakeholder consultations, project worksites and related areas.
ESS 3: Resource Efficiency and Pollution Prevention and Management	Yes	Implementation of most of the investment subprojects will involve construction activities that will generate dust, erosion, sediments, solid and liquid wastes that will be properly managed via ESIAs, ESMPs and WMP. More or less similar impacts are likely to be experienced during operation phases and will be managed by the same tools as well as operation and maintenance plans.
ESS 4: Community Health and Safety	Yes	Construction activities (excavation, vehicle operations, work at height, use of chemicals, use of crane or other heavy equipment etc.) may have irreversible effects of disability or fatality to community. Localized negative impacts (like dust emissions, accidents, etc.) to sensitive receptors such as schools, religious buildings and community centers will need to be managed. The Project will require Contractors to prepare appropriate plans for emergency preparedness and response, management and safety of hazardous materials, traffic and road safety, security personnel, etc. as per the requirement of ESS4. Implementation of the Project is likely to trigger influx of workers or job seekers and their followers into a sub-project areas. If a significant labor influx does occur, the project will develop and implement a Labor Influx Management Plan in line with ESS2, ESS4 and other provisions of the ESF. The project workforce could facilitate an increase in the transmission of HIV and other communicable diseases to members of the local/host communities during implementation of the sub-projects. Specific measures to address GBV risks are presented in section 3.11 and the Project GRM in section 4 will be implemented. As the situation permits and depending on the public health circumstances, the project will ensure compliance with national law, policies and protocol requirements as well as World Health Organization and World Bank guidance[3] regarding the COVID-19

[2] World Bank Technical Note: Public Consultations and Stakeholder Engagement in WB-supported operations when there are constraints on conducting public meetings. March 20, 2020; and "ESF/Safeguards Interim Note: COVID-19 Considerations in Construction/Civil Works Projects", April 7, 2020.

[3] World Bank Technical Note: Public Consultations and Stakeholder Engagement in WB-supported operations when there are constraints on conducting public meetings. March 20, 2020, and "ESF/Safeguards Interim Note: COVID-19 Considerations in Construction/Civil Works Projects", April 7, 2020.

ESSs	Yes/No	Application
		situation in relation to stakeholder consultations, project worksites, communities and related areas.
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Yes	Land acquisition, restrictions on land use and involuntary resettlement are likely during the implementation of the Project. The RPF will provide guidance on RAP preparation. The project shall try to minimize land acquisition and any associated physical or economic resettlement wherever possible especially during detailed engineering designs for roads, drains, and other community facilities to be upgraded/constructed.
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Yes	No sub-projects will be financed inside or near protected areas and sensitive habitats. Sub-projects will be screened for potential direct and indirect impacts on natural habitats. In case the project will purchase natural resources commodities such as timber, it will be important to establish the source area and to have a mechanism in place to ensure that the Primary Suppliers are not significantly impacting sensitive ecosystem or degrading natural habitats.
ESS 7: Indigenous People/Sub-Saharan African Historically Underserved Traditional Local Communities	No	Relevance of this ESS will further be assessed during project preparation as part of the ESIA process and as we get more information and clarity especially about selected and confirmed locations and sites for project implementation.
ESS 8: Cultural Heritage	Yes	The Project will be implemented in 45 LGAs, all with different cultural backgrounds. Elements of cultural heritage are found in some of the ULGAs such that there potential for cultural heritage resources to be found unexpectedly (chance finds) and screening of subproject sites to avoid impacts on cultural heritage during construction. Chance finds procedures will be included in the Specifications for the contracts.
ESS 9: Financial Intermediaries	No	This ESS is not relevant to the Project.

ESSs	Yes/No	Application
ESS 10: Stakeholder Engagement and Information Disclosure	Yes	A Stakeholder Engagement Plan (SEP) has been prepared to guide implementing agencies on how to provide stakeholders with timely, relevant, understandable and accessible information, and consult with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination and intimidation as well as establishment / strengthening as relevant of a GRM for all stakeholders.

3.3.2 World Bank Safeguard Tools for the TACTIC Project in Kahama Municipal Council

The implementation of each of the ESSs will be enabled through five instruments which are all part of the Operational Manual of the TACTIC and therefore mandatory and which have been developed based on the respective ESSs:

i) Environmental and Social Management Framework (ESMF) (and subsequent ESIAs/ESMPs) for the application of the ESS1, ESS2, ESS3, ESS4, ESS6 and ESS8.
ii) Stakeholders Engagement Plan (SEP) for the application of ESS10;
iii) Resettlement Policy Framework (RPF) and any subsequent RAPs for the application of ESS5;
iv) Labour Management Procedures for the application of ESS2
v) Environmental and Social Commitment Plan (ESCP) which will describe the obligations of the borrower to apply the above instruments and other actions.

3.3.3 World Bank EHS Guidelines

The World Bank Groups Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry specific examples of Good International Industry Practice (GIIP). EHS Guidelines are applied as required by their respective policies and standards. These industry sector EHS guidelines are designed to be used together with the General EHS Guidelines document, which provides guidance to users on common EHS issues potentially applicable to all industry sectors. Specific guidelines which will be used is Environmental, Health, and Safety (EHS) Guidelines: Environmental Waste Management. As stipulated earlier the guidelines will be used together with the Environmental, Health, and Safety General Guidelines. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. Application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets, with an appropriate timetable for achieving them. The applicability of the EHS Guidelines will be tailored to the hazards and risks established for the project in accordance to the proposed project activities. The circumstances that skilled and experienced professionals may find when evaluating the range of pollution prevention and control techniques available to a project may include, but are not limited to, varying levels of environmental degradation and environmental assimilative capacity as well as varying levels of technical feasibility. The applicability of specific technical recommendations will be based on the professional opinion of qualified and experienced persons.

The project proponent shall comply with the relevant requirement of environment, health and safety (EHS) of the World Bank Group (WBG). The World Bank Environmental Health and Safety General Guidelines containing quantitative limits and good international management practices to manage potential impacts are shown in **Table 10**.

Table 10: World Bank EHS Guidelines applicable

EHS Guideline	Content & Relevance to Sango market Project
General EHS Guidelines (2007)	These guide performance levels and measures that are generally considered in the achievement of new facilities by existing technology at reasonable costs. Application of the EHS guidelines to existing facilities may involve establishing site-specific targets, with an appropriate timetable for achieving them.
EHS Guidelines for - Air Emissions and Ambient Air Quality, 2007	Requirements of the guidelines have been incorporated in the analysis and management measures for emissions management during construction and operation phases of the proposed facilities at Sango market. This provides guiding approach to managing significant sources of emissions, including specific guidance for assessment and monitoring of impacts.
General EHS Guidelines 3 Community Health and Safety (2007)	These address project activities implemented outside of the traditional project boundaries but that are nonetheless related to the project operations, including water quality and availability, traffic safety, transport of hazardous materials, disease prevention, and emergency preparedness and response.
EHS Guidelines: Waste Management Facilities (2007)	If significant waste management activity such as incineration is included in the project scope/design basis, leading to creating a separate waste management facility, the World Bank guidelines for dedicated waste management facilities could apply.
General EHS Guidelines 1 Environmental (2007)	It covers a range of environmental aspects that apply to most industrial development projects. The subsections are air emissions and ambient air quality, energy conservation, wastewater and ambient water quality, water conservation, hazardous materials management, waste management, noise and contaminated land.
WHO Ambient Air Standards	The ambient air quality guidelines specified in the Standard have been incorporated in the analysis and development of management measures to avoid or minimize human health risks.

3.3.4 Other World Bank Instruments Applicable for TACTIC Project

Environmental and Social Framework - Guidance Notes for Borrowers[4];

- The World Bank has developed several Guidance Notes to ensure the governments (borrowers) comply with the World Bank Environmental and Social Standards. This guidance are public documents that be accessed in the World Bank website[5].
- Among the applicable guidance notes for HEET are:
- Community Health and Safety: http://documents.worldbank.org/curated/en/290471530216994899/ESF-Guidance-Note-4-Community-Health-and-Safety-English.pdf
- Gender based violence: http://documents.worldbank.org/curated/en/399881538336159607/Environment-and-Social-Framework-ESF-Good-Practice-Note-on-Gender-based-Violence-English.pdf

3.4 International agreements, Conventions and Treaties

International agreements, convention and treaties which are relevant to this project include:

3.4.1 United Nations Framework Convention on Climate Change (1992)

The objective of United National Framework Convention on Climatic Change (UNFCCC) is to stabilize the concentration of greenhouse gas (GHG) in the atmosphere, at a level that allows ecosystems to adapt naturally and protects food production and economic development. Article 4 commits parties to develop, periodically update, publish and make available national inventories of anthropogenic emissions of all greenhouse gases not controlled by the Montreal Protocol (by source) and inventories of their removal by sinks, using agreed methodologies. It commits parties to mitigate GHG as far as practicable. Since Tanzania is a Party to the Convention, she will have to account for all sources of GHG in her future National Communications. In this aspect, since this proposed Project is subjected to emission some amount of the GHG from its facilities-vehicles and machineries.

3.4.2 Kyoto Protocol (1997)

The Kyoto Protocol is an international agreement linked to the UNFCCC. The Kyoto Protocol binds 37 industrialised countries and the European Community to reduce their GHG emission by 5% from 1990 levels in the commitment period 2008-2012. The Protocol differs from the Convention in that while the Convention encourages industrialized countries to stabilize GHG emissions, the Protocol commits them to do so. It recognizes that developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere as a result of more than 150 years of industrial activity. As a result, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities." It provides mechanisms to achieve this objective, namely the carbon trading, joint implementation and the clean development mechanism (CDM). Since Tanzania is not one of the 37 industrialized countries bound by the Protocol, on the CDM it is relevant to this project.

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[4] http://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-framework-resources#guidancenotes

[5] https://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-framework-resources#guidancenotes

3.4.3 The convention on wetland RAMSAR

The Convention on Wetlands (Ramsar, Iran, 1971) -called the "Ramsar Convention"- is an intergovernmental treaty that embodies the commitments of its member countries to maintain the ecological character of their Wetlands of International Importance and to plan for the "wise use", or sustainable use, of all of the wetlands in their territories. Unlike the other global environmental conventions, Ramsar is not affiliated with the United Nations system of Multilateral Environmental Agreements, but it works very closely with the other MEAs and is a full partner among the "biodiversity-related cluster" of treaties and agreements.

3.4.4 Convention on Protection of Workers against Occupational Hazards in the Working Environment Due to Air Pollution, Noise and Vibration.

This Convention, ratified by Tanzania in 1984, provides the framework for ensuring a safe working environment for workers. The implementation of infrastructural sub-projects will ensure that it prevents the exposure of its workers and the public from any occupational hazards by providing appropriate security and safety equipment.

3.5 Regional Agreements

3.5.1 Other relevant International Conventions Ratified by Tanzania

ILO Convention: C138 Minimum Age Convention, 1973 (Ratified by Tanzania (United Republic of) on 16:12:1998) which prohibits Child labour. ILO Convention: C182 Worst Forms of Child Labour Convention, 1999 (Ratified by Tanzania (United Republic of) on 12:09:2001). Therefore, in accordance with these Convention requirements, TACTIC Projects shall adhere to the ILO Convention, particularly in child labour employment. ILO Convention: C148 Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (Ratified by Tanzania (United Republic of) on 30:05:1983) which protects Workers against Occupational Hazards in the Working Environment Due to Air Pollution, Noise and Vibration.

3.6 Institutional Arrangement for Environmental Management

Tanzania is among countries in East Africa with an Act for environmental management legislation. The legislation, Environmental Management Act (EMA) (2004), provides a legal and institution framework that guides the implementation of the environmental management activities. The framework provides a pre-requisite for effective implementation of Environment Policy at all levels (National, Region, Council, and Village/Street/Hamlet). According to the Environmental Management Act (EMA) (2004), there is the Environmental Management Committee established at the Hamlet/Village/Street, Ward, Council and at National level with the responsibility for the proper management of the environment in respect of the area in which they are established. The functions and responsibility of these committees are well explained in the Act. Moreover, section 36 (1), (2) of EMA stipulates that each City, Municipal, District and Town councils shall designate or appoint an Environmental Management Officer (EMO) who shall perform among the following functions:

i) Advice the environmental management committee to which he/she belongs on all matters related to the environment.
ii) Promote environmental awareness in the area he/she belongs on the protection of the environment and the conservation of natural resources.
iii) Monitor the preparation, review and approval of Environmental Impact Assessment for local investments.

The Institutional set up as presented in the **Figure 8** explains the layers of decision making from national to Village/Street/Hamlet levels

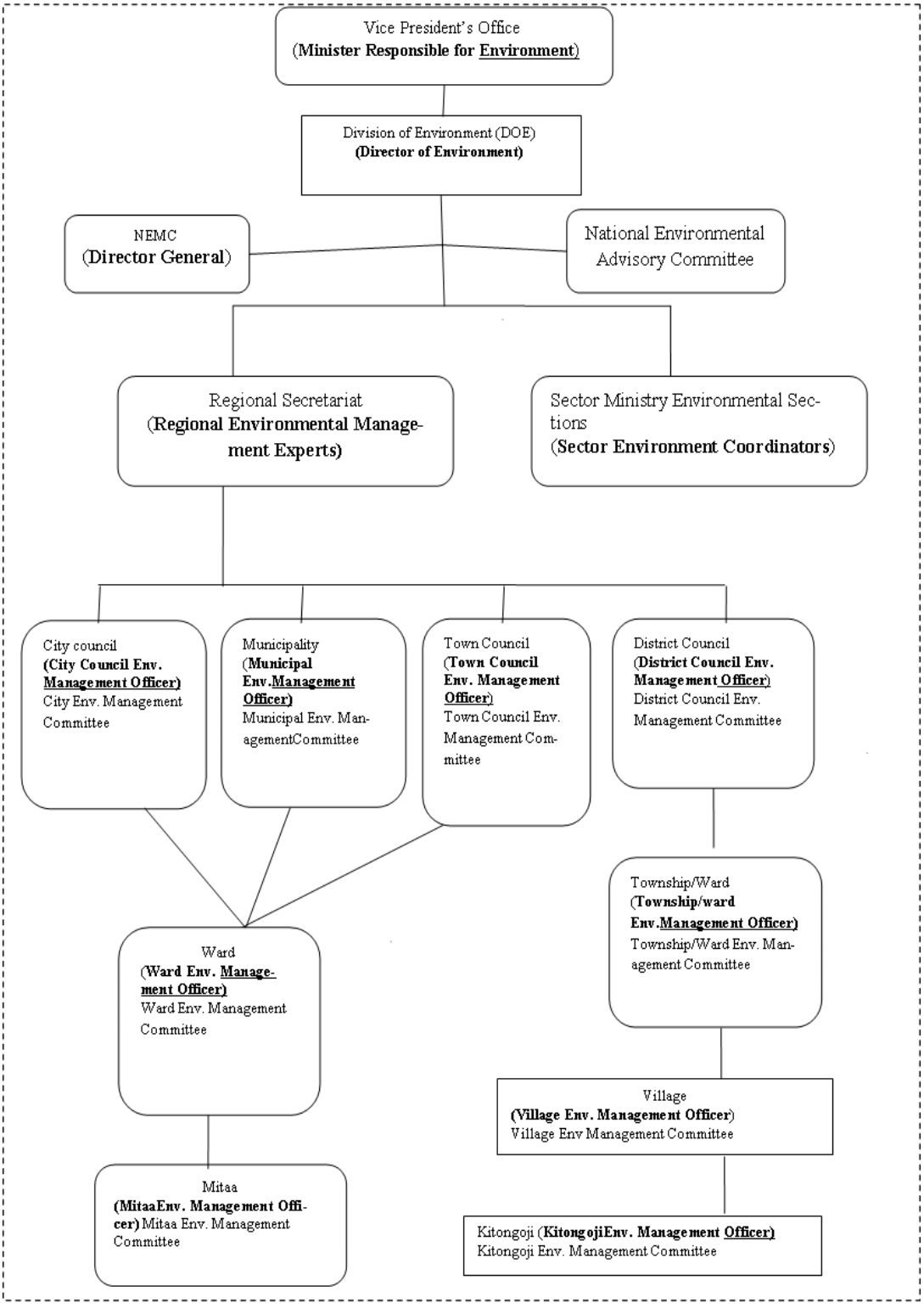


Figure 8: Institutional Set Up for Environmental Management in Tanzania Mainland

CHAPTER FOUR

ENVIRONMENTAL AND SOCIAL BASELINE DATA

4.1 Introduction

Sets out in detail the baseline data that is relevant to decisions about project location, design, operation, or mitigation measures. This should include a discussion of the accuracy, reliability, and sources of the data as well as information about dates surrounding project identification, planning, and implementation. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions. Based on current information, assesses the scope of the area to be studied and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences. Takes into account current and proposed development activities within the project area but not directly connected to the project.

4.2 Geographical Location

4.2.1 Coordinates and boundary

Kahama Municipal Council was established in January, 2021, after being officially declared as a Town Council on Government Notice No. 174 and published on the 17th of June 2011 in the Local Government (Urban Authorities) Act, (CAP.288) by the Order Made under Section 5 (3). On 28th January 2021 the town council was upgraded and declared to be a Municipal Council by the late President John P. Magufuli. Kahama Municipal Council is in the North-Western plateau of Tanzania. Kahama Municipal Council which is northern western plateau of Tanzania is in Kahama District which is one of the three (3) Districts in Shinyanga Region namely Kishapu, Shinyanga and Kahama.

Kahama Municipal Council is located between latitude $30^0$15" and $40^0$30" South of the Equator and Longitudes $31^0$30" and $33^0$00" East of Greenwich on the road off to neighboring countries of DRC Congo, Uganda, Burundi and Rwanda. It is bordered by Tabora Region to its eastern part by linking to Nzega District and Msalala District Council and Geita region to its north.

4.2.2 Area and Administrative Units

The size of Kahama Municipal Council covers an area of 1520.2Km^2 (152,016.1 ha) of which 45,834.5 hectare is used for residential and 106,181.6 ha used for diverse economic activities including farming and livestock keeping and is administratively divided into 20 wards comprising of most of Kahama Division. However, other parts of the council cover rural area with 45 villages.

The Municipality area has 20 wards namely Kahama Mjini, Nyasubi, Majengo, Nyahanga, Zongomera, Mhongolo, Nyandekwa, Iyenze, Kinaga, Busoka, Ngogwa, Wendele, Kagongwa, Isagehe, Mondo, Mwendakulima, Kilago, Nyigogo, Mhungula and Malunga. Also has 45 Villages which are subdivided into 32 sub-villages (Streets) and each ward being a group of streets that are locally administered as a unit. Each ward has an Executive Officer and every village has its own village government and assembly.

Politically the Municipal council is within 1 electro constituencies with 20 Wards each represented by one elected Councilor and six appointed Councilors representing special seats for women. This

makes a total of 28 Councilors including 2 members of parliament. There are also politically elected leaders, 45 at the villages and 32 at sub- village levels (streets).

4.3 Agro-Ecological Zones and People

4.3.1 Climate

Kahama Municipal Council is dominated by extensive plains, gently undulating plain and flat plains which covers almost 82% of the surface. 13% of the surface is valleys (Mbuga) and Hills occupy 5% of the total surface. It receives rains in the duration of approximately 5 months, starting from late October to early May. This rainy season is characterized by two-week to one-month dry spells, being most pronounced in January and February. It receives an average rainfall between 750 to 1030 mm. Temperatures is relatively constant throughout the year, with mean daily temperature ranging from 21^0C to 26^0C. The proposed Sango Market designs shall take into consideration changes of weather particularly in terms of temperature and rainfall by ensuring there is proper ventilation, minimal solar exposure, outdoor shading by trees and alternative water sources. Tree planting within the market is encouraged so as to minimize extreme hot condition and prevent dust during hot and windy seasons respectively.

4.3.2 Population Size and Growth

According to the 2022 National Population and Household Census, Kahama Municipal Council had 351,957 people which are about 15.7% of the regional population (2,241,299). The male population was 172,459 while the male population was 179,498 (51.5%). The growth rate is 3.8% per annum and by 2019 Kahama Municipality was estimated to have a population of 312,349 (men 151,524 and women 160,825) with 49,436 numbers of households at the average family size of 5 persons and the life expectancy set at an average of 45 years. The age distribution for Kahama Municipal Council shows that the young population under 15 years was 49.2 percent. For the working population of the age group between 15 to 64 years the proportion was 48.7%. The high growth rate is attributed to immigration rather than to human multiplication. The proposed project is likely to lead to increased population in Kahama since people will be coming from different areas in search for employment opportunities during project implementation.

4.4 Socioeconomic Activities

4.4.1 Gross Domestic Product (GDP)

Levels of GDP per capita are obtained by dividing GDP at current market prices by the population. A variation of the indicator could be the growth in real GDP per capita, which is the percentage change in real GDP divided by the population. In the year 2014/2015 records indicated that Revenue collection and utilization for Kahama Municipal Council increased from 86% to 94.34 % in the year 2017/2018. Kahama Municipal Council GDP and Per Capital Income with Land labour and its skills, and capital including equipment, provide the main means of economic production. Kahama Municipal Council, like other councils in central, northern and lake zones, has larger livestock population, including cattle, goats, sheep and poultry and consider the second economic activity that can employ significant number of people and contributes large share to the GDP of Shinyanga region and country at large. Unfortunately, its contribution to the regional GDP is very low. Main reason for poor performance of these sectors has been influenced by poor or traditional practice of Agriculture, livestock keeping with no regular treatment, absence of livestock infrastructure and medicine. The proposed project is likely to increase the municipality's contribution to regional GDP as a result of increased small businesses that will be established in the new Sango market and other areas nearby.

4.4.2 Agriculture

Agriculture is the main source of income to the majority of households residing in Kahama Municipal Council. Most of them are engaged in rice and maize cultivation and some vegetables and fruits cultivation. Others obtain their sources of cash income from different petty businesses and some are employed in different private and public institutions. However, agricultural activities have been the key contributor to the council's per capita GDP compared to other activities in the council. Agriculture and forestry are the main sources of livelihood of the people of Kahama Municipal Council.

Kahama MC comprises a total area of 152,016.1 Ha (1,520.2km2) of which available arable land for cultivation is 71,873 Ha (47.3%) of the total land. While, suitable land for irrigation is about 4000 Ha and area under irrigation is 3.2 Ha. (0.08 %) of total suitable land for irrigation). The population is 242,038 (Census 2012) and an estimate of 323,905 (Women 157,130 (48%) and Men 166,775 (51%) by 2019 while the total number of farmers is 10630 (4.4% of total population). KMC agriculture sector contributes about 35% employment to Kahama residents and 45% revenues. The proposed project will bring positive impacts to the agricultural sector in Kahama since there will be market for agricultural products resulting to its growth.

4.4.3 Beekeeping

Though beekeeping practice is still done in traditional ways but it is another subsector which earns income to Kahama Municipal Council. Beekeeping in Kahama Municipal Council produces poor quality of bee products such as honey, glue and Bee wax due to its local mode of its production. Currently, the council has 7 beekeepers' groups, 216 modern beehives as well as 220 local beehives and 1 honey processing industry.

Currently Production and Productivity in Kahama Municipal Council honey production by June 2019 is estimated to 2670 Kg per year that fetch TSH. 10,680,000/- and 186 Kg of beeswax fetch TSH 612,000/-. Also, there is an increase/ of beekeepers within the council compared to past trend where 60 in 2015, 65 in 2016, 80 in 2017, in 2018 and 92 in 2019. In Kahama Municipal council there are only two apiaries, one is in Wendele (Ngogwa) with 110 hives and another one is in Mwendakulima (Mwendakulima) with 150 beehives. The current status of Beekeeping Reserves is as follows: **(**Kilago village Forest (Ngitile) with a total area of 304.32 Ha, Ngulu Village (Ngitili) at Ngongwa with ana area of 330.14 Ha., Igunhwa Village Forest (Ngitili) with an area of 141 ha., Ukamba Local Authority Reserve at Bukamba. This has 1,000 Ha, Mkweni Hills Reserve at Wendele. This is under TFS and has an area of 15,744 ha, Chapulwa Forest reserve at Mwendakulima. The proposed project will have a positive impact to beekeepers in Kahama since there will be market for selling their products such as honey.

4.4.4 Mining Sector

Kahama Municipal Council plays a significant role in mineral production in the country. However, the sector has yet to contribute significantly to the council's and community economy. Kahama Municipal Council attracted a large flow of Foreign Direct Investment, mainly in the mining of gold at Buzwagi in Mwendakulima Ward (**Table 11**). Minerals are a principal source of income for many developing countries, including Tanzania. At first glance, mineral-rich economies have an advantage over those less well-endowed because minerals provide funds for rapid development and poverty reduction. Mining in Kahama Municipal Council is a famous economic activity and

therefore mining sector has significant contribution to the council's economy. The mineral deposit available in the council is Gold which is in large scale at Buzwagi Gold Mine (Open ground mining), Also there is small scale gold mining activities at Mwime However, Small-scale Diamond mines are found at Nyang'hwale where large mining companies were operating in the past (**Figure 9**). The proposed project will be positively affected since the influx of people from other areas will be customers and business owners in the market which will increase the markets revenue.

Table 11: Number of large, medium and small-scale minerals by 2012

District	Type of Mineral Deposits	Small Scale	Medium Scale	Large Scale
Kahama	Gold	6	0	1
Total		6	0	1

Figure 9: Gold processing plant at Buzwagi Gold mine 7km from Kahama Municipal (Source: KMC, 2017).

4.4.5 Nature and Tourism

According to the national industry's mission statement that forms the basis of the tourism policy is develop sustainable quality tourism that is ecologically friendly to the conservation and restoration of the environment and its people's culture. Kahama Municipal Council is one of the unique destinations in the Tanzania that has yet been discovered by many. It is a land of much wonder holding an unparalleled diversity of fauna, flora and many natural features.

Tourism is of growing importance as visitors stop during their journey to use the facilities and services available in the Municipal. The existence of large number of quality and well-equipped Hotels in the Municipal also offers scenic sites for camping and rest that are attracting a growing number of tourists who come from various parts of the world to Gombe and Malagarasi western Tanzania. Such visitors include those attending conferences and workshops, and foreigners on safari and beach holidays travelling from the north to south of Africa in overland trucks. This sector will positively affect the proposed market since the tourists will be among the customers and business owners.

4.4.6 Eco Tourism

To promote domestic and international tourism, most important areas identified by Government of Tanzania are development of infrastructure, product development and diversification, development of eco-adventure sports, cultural presentations, providing inexpensive accommodation, streamlining facilitation procedures at airports, human resource development, creating awareness and public participation and facilitation of private sector participation. Availability of good infrastructure such as accommodation facilities, telecommunication services, roads, banks/bureau de change services and tour operators are an important tool for the development of competitive tourism industry. Accommodation facilities are important in attracting tourists. Therefore, information about hotels, camp sites and lodges are vital for the tourists, as it helps them to choose the type of accommodation they like as well as compare the quality against prices charged. In Kahama Municipal Council the Shinyanga to Kigali and Bujumbura and DRC Congo Road ways plays a key role in the eco-tourism development. The road provides easy communication between the Council and other big commercial cities in Tanzania like Dar es Salaam and Mwanza which encourage more people to come in search of business opportunities, mining activities as well as those who come for tourism purposes. The available accommodation facilities which range from hotels to guest houses are to a large extent located at the centre of the Kahama district and the Kahama Municipal Council in general. In this regards, construction of new accommodation facilities become a pressing issue. There is also a need of increasing the number of financial services such as banks, bureau de change etc., so as to meet the higher demand of these services in the near future. In Kahama Municipal Council there are number of executive hotels and guest Houses including the following Submarine Hotel, Mongo Hotel, Buzwagi view Hotel, Pine Ridge Hotel. Presence of the market will help promote eco-tourism as one of the services that is highly required to bring development by attracting tourists.

4.4.7 Industrial Development

According to the National Bureau of Statistics (NBS), enterprises are grouped into three categories according to capital outlay and number of people employed:

- Micro industries are those employing less than 50 people and with capital of less than TZS 5 million
- Small-scale industries are those with capital of more than TZS 5 million but less than TZS 200 million and employing less than 50 people
- Medium scale industries are those with capital of more than TZS 200 million but less than TZS 800 million and employing less than 100 people
- Large scale industries are those with capital of more than TZS 800 million and employing more than 100 people

Through the 2012 census, Kahama Municipal Council realized a total of 473 small scale industries of which 5 are Food processing industries and 467 milling machines and1 honey processing industry.

In Kahama Municipal there is special zone which has been planned and allocated for small scale Industries and Industry. This zone has 2160 acres of which 500 acres have been surveyed and allocated. Development project budget trend for the Kahama Municipal for the past 2 years has been increasing and the council has allocated 2,500 acres Potential Investment Areas for small and heavy Industries at Zongomera ward. Currently Kahama Municipal Council has inspected the 5 available Food processing industries which are registered by TFDA among which 3 are medically

examined (**Table 12**). The proposed project is going to promote industrial development because most of the industrial products will be sold in the market for wholesale as well as retail.

Table 12: Production for 2013/14-2019/20 Crop season

Crop	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Maize	22598.25	19139.4	26683.6	12342.6	34174.6	21647.9	38,500
Rice	28096	30635.2	44607.6	21194.2	39503.4	27082.2	69,900
Bulrush millet	0	0	0	0	1	0	0
Sorghum	67.2	27.5	21.4	257.8	252.1	7.5	10.800
Cassava	5437	12339.7	4987.5	5375.4	13433.9	5995.9	24,000
Sweet potatoes	3981.5	14120	9583.8	62239.6	60875.6	27498.6	19,700
Beans	439.5	372	920.3	312.9	974	473.4	659.5
Bambara nuts	71.3	49.5	39.4	54.2	377.8	90.4	260.0
Groundnuts	3061.4	2426.9	9033.5	3184.9	5399.5	8409.2	705.36
Cotton/	575.83	134.2	108.3	125.7	287140	262057	23.37
Sunflower	441	493.9	524.8	174.2	1088.5	1038.9	795
Grams	1	2	29.4	24.5	17.5	0	-
Cowpea	5.2	409.5	857.7	206.9	682.5	1285.5	823.4
Cheakpea					96.3 tons		260.8

4.4.8 Irrigation

Kahama Municipal Council is endowed with the suitable land for irrigation about 4000 Ha out of which total area of more than 1,200 acres (485 ha.) of plain land is potential for irrigation at Malenge village,500 ha at Bumbiti "A" Village in Mondo, Investors are welcome help Kahama MC population to move away from subsistence to a more commercial mode of production through reliable irrigated agriculture which has proved to be an essential tool for combating food shortages, and alleviating hunger and poverty in other areas. In Kahama Municipal Council, the basic irrigation infrastructures, required for effective provision of good agricultural yields includes: Dams, water trough, main canal, secondary canal and tertiary canal. Availability of market for agricultural products will result to the increased need for production which will lead to the need for irrigation.

4.4.9 Livestock Sector

Apart from growing crops the residents also practice livestock keeping as an alternative source of income. Livestock is the second important economic activity for the residents of Kahama Municipal Council. The livestock kept are cattle, goats, pigs, sheep, donkeys and poultry. The livestock sector makes significant contribution to food security and poverty eradication at household level. Besides, the subsector is an important source of protein through meat, milk and poultry products. Livestock is the second important economic activity for the residents of Kahama Municipal Council. To large extent, livestock keeping is predominantly traditional and involves mostly indigenous chicken. Other livestock kept are cattle, goats, sheep, donkeys, pigs and chicken.

Although less than 0.5% of the labour force is engaged exclusively in livestock rearing in the urban areas as compared to about 1% in the rural areas of Kahama Municipal Council, the total economic value of this activity is significant. Traditional cattle are reared usually through free ranging in rural areas, and in the urban periphery improved dairy stock are usually stall fed. About 3.8% of the area of the Kahama Municipal Council.is used for livestock husbandry. Men (1.1%) are more likely than women (0.8%) to be involved in Cattle keeping. Farmers are supported through the public agricultural extension and disease control services by Kahama Municipal Council. One of the general distinctiveness of farming in the Kahama MC is the domination of continuation farming undertaken by smallholder peasants with very diminutive commercial inclinations in their husbandry practices. Most of them use low yielding plant seeds and livestock breeds, with minimal application of yield boosting inputs such as fertilizers and disease prevention applications. Crops are cultivated on approximately 106,181.6 hectors which is suitable for agriculture. The market will promote livestock keeping in Kahama since there will be market for its products such as meat, milk and chicken.

4.5 Food Crops

4.5.1 Food Security

Food security refers to a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Main food crops produced in Kahama Municipal Council are maize, cassava, sweet potatoes, sorghum, groundnut, millet and beans. Cotton and rice constitute the main cash crops. Maize is most important cereal grown. It is cultivated on about 16,480 hectors. However, due to general use of local seeds with lower productive capacity, yields are often poor than would have been the case with improved varieties. The proposed project will have a positive impact on food security because there will be market hence increased production as a result of increased demand.

4.5.2 Cash crops

Most predominant cash crop planted in Kahama MC which are income earning crops. They include cotton, tobacco and chickpea. Cotton and Tobacco are one of the most important cash crops in the Kahama Municipal Council but less now because of a fall in prices in the world market. Farmers are trying to revive production with assistance of various companies. The proposed market will be a great place to sell these crops, therefore leading to more production.

4.6 Infrastructure

4.6.1 Roads

The road network is a crucial means of transportation for both goods and services. It enhances the movement from one area to another and also allows social interactions. A high-quality road network is important for connecting key areas as well as the isolated local communities, improving domestic firms' investment decisions and also determining the Council's potentiality to investments. The roads are the most important means of transportation in Kahama Municipal Council. In Kahama Municipal, major roads are highly passable throughout the year but collector and feeder roads are not passable especially during rainy season. The roads are affected leading to poor accessibility to various community facilities. Kahama roads are in various conditions basing on the road inventory survey done there were tarmac roads, earth and gravel roads. The proposed market may be affected due to poor accessibility. On the other hand, the proposed project will facilitate Kahama MC to upgrade the roads in the areas surrounding so as to improve its accessibility.

Tarmac roads

Kahama Municipal is served by three major tarmac roads which passes through the CBD area these are: -

- Isaka road with total length of 5.25 km (**Figure 10**)
- Tabora road with total length of 6.42 km
- Lumelezi road with total length of 4.46 Km.

Figure 10: The tarmac trunk road from Isaka to Bujumbura (Rwanda) which passes outside the CBD area (Source: KMC, 2017)

The Municipal has a good road network, The Municipality has a road network of 951.52km of which 16.13 Km are tarmac, 67.88 Km are covered with gravel and 870 Km are earth roads. The current road status in the Municipality is shown in **Table 13**.

Table 13: Road Type and Condition in the Municipality

Type	Condition	Kilometers

Tarmac	Good	10.7
	Fair	02
	Bad	00
Gravel	Good	19
	Fair	26
	Bad	22.88
Earth	Good	90.05
	Fair	214.73
	Bad	870.94
Total		951.52

(Source: TARURA KMC Records, 2019)

Earth and gravel roads

The earth and gravel roads have covered large area of CBD which connects the different activities at CBD area. These roads are of great potential because they provide a good linkage and serves large community (**Figure 11**).

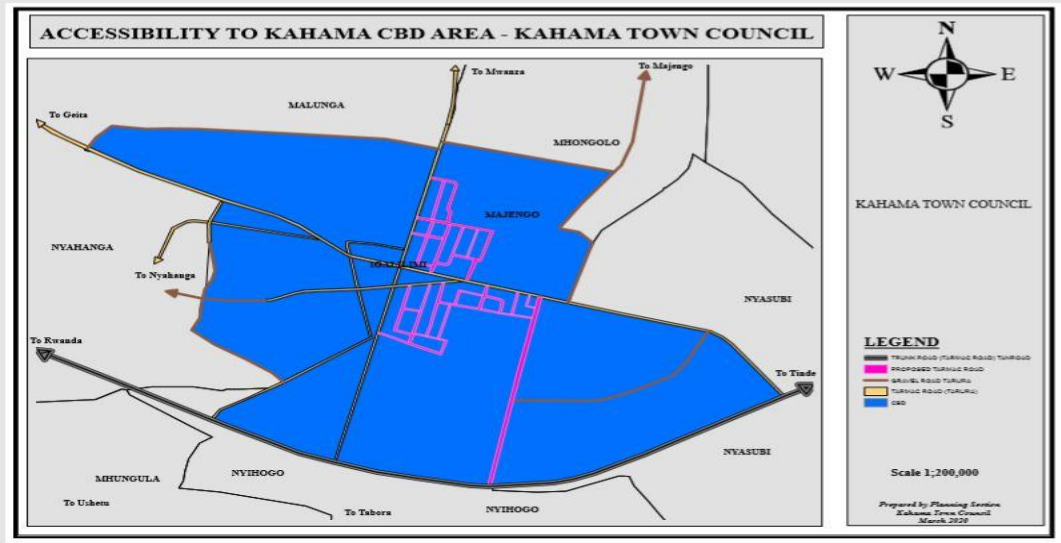


Figure 11: Road network in Kahama Municipal (Source: KMC, 2017)

4.6.2 Air Strip

The Municipal of Kahama can easily be accessed by other different modes of air, train, water and from all the major cities of the East African Community. There is an Air strip at Mwendakulima which serves visitors who usually come to Kahama Municipal. Precision Air, a private airline whose flight time is about two hours from Dar es Salaam to Kahama, is the fastest mode of transport. The flight is currently scheduled three times a week to meet the demand of the customers at an affordable price (**Figure 12**).

Figure 12: Kahama airport (Source: KMC, 2017)

The current Mwendakulima Airstrip caters for international and local visitors who usually come to Kahama Municipal. It is located 08km from Kahama CBD with three times a week scheduled flights to meet customers demand at an affordable price. The presence of this airstrip encourages aviation industry operators and definitely cargo and passenger operating from Kahama Municipal Council. The Mwendakulima airstrip has currently been serving aircraft consignment both for passengers and goods cargo that records a three times weekly flight from Precision.

4.6.3 Electricity

The Kahama Municipal Council receives 80% of its daily demand of electricity from main secondary feeders. Electricity supply is drawn from the national grid system. Electricity is used for commercial, domestic, institutional and industrial purposes. All wards are served with hydroelectric power from National Grid System. Electricity is one major part of energy in Kahama Municipal Council. Electricity is commonly used in Kahama Municipality and rural parts of the council. Electricity supply which is a prerequisite for proper functioning of nearly all sectors in the economy in Kahama District stimulates development, both social and economic. Like other parts of the country, TANESCO is the sole supplier of electricity in Kahama Municipal Council.
A good number of institutions in the council have been connected with electricity. Number of domestic installations has each day been increasing all together with commercial segment of customers.

4.6.4 Water Supply

Kahama Urban Water Supply and Sanitation Authority (KUWASA) is the main supplier of clean and safe water in the Municipality. The sources of water are Lake Victoria, natural springs, boreholes and rain water harvesting at a small scale. The current daily water production of KUWSA is 11,087 cubic metres. It is estimated that 70% of Kahama MC is covered with 16,957 clients' connection and 70% of the population has access to water managed by KUWSA. Clients are metered and charged for water used on monthly basis. From Kahama Municipal Five-year strategic plan reveal that, the main source of water supply in Kahama is from Lake Victoria with a total length of distribution network approximately 240 km with 200km UPVC and 14km of steel pipes (**Figure 18**). The current supply of water in Kahama Municipal Council is adequate. About

84,074 households had reliable and safe sources of water by the year 2019 (**Table 14**). The proposed project will have a water use permit to obtain water from available schemes for construction activities which can result to the decreased water level if there will be over abstraction. Also, the proposed bus terminal will increase pressure on the water supply system because during all project phases it will require water for several activities. The market shall have its own water source i.e., a borehole so that water is made available always and avoid putting pressure on the water supply system in Kahama Municipality.

Table 14: Number of Households with Reliable and Safe Sources of Water in Kahama Municipal Council 2015- 2019

LGA	**2015**	**2016**	**2017**	**2018**	**2019**
Kahama MC	60,870	64,550	65,775	80,054	84,074
Total	**60,870**	**64,550**	**65,775**	**80,054**	**84,074**

Figure 13: Water reservoir tanks in Isagehe, Kahama (Source: KMC, 2017)

4.6.5 Waste Management systems

Kahama Municipal Council has nine (9) collection points which are located in area where the rate is higher than the collection capacity in unplanned areas and some are just free land, and some areas there is no collection points people have tendency of throwing the waste in the soil despite the presence of collection point. 12 urban Wards are operated by community-based organization, the collection system in Kahama Municipal Council is door to door collection whereby community-based organization (CBO) is passes along the roads, household, Institutions and entrepreneurs to collect all wastes stored in plastic sacks and dustbins. The door-to-door collection is being conducted with pushcart or 'guta' (motorcycle) for transportation to the collection Point. The transportation of wastes from collection point to dumping site is conducted by hired Company where the Kahama Municipal Council cannot conduct the service due to lack of equipment's.

Ward Committee and street leaders play major role in management of solid waste. Each Ward Environmental/Health Officer is responsible for coordination and management of the service by doing inspection for each street and household. Liquid waste is disposed of through pit-latrines,

and septic tanks. Residents are serviced by cesspit emptier owned by the private operators. Paid for washrooms are also available at the central bus terminal and the markets. Kahama Municipal. Council like other urban areas in Tanzania is facing the Solid Waste Management (SWM) problem. The trend seems to worsen particularly in Kahama Municipal Council due to social economic activities and escalating population growth. In the year 2020 Kahama MC was estimated to have a population of 313,902 and production of solid waste was 170 tons per day while the capacity to collect is 51 tons per day (30%), and recycling capacity of 79 tons/day. The proposed project will have a proper solid waste management plan in all phases so that it does not add a burden to the existing challenge by ensuring waste is properly disposed of and where possible recycled. During the project implementation especially construction phase, the workers will be provided with proper toilet facilities that may temporarily serve them to avoid polluting the environment by open urination and defecation. Proper sanitary facilities which include toilets and septic tanks and drains will be well designed to accommodate the needs of the Industrial Park and its users. The proponent shall ensure all liquid waste produce is disposed of or treated as guided by KUWASA.

4.6.6 Telecommunication and data transmission

Communication services that are available in the Kahama Municipality include postal services, telephones, private carriers and internet. Postal services that include handling of cargo and mail, money transfers, sale of postage stamps and Expedited Mail Services (EMS) are handled by the Tanzania Postal Corporation (TPC). Internet cafes and services are provided by Tanzania Telecommunication Company Limited (TTCL) and other private providers. There are three local radio stations namely Kahama FM, Divine FM and HUHESO FM radio. Telephone services are provided by TTCL, Tigo Tanzania Millicom International Cellular, Airtel, Vodacom, Halotel and Zantel. Some of the Municipality institutions are connected to the National Fiber Optic Network. The proposed project will have a positive impact on the telecommunication sector since there will be increased demand for communication especially during the operation phase.

4.7 Social Services

4.7.1 Health Sector

Provision of good health service is important element required for National development as it has been visualized from the council levels, poverty alleviation and other health development gains needed by all Tanzanians. To achieve this, the Government has emphasized on delivery of equitable and quality preventive, curative and rehabilitative health services at all levels. Provisions of health services in Kahama Municipal Council are still below the nation and international standards requirements. The council still has inadequate number of doctors, health infrastructure and facilities. Moreover, inadequate number of doctors limited provision of curative and preventive health services such as operations, professional assistance and advice, mother and child health facilities, diagnosis of illness due to shortage or lack of medical machines and equipment, to mention a few. This is evidenced by high rates of infant and child mortality as well as maternal mortality rate. However, health services can be improved through formulating incentives which will motivate doctors and other health workers to work in rural areas. One of the council's priorities is to construct dispensaries in every village and one health centre in every ward by both public just as guided by the national plans. Investors are highly invited to help both public and private sectors to adhere for increasing accessibility of health services to Kahama Municipal council's population.

4.7.2 Health Facilities

Kahama Municipal Council has a total number of 43 health facilities, including 2 hospitals, 5 health centers and 34 dispensaries and 2 clinics. The available health services are under ownership of the government, FBO, private and Parastastals. The number health workers provide services do attend both in and out patients of the entire population of the council and from outside the council (**Table 15**).

Table 15: In patient Top Ten Diseases/Diagnosis in KMC

S/N	Diagnosis	< 5 years		Diagnosis	5+ years	
		Admission	Death		Admission	Death
1	Normal deliveries	0	00	Normal Deliveries	99,711	223
2	Malaria severe	22,504	335	Malaria severe	55,321	661
3	Other diagnosis	2285	0	Other Diagnosis	33,090	00
4	Anemia	11,762	223	Anemia	11,590	223
5	Cardiovascular Disease	116	00	Cardiovascular Disease	22,813	22
6	Malaria Uncomplicated	6626	99	malaria uncomplicated	21,561	99
7	Pneumonia	11400	110	pneumonia	6668	44
8	Emergency surgical conditions	5564	0	emergency surgical condition	11,411	00
9	Diarrheal disease	11055	119	diarrhea disease	4412	77
10	Clinical AIDS	33	0	clinical AIDS	4456	113

Source: TMOs Office DHIS2 (2019)

HIV/AIDS and TB

The prevalence of HIV at Kahama Municipal Council is 4.8% and large burden of PLHIV 25,871 and among them 11,326 (43.8) are on ART (HMIS data 2017). Various efforts have been in place to combat HIV by government; which include increasing HIV testing sites, to expand Care and Treatment clinics and PMTCT sites to reach many people in need of the services, HIV Viral Load testing and test and treat program so that once your diagnosed and started on ARTs however support from other stakeholders is also necessary. The prevalence of TB is 528/100000 and total number of clients diagnose to have Tuberculosis was 644 among them TB/HIV clients was 294 (45%), Health facilities providing TB services within the council is 18 (HMIS 2018). During the implementation of the proposed project, the number of victims for HIV/AIDS is likely to increase due to immigration of people from different areas interacting with native people in Kahama.

4.7.3 Education Sector

This section deals with provision of education in the council as one of the basic human rights. The system of education as set by the Ministry of Education and Vocational Training is divided into

Pre- Primary, Primary and Secondary, Colleges and Universities and Vocational education. Ministry of Education and Vocational Training campaign is to have pre-primary school in every primary school. Theoretically, pre-primary education serves children aged five to six years (Ministry of Education and Culture, MOEC, 2006) although some children below age five attend pre-primary schools. The proposed project will not directly impact this project.

4.7.4 Primary Education

Primary education in Kahama Municipal Council comprises five sections namely; Statistics and Logistic, Academic, Adult Education, Special Needs Education as well as Cultural and sports section. Kahama MC primary education department has four centers for special needs education. The centers are divided into various units including visually impaired, hearing impaired, as well as dumb and albinism. The centers are located at Kahama, Nyasubi, Kishima A and Ubilimbi (**Table 16**).

Table 16: Centre for Special Needs

School	**No. of Centers**	**No. of pupils**		
		Boys	**Girls**	**Total**
KAHAMA	1	8	13	21
NYASUBI	1	13	7	20
KISHIMA A	1	7	4	11
UBILIMBI	1	3	2	5
Total	4	31	26	57

Source: Kahama Municipal Report (2019)

4.7.5 Number of Primary School and enrollment

Kahama Municipal Council has total of 113 whereby 80 being government primary schools and 32 private schools with a total of 94,654.00 of which 46,404 being boys and 48,250 being girls in government schools. While, in private schools the total enrollment is 6957 of which 3,594 being boys and 3,363 being girls. Also, in government pre-primary the total enrollment is 7,943 where by 3,885 being boys and 4,058 being girls. While, in private pre-primary school the total enrollment is 1,019 whereby 499 being boys and 520 being girls (**Table 17)**.

Table 17: Number of primary school and enrolment

Schools	**Total**	**Pre-Primary Enrollment**			**Primary Enrollment**			**Grand Total**		
		B	**G**	**T**	**B**	**G**	**T**	**B**	**G**	**T**
GOVERNMENT	72	3012	3075	6087	38644	40615	79259	41656	43690	85,346.00
PRIVATE	23	534	510	1044	4214	4050	8264	4748	4560	9,308.00
TOTAL	**95**	**3546**	**3585**	**7131**	**42858**	**44665**	**87523**	**46,404.00**	**48,250.00**	**94,654.00**

Source: KMC- Primary Education Department (2020)

4.7.6 Number of Secondary Schools

Kahama Municipal Council secondary school department has a total number of 35 secondary schools. 31 of the total secondary school available are ordinary level secondary schools (form I-IV), whereby 16 being government schools and 16 private schools. Also, KMC has 4 advanced secondary level (form 1-VI) 2 being government schools and 2 private schools (**Table 18**).

Table 18: Number of Secondary Schools in the Kahama Municipal Council

Level	**Government**	**Private**	**Total**
O – level (I-IV)	16	15	31
A – level (V-VI)	2	2	4
Total	18	17	35

Source: KMC-Secondary Education Department (2020)

4.8 Environmental Baseline Information

4.8.1 Sound Levels

Noise level measurement in the selected areas within the project site was done using Environment Test Meter, Model NO9AQ, 4 – in – 1 digital multifunction environment meter with measurement range of 35 to 130dB. The Sound level metre meets ANSI S1.4 type 2 standards and conforms to IEC 60651 type 2. Equipment accuracy is ±3.5 dB of reading. The metre was calibrated using electrical calibration with built-in oscillator (1 kHz sine wave). On taking measurements, the metre was set to the "A" weighed measurement scale, which enables the metre to respond in the same manner as the human ear. The "A" scale is applicable for workplace compliance testing, environmental measurement, and workplace design and law enforcement. The metre was held approximately 1.5 metres above the land and at least 0.5 metre away from hard reflecting surfaces such as walls. A set of five (5) readings were taken per point and the selection of individual testing points included areas where people were working and also ensured to capture the centre of noise source as shown in Table 19. The lowest and the highest values were recorded and then compared with local standards, Tanzania Bureau of Standards (TBS). The study took place on 31st December, 2022 between 09:30 am to 16:20 pm for proposed project areas in Kahama Municipality.

Table 19: Sound Levels Monitoring Data at the proposed Sango Market site

Date dd/mm/yy	**Location**	**Coordinates (Degrees)**	**Sound level (dBA)** (Accuracy ±3.5 at 94 dBA)		
			Lowest	**Highest**	**Average**
31.12.2022	Centre of the market	S03.832273 E32.617427	59.4	59.7	59.6
31.12.2022	Point A	S03.831340 E32.617715	54.2	54.8	54.5
31.12.2022	Point B	S03.832244 E32.616692	64.3	66.4	65.4
31.12.2022	Point C	S03.833125 E32.617372	46.6	48.2	47.4
31.12.2022	Point D (Entrance gate)	S03.833187 E32.617411	56.8	60.6	58.7

Tanzania Standards as per Tanzania Bureau of Standards (TBS) 70 dBA
IFC Noise level Guidelines for Industrial and commercial receptors 70 dB(A)[6]

Source: Consultant, 2022

4.8.2 Combustion Gaseous Emission Concentrations (Flue Gases)

There is no official record of secondary flue gas emission data due to non-availability of a regular flue gas emission monitoring program for flue gas conditions or emissions. The main sources of air pollutant emissions are from diffuse sources such as combustion of carbon-containing fuels in a limited oxygen gas supply. Air quality was measured under this project. The study took place on 31st December, 2022 between 11:30am to 16:20 pm for proposed project areas in Kahama Municipality. The samples were collected from onsite points of the project site by using Digital Gas Analyser HD4400. The present condition of the air quality is presented in Table 20 for the proposed site. From the test results, it is found that the site has no gaseous contaminants of all flue gases such as Sulphur dioxide (SO_2), Carbon monoxide (CO) and Nitrogen oxides (NO/NO_X). On the other hand, flue temperature content was far below air temperature and the atmospheric environmental standards for both the residential and industrial areas thus; were within acceptable Tanzania Bureau of Standards (TBS) limits. This Environmental and Social Impact Assessment (ESIA) used the Tanzanian standards TZS 845:2019(E) Air Quality – Specification[7] and this is one of the nine compulsory environmental standards developed by the Tanzania Bureau of Standards and collated in the National Environmental Standards Compendium. In general, the air quality standards contain the same tables of limit or guideline values as the regulations as shown in **Table 20**.

Table 20: Findings of Flue gases at the proposed Sango Market site

Date dd/mm/yy	**Sampling point**	**Coordinates**	**Flue Temperature (◦F)**	**Air Temperature (◦F)**	**O_2 (%)**	**CO ppm**	**NO Ppm**	**NO_X ppm**	**SO_2 ppm**	**Temperature Difference (◦F)**
31.12.2022	Centre of the market	S03.832273 E32.617427	82.40	86.20	20.80	0.00	0.00	1.05	0.00	-3.8
31.12.2022	Point A	S03.831340 E32.617715	82.60	90.00	20.80	0.00	0.00	1.05	0.00	-7.4
31.12.2022	Point B	S03.832244 E32.616692	80.60	91.80	20.80	0.00	0.00	1.05	0.00	-11.2
31.12.2022	Point C	S03.833125 E32.617372	82.40	91.90	20.80	0.00	0.00	1.05	0.00	-9.5
31.12.2022	Point D (Entrance gate)	S03.833187 E32.617411	80.60	89.10	20.80	0.00	0.00	1.05	0.00	-8.5
Tanzania Bureau of Standards (TBS) Limits			**-**	**-**	**-**	**0.01**	**0.00012**	**0.00012**	**0.0005**	

Source: Primary data/Consultant, 2022

[6] https://www.ifc.org/wps/wcm/connect/4a4db1c5-ee97-43ba-99dd-8b120b22ea32/1-7%252BNoise.pdf?MOD=AJPERES&CVID=ls4XYBw

[7] https://www.tbs.go.tz/uploads/files/list%20of%20compulsory%20tanzania%20standard%20as%20of%20september%202021.pdf

4.8.3 Temperature and Relative Humidity

Temperature and Relative Humidity measurements in the selected areas within the project site were done using Environment Test Meter, Model NO9AQ, 4 – in – 1 digital multifunction environment meter with measurement range of -20°C to +750°C (-4°F to +1382°F) for temperature and 25% to 95% Relative Humidity (RH). Equipment accuracy is ±3/3.5% reading ±2°C (at -20°C~+200°C) and ±5% RH (at 25°C, 35%~95% RH) for temperature and relative humidity respectively. The metre was calibrated using electrical calibration with built-in oscillator (1 kHz sine wave). On taking measurements, the metre was set to the "(Fahrenheit degree (◦F)" measurement scale for temperature and percentage for relative humidity, which enables the metre to respond in the same manner as the atmospheric conditions. These scales are applicable for workplace compliance testing, environmental measurement, and workplace design and law enforcement. The metre was held approximately 1.5 metres above the land and at least 5 metre away from hot objects. A set of five (5) readings were taken per point and the selection of individual testing points included areas where people were working and also ensured to capture the centre of project (**Table 21**). The values were recorded and then compared with meteorological data from Tanzania Meteorological Authority (TMA). The study took place on 31st December, 2022 between 11:30am to 16:20 pm for proposed project areas in Kahama Municipality.

Table 21: Temperature and Relative Humidity Monitoring Data at the proposed Sango Market site

Date dd/mm/yy	Location	Coordinates (Degrees)	Temperature (◦F)	Relative Humidity (%)
31.12.2022	Centre of the market	S03.832273 E32.617427	27.7	57.0
31.12.2022	Point A	S03.831340 E32.617715	28.5	50.5
31.12.2022	Point B	S03.832244 E32.616692	29.1	52.8
31.12.2022	Point C	S03.833125 E32.617372	30.0	47.5
31.12.2022	Point D (Entrance gate)	S03.833187 E32.617411	28.6	54.4

Source: Consultant, 2022

4.8.4 Ambient Air Quality

Ambient air quality was measured using a portable device known as Environment Air quality tester ECO-12. According to the standard Q31/0120000311C003-2018. Adoption of the independently sampled high quality sensors, which can be used to detect CO, NO_2 and CO_2 in ppm, PM_{10} in $\mu g/m^3$, $PM_{2.5}$ in $\mu g/m^3$, TVOC in mg/m^3, temperature and humidity in the environmental air. The study took place on 31st December, 2022 between 11:30am to 16:20 pm for proposed project areas in Kahama Municipality. The equipment was held 1.0m above the ground during measurement, in which reading were recorded at each point to represent the value of that particular point. The average measured concentration for $PM_{2.5}$ and PM_{10} found to range between 2 and 9 $\mu g/m^3$ and between 3 and 10 $\mu g/m^3$ respectively. Based on the results, the average $PM_{2.5}$ and PM_{10} concentrations measured at all stations were below the respective standards stipulated by TBS, WHO/IFS and Environmental Management (Air Quality Standards) Regulations, 2007 presented in **Table 22**. The average measured concentrations of Total Volatile Organic Compounds (TVOC), Carbon monoxide (CO) in ppm, Nitrogen dioxide (NO_2) in ppm and Carbon dioxide (CO_2). All

the measured parameters were within the stipulated guidelines, i.e., WHO/IFC ambient air quality guidelines and safe for human health and the surrounding environment. Based on the results, the project is expected to have an impact during its implementation.

Table 22: Average values of dust levels measured at the proposed Sango Market project site

Location	**Coordinates** (Degrees)	**Measured Dust Parameter**		**TVOC** (mg/m^3)	**NO_2** (ppm)	**CO_2** (ppm)	**CO** (ppm)
		$PM_{2.5}$	**PM_{10}**				
Centre of the market	S03.832273 E32.617427	9	10	0.15	0.0	313	0.0
Point A	S03.831340 E32.617715	3	4	0.14	0.0	282	0.0
Point B	S03.832244 E32.616692	5	6	0.12	0.1	291	0.0
Point C	S03.833125 E32.617372	2	3	0.14	0.2	273	0.0
Point D (Entrance gate)	S03.833187 E32.617411	4	4	0.13	0.15	316	0.0
The Environmental Management (Air Quality Standards) Regulations, 2007 and TBS Standards		**40**	**60 – 90**		**0.1 ppm for 8 hours of exposure**		**90 ppm for 15 minutes of exposure**
WHO/IFS Standards		**25 for 24 – hour mean**	**50 for 24 – hour mean**	**0.3 – 0.5**	**0.3 ppm for 30 minutes of exposure**	**400 - 1000**	**90 ppm for 15 minutes of exposure**

Source: Primary data/Consultant, 2022

4.8.5 Ground Vibrations

Ground vibrations were measured at 5 points of the proposed Sango Market project site that represented onsite and offsite receptors. The detached probe-type vibration meter model TA8663 was utilized to quantify the ground vibration in the study area. The meter has an accuracy of ±5% ±2 digits, acceleration of 1-199.9 m/s^2, a wide frequency ranges of 1 Hz to 15 kHz for capturing almost all possible vibrations for workplace assessments. This meter adopts piezoelectric effect of artificial polarized ceramic for design. It is suitable for monitoring all kinds of vibrating mechanical facilities, especially the vibration measurement of rotating and reciprocating machinery. Based on ground vibrations measurements collected, the average recorded level was 0.11 mm/s (**Table 23**). The proposed project has the potential to increase the ground vibration levels from its construction activities like movements of heavy equipment and trucks, etc., as well as during operation phase due to vehicle movement and other works in the proposed market.

Table 23: Ground vibration levels at the proposed Sango Market site

Location	**Coordinates** (Degrees)	**Ground vibrations** (mm/s)
Centre of the market	S03.832273 E32.617427	0.0
Point A	S03.831340 E32.617715	0.1
Point B	S03.832244 E32.616692	0.15
Point C	S03.833125 E32.617372	0.1
Point D (Entrance gate)	S03.833187 E32.617411	0.2
Average		0.11
Environmental Management (Standards for the Control of Noise and Vibrations Pollution) Regulations, 2015		**5 mm/s PPV at all times**

Source: Primary data/Consultant, 2022

4.8.6 Hydrology of the Proposed Sango Market

The hydrological and hydraulic studies were carried out for estimation of the design peak floods and provision of dimensions of the required hydraulic structures that will pass the floods flow safely across the Sango Market area.

The TRRL/ East African Flood Model was used to estimate the design flood flows across the study area. However, due to the limitation of the method to the size of catchment area, that has to be equal to $1km^2$or less than 200 km^2, the Rational method had to be used for catchments with smaller sizes less than $1km^2$.

The study area is basically drained with streams which may influence flooding at the location. The detailed delineation was done to identify the extent of draining streams in relation with their effect to the study area. The preliminary observation on drainage pattern of the area was indicated that there is a medium flow which comes to the study area and a proper mitigation to accommodate the flow should be addressed (see details in **Appendix VII**).

CHAPTER FIVE

STAKEHOLDER CONSULTATION

5.1 Introduction

In compliance to requirements of the Environmental Management Act of 2004 and its ESIA and Audit Regulations including the amendments, also the requirement of the World Bank Environmental and Social Framework specifically ESS10 and the subsequent tools such as the Stakeholder Engagement Plan (SEP), the team conducted stakeholder's consultation in January 2022 in Kahama Municipal Council. The stakeholders involved were surrounding communities, district authority, government institutions such as TARURA, utility companies such as TANESCO and KUWASA, people with disabilities, youth, women and other potentially affected community members. This chapter therefore details the issues raised by different stakeholders interviewed during the audit exercise.

5.1.1 Objectives of Stakeholders Consultations

The objectives of stakeholders Consultations for this proposed project were:

- share information about project components and proposed project activities with the community in the project areas, and also with relevant stakeholders.
- gather different viewpoints and opinions, and to understand the concerns and sensitivities of local authorities and communities on environmental problems in the proposed project site. Using this information, public concerns can be addressed in time, during project design and when selection between alternative solutions are made.
- perform a thorough and comprehensive evaluation of all environmental impacts and propose the most effective mitigation measures that exactly address the expected adverse environmental impacts of the project.

5.2 Methodology and Data Collected

Stakeholders' consultation was conducted simultaneously with the field work targeting the various groups of stakeholders (**Figures 19, 20, 21, 22 and 23)**. The process involved discussion with all interested and affected parties. During the exercise local community members in particular within a close proximity to the facility were consulted. Interviews, focus group discussions, physical visits and consultations were the main methods used in involving selected stakeholders. The comments were ranked based on the frequency and the action to each community reference to the action shall also be presented.

Figure 14: Stakeholders consultation in Sango market (Source: Consultant, 2022)

Figure 15: Meeting with the people with disabilities (Source: Consultant, 2022)

Figure 16: Meetings with leaders of Majengo and Mhongolo Wards (Source: Consultant, 2022)

Figure 17: Meeting with the local leaders and representatives Bodaboda, Bajaji and Tax drivers (Source: Consultant, 2022)

5.3 List of Stakeholders Consulted

Stakeholders' consultations were carried out to identify and respond to issues of concern to stakeholders. This process allowed the creation of a chain of communication between the project and the public. The stakeholders identified and consulted include

1. Kahama Municipal Council including the Municipal Director and the entire team (legal, community development, environment, physical planning, engineering)
2. Kahama Water and Sewerage Authority (KUWASA)
3. TANESCO, Kahama Office
4. TARURA, Kahama Office
5. Association of people with disabilities
6. Association of Traders in Sango market
7. Representatives of Sango Traders
8. Association of vendors at Sango market
9. Association of Mama Ntilie at Sango market
10. Office of the Mayor of Kahama Municipal Council
11. Nyasubi Ward office
12. Sango Street office

5.3.1 Stakeholders' Comments

The concerns of the stakeholders are presented in **Table 24**. Some of the concerns are related to designs while others are concerned about operation of the project.

Key issues raised by stakeholders were as summarized here under:

Stakeholders' categorization: It was suggested that all stakeholders should be visited and their recommendations and concern gathered to ensure that there are no complaints or grievance at later stage of project development. Issues of proof of ownership of land where these projects will be implemented was also emphasized to avoid conflicts over land ownership.

Designs to consider various climatic and social issues: It was suggested that designs of the proposed infrastructures should take into consideration various factors such as social issues concern especially those related to people with disabilities and climatic factors especially the hot seasons. People with disabilities requested that all the necessary features used by them and other disadvantaged group be included in order to make the roads user friendly for all groups. Vendors at the market emphasized the need to have open designs for the market due to hot weather.

Bus Stand and Market to accommodate all current users: Vendors and users of the bus stand as well as the market were concern about whether all current users of the bus stand and the market will be considered and able to return upon completion of construction activities. It was emphasized by users and vendors representatives that the design of the proposed facilities should consider returning all users and vendors who are currently occupying the facilities in order to avoid displacing other people.

Interaction between local communities and influx of labourers during construction should be monitored: Representatives of local communities are concerned about the impact which might be caused by the influx of labourers during construction which might lead to increased cases of violence, HIV/AIDS and social unrest. The representatives emphasized on the need for the Municipality and all other concerned stakeholders to ensure that contractors workers and labourers are well managed to avoid any cases of social unrest within the community.

Designs to consider energy use efficiency: The stakeholders are of the opinion that designs should incorporate the concept of sustainable energy. The design should ensure that energy used is minimized and other sources of renewable energy are considered. For example, use of natural lights (use of transparent roof sheets) can be used to minimize the use of electric bulbs. Rain water harvesting can also be considered to supplement water use during deficit period.

Table 24: List of Stakeholders consulted and their concerns / views

S/N	GROUP CONSULTED	ISSUES/CONCERNS	
1.	Kahama Municipal Council , Community Development,) - Anderson David Msumba (Municipal Director) - Clemence Mkusa (Municipal Urban Planning Officer) - Robert Kwela - Ibrahim Kuguru (Ag. Municipal Environmental Management Officer) - Flora K. Sangiwa (Municipal Planning Officer) - Enne Moses (Municipal Architect)	• There are title deeds for all the proposed project areas. • There are no conflicts or pending compensation issues. • The project is consistent with the masterplan/ town plan. • Local government leaders, residents and traders have been consulted and made aware of the proposed projects under TACTIC. • The proposed developments should be designed in a way that they are manageable and affordable by the Kahama residents especially the Sango Market. • Involvement and consideration of the needs of people with disabilities in the proposed projects. • The challenges and deficiencies with the current infrastructure design is inclusivity. The need for people with disabilities were not considered like putting wheelchair ramps in buildings. • Work force is available to help in the project implementation.	• Noted • Noted • Noted • Noted • The designs have been made taking that into consideration. • Taken into consideration. • The proponent will make sure that the proposed Sango market considers people with disabilities. • Noted
2.	Tanzania Rural and Urban Roads Agency (TARURA) - Eng. Joab Mutagwaba (District Manager)	• The proposed projects are known. • The project shall have a positive impact to the community of Kahama by increasing road length and accessibility thus reducing unnecessary congestions and the constructed drainage will remove flooding nuisance.	• Noted • Positive

S/N	GROUP CONSULTED	ISSUES/CONCERNS	
		• If there will be no proper destination/disposal point of storm water, the proposed drainage construction will have a negative impact. Hence, there is a need to have a reliable destination/ end point of the storm water in drainage to avoid stagnation and flooding to people's homes. • The Municipal Council, contractor and consultants should cooperate with TARURA to ensure a smooth undertaking of the projects and the office is ready to offer a helping hand and their views.	• The proponent with the designing team shall ensure that a proper destination for stormwater drainage is selected. • The proponent will make sure of that.
3.	Tanzania Electric Supply Company Ltd (TANESCO) -Said Hamad (District Operations Engineer)	• The project is known. the PIU consulted the office to let them know of the proposed projects. • The PIU consulted the office to let them know of the proposed projects and TANESCO gave them the utilities layout. • The project is likely to affect their infrastructure because there are some areas where they will be required to remove the polls and wires to give way for construction to take place. The PIU will have to notify TANESCO by letter if there will be a need for relocating utilities that may be impacted by the project and provide necessary costs for the relocation.	• Noted • Noted • The proponent shall liaise with TANESCO in case there is any relocation required and make sure that it is done accordingly and not affect the customers for a long time unnecessarily.
4.	Kahama Urban Water Supply and Sewerage Authority (KUWASA) -Josephat John (Ag. PCE)	• They are aware of the project. • The project shall have a temporary impact on the water utilities if there will be a need for relocation and it can cause losses if there will be no communication between the PIU and KUWASA.	• Noted • The proponent will communicate with KUWASA where relocation will be required and cover for such costs.

S/N	GROUP CONSULTED	ISSUES/CONCERNS	
		• The PIU shall notify KUWASA if utilities in some areas may require relocation and the budget shall be provided for the task to enable the process and smooth undertaking of the project. • The PIU needs to consult KUWASA prior construction to know of the water supply network where the project will cover and if they can be affected and what should be done.	• Upheld. • The proponent will make sure of that.
5.	People with disabilities - Mbwana Karata (Vice Chairperson – CHAWATA) - Marco Kanjiwa (Chairperson – SHIVYAWATA)	• They are aware of the project. • Storm water drainage should be covered. • The proposed buildings should have wheelchair ramps for easy access. • Important signs, there should be a translator for the deaf, Braille/tactile system for the blind in buildings and roads to render easy use for them. • Make available space/frames for the PwDs to carryout businesses. Space for their bajaj for business and shops. • Consider the participation of PwDs in the project through providing employment opportunities whether temporary or permanent for the works they can perform.	• Noted • To be considered. • The design will incorporate that. • To be taken into consideration. • The proponent shall consider that. • The proponent will make sure that equal opportunity is given to PwDs as much as normal people.
6.	Local Government Leaders (Nyasubi Ward and Mtaa leaders) - Abel Shija (Councilor) - Innocent Kapere (WEO) - Herither G. Makaga (Councilor – special seat)	• The project is well known. • The land is owned by the government and there are no pending compensation issues/conflicts. • The design of market should be sustainable and easily manageable by the Nyasubi people.	• Noted • Noted • The buildings are designed in a way that they can easily be maintained.

S/N	GROUP CONSULTED	ISSUES/CONCERNS	
	- Sozy M. Mabula (MEO Sango)	• There is available space for temporary relocation of the current market traders to give way for the implementation of the project. • There are some cases of GBV and Sexual harassment in the area like business women being undermined and abused as well as not getting paid on time.	• Noted. • The proponent shall ensure that these are avoided/reduced and/or properly managed during project implementation.
7.	Market administration - Jovenary Deus (Chaiperson) - Prisca Masana (Secretary) - Bakari Abdallah (Accountant)	• The market administration is aware of the project and ready to cooperate with the PIU to ensure smooth implementation. • The market should be designed in such a way that each product/business has its own space for example a space for fish vendors, fruit vendors, food vendors and the like. • The area is prone to floods hence needs to be designed in a way that when it rains the market is not affected. • There needs to be proper stormwater drainage and sewerage systems. • The toilets need to be well designed to accommodate needs of all types of people (considering gender, age and people with special needs/PwDs). • The Park floors and pavements should be well designed and constructed by using good and sustainable materials suitable for the area. • There need to be offices for the market administration and business associations.	• Positive • The designs have incorporated that. • The designs have taken that into consideration hence the proposed market will be flood resilient. • That is incorporated in the designs. • The toilets are designed in a way that they have considered inclusion. • The proponent shall make sure of that. • They will be there.

S/N	GROUP CONSULTED	ISSUES/CONCERNS	
8.	Representatives of traders and vendors and the residents/users/customers of the market (See **Appendix III**)	• They are all aware of the market upgrading project. • They were consulted by their local government leaders and market administration. • Their major fear is the possibility of the current businesses and the traders being prioritized after the upgrade. • There needs to be a space for receiving luggage/bulk products for the traders. • They are ready to offer man-power if given the opportunity. • There needs to be enough parking space to accommodate the needs of the market. • If it will be a storey building, it should be designed in a way that everyone can access, putting into consideration people with disabilities and should be well ventilated (not closed). • There should be lights in the market for security. • There should be a police station to regulate safety and security and stop crimes in the market and nearby areas. • There should be health care service providers such as dispensary and pharmacies. • There should be a proper water supply systems and services in the market. • There should be a proper firefighting system in the market.	• Noted • Noted • The proponent will ensure the traders are given priority as market occupancy once the construction is completed. • It will be available. • Positive. • It is considered. • Considered in the designs. • Considered. • To be taken into consideration. • They will be available since they are important. • The proponent will make sure of that. • The proponent shall ensure the market is safe and has a proper firefighting system.

CHAPTER SIX

IMPACT ASSESSMENT AND EVALUATION

6.1 Environmental and Social Risk Classification of the project as per the World Bank ESF

Environmental and social risks are rated as Substantial due to environmental and social impacts likely to be caused by project activities. The main impacts of the proposed projects will emanate from the physical construction activities. No major land use change is expected because these activities will be implemented within the Kahama Municipal Council in existing land uses. Kahama Municipal Council already have a master plan therefore this project will finance implementation of activities which are already pre-determined within their areas. The cumulative impact of the works and presence of contractors and machinery on the project sites is unknown at the moment, but careful supervision will be needed to avoid accidents, loss of cultural assets and potential conflicts with local communities. Other potential impacts are related to (i) waste generated at construction sites which can pollute land and water bodies (cement mixing areas, metal, wood and paint residues, diesel, used electronics equipment and other residues); open pits in the soil can cause accidents; (ii) food residues can attract disease causing organisms; (iii) cutting of trees to use as building material (although this will not be allowed and construction materials will be supplied with the authorized vendor); (iv) road accidents; amongst others.

Review of designs and architectural drawings will include E&S aspects in order to increase safety and reduce negative environmental effects and increase sustainability of the works, which will require strong willingness by the Kahama Municipal Council and the PORALG to implement the changes in case the proposed mitigation measures need significant changes. Safety aspects specially to deal with the impacts of earth quakes are important to be considered and quality assurance guaranteed. Other potential environmental and social risks and their mitigation measures are elaborated in the relevant section of the appraisal summary. This ESMF for TACTIC project provides for initial risk assessment and classification based on the available documentation and data. Implementation of the project activities will be positive and urgently needed.

6.2 Impact Assessment

Identification of impacts was followed by prediction or estimation of the magnitude, extent and duration of the impact in comparison with the situation without the project. The matrix method was used (**Table 28**). To be able to predict whether impacts are likely to occur as well as their scale, the initial reference or baseline data prior to the project was determined, and the future changes forecasted with or without the proposed project. The impact

evaluation was based on experts' knowledge as well as checklists. The significance of impacts was tested using the following criteria:

i. The magnitude and likelihood of the impact and its spatial and temporal extent;
ii. The likely degree of recovery of the affected environment;
iii. The value of the affected environment;
iv. The level of public concern; and
v. Extensiveness over space and time (magnitude);
vi. Intensiveness in concentration or in proportion to assimilative capacity;
vii. Exceedance of environmental standards or thresholds;
viii. Level of compliance with environmental policies, land use plans, sustainability strategy;
ix. Level of adversity and seriousness in affecting ecologically sensitive areas;
x. Level of adversity and seriousness in affecting heritage resources, other land uses; communities and/or indigenous peoples, traditions and values.

The impacts were further rated at a scale of "–3" to "+3" through "0" in the following manner;

Table 25: Scales of impacts

+3	High positive impacts
+2	Moderate positive impacts
+1	Minor positive impact
0	No impacts
-1	Minor negative impact
-2	Moderate negative impacts
-3	High negative impacts-

The team focused on significant positive and negative impacts that were rated -2, -3 and proposed mitigation measures.

6.3 Impact Rating Criteria

Seven criteria were used to determine the significance of the impacts in the Matrix, these include

- **Spatial Scale-**The spatial dimension encompasses the geographical spread of the impacts regardless of whether they are short term or long term. **Table 26** describes the ratings used in the Simple Matrix as far as spatial scale is concerned.

Table 26: Spatial Rating

International (I)	Trans-boundary
National (N)	Within country
Regional (R)	Within Region
Local (L)	On and adjacent to site

- **Temporal Scale**-Temporal boundaries refer to the lifespan of impacts. **Table 27** describes the ratings used in the Simple Matrix.

Table 27: Temporal Rating

Short-Term (ST)	during construction
Medium-Term (MT)	Life of project
Long –Term (LT)	Residual impacts beyond life of project

- **Phase-** During which phase of the construction is the impact likely to occur. The phases included Mobilization, Construction, Demobilization and Operation.

- **Reversibility of the impact-** Every impact was checked if its effect can be reversed or not. Letter R was used to denote reversible impacts while IR was used to denote Irreversible impacts

- **Cumulative Impacts-** These are impacts that cause changes to the environment that are caused by an action in combination with other past, present and future human actions.

- **Residual Impacts-** These are long term impacts which go beyond the lifetime of the project.

Table 28: Impact Correlation Matrix for the proposed construction

S/N	Impact	Project activities and phase														Impact Rating				
		Construction/Mobilization/Demobilization phase					Operation Phase							Decommissioning phase						
		Site clearance and demolition	Transportation of materials	Trench excavations and casting of foundation	Construction of the superstructure and installation of services	Landscape activities	Running the Buildings	Liquid waste handling	Solid waste handling	Energy provision	Maintenance works	Presence of Auxiliary	Water provision	Demolition of structures	Removal of solid wastes	Termination of Temporary employment	Spatial Scale	Temporal Scale	Reversibility	Cumulative Effects	Residual Impact
1.	Job Creation and employment opportunities	+1	+1	+3	+3	+2	+2	+1	+1	0	+1	+1	0	+2	+1	+1	R	LT	R	✓	
2.	Increased market opportunities and sources of income	0	0	0	0	0	+3	0	0	0	0	0	0	0	0	0	R	MT	R	✓	
3.	Increased Revenues to local authorities				+2		+3	0	0	0	0	0	0	0	0	0	N	MT		✓	

S/N	Impact	Project activities and phase															Impact Rating				
		Construction/Mobilization/Demobilization phase					Operation Phase							Decommissioning phase							
		Site clearance and demolition	Transportation of materials	Trench excavations and casting of foundation	Construction of the superstructure and installation of services	Landscape activities	Running the Buildings	Liquid waste handling	Solid waste handling	Energy provision	Maintenance works	Presence of Auxiliary	Water provision	Demolition of structures	Removal of solid wastes	Termination of Temporary employment	Spatial Scale	Temporal Scale	Reversibility	Cumulative Effects	Residual Impact
4.	Increased level of crimes	0	0	0	-2		-2	0	0	0	0	0	0	0	0	0	L	LT	R	✓	
5.	Prevalence of Communicable diseases	0	0	0	-2		-2	0	0	0	0	0	0	0	0	0	L	LT	R	✓	
6.	Exploitation of borrow pits/quarries and other natural resources	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	L	ST	R	✓	
7.	Disadvantages related to the management of solid wastes from demolition	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	L	ST	IR		

S/N	Impact	Project activities and phase														Impact Rating				
		Construction/Mobilization/Demobilization phase					Operation Phase							Decommissioning phase						
		Site clearance and demolition	Transportation of materials	Trench excavations and casting of foundation	Construction of the superstructure and installation of services	Landscape activities	Running the Buildings	Liquid waste handling	Solid waste handling	Energy provision	Maintenance works	Presence of Auxiliary	Water provision	Demolition of structures	Removal of solid wastes	Termination of Temporary employment	Spatial Scale	Temporal Scale	Reversibility	Cumulative Effects	Residual Impact
8.	Income to local suppliers and service providers	0	0	0	+3		+3	0	0	0	0	0	0	0	0	0	R	L T	R		
9.	Increased skills and impart knowledge to local communities	0	0	0	+2	0	0	0	0	0	0	0	0	0	0	0	R	L T	IR		
10.	Occupational Safety and Health Impacts	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	L	L T	R		

S/N	Impact	Project activities and phase														Impact Rating				
		Construction/Mobilization/Demobilization phase					Operation Phase							Decommissioning phase						
		Site clearance and demolition	Transportation of materials	Trench excavations and casting of foundation	Construction of the superstructure and installation of services	Landscape activities	Running the Buildings	Liquid waste handling	Solid waste handling	Energy provision	Maintenance works	Presence of Auxiliary	Water provision	Demolition of structures	Removal of solid wastes	Termination of Temporary employment	Spatial Scale	Temporal Scale	Reversibility	Cumulative Effects	Residual Impact
11.	Impacts on Community Health, Safety and Security due to traffic congestion	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	L	ST	IR		
12.	Gender discrimination	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	L	ST	IR		
13.	Child labor	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	L	ST	IR		
14.	Impairment of air quality due to dust	-1	-2	-2	-2	-1	0	0	0	0	0	0	0	-2	-1	0	0	0	0	0	
15.	Dust and Noise pollution	-2	-2	-2	-2	-1	-1	0	0	0	-1	-1	0	-2	-1	0	L	ST	R		

S/N	Impact	Project activities and phase														Impact Rating				
		Construction/Mobilization/Demobilization phase					Operation Phase							Decommissioning phase						
		Site clearance and demolition	Transportation of materials	Trench excavations and casting of foundation	Construction of the superstructure and installation of services	Landscape activities	Running the Buildings	Liquid waste handling	Solid waste handling	Energy provision	Maintenance works	Presence of Auxiliary	Water provision	Demolition of structures	Removal of solid wastes	Termination of Temporary employment	Spatial Scale	Temporal Scale	Reversibility	Cumulative Effects	Residual Impact
16.	Waste water management problems	0	0	-1	-3	-1	-3	0	0	0	0	0	0	0		0	L	LT	R	✓	
17.	Erosion of Exposed Surfaces	-1	-1	-1	-1	-1	-2	0	0	0	0	0	0	0	0	0	L	ST	R	✓	
18.	Solid waste management problems	-2	0	-2	-3	-2	-3	0	0	0	-1	-2	0	0	0	0	0	ST	R	✓	
19.	Loss of vegetation	-2	0	-1	-2	-1	0	0	0	0	0	0	0	0	0	0	L	LT	R		
20.	Construction vibration	-1	-1	-1	-2	-1	0	0	0	0	0	0	0	0	0	0	L	ST	IR		
21.	Increased revenue	0	0	0	+1	0	+3	0	0	0	0	0	0	0	0	0	N	LT	R	✓	

S/N	Impact	Project activities and phase														Impact Rating				
		Construction/Mobilization/Demobilization phase					Operation Phase							Decommissioning phase						
		Site clearance and demolition	Transportation of materials	Trench excavations and casting of foundation	Construction of the superstructure and installation of services	Landscape activities	Running the Buildings	Liquid waste handling	Solid waste handling	Energy provision	Maintenance works	Presence of Auxiliary	Water provision	Demolition of structures	Removal of solid wastes	Termination of Temporary employment	Spatial Scale	Temporal Scale	Reversibility	Cumulative Effects	Residual Impact
22.	Increased commercial and social activities around project locations.	0	0	0	0	0	+3	0	0	0	0	0	0	0	0	0	L	LT	R	✓	
23.	Increased pressure on social services and utilities	0	0	-1	-1	0	-3	-3	-3	-3	-1	-2	-3	0	0	0	L	MT	R	✓	
24.	Health and safety risks due to fire hazards	0	0	0	0	0	-2	0	0	-2	0	0	0	0	0	0	L	LT	R		
25.	Incidence of Diseases	0	0	0	-2	0	-2	0	0	0	0	0	0	0	0	0	L	LT	R		
26.	Water pollution	0	0	0	-1	0	-2	-2	-1	0	0	0	0	0	0	0	L	LT	R		

S/N	Impact	Project activities and phase														Impact Rating				
		Construction/Mobilization/Demobilization phase					Operation Phase							Decommissioning phase						
		Site clearance and demolition	Transportation of materials	Trench excavations and casting of foundation	Construction of the superstructure and installation of services	Landscape activities	Running the Buildings	Liquid waste handling	Solid waste handling	Energy provision	Maintenance works	Presence of Auxiliary	Water provision	Demolition of structures	Removal of solid wastes	Termination of Temporary employment	Spatial Scale	Temporal Scale	Reversibility	Cumulative Effects	Residual Impact
27.	Increased storm water generation and overflow	0	0	0	-2		-2	0	0	0	0	0	0	0	0	0	L	LT	R		
28.	Loss of employment and revenues	0	0	0	0	0	0	0	0	0	0	0	0	-3	-2		L	LT	IR		
29.	Population Influx	0	0	0	-1	0	0	0	0	0	-1	0	0	0	0	0	L	ST	IR		
30.	Loss of scenic quality	-2	0	0	-1	0	-1	0	0	0	0	0	0	-2	0	0	L	MT	R		
31.	Loss of aesthetic value due to haphazard disposal of demolished waste	0	0	0	0	0	0	0	0	0	0	0	0	-3	-2	0	0	0	0		

S/N	Impact	Project activities and phase														Impact Rating				
		Construction/Mobilization/Demobilization phase					Operation Phase							Decommissioning phase						
		Site clearance and demolition	Transportation of materials	Trench excavations and casting of foundation	Construction of the superstructure and installation of services	Landscape activities	Running the Buildings	Liquid waste handling	Solid waste handling	Energy provision	Maintenance works	Presence of Auxiliary	Water provision	Demolition of structures	Removal of solid wastes	Termination of Temporary employment	Spatial Scale	Temporal Scale	Reversibility	Cumulative Effects	Residual Impact
32.	Dust and noise pollution from demolishing works	0	0	0	0	0	0	0	0	0	0	0	0	-3	-2		L	ST	IR		
33.	Loss of revenue to KMC and the government	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	N	LT	IR		

6.4 Project Alternatives

Consideration of project alternatives is crucial in ensuring that the developer and decision-makers have a wider base from which they can choose the most appropriate option. The following alternatives have been considered and are examined hereunder:

6.4.1 No project Alternative

The no project alternative entails retaining the current status quo (No construction of the proposed office building). Adopting this option would mean avoiding most of the negative effects associated with the presence of the Sango Market and missing all the positive benefits such as Benefits to communities resulting from employment, Improved health and hygiene, Increased Income to KMC etc.

6.4.2 Alternative Site

The option of using another site apart from that of the proposed one (existing) was also considered. However, the Proposed site was observed to have the following advantages over others;

- The site is owned by KMC, (No need to buy a new piece of land).
- It is currently used for the same purpose, so customers are used to it
- The plot is located on a favourable piece of land; it is at the CBD area.
- Availability of all necessary utilities such as electricity and water supply network
- Good road network, shall make it easily accessible

6.4.3 Energy Alternative

The use of other alternative energy sources apart from power from the National grid and diesel generators were considered. As it is the case in most of developing countries, supply of electricity from national grids is not reliable as it mostly originates from hydroelectric power generators, which depend on rainfall frequency, intensity and pattern. On the other hand, diesel generators which are mainly used during power interruptions, emit a lot of greenhouse gases especially when they are run for a long time. Solar energy was considered and the design team shall explore the feasibility of using this alternative.

6.4.4 Technology and Building Materials Alternatives

Construction technology involves the choice of building materials and the technique and means used to erect a building. As with the market design process, cautious consideration of contextual conditions is crucial to developing appropriate construction technologies. In addition, any selected technology must be constantly reviewed and, if necessary, upgraded during the construction process. A number of construction technologies were considered. The following criteria was used to select the most suitable technology options for this building;

- The use of locally available, low-energy-consumption building materials, especially those produced with renewable energy sources;
- The use materials from sustainable production chains (e.g., avoid use of timber from savage deforestation);
- The use non-toxic materials; and
- The use materials easily dismantled (and recyclable as building materials or energy sources).

6.4.5 Collection, Treatment and disposal of Sewage

Two alternatives was considered for wastewater collection and disposal which includes the use of offsite sanitation or onsite sanitation. Onsite sanitation includes treatment and disposal of liquid wastes on site (i.e., Septic tanks etc) while offsite sanitation means collection of wastewaters from the site for treatment and disposal outside of the site (i.e., Sewerage system). The off-site sanitation (sewerage) was disqualified due to the following reasons;

- There is no sewerage system near the project area

It is very costly to construct a sewerage system and wastewater treatment plant

CHAPTER SEVEN

POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND THEIR MITIGATION MEASURES

7.1 Introduction

Takes into account all relevant environmental and social risks and impacts of the project. This will include the environmental and social risks and impacts specifically identified in ESS2-8, and any other environmental and social risks and impacts arising as a consequence of the specific nature and context of the project, including the risks and impacts identified in ESS1, paragraph 28.

7.2 Potential Social Impacts during the Preparatory Phase of Sango market

7.2.1 Positive social impacts

Job Creation and Increased Income to Local Communities

During this phase people shall be employed by the contractor to do mobilization works such as construction of camp sites, quarrying and material extraction and transportation activities. This shall increase the income to all those who have the opportunity to be employed by the contractor.

7.2.2 Negative Social Impacts

Disruption of Economic and Social Activities and Services

The proposed project areas might be used by people for cultivation, livestock keeping and beekeeping, to mention few. Land acquisition for the proposed project will force people to find other areas to get similar services.

Mitigation measures

- Awareness rising to community within the project core area; and
- Inclusion of local leaders (Ward/sub-ward chairpersons/executive officers or /and councilors.
- Development of RAP as per RPF including livelihood restoration measures.

Damage to Cultural Heritage

Inappropriate siting of facilities as well as construction (excavation) activities could result in damage to cultural heritage. While internationally and nationally protected sites are well documented and can be avoided this may not be the case with locally important sites.

Mitigation measures

- Implementation of the chance finds procedure as per the WB guides
- Screening of potential construction sites to identify cultural heritage.
- Engagement with local leaders and communities to understand the location of locally important cultural heritage (as part of screening).

7.3 Potential Environmental Impacts during the Preparatory Phase (Site Selection and Design)

7.3.1 Negative environmental impacts

Exploitation of Borrow Pits/Quarries and Other Natural Resources

Extractions of water, construction materials from both authorized borrow pits and quarries on government land, communal land and on private-owned land are associated with rampant degradation with no efforts of restoration/re-vegetation.

Mitigation measures

- Exploitation of construction materials will be from the authorized source only;
- Restoration of the borrow pits/quarries after use constituting levelling the area and seeding or planting of trees and/or grasses will be done in association with local government (natural resources department) and local environmental NGOs. If appropriate the levelled area will be left for natural re-vegetation;
- Re-use of the excavated soils and demolition rubbles as part of the sub-base material;
- Construction of underground water reserve tank and introducing rainwater harvest system; and
- Extraction of underground water resources.

Contamination and /Impaired Quality of Receiving Body – Land and Water

Main sources of construction waste are cleared vegetation and top-soil (overburden) and domestic waste from quarries. During quarrying activities, various type of wastes will be generated including solid and liquid wastes. The wastes may contaminate land or be washed into local surface and ground water resources and impair the quality of these receiving bodies.

Mitigation measures

- Efficient collection and disposal system based on the principles of reduction, re-use and recycling of materials, shall be instituted at project areas;
- To reduce the cost of the project, much of the excavated soil and rubble materials will be reused as initial filling materials where levelling of runway, taxiway and apron is required;
- Introduction of waste disposal bins, warning notices, posted at strategic points;
- No, on site burial or open burning of solid waste shall be permitted;
- Wastes not suitable for incinerations and general municipal waste damping (e.g. Batteries, plastics, rubbers and tyres) shall be removed for recycling, treatment, and/or disposal by licensed contractor as appropriate; and
- Instructions to contractor to put on his/her methodologies for handling hazardous waste such as oils, lubricants and non-combustible waste during bidding process.

7.4 Potential Social Impacts During Construction Phase

7.4.1 Positive Social Impacts

Jobs Creation

The construction activities will be envisaged to create more employment opportunities to local people. The project components expect to employ many workers from the locality and it is expected that more jobs will be directly connected with construction of the infrastructure.

Enhancement measures

- As part of the bidding requirements the contractor shall be encouraged to employ local, unemployed yet willing to work hard, manpower to the extent viable subject to a maximum of 50% unskilled labour. This will ensure that local people are more benefited out of the project;
- Employment will be on the basis of non-discrimination / equal opportunities for both genders as well as free of other forms of discrimination on the basis of individual characteristics;
- Contractor shall provide on job skills and training to workers; and
- Local communities shall be encouraged by the APIUs to produce quality goods and services at the project site through early engagement of likely requirements.

Income to Local Suppliers and Service Providers

The proposed project will need construction materials and other services in respective project region. Materials needed for this project is very large. This is good news to suppliers of building materials as well as those who will provide food and waste collection services.

Enhancement measures

- Ensure monitoring of labour standards among contractors, sub-contractors, workers and service providers; and
- Kahama Municipal Council to design appropriate means of collecting revenues.

Impacts on Knowledge

Whilst the operations related to constructions of concrete structures and installation of electrical wiring system and equipment are well known to local experts, the equipment and technology might be new to most practicing local engineers and consultants. The project activities will therefore benefit local experts in updating their knowledge and have opportunity for practical learning by participating in the whole process.

Enhancement measures

- Contractor shall provide on job skills and training.

7.4.2 Potential Negative Social Impacts during Construction

Occupational Safety and Health Impacts

On a daily basis, construction workers face dangerous employment conditions. Even though construction workers are trained and know basic safety measures, accidents can still happen. The risks taken every day during regular construction work make it difficult for job sites to remain accident-free. Accidents on site could be caused by defective or collapsing scaffold, electrocutions, falls, falls from ladders, and defective machinery such as forklifts, conveyors, hoists, cranes, malfunctioning tools and other equipment. Accidents can result in serious injuries or death. In case, construction is extensive, the potential significance of the risk to health and public safety will depend on the size of the population and the workers exposed and the degree of exposure. Workers permanently on the site will be exposed to air pollution throughout the construction period. Work accidents during construction work are quite common. This is due to the presence and handling of hazardous equipment and harmful building materials. It is therefore required that before the construction activities, there is need for the materials to be well inspected and harmonized to the occupational health and safety standards.

Mitigation measures

- Appropriate working gear (such as nose, ear mask and clothing) and good construction site management shall be provided by the contractor;
- Adequate training of contractors' workers on OHS and on proper use of PPE will be provided including but not limited to induction, tool-box talks (daily or weekly depending on activities) and 6 months refresher training sessions.
- During construction the contractor shall ensure that the construction site is fenced and hygienically kept with adequate provision of facilities including waste disposal receptacles, sewage, firefighting and clean and safe water supply;
- A well-stocked First Aid kit (administered by medical personnel) shall be maintained at construction site by the contractor. The medical personnel shall also be responsible for primary treatment of ailments and other minor medical cases as well as providing some health education to the workforce;
- Reporting mechanisms for the public to register concerns or complaints regarding perceived risks to their health and safety due to the construction operation;
- Developing a detailed health and safety plan and training all contractor staff on the plan.
- Emergency contact details in the event of an accident shall be provided by workers to the contractor.

Labour and Working Conditions

Contracted workers and those employed in the supply chain are at risk of being subjected to poor labour practices by their employers this may include lack of contracts, irregular pay, working long hours, lack of breaks etc. In addition, the use of child labour in the supply chain (e.g. the production of gravel is known to occur in Tanzania and will be avoided. Women are also at risk of being discriminated against in terms of employment opportunities by contractors. There is also a risk of sexual exploitation of women by their employers/ contractors which could include demands for sexual activities in exchange for recruitment, keeping their job etc by male supervisors.

Due to technological developments and investment in labour saving equipment, the skilled and non-skilled workforce will be needed. The skilled construction workers will be imported to the area of construction and will reside in labour camps. A smaller number of local low-skilled jobs may be envisaged. These will include protection and guarding of the construction companies' properties. Low skilled workers will be hired around the project jurisdiction if necessary. Labour camps will be the responsibility of the contractor under the supervision of the consultant and APIUs. In order to ensure that the labour camps comply with the national law and ESS4 contractors will be required to prepare camp management plans as well as codes of conduct for workers and compliance will be mandatory for all workers. Other measures for the protection of and operation of the workers camp will be as narrated in ESS2 as described in this ESMF and subsequent LMP.

Mitigation measures

- The project will develop Labour Management Procedures to guide the employment of all workers.
- Contractors will be required as part of the bidding documents to develop camp management plans and codes of conduct for workers,
- The contractor shall be encouraged to employ local, unemployed yet willing to work hard, manpower to the extent viable subject to a maximum of 50% unskilled labour. This will ensure that local people are more benefited out of the project;
- All workers will have contracts with terms and conditions that are consistent with national labour laws and policies as well as ESS2.
- Workers will have access to a specific worker grievance mechanism in line with ESS2, which will be documented in the LMP.
- Contractors will be required to apply equal opportunities/ non-discrimination to the employment of workers and not discriminate on the basis of gender or any other personal characteristics.
- Contractors will be required to ensure that no children are employed on the site and have in place measures to verify the age of workers. Child under 14 are prohibited from working while children aged 14-18 can only take on light work (which generally excludes work on construction sites).
- All workers must have an employment contract, be paid for their work and have the right to resign if they wish. Forced labour will be explicitly prohibited.
- Selection of companies in the supply chain will involve due diligence to avoid the use of companies which are involved in child labour.
- The project will develop a GBV Action Plan which will include prevention and response measures. This will include codes of conduct, training and capacity building, awareness raising, access to referral pathways etc.

Community Safety – Social Conflict

It is expected that the increased number of workers and higher concentration of residents near construction sites will have an impact on local communities. Uncontrolled movement of workers will affect residents around the settlements. Also, the construction of the project shall definitely be accompanied by in-migration of job seekers and opportunistic businesses and speculators. This will bring many people in the project areas. This will increase social interactions amongst the construction workers and local communities. The presence of workers increases the risk of

SEA/SH (GBV) towards members of the community in particular female students who may be present on campus. Such risks are known to occur on construction projects.

Entry of a temporary labour force into an area could cause different negative impacts to the local communities including conflicts between local community members and newly arrived people due to the socio-cultural differences and other issues. The situation when temporary workers come from other regions and they are from different social and cultural backgrounds could easily create conflicts with the local social environment. Due to this, workers must receive training and sign a labour code of conduct (Annex V), in order not to create conflicts with the local community.

Influx of temporary workers may have a potential increase in crime in the community. This may be experienced during the construction period if mitigation measures are not introduced. With an increase in construction activities and the possibility of job seekers arriving, it may be more difficult to identify strangers in the community. There may also be negative issues that need to be managed such as increases in local prices, increased rents, prostitution or alcohol consumption associated with labour influx or increased incomes of local workers. It is expected that contractors will hire staff to provide security for their camps and other properties. Increased presence of security personal can lead to community health and safety risks associated with any inappropriate use of force, GBV(SEA/SH) and intimidation of the community.

Mitigation Measures

- Maintain good security in the area with signage like "No employment at the moment", to keep away job seeker to avoid unnecessary people in project sites
- Local workers will be hired to the extent possible to minimize influx
- Workers will be required to sign worker codes of conduct.
- Contractors will need as part of their C-ESMP to include camp management requirements
- Ongoing engagement with local stakeholders including relevant authorities on construction activities
- Ensure that all stakeholders are aware of the grievance redress mechanism and have access to the same.
- GBV Action Plan will be developed to prevent and respond to project related GBV risks associated with the community.
- The PIU will ensure that contractor (i) make reasonable inquiries to verify that the direct or contracted workers retained to provide security are not implicated in past abuses; (ii) train them adequately (or determine that they are properly trained) in the use of force, and appropriate conduct toward workers and affected communities; and (iii) require them to act within the applicable laws of Tanzania.

Community Health – Communicable Disease Transmission

The construction of the project shall definitely be accompanied by in-migration of job seekers and opportunistic businesses and speculators. This will increase social interactions amongst the construction workers and local communities. The presence of a large number of workers can give rise to an increased spread of communicable diseases. This among other factors may also produce an inherent increased risk of transmission of sexually transmitted diseases, HIV/AIDS and other contagious diseases taking into consideration that the project will be implemented within the municipal council. In addition, the increase in disease like COVID-19 associated with the entry of a temporary labour force into community could also occur.

Mitigation measures

- In order to prevent more HIV/AIDS infection, during the implementation phase, the project shall include information education and communication component (IEC) for workers and the community in its budget. This will help to raise more awareness on HIV/AIDS and means to suppress its incidence.
- The contractor shall deploy locally available labour as practically possible
- A safety, health and environment induction training shall be conducted to all workers, putting more emphasis on HIV/AIDS and communicable diseases.
- Staff shall be encouraged the use of preventive measures like condoms by availing condom dispensers.
- Contractors will be required as part of the ESMP to include measures to demonstrate how they will work in a Covid-19 secure manner where relevant to minimise transmission risks.
- Worksites will be well maintained to avoid the creation of breeding sites for vectors. This will include to avoid the construction of small pools of water (mosquitos), waste (rodents) etc. which contribute to diseases transmission (water will be stored in containers).
- Contractors will have access to potable water and adequate sanitation facilities to prevent disease transmission.

Community Health and Safety– Accidents and Injury due to traffic congestion

During the building works, the risks related on public safety and the personnel increase. The building works will induce possible harmful effects on public safety. The traffic related to construction will contribute to reduced road safety especially on local roads where some contractor's facilities are located, especially where the traffic passes through settled areas and towns located close to the road. The traffic to construction site will depart from the public roads. Residents from local settlements on these haulage roads will be exposed to increased possibilities for accidents and injuries. Traffic consisting of heavy vehicles and machinery is especially risky. The sources of the effects to public are identified in the **Table 24** and could occur along transportation routes or as a result of the community entering construction sites. Children can be at particular risk of such impacts if they are unaware of project risks.

Table 29: Sources of the harmful effects on health and safety

Type of harmful effect	**Sources of the threat**
Accident risk (falls, trips, road traffic accidents, etc)	● During excavation work ● Movements and operations of heavy equipment ● Access to danger zones ● Transport, handling and storage of the materials ● Concrete batching and mixing plant ● Modification made to the known plans of route
Indirect health risk	● Environment Pollution ● Contamination of water or food

Mitigation measures

- Maintain good security in the area with signage like "No employment at the moment", to keep away job seeker to avoid unnecessary people in project sites

- Develop and implement an emergency response plan including spill response and train workers on the same;
- Institute good site practices including prevent public access to the construction site by securing equipment and demarcate excavate, using warning signs with appropriate text (local language) and graphics programs;
- Institute traffic management and safety programme including, training and testing of heavy vehicles operators and drivers, enforcement of speed limits, maximum loading restrictions and compliance with all Tanzania transportation law and standards
- Undertake stakeholder engagement with local communities to inform them of activities on the site and associated risks.

Population Influx

The proposed project in the city will attract population increase especially in the areas where the project will be carried out. This is because the project will increase employment opportunities as well as opportunities for other income generating activities. The population influx into the areas would also increase pressure on both resources and social services due to increased demand on the services and resources. This may lead to extra demands for resources which might cause conflicts in the community.

Mitigation measures

- The proponent shall ensure there is controlled in flow of people from different areas to help control crimes and illegal immigration.

7.5 Potential Environmental Impacts During Construction Phase

7.5.1 Negative environmental impacts

Impacts on Air Quality

Construction activities have potential to emit dusts and noxious gases such as CO2, CO, NOx, SO2, VOC and CH4. Vehicles and equipment's with internal combustion engines have potential to emit noxious gases. Construction works that are likely to generate dusts are mainly related to the movement of materials and machinery and construction work. When dust is exceptionally fine and when the resident populations undergo an exposure prolonged and persistent (such as in proximity of a career) there are risks of attacks of the public health. Potential sources of dust at the site and off site are summarized in **Table 25**.

Table 30: Project activities and Impacts

Activity	Source of production of dust
On-site building work producing dust and gaseous emissions	
Clearance and terracing of the site	Earthworks Initial soil spraying after excavation. The movement of construction traffic and movement of materials Stored materials subjected to wind action
Excavation	The important sources are: The movement of traffic of construction The handling and the storage of waste

Activity	Source of production of dust
	The excavation and the transport of materials and potential storage on the site.
Building Foundations	The important sources are: Foundation excavation The movement of construction traffic The handling and the storage of waste The excavation and the transport of materials and potential storage on the site.
Building Works	Movement of traffic of construction. Potential of a certain strongly localized harmful effect if the completion of work requires "smoothing and sanding" of the wall to obtain a desirable completion.
Auxiliary work -	
Off-site building work producing dust	
Main court	Any movement of traffic on unpaved roads Surface Materials brought by the wind
Aggregate mixing unit	Stored materials Input of the handling of the materials Filtering and another process of materials Handling of materials/loading output Traffic congestion
Tool maintenance course	Materials of surface brought by the wind Traffic of construction
Sites of borrow	Clearing the site Excavation Stored materials Material loading

With regard to the gaseous emissions, the sources of atmospheric emissions associated with construction activities are mainly from units of construction and the possible generators, by evaluating these sources, the following conclusions can be drawn:

- The majority of the sources are mobile and will generate dispersed emissions and in a temporary way;
- The majority of the emissions will be generated starting from the concentrations of activities which are rather far away from the sensitive receivers; and
- The level of the emissions of the precursory pollutants and the atmospheric pollutants will vary from day to day, according to the type of the activity, but even if the impact is very limited in time, it does not remain about it less than it is subjected to a factor of expansion in space with knowing the weather conditions. Of this fact the intensity of the impact of the building site on air pollution especially by the suspended particles is evaluated like average.

Mitigation measures

Impairment of air quality due to emissions

- Equipment shall be maintained in good running condition, no equipment to be used that generates excessive black smoke;
- Enforce vehicle road restrictions to avoid excess emissions from engine overloading, where practical switching off engines will be done when not in use;
- There will be routine inspection of equipment;
- Trucks transporting materials shall be fully covered; and
- Turn off engines to reduce idling.

Impairment of Air Quality Due to Dust

- Protect stockpiles of friable material subject to wind through wetting;
- Cover loads with friable material during transportation;
- Restrict speed on loose surface roads to 30Km/hr during dry or dusty conditions; and
- Douse with water of roadways and work sites to reduce dust when necessary.

Impacts Through Noise

During construction works, the noises come mainly from the units of building site (power picks, mechanical shovels, cranes, concrete batching and mixing plant etc), trucks and semitrailers charged to transport materials as well as use of explosives (career of massive rock). The extent of the nuisance will depend on the spatial organization of the site and mainly the location of borrow pits, as well as the crushing plant, concrete plants and other noisy machines compared inhabited areas.

Mitigation measures

- Vehicles carrying construction materials shall be restricted to work during day time only;
- Machine operators in various sections with significant noise levels shall be provided with noise protective gear; and
- Construction equipment shall be selected, operated and maintained to minimize noise.

Impacts Through Vibration

Construction activity can result in varying degrees of ground vibration, depending on equipment and Method Employed. Vibration will be produced by construction vehicles, plant and machinery during delivery of materials, processing of materials, and actual construction work. The Construction activities that typically generate the most severe vibrations are blasting and impact pile driving for foundation. Due to an increase in activities and number of operational vehicles, the impacts vibration will cause disturbance to neighbours and physical damage to properties near the construction site.

Mitigation measures

- Impact pile driving shall be avoided where possible in vibration sensitive areas; and
- Vibratory rollers and packers shall be avoided.

Disadvantages Related to the Management of Wastewater

The types of wastewaters generated during construction activities include sewage, gray water and process water. Sewage effluent from camps and associated buildings will be produced in the sanitary facilities provided and collected on site. Septic waste produced in scattered sites will also pose a problem to human health. This will be particularly severe if the waste is not collected directly and / or is released directly into the wild without any treatment. Gray sewage will pose less of a direct problem to human health but will be produced in large quantities in the camps. Hunting and process water will be generated from batching plants, equipment maintenance centers and ordinary sites. Wastewater discharge in the natural environment can pollute environment and causing unhygienic sanitary conditions and nuisances to the human perceptions. Types and sources of wastewater are shown in **Table 26**.

Table 31: Types and sources of waste water

Type	**Source**
Sewage	Works Camp
	Offices Other elements of the main camp
	Remote secondary facilities
	Sites
Gray water	Works Camp, cooking, personal and clothes washing
	Offices/Other camps
Hunting and process water	Oil spills
	Aggregates and process plants
	Equipment maintenance centers
	Ordinary sites

Mitigation measures

- Wastewater shall be properly treated in the Septic Tank Before disposal into the Soak Away Pit within the site;
- Contractor shall be instructed to put on his/her methodologies for handling hazardous waste such as oils, lubricants and non-combustible waste; and
- Training on waste management shall be done to all personnel, operators and services providers.

Disadvantages Related to the Management of Solid Wastes

Main sources of construction waste are cleared vegetation and top soil (overburden), scrape metals, asbestos, remnant of timbers and domestic waste from construction crews. During construction activities, various type of solid wastes will be generated including solid wastes from food in cafeteria and offices. The wastes may contaminate land or be washed into local surface and ground water resources and impair the quality of these receiving bodies. Other associated impacts include flies and increased bird population (attracted by food waste).

Mitigation measures

- The contractor shall have adequate facilities for handling the construction waste; and

- Topsoil shall be stock piled and used for reclamation or re-vegetation practice at the site during landscaping.
- Hazardous waste such as asbestos will be handled with the designated and registered vendor by the National Environmental Management Council (NEMC).

Erosion of Exposed Surfaces

Inadequate compaction and resurfacing compounded by rain, trampling, vegetation clearance etc. may cause erosion and consequent sediment load in runoffs. This is mostly likely to happen if construction is undertaken during the months of rain seasons -heavy rains.

Mitigation measures

- The construction will be as per engineering design and procedure of which a maximum requirement of compaction strength is achieved during the construction. That is maximum dry density (MDD) specified in the design manual by consultant;
- Maintain gravel fill and/or re-vegetate around the structures;
- Unnecessary ground clearance and sensitive re-alignments shall be avoided;
- Directing flow to properly designated channels;
- All excavation works shall be properly backfilled and compacted; and
- Most of construction activities will be done during dry weather.

Landscape and Visual Impacts

Like any development, there is a 'zone of visual intrusion' from which it can be seen. These refer to the impacts of landscape change on people: on the views that people have from their homes, offices, footpaths, cars as they drive past etc. Construction activities shall affect the landscape by removing existing landscape features in place such as trees and replacing them by concrete and gravel surface. If operated at night, the lights will lead to the increase of light pollution. The following components of the landscape can be affected by development:

- Physical factors: geology, landform, microclimate, drainage, soil, ecology; and
- Aesthetic factors: proportion, scale, enclosure, texture, colour views as well as sounds

However, the proposed project components can also change the overall character of an area to make it look harder and more urban.

Mitigation measures

- Light pollution can be reduced by keeping lighting (e.g. of parking lots) to the minimum levels needed for safety, and through the careful choice of light fixtures such as the use of flat-glass lanterns in car parks; and
- Locating parts of the development further away from viewers.

Loss of Scenic Quality

Scenic quality deterioration will occur due to stock piling of construction materials and discoloration of plant leaves and houses in the vicinity around the proposed site due to windblown dust. Excavation works as well as presence of construction vehicles, plant and equipment will also add to scenic quality deterioration. Scenic quality deterioration will also occur off-site, at the sources of construction materials, the quarries and sand mines. If these are not made well, they may become an eyesore. Scenic quality deterioration can destroy the economic and aesthetic value

of public and/or private property including land. Scenic quality degradation effects will be significant, short term and direct. They will, in spite of everything, be manageable given proper site operation and prior warning as well as issuance of site operation guidelines.

Mitigation

- Tree planting in the market after construction.
- Backfilling and rehabilitation of quarries.

7.6 Potential Social Impacts During the Operation Phase

The following social impacts have been identified during project preparation. However, following development of the Social Impact Assessment, LMP and GBV Action Plan for the Project these impacts will be revisited and updated where relevant.

7.6.1 Positive Social Impacts

Increase of Revenue to Kahama Municipal Council

Kahama Municipal Council will increase number of businesses which in return will increase revenues through rent and revenue. This will increase financial standing of the municipal council which will lead to efficient running of the council.

Job Creation

Jobs generated by operations of project components can be divided into two (2) categories: direct and indirect jobs; their volume depends strongly on the level of operational activities. Direct jobs are those related to operational services, cleanliness, stationeries, catering and commercial activities. Indirect jobs are those created by the positive impact institutions to economic sectors. These are agriculture, livestock, energy and water sector. The ripple effect (or catalyst) on the entire regional and national economy is also the origin of the creation of 'indirect' jobs.

Enhancement measures

- Employment will be on equal opportunities/ non-discrimination for both genders and on the basis of any personal characteristics.

Increased Commercial and Social Activities Around Project Locations

Construction of the proposed project components is anticipated to attract more businesses in a way that create vibrant businesses within project respective areas. Also, it with cause a growth of the existing businesses around the project location.

Enhancement measures

- Good security within the project area and area of influence.

7.6.2 Negative Social Impacts

Increased Incidences of Diseases and Ill Health

The concentration of a large number of people within the proposed project area could contribute to increased levels of communicable diseases, which facilitate the spread of diseases such as Sexually Transmitted Diseases (STDs), HIV/AIDS, Covid 19 and other ailments.

Mitigation measures

- A safety, health and environment induction course shall be conducted to community members and workers, putting more emphasis on HIV/AIDS, which has become a national disaster;
- The project shall include information education and communication component (IEC) in its budget. This will help to raise more awareness on HIV/AIDS, and means to suppress its incidence;
- Environmental sanitation systems shall be improved; and
- Follow all measures outlined to prevent spread of Covid 19 such as leaving a minimum distance of 1m between workers, washing of hands while entering and leaving the site, wearing of masks, and provision of facilities for frequent checkup to reduce new cases. Hand washing facilities will be provided at site.

Increased Pressure on Social Services and Utilities due to population influx

The presence of the buildings has the potential to increase pressure on social services and utilities such as electricity and water. The demand may strain the existing service delivery system in one way or the other. The increase of population in due to employment opportunities and students' enrolment will definitely strain the existing social services.

Mitigation measures

- Use of water conservatively by instituting technologies (e.g., self-lock water tape) and awareness raising notices to users, etc;
- Construction of underground water reserve tank and introducing rainwater harvest system;
- Extraction of underground water resources;
- Alternative measures like use of solar power, drilling a borehole at site, water recycling shall be explored and implemented if found feasible. For instance, use of energy savers bulbs shall be given high priority; and
- Use of air conditioning shall be kept to a minimum and maintenance of the cool indoor environment using natural ventilation system shall be strongly explored during the design process.

Risk of SEA/SH at the market

Women are at risk of SEA/SH while conducting their activities in the market. This can include sexual acts from male counterparts, sexual assault, verbal sexual harassment amongst others. SEA/SH may affect women working in market areas negatively. The identification of SEA/SH risks during operation will be considered further as part of the GBV Action Plan.

Mitigation measures

A GBV Action Plan will be drafted, approved and implemented which will include the following:

a) Assess the SEA/SH risks associated with the project based on existing data and input from key stakeholders. This will include identification of risks to workers and communities during construction as well as risks to women in project areas.
b) Map out GBV prevention and response actors at the levels of district and the market.

c) Define the GBV requirements and expectations in the bid documents including codes of conducts (to be signed by workers), training, awareness raising for workers and the community, GBV responsive GRMs and approach to GBV case management.
d) Define the GBV measures needed to protect women including to develop GBV policies to address SEA/SH, training and awareness raising, GBV responsive GRMs, educator/ staff codes of conduct (to be signed), referral pathways etc.

7.7 Potential Environmental Impacts During the Operation Phase

7.7.1 Negative environmental impacts

Water Pollution

This pollution will be mainly a result of sanitation system (Septic tank system) that will be used during project operation. This is due to the fact the proposed project will increase number of students with time. Onsite sanitation systems always cause groundwater pollution due to infiltration of the effluent during disposal. Also, surface water is at risk of pollution due to drainage of contaminated impervious surfaces. In this case, the main pollutants include solid matters, floating and macro waste, heavy metals and organic matters. During the rainy season, the surface waters will drain the pollutants directly towards the natural discharge system if the project does not envisage pre-treatment of rain water. Thus, the risk of water degradation is assessed as important, which may have an indirect impact on the water table too.

Mitigation measures

- The developed Surface Water Quality Program and a Spill Prevention and Response Plan will be used to manage and mitigate the pollution of surface and ground water on the proposed project sites. The ESMP describes the measuring and monitoring activities and tracks actions taken to manage surface and ground water discharges;
- Septic tank and soak away shall be designed in such a way waste treatment is achieved by 100% before disposal to the authorised disposal sites;
- Minimize oil spillage;
- Discharge and treat foul drainage and sewage; and
- Pass run off through oil interceptors.

Storm Water Generation and Overflow

The proposed project components will generate a lot of storm water due to presence pavements, concrete surfaces and building roofs. The structures will tend to compromise the infiltration capacity of the land surface hence rendering water free to the environment. The storm water generated might have impacts on structures downstream as well as being a factor for soil erosion and poor water quality.

Mitigation measures

- The design of storm water drainage will be given a high priority;
- Rainwater harvesting will be used encouraged in proposed project sites; and
- The design shall consider enough greeneries in the project site.

Health and Safety Risks Due to Fire Hazards

Buildings are very prone to fire hazards because of different types of combustible materials and machines, which are used and installed, respectively. Electrical fault is by large the main culprit in fire accidents in buildings in Tanzania. The components of a fire are fuel (combustible substance), heat and oxygen. Unless all three are present fire will not occur. Fire can cause the following effects:

- Loss of lives;
- Serious Injuries;
- Loss of properties etc.

Mitigation measures

- Adequate number of portable fire extinguishers shall be placed at strategic locations;
- Good housekeeping shall be maintained at all sites to reduce the fire risk;
- The design of buildings shall strictly adhere to the Fire Safety Standards;
- Fire detectors and sprinkler system shall be installed in the buildings; and
- The proponent shall insure buildings against fire Hazards.

7.8 Potential Social Impacts During Decommissioning Phase

7.8.1 Negative social impacts

Loss of Employment and Revenues

The people employed by the project will lose their jobs. This will have significant impact on these people and their families. Other dependents of the project, such as suppliers of various services (e.g., Security Company) will lose the market. Also, the KMC will be loose revenue in case of the decommissioning of the project, the revenue generated will cease. This impact is considered negative, long term and of moderate significance.

7.9 Potential Environmental Impacts During Decommissioning Phase

7.9.1 Negative environmental impacts

Loss of Aesthetics Due to Haphazard Disposal of Demolished Waste

In the event of future rehabilitations and upgrading, the buildings may need to be demolished necessitating disposal of demolished waste. Haphazard disposal may cause contamination/impaired quality of receiving body – especially land, and water resources.

Mitigation measure

- The debris resulting from the demolition will either be transported by a licensed waste transporter for dumping at an approved site or used as base material for new construction work;
- All the necessary health and safety measures will be implemented including provision of personal protective equipment such as, safety harnesses, helmets, gloves, respirators, safety shoes, coveralls, goggles and ear protectors; and
- Restoration of the affected land will involve the filling in of any open pits and grading the land to its natural contours, then planting appropriate tree species and under cover vegetation to hold the soil in place and to prevent flooding.

Dust and Noise Pollution from Demolishing Works

In the event of future rehabilitations and upgrading, the building needs to be demolished necessitating disposal of demolition waste. The noise pollution and air quality will be most affected during the demolition work with the emission of dust particles from machinery like excavators, electric grinders and mixer. The impact receptors are likely to include site workers and neighbors. The substances which will most significantly contribute to air pollution, will be Particulate Matter. Particulate matters may cause health hazards when inhaled in significant amounts and can also reduce the visibility. Most of those dust particulates will come from dust particulates which themselves come from the concrete rubbles and blocks.

Mitigation Measure

In the event of dust generation during decommissioning dust suppressors and blockers will be used such as water and fencing of the site during works to avoid dust from spreading to nearby areas.

Loss of Revenue to the Government

As discussed above both town and Central government will be receiving revenue from the project. In case of the decommissioning of the project, the revenue generated will cease.

Mitigation Measure

In case of lost revenue from the project due to decommissioning the government will have to look for alternative source of revenue or increase some of the revenues such as fuel, drinks and levies to compensate for the lost revenue from the project. The government may introduce new sources of revenue to ensure that the amount collected is not affected.

CHAPTER EIGHT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

8.1 Introduction

Plans for the implementation of mitigation measures for the proposed project are provided below. The Plans indicate institutional responsibilities, time to take the action and estimated costs. The proposed costs are only indicative, the proposed development should proceed with the suggested changes, and the developer will work out on actual costs and include them in the overall cost of the project. Based on the EMA, (URT 2004), NEMC is required to ensure compliance of all the agreed conditions for authorization. The measures are given in **Table 27**. Kahama Municipal Council is committed to implement the mitigation measures suggested by the Environmental and Social Impact management Plan (ESMP).

8.2 Implementation of the Management Plan

The environmental and social mitigation measures incorporated in the detailed engineering design shall be handed over to the contractor during construction period. The Contractor shall take stock of the contents of the Environmental and Social Management Plan of the Project. The contractor shall implement the ESMP during the construction period under close supervision of firm representing Kahama Municipal Council.

Table 32: Environmental and Social Management Plan

Phase	Potential Impacts	Management/Mitigation Measures	Target Level	Responsibility of Direct Supervision	Responsibility for Mitigation	Annual Cost (TSH)
MOBILIZATION	Dust emission due to site clearance	• Water spray shall be used • Fence the site to minimize wind effects, • Cover all spoil materials while at site	As per TZS 837 Parts 1, 2 and 3	Contractor	Kahama Municipal Council	3,000,000
	Vegetation clearance	To mitigate the impact during mobilization, the vegetation clearance shall be only for those hinder project implementation and after construction trees planting programme shall be initiated	Minimal vegetation clearance	Contractor	Kahama Municipal Council	3,000,000
	Flooding	• The area will be provided with external ditches to accommodate natural stream coming toward the market. • The storm from the market will be directed through internal drainages provided by following its natural path to closed external ditches (under sidewalk) outside the market then will be connected to the existing drainage systems of other infrastructures basically highway drainages.	Zero flooding	Contractor	Kahama Municipal Council	As provided in BoQ

Phase	Potential Impacts	Management/Mitigation Measures	Target Level	Responsibility of Direct Supervision	Responsibility for Mitigation	Annual Cost (TSH)
	Noise pollution due to demolition	• Regular maintenance of all used machine-like full dozer • Site mobilization works will be on day time only not otherwise • The site will be fenced by iron sheet before levelling • Noise protective gear will be provided to workers	As per TZS 837 Parts 1, 2 and 3	Contractor	Kahama Municipal Council	3,000,000
	Occupational Health hazards	• Apply water spray to all area where dust emission is high • All used trucks will be serviced regularly their engines • Cover all stockpile found at site • Any trucks used for transporting waste from site will be covered • Provide safety gears to demolition crews like safety boots, uniform etc.	Zero health hazards	Contractor	Kahama Municipal Council	3,000,000
CONSTRUCTION	Impacts associated with transportation of construction materials	• Trucks used for transporting construction materials shall be covered on top • All trucks used shall be regularly serviced their engine,	As per TZS 837 Parts 1, 2 and 3	Contractor	Kahama Municipal Council	4,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level	Responsibility of Direct Supervision	Responsibility for Mitigation	Annual Cost (TSH)
	Occupational health and safety of construction workers	• Use water sprinklers to suppress excessive dust during construction; • Provide and enforce use of appropriate protective gears such as boots, helmets, masks and gloves to workers • Adhere to OSHA guidelines to avoid accidents at the work place • Provide First Aid facilities and train some workforce on emergency response measures. • Establish health and safety regulations, and formulating preventive measures for accidents and other human health and safety hazards.	OSHA regulations and OSHA Act of 2003	Contractor	Kahama Municipal Council	20,000,000
	Dust from the movement of Construction Equipment	• Use of water sprinklers to suppress dust on unpaved area within project site	As per TZS 837 Parts 1, 2 and 3	Contractor	Kahama Municipal Council	5,000,000
	Noise from Movement of Construction Equipment	• Routine maintenance of equipment for optimal performance • Fencing the project site with iron sheet	As per TZS 837 Parts 1, 2 and 3	Contractor	Kahama Municipal Council	4,000,000
	Pollution of surface water	• Removal of all debris • Compaction and surfacing	No debris left at site	Contractor	Kahama Municipal Council	4,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level	Responsibility of Direct Supervision	Responsibility for Mitigation	Annual Cost (TSH)
	sources due to spoils materials					
	Potential of spread of HIV/AIDS to the construction crew	• Sensitize workers on dangers of HIV/AIDS • Collaborate with NGOs to ensure Voluntary Counselling and Testing programs are established	All workers sensitized on issues of HIV/AIDS	Contractor	Kahama Municipal Council	40,000,000
	Health hazards to workers due to poor management of hazardous waste	Generated cut pieces of iron sheets, steel bars and a like shall be collected into a designed area for temporary hazardous waste storage while waiting to be collected by authorized dealers for disposal.	Zero injuries	Contractor	Kahama Municipal Council	4,000,000
	Pollution due to mismanagement of solid waste	• Ensuring proper design of systems for collection, transportation and disposal of solid wastes • Ensuring availability of sufficient waste bins at appropriate locations • Sorting of solid waste shall be done at source • Constructed chamber shall be paved and roofed	No pollution	Contractor	Kahama Municipal Council	4,000,000
	Pollution due to mismanagement of domestic wastewater	• Installation of a movable toilet or construction of temporary toilets and bath to be used during construction,	Zero pollution	Contractor	Kahama Municipal Council	4,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level	Responsibility of Direct Supervision	Responsibility for Mitigation	Annual Cost (TSH)
		• Emptying of provided toilets will be done to avoid overflow				
	Vibration due to construction and installation activities	• All noise activities should be undertaken during day time • Neighbours and workers should be informed the day of installation of machines which might cause vibrations.	5 mm/s PPV at all times as per noise and vibration regulation, 2015	Contractor	Kahama Municipal Council	4,000,000
	Gender inequity in employment opportunities	• Implementation of the Gender Action Plan (GAP); • Jobs will be equitably distributed to both women and men as long as they qualify rather than based on gender to allocate jobs. Employment records disaggregated by sex will be kept by the contractor and easily accessed by the monitoring and supervising team; • livelihood support strategies will be extended to the vulnerable groups and their income levels monitored closely during the implementation process;	No gender inequity	Contractor	Kahama Municipal Council	No cost
OPERATION						
	Pollution of surface water source due to	• Ensuring proper design of septic tank and soak away system	No liquid waste overflowing	Proponent	Kahama Municipal Council	5,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level	Responsibility of Direct Supervision	Responsibility for Mitigation	Annual Cost (TSH)
	mismanagement of domestic wastewater	• Ensuring routine maintenance of storm water drainage system • Ensure septic tank is emptied frequency to reduce overflow of liquid waste				
	Pollution due to mismanagement of domestic solid waste	• Ensuring proper design of systems for collection, transportation and disposal of solid wastes • Ensuring availability of sufficient waste bins at appropriate locations • Design waste collection chambers for collecting waste before transported to dump site	No pollution	Proponent	Kahama Municipal Council	4,000,000
	Fire-break out and Safety Systems	• Portable fire extinguishers shall be put in place in all strategic areas • Firefighting system incorporating water hydrants shall be installed including fire detection alarm system to avoid the risk of fire break out. • Fire assembly area shall be designated in the project area	zero fire break outs	Kahama Municipal Council	Kahama Municipal Council	5,000,000
	Spreading of HIV/AIDS and other STIs	• Raising awareness of the dangers of the HIV/AIDS to workers, lessors and visitors, • Support voluntary HIV counseling and testing.	Reduce spreading of STI	Kahama Municipal Council	Kahama Municipal Council	4,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level	Responsibility of Direct Supervision	Responsibility for Mitigation	Annual Cost (TSH)
	Pollution due to mismanagement of tannery wastewater	• Generated wastewater from a tannery factory shall be collected into a designed effluent treatment plant incorporated with constructed wetland	No pollution	Kahama Municipal Council	Kahama Municipal Council	5,000,000
	Hygienic nuisance due to poor handling of hides	• Timely cure raw hides • Ventilate tannery area and ensure that exhaust from odour area is controlled • Timely clean workshop using recommended reagents	No smell	Kahama Municipal Council	Kahama Municipal Council	4,000,000
	Soil erosion due to runoff effects	• Proper backfilling and resurfacing of the constructed area • Stabilize the soil by applying light compaction, • Planting of trees and grass on bare land at project site	No soil erosion	Kahama Municipal Council	Kahama Municipal Council	4,000,000
	Water and soil pollution due to poor handling of chemicals or spills	• All users of chemicals must be familiar with guidelines and laws governing chemical spills • All chemical wastes must be disposed of in accordance with laws • Initiate the program of control the spills, contain the spills and clean up the spill once any chemical spillage occur.	No water or soil pollution	Kahama Municipal Council	Kahama Municipal Council	4,000,000

Phase	Potential Impacts	Management/Mitigation Measures	Target Level	Responsibility of Direct Supervision	Responsibility for Mitigation	Annual Cost (TSH)
		• Provide recommended PPEs to everyone who deals with chemicals • Paving the area where chemicals are stored, • Ensure that spill kit with recommended facilities shall be available at project site				
	Gender based violence and harassment	• Strict implementation of the council policy on Gender and HIV/AIDS issues including utilization of the existing structure and system for management of gender-related issues within the Institute;	No gender violence	Kahama Municipal Council	Kahama Municipal Council	10,000,000
DECOMMISIONING PHASE	Loss of aesthetic value due to abandonment of structures	• Either demolish the structures or undertake major rehabilitation in an environmentally sound manner • To restore the environment into its original appearance.	Minimum to zero pollution of environment	Kahama Municipal Council	Kahama Municipal Council	To be provided in the decommissioning plan
	Noise and dust pollution from demolition	-Apply water spray for dust control, -Fence the area with iron sheets -Cover all demolition wastes at site -Service all machines used	As per As per TZS 932:2006 and TZS 837 Parts 1, 2 and 3.	Kahama Municipal Council	Kahama Municipal Council	To be provided in the decommissioning plan

Phase	Potential Impacts	Management/Mitigation Measures	Target Level	Responsibility of Direct Supervision	Responsibility for Mitigation	Annual Cost (TSH)
	Loss of Employment	• Prepare workers for forced retirement by providing skills for self-employment, and wise investment of the retirement benefits, • Ensure that all employees are members of the Social Security schemes, • Consider redeploying employees in other projects of the proponent.	The retrenchment to go as smoothly as possible	Kahama Municipal Council	Kahama Municipal Council	To be provided in the decommissioning plan
TOTAL						**151,000,000**

8.3 Environmental and Social Monitoring

Monitoring refers to the systematic collection of data through a series of repetitive measurements over a long period of time to provide information on characteristics and functioning of environmental and social variables in specific areas over time. There are four types of monitoring that are also relevant to this ESIA.

8.3.1 Baseline monitoring

The measurement of environmental parameters during a pre-project period and operation period to determine the nature and ranges of natural variations and where possible establish the process of change.

8.3.2 Impact/effect monitoring

Involves the measurement of parameters (performance indicators) during establishment, operation and decommissioning phase in order to detect and quantify environmental and social change, which may have occurred as a result of the project. This monitoring provides experience for future projects and lessons that can be used to improve methods and techniques.

8.3.3 Compliance monitoring

Takes the form of periodic sampling and continuous measurement of levels of compliance with standards and thresholds – e.g., for waste discharge, air pollution.

8.3.4 Mitigation monitoring

Aims to determine the suitability and effectiveness of mitigation programme, designed to diminish or compensate for adverse effects of the project. To ensure that mitigation measures are properly done, monitoring is essential. **Table 28** provides details of the attributes to be monitored, frequency, and institutional responsibility and estimated costs. These costs are only approximations and therefore indicative. Costs that are to be covered by the developer should be included in the project cost.

Table 33: Social and Environmental Monitoring Plan for proposed Sango market

Environmental Aspect	Parameters	Monitoring frequency	Sampling Area	Measurement Units	Method	Target level/ Standard	Responsibility for monitoring	Annual costs estimate (TSH)
Pre-construction Phase								
Air Quality	Dust (PM_{10})	Once	Project sites	g/Nm^3	*Micro-dust Pro (TZS 837 Part 3)*	<0.25	Proponent	4,000,000
Noise Baseline	Noise level	Once	Project sites	dBA	*Noise Level Meter*	<55 (Day Time) <45(Night Time)	Proponent	4,500,000
Construction Phase								
Air Quality	Dust (PM_{10})	Once per month	Project sites	g/Nm^3	*Micro-dust Pro (TZS 837 Part 3)*	<0.25	Proponent	4,000,000
Noise pollution	Noise level	Once per month	Project sites	dBA	*Noise Level Meter*	<55 (Day Time) <45(Night Time)		4,000,000
Employment opportunity	Percentage of local	Three times a year	Project sites	Number of local people	Records, inquiries and observation	>50	Proponent	4,000,000

Environmental Aspect	Parameters	Monitoring frequency	Sampling Area	Measurement Units	Method	Target level/ Standard	Responsibility for monitoring	Annual costs estimate (TSH)
	construction labourers			employed in the project				
Safety and health risks	Number and type of safety equipment such as mask, helmet gloves and ear plugs. Health and sanitation facilities in site.	Twice a year	Project sites	Number of safety measures provided	Records, injuries and inspection	-	Proponent	4,000,000
Waste Management	Solid and Liquid waste collection facilities	Once a week	Project sites	Presence of Skip bucket and Septic Tank System	Observations	At Least 1 Skip bucket and Septic Tank System for each site	Proponent	4,000,000
Soil erosion	Soil erosion	Once per Month during dry season and weekly during rainy season	Project Sites	Area eroded	Observations and measurements	No erosion at all	Proponent	4,500,000

Environmental Aspect	Parameters	Monitoring frequency	Sampling Area	Measurement Units	Method	Target level/ Standard	Responsibility for monitoring	Annual costs estimate (TSH)
Vibrations	Vibrations	Once per year	Project sites	Number per minute	Observations and Measurements		Proponent	4,000,000
Demobilization phase								
Air Quality	Dust (PM10)	Once	Project sites	mg/Nm^3	*Micro-dust Pro (TZS 837 Part 3)*	<0.25	Proponent	4,000,000
Noise pollution	Noise level	Once	Project sites	Dba	*Noise Level Meter*	<55 (Day Time) <45(Night Time)		4,000,000
Waste Management	Solid and Liquid waste collection facilities	Once a week	Project sites	Presence of Skip bucket and Septic Tank System	Observations	At Least 1 Skip bucket and Septic Tank System	Proponent	4,500,000
Operation phase								
Safety risk due to fire	Awareness and Signage number of fire extinguishers	Once a year	Project site	Number of safety measures provided	Records, injuries and inspection		Proponent	4,000,000

Environmental Aspect	Parameters	Monitoring frequency	Sampling Area	Measurement Units	Method	Target level/ Standard	Responsibility for monitoring	Annual costs estimate (TSH)
Waste Management	Solid and Liquid waste	Everyday	Project site	Presence of Waste Collection Point for the hotel Hotel connected to the septic tank and soak away pits	Observations	At least 1garbage collection point for the hotel buildings Wastewater septic tanks properly functioning	Proponent	4,000,000
Total monitoring costs								**57,500,000**

Source: Consultant Analysis, 2022.

8.4 Capacity Development and Training

8.4.1 Training Needs to Environmental and Social Specialists and Other Project Staff

For successful implementation of the E&S issues, capacity enhancement through training will be done to institution project team. The training can be in the form of the whole project staff or Training of Trainers (TOT), and it can be in the form of short or long workshop. This training will ensure that the project specialists are able to manage and monitor the environmental and social aspects of project activities. The workshop will take place in early stages of TACTIC project implementation. The workshop can be conducted by an external consultant with substantial knowledge on the environmental management requirements for Tanzania, including World Bank ESF and its ESS requirements. Other relevant staff members of Kahama Municipal Council can be included in the training in order to widen the familiarization of the E&S issues of the project.

However, before selection of specific trainings that will be conducted, training need assessment will be conducted to identify gaps of knowledge, skills and abilities for KMC employee who will be involved in implementation of E&S related activities, given the fact that it is their first time to implement WB financed project. The gap between existing capacity and required one for successful implementation/supervision of environmental and social related actions will be used for identification of specific training. Thus, key training areas can include, but not limited to the following;

(a) Environmental and Social assessment process:

- Screening process;
- Impact prediction and identification;
- Formulation of mitigation measures;
- How to prepare terms of reference for environmental and social impact assessment;
- How to integrate environmental and social management considerations in project design and preparation of contract documents for constructions;
- Reviewing, approving ESIAs;
- Formulation of environmental and social management plan;
- Public participation in ESIA process; and
- Monitoring and reporting of project implementation.

(b) Environmental and Social policies, procedures and guidelines:

- How to incorporate Environmental and social policies and legislation according to the nature of project;
- World Bank Environmental and Social Standards (ESS);
- Review of ESIA and ESMP; and
- Collaboration with relevant institutions.

(c) Occupational Safety and Health issues:

- Hazard identification
- Hazard assessment and management
- Risk assessment and management
- Emergency preparedness plan and Response
- Risks and crises management

- Stakeholder engagement and grievance management, including in relation to the worker grievance mechanism, for the social and environmental staff.

(d) Other key topics on environmental and social issues:

- How to prepare Environmental and Social Management System;
- How to screen projects; appraise and approve ESIAs;
- How to review of environmental and social screening and assessment process;
- How to supervise and report the implementation of the project components;
- How to create baseline information prior to project implementation;
- Environmental pollution;
- Waste management; and
- Protection of water resources against pollution.

(e) Capacity building for GRM focal persons and members of the Grievance Redress Integrity Committee (GRIC)

Focal persons (Grievance Handling Officers - GHOs) and members of the Grievance Redress Integrity Committee (GRIC) of the eligible Institutions will have to get trained on the use of GRM guide which include grievances handling, reporting and escalation to the respective authorities. The guide has to be prepared in a manner that GRM could capture and report Sexual Exploitation, Abuse and Harassment (SEAH) and Gender Based Violence cases. In order to ensure optimal utilization of the GRM by the PAPs at work-places, publicization and sensitization on the existence of GRM is mandatory and has to be done by the responsible institution.

CHAPTER NINE

GRIEVANCES REDRESS PROCEDURES

9.1 Purpose

A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanisms provide a formal avenue for affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts. Grievances are any complaints or suggestions about the way a project is being implemented, and they may take the form of specific complaints for damages/injury, concerns around resettlement and compensation, concerns about routine project activities, or perceived incidents or impacts.

The stakeholder engagement process will ensure that the PAPs are adequately informed of the procedure. The GRM is designed with the objective of solving disputes at the earliest possible time, which will be in the interest of all parties concerned and therefore, it implicitly discourages referring such matters to a tribunal/court for resolution.

9.2 Principles

A functional GRM has to be established and/or strengthened at the Kahama Municipal Council in order to ensure grievances emanating from the TACTIC project implementation are reported and raised accordingly. GRM is necessary for addressing the legitimate concerns of the project affected persons (PAPs). In addition, GRM provide a formal avenue for affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts. In the interest of all parties concerned, the GRMs are designed with the objective of solving disputes at the earliest possible time. Such mechanisms are fundamental to achieving transparency and voicing PAPs' concerns about overall project activities.

9.3 Construction GRM

This will be administered by the respective project implementing contractors and will address grievances associated with the construction of Sango market.

Step 1: Submission of Grievances

The affected person shall file their grievance to the GHO, which will be recorded in writing. The grievance note should be signed and dated by the aggrieved person. A grievance can be submitted to in a number of ways as follows:

- through suggestion box (which will be in accessible locations including at construction site).
- during regular meetings held with stakeholders;
- through the Local Consultative Forums established in the affected locations;
- during informal meetings;
- through communication directly with management – for example a letter addressed to site management/ municipal council; and
- email, what's app messages and telephone (where appropriate).

- all complaints about abuse in service, potential corruption must be channelled to proper authorities no more than 5 days after the complaint is received.

Step Two: Logging the Grievance

The CGC keeps records of all complaints received, whether and how the CGC resolved them, and which complaints were forwarded to the municipal council. Once a grievance has been received it must first be logged in the grievance database register by the CGC. A sample grievance logging form is provided in **Appendix VIII**.

Anonymous grievances will be accepted recognizing that this may limit the possibility of investigation and resolution. Those who collect grievances will be trained on how to collect grievances related to GBV in the appropriate manner (see below).

Step Three: Providing the Initial Response

The person or community or stakeholder that lodged the initial grievance will then be contacted within 2-3 days to acknowledge that CGC has received the complaint. This response will either accept or refute responsibility for the grievance. This notification will include details of the next steps for investigation of the grievance, including the person/department responsible for the case and the proposed timeline for investigation and resolution which will depend on the severity of the incident. In some cases, it may be necessary to provide an immediate response to avoid further harm while more detailed investigations are undertaken eg in the case of fatalities, workplace accidents, community safety pollution of natural resources, conflict with communities etc.

Step Four: Investigating the Grievance

The CGC will aim to complete investigation within two weeks of the grievance first being logged. Depending on the nature of the grievance, the approach and personnel involved in the investigation will vary. A complex problem may involve external experts for example. A simpler case may be easier, and quicker to investigate. The CGC will involve the aggrieved person/people in this investigation, where possible, to ensure participation. The CGC will continually update the aggrieved on the progress of the investigation and the timeline for conclusion. Unless highly complex, the investigation will be completed within 14 days, although efforts should be made to complete this process faster.

Step Five: Communication of the Response

The CGC will outline the steps taken to ensure that the grievance does not re-occur and any measures needed to resolve the complaint. The response will be communicated within 1 day of the resolution being determined.

Step Six: Complainant Response

If complainant is satisfied then SGC will seek their sign off from the complainant and determine what if any follow up is needed to monitor the implementation of the resolution. The resolution

will be implemented promptly. This may happen at the time the resolution is proposed or within a timeframe agreed between the CGC and complainant but ideally within 5 days.

Step Seven: Grievance Closure or Taking Further Steps if the Grievance Remains Open

Once the measures have been implemented to the complainant's satisfaction the grievance will be closed. If, however the grievance still stands then the CGC will initiate further investigation and determine the steps for future action. Once all possible redress has been proposed and if the compliant is still not satisfied then they will be advised of their right to appeal to the next level as outlined above.

If the grievances cannot be resolved at the Kahama Municipal Council or PIU at PORALG, the complainant will be advised of their right to legal recourse.

9.4 Gender Based Violence (GBV)

The Project may result in incidences of Gender Based Violence (GBV) and Sexual Exploitation and Abuse (SEA) affecting workers and the community. GBV cases are different from other complaints that are typically handled through the grievance redress mechanisms. As outlined in the ESMF, a GBV action plan will be developed for the Project and will be modified for each PIUs once service providers have been identified. A GBV referral pathway will be identified within Kahama Municipal Council with the appropriate capacity and quality of service delivery. The CGC will be trained on how to manage GBV related grievances including matters of confidentiality, treating survivors with empathy and what non-identifiable data will be collected and how to close the case.

In cases involving a Project Worker, the contractor and PIUs will be advised about the case who will in turn inform the GBV Specialist at the national level who will instigate any investigation required involving the contractor, PIUs, services providers etc. They will then recommend action to be taken by the contractor/CGC in ensuring that administrative sanctions are taken against an alleged perpetrator of sexual assault.

9.5 Adaptation for Vulnerable Groups

This GRM will be presented to Vulnerable Groups and adapted as needed to meet their requirements and decision-making processes while maintaining the principles underlying the mechanism and the roles and responsibilities. Such adaptations will be discussed and agreed during the preparation of the Vulnerable Groups Plans but may include roles for traditional leaders and decision-making processes for example in addressing land issues. The aim for this adaptation is to ensure that vulnerable groups are able to raise their concerns in a manner they feel will be listened to and which they feel is accountable to them.

9.6 Operational GRM

Grievance emanating from the operational activities, will be handled at the Kahama Municipal Council ideally through the appointed *Grievance Handling Officers (GHOs)*. At the council level

a Grievance Handling Officers comprising of TACTIC Project Coordinator, Environmental Officer and Community Development Officer/Sociologist will be responsible for addressing all grievances related to Project performance. The GHOs shall maintain records where grievances and complaints, including minutes of discussions, recommendations and resolutions made, will be recorded as outlined below which will be adapted, where relevant, to align with the council while maintaining the requirements outlined.

To ensure effectiveness and efficiency, GRM the procedures for handling grievance will be simple. The Grievance Handling Officers (GHOs) shall maintain records where grievances and complaints, including minutes of discussions, recommendations and resolutions made, will be recorded. Quarterly reports on grievances received, registered, resolved or channelled to the appropriate departments staff for explanation or resolution as well as grievances referred to the responsible Government Institutions for further scrutiny such as the *Prevention and Combating Corruption Bureau-PCCB, Commission for Human Rights and Good Governance-CHRGG, security and legal recourse*, will be submitted to the Grievance Redress Integrity Committee (GRIC) for discussion and way forward.

The GRM has the following steps:

Step 1: The Project Affected Person (PAP) shall file the grievance through a special e-mail established for receiving grievances, suggestion boxes, meetings or directly to the GHO who will record grievances/complaints receipt and resolution form. Grievance will be recorded in the grievance/complaints register. All alternative ways of submitting grievances to the management of the Kahama Municipal Council will be made known to the PAPs for easy communication.

The GHOs will keep records of all complaints received and the responses made in order to track the resolution of grievances. The GHO will acknowledge the complaint has been received. The response will either accept or refute responsibility for the grievance and next step will be the investigation and resolution or immediate actions to be taken. The GHOs will aim at completing investigation within two weeks of the grievance first being logged and will involve the aggrieved person/people in this investigation to ensure their views are incorporated.

If complainant is satisfied, the GHOs will seek their sign off and determine if any follow up is needed to monitor resolution implementation. Once the measures have been implemented the grievance will be closed. If the grievance still stands then the GHO will initiate further investigation and determine the steps for future action.

Step 2: If the PAP is not satisfied with decision of GHOs, the grievance is referred to the Grievance Redress Integrity Committee (GRIC) respond within 2 weeks' time from the submission. The GRIC members would preferably be senior staff who would be required to present the status of Grievance handling to the decision organ of the responsible Institution for discussion and decision on proposed mitigation measures. GHOs will present the report of the number of grievances registered and attended to the Grievance Redress Integrity Committee (GRIC) for discussion and way forward.

Step 3: If the PAP is not satisfied with decision of GRIC, the grievance is reported to the TACTIC Project Implementation Unit at the council.

Step 4: If the PAP is not satisfied with decision of the council, the grievance(s) is reported to PORALG. If the PAP is not satisfied with decision of PORALG, he/she is will channel the grievance to legal redress.

The TACTIC project GRM flow chart is presented in **Figure 18.**

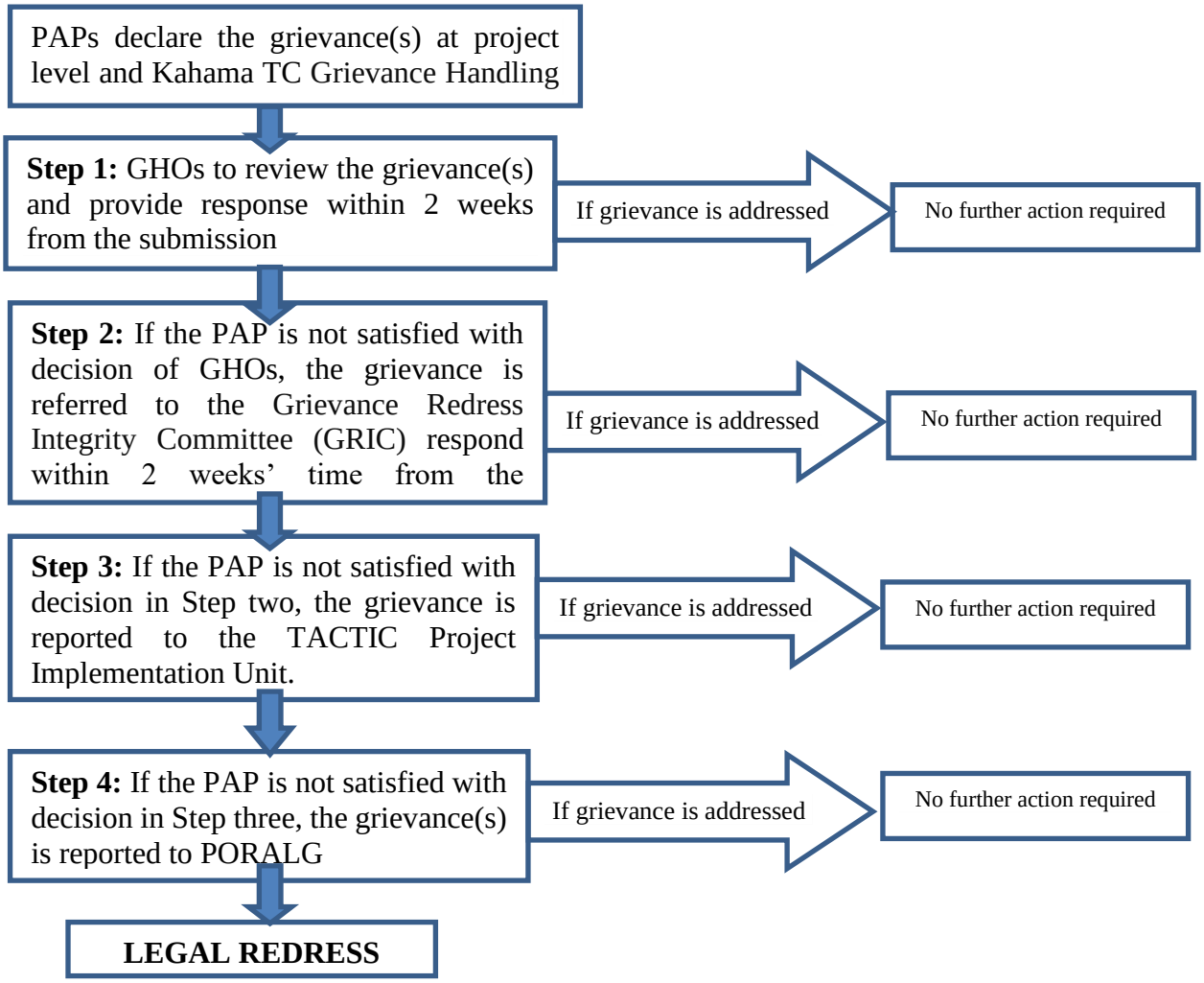


Figure 18: The flow chart for steps in Construction and General GRM

9.7 Gender Based Violence (GBV) Grievance Redress Mechanism:

In case of complaints related to Gender Based Violence (GBV), the GHO will treat these grievances with due confidentiality. Specific provisions will be included for complaints related to Sexual Exploitation and Abuse (SEA) that could be derived from the project to ensure the survivor's confidentiality and rights. The GRM will ask for, or record, information on three aspects related to the GBV incident: (a) the nature of the complaint (what the complainant says in her/his own words without direct questioning, (b) if, to the best of their knowledge, the perpetrator was associated with the project, and (c) if, possible, the age and sex of the survivors. Survivors will be advised of their right to referral pathways include security and legal recourse, health services and, psychosocial counselling. Details of the GBV GRM will be included in the GBV action plan.

9.8 Resettlement Grievance Redress Mechanism

Resolution of involuntary resettlement and construction related grievances will be handled by the existing land dispute resolution structures established at the street level to the Ward and District level. The project affected persons (PAPs) shall file the grievances to the local government (village/Street) office for mediation and resolution of disputes emanating from resettlement issues.

In situations where PAPs are not satisfied with the street government decision on resettlement disputes, the PAPs can_approach the street Adjudication Committee (MAC) for mediation. The VLC will try as much as possible to arrive at a compromise for the complaints raised. This may be obtained through series of conciliations, mediations and negotiations exercises between the two parties *(the PAPs, the subproject proponents and City Director).* If disagreement on the resolutions persists, the PAPs will be allowed to submit their appeal to the Ward tribunal, District land and Housing tribunal, Ministry of Land, Housing and Human Settlement Development before being transferred to the court of law and court of appeal, where necessary, with a view to determine claims validity and compensation required. The response time for cases handled will depend on the issues addressed but it will be as short as it is possible.

9.9 Records Keeping of GRM

All comment responses and, grievances are to be logged using grievance logging forms and registers. This includes details of the claim/grievance/complaint, the claimant/aggrieved, and ultimately the steps taken to resolve the grievance. A master database will be maintained by the CGC to record and track management of all grievances. Regardless of the actual establishment of such a database, typically documentation on grievances keeps track of the following:

9.10 Monitoring of GRM

It is vitally important to monitor the effectiveness of the grievance mechanism. Appropriate measures for this include monthly reporting on the number of grievances received, resolved and outstanding and associated timeframes. This will be undertaken by the CGCs and reported to Municipal Council/PORALG. As part of stakeholder engagement and consultation, involving the views of the stakeholders for whom the Grievance Mechanism is designed will be part of PORALG Monitoring.

CHAPTER TEN

DECOMMISSIONING

10.1 Introduction

As decommissioning will take place in the remote future, the specific conditions for mitigation are generally inherently uncertain. In view of this, specific mitigation measures pertaining to environmental impacts of decommissioning works cannot be proposed at the moment with a reasonable degree of certainty. A Detailed decommissioning plan that takes environmental issues into consideration shall be prepared by the developer prior to the decommissioning works. Should it be done, decommissioning may entail change of use (functional changes) or demolition triggered by change of land use. Therefore what is presented here is just a Preliminary Deccommissioning Plan which give light to what shall be done if the need for decommissioning arise.

10.2 Preliminary Decommissioning Plan

This Section provides a brief outline of the works required to demolish the Proposed bus terminal on the site incase it happen. This Plan will be used as a reference document that provides the framework to ensure that demolition activities on the site do not adversely affect the health, safety, traffic or the environment of the public and neighbouring properties. The Contractor will be required to prepare a detailed Demolition Plan and Construction Management Plan to the satisfaction of the Proponent and relevant Authorities prior to the commencement of works on site.

10.2.1 Type of facilities to be Demolished

The facilities to be demolished within the bus terminal shall be generally constructed with load bearing masonry walls with steel or timber framed roofs and metal roofs. The bus terminal will be generally constructed off a concrete slab on ground, presumably with strip and pad footings.

10.2.2 Demolition Methods

It is anticipated that the Contractor will prepare a detailed Demolition Plan prior to the commencement of work on site, however, the indicative demolition methodology will be as follows:

- The strip out and removal of non-structural elements will be undertaken utilising manual labour and small plant including – bobcats, 3-5t excavators and dingo type loaders.
- The materials will be removed from site using small to medium sized trucks.
- The structures will be demolished using larger plant and equipment including 15-40t hydraulic excavators. These machines will be equipped with rock breakers, pulverisers and the like which would be used in a sequential manner.
- This engineer will be engaged to provide further engineering advice in relation to temporary support or backpropping of the structure during demolition.
- During the demolition process erosion control measures will be established. These will include treatment of dust and potential discharge into stormwater systems.

10.2.3 Materials Handling

Materials handling will be by mechanical plant (including excavators and bobcats) loaded into trucks (bogie tippers and semi trailers). The debris will be carted offsite to an approved waste facility or recycling centre.

The contractor shall submit a Demolition Waste Management Plan to Kahama Municipal Council which outlines the objectives of:

- maximisation, reuse and recycling of demolition material
- minimisation of waste disposal
- evidence of implementation for specified arrangements of waste management

On-site storage of reusable materials will occur at Site. Recycling and disposal containers will also be accommodated at this location for collection vehicles. Hazardous materials will be treated separately. A hazardous materials inspection will be undertaken by an accredited consultant and a report issued. Hazardous materials will be removed in accordance with EMA 2004. A final clearance report will be provided by the hygienist which will include the provision of tip dockets from waste centres.

10.2.4 Proposed Sequence

The Contractor will be required to prepare the following documentation prior to the commencement of demolition and/or excavation works:

- Dilapidation Survey
- Construction Waste Management Plan
- Demolition Management Plan

In principle, the demolition process is undertaken in the reverse sequence as construction. Essentially, internal finishes will be stripped out. Services will then be removed including airconditioning, pipework and conduit. The facades will be removed where necessary and the structure will then be demolished using the larger plant and equipment. It is estimated that it will take 3 months to demolish and clear the site.

10.2.5 Protective Measures

An A Class hoarding will be erected around the perimeter of the construction site prior to the commencement of demolition works. Additionally, wherever the risk arises of material falling into public areas, overhead protection will be provided in the form of a B Class hoarding. At this stage, it is anticipated that a B Class hoarding will be established on the Victoria frontage. Scaffolding will be erected to facades where materials could fall in excess of 4m. The scaffolding will be clad with chainwire and shadecloth to enclose debris and dust onto the site. During the demolition, dust control measures will be used to minimise the spread of dust from site. The Contractor will have a senior representative on site at all times to ensure compliance with the safety guidelines and agreed work methods.

10.2.6 Traffic Management

The management of construction traffic during the deccommissioning phase will be subject to the provision of a detailed traffic management plan. This plan will be prepared by the Contractor for the various stages of demolition. During demolition, all traffic will be held within the site boundaries. The site will remain closed to pedestrian traffic and will be generally manned by security.

10.2.7 Occupational Health and Safety

A detailed OH&S Policy will be provided by the Contractor prior to work commencement. A detailed Site Safety Plan will be prepared for the specific project.

10.2.8 Environmental Management Plan

A detailed Environmental Management Plan will be provided by the Contractor prior to the commencement of the work.

10.2.9 Potential Impacts and Mitigation Measures

Dust and Noise Pollution

The demolition activities for the remained part (foundation structure) shall be accompanied with emission of a lot of dusts since the demolition works are expected to be carried out by conventional method using mechanical breakers and jackhammers. However, alternative methods of demolition including explosive techniques can be used.

Mitigation Measures

- Water sprinkling shall be applied to open earth to reduce dust emission.
- Trucks transporting construction materials shall be covered if the load is dry and prone to dust emissions.
- The demolition area shall be fenced by iron sheets; this will prevent the dust at the ground to be picked up by the wind.
- Community notification shall be undertaken where appropriate where work is likely to cause dust impact on the public and nearby residents.
- Sound construction equipment, with noise sinks, shall be used
- Machine operators in various sections with significant noise levels shall be provided with noise protective gear.
- Construction equipments shall be selected, operated and maintained to minimize noise.

Increased Waste

A lot of demolition waste is expected as a result of the demolition of the bus terminal and its facilities. These shall include blocks, concrete, reinforcements, pipes etc. Most of the block materials shall be salvaged and recycled.

Mitigation Measures

- All materials which can be reused shall be reused
- Materials that cannot be reused shall be sent to at the authorized dumpsite

10.2.10 Costs for Undertaking the Mitigation Measures

The cost for undertaking Mitigation measures during deccommissioning is estimated to be **TSH 75,000,000.**

CHAPTER ELEVEN

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

11.1 Summary and Conclusions

The findings from this environmental and social impact assessment report can be summarized as follows:

The project is generally accepted at the community, district, regional and national levels, based on its potential socio-economic benefits. The potential long-term social and economic benefits that the project is likely to bring are much greater than the negative impacts that can be managed to acceptable levels.

All key stakeholders for should be involved at all stages of the project.

The project will not trigger involuntary resettlement and compensation-related issues since it will be implemented within the planned areas.

The design, construction and operation of the proposed facilities and support infrastructure should fully consider the needs of the PWDs. The gender requirements (gender-responsive design, construction, operation and maintenance), health and safety standards and conformity to national and international standards/guidelines underpinning the KMC requirements.

The negative impacts of concern are: disturbances from elevated levels of construction noise and vibrations on during construction; air emissions impact from dust and exhaust fumes during construction; occupational health and safety hazards in all phases of the project; accidental contamination of surface and groundwater resources; exposure to HIV/AIDS and new transmission; and workplace sexual harassment and violence against women & vulnerable segments.

The significant positive impacts of concern are: employment and income generation opportunities in phases of the project; income to surrounding petty traders, materials/equipment suppliers and service providers during construction and operation phase; revenue generation to local government and agencies;

Given the above findings, it can be concluded that the proposed project activities from design, construction to operations stage will have manageable/ reversible negative impacts on the biophysical and social-economic environments, provided that the proposed mitigation measures are appropriately implemented. In this way, the project will have minimal environmental, socio-economic, and cultural concerns that would inhibit its implementation and development. It is anticipated that the project will potentially result in more positive than negative impacts in the long term.

Subsequently, the report's findings support the development and operation of the proposed project because the KMC and other responsible parties implement the mitigation and enhancement measures recommended in this report. KMC is responsible for ensuring the overall implementation of the proposed ESMP and ESMP and conducting periodic environmental monitoring and audits.

11.2 Recommendations

This ESIA report recommends that the proposed project be allowed to proceed on condition that the proponent implements the ESMP proposed in this report as appropriate and any other conditions imposed by NEMC, WB and other relevant authorities.

APPENDICES

Appendix I: Terms of References

Environmental and Social Impact Assessment for the Upgrading of Sango Market on Plot No. 889, Block 'U' located at Sango Mtaa in Nyasubi Ward, Kahama Municipality in Shinyanga Region.

1.0 INTRODUCTION

The detailed scope for undertaking Environmental and Social Impact Assessment is intended to guide the Consultant to address relevant environmental and social issues during the assessment process. Among others, the ESIA conducted in accordance with the requirements of the Environmental Management Act No. 20 of 2004 and Environmental Impact Assessment and Audit regulations (2005). The Consultant shall do everything necessary to meet the objectives of the services and not less than the following tasks that undertaken during the Environmental and Social Impact Assessment. In the process of consultation (Scoping process) with relevant stakeholders like environmental authorities, the Consultant may further be required to finalize the Terms of Reference for the undertaking of ESIA according the agreement with these stakeholders.

2.0 OBJECTIVE OF THE ASSIGNMENT

The main objective of the consultancy services is to undertake Environmental and Social Impact Assessment (ESIA) for the upgrading of Sango market. The ESIA will address environmental and social impacts which may arise from the upgrading the proposed road and provide mitigation plan to prevent or minimize adverse impacts.

3.0 SCOPE OF WORK

TASK 3.1: SCOPING

The Consultant shall carry out scoping exercise and prepare Scoping Report. The Scoping Report should include the following:

- Background of the project and objective of the assignment
- Project description
- An outline of how the scoping exercise was undertaken.
- Identification of issues and problems
- Synthesis of results of Scoping exercise (potential positive and negative impacts)
- Project boundaries in terms of spatial, temporal and institutional aspects
- Stakeholder's consultation. This will cover all levels of stakeholder identification, record their concerns and indicate how they were involved. This list of stakeholders consulted appended in the Scoping Report.
- Project alternatives,

In the undertaking of scoping exercise, the Consultant has to refine the framework TOR given by the Client to cover environmental issues, which may emerge from the consultation during the scoping exercise. The Refined TOR appended to the Scoping report. The Scoping Report should be submitted with the Inception Report for review and be submitted to the National Environment Management Council for further review and approval.

TASK 3.2 UNDERTAKING OF ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Sub-Task (I): Introduction

The Consultant shall provide description or profile of the developer, background to the project proposal and its justification, need and purpose of undertaking the study, ESIA study methodologies and approaches applied and structure of the report.

Sub-Task (ii): Description of the Proposed Project

The Consultant shall describe project components and activities to be implemented in each phase of project life cycle i.e. pre construction, construction, post-construction (demobilization) and operation. This part meant to give a general idea of what the project will entail. To avoid unnecessary details, focus on the project activities based on project phases i.e., mobilization or pre-construction phase, construction phase, operation phase and decommissioning and demobilization phase. The description shall include the following information**:**

- Background information:
- Background information shall include: Title of the proposed project and developer; Project justification and objectives; Funds and source of funding or financier(s); Project location including maps of appropriate scale; Project design, size, and capacity; Area of influence of the road works; Project life span and Project components; Land size required;
- Project activities; Description of project activities shall be based on phases of project life cycle i.e., mobilization or pre-construction, construction, operation and maintenance, demobilization and decommissioning phases:

Mobilization or Pre-construction activities;

Describe issued pertaining to land acquisition; construction camp and site workshop; project design; land dispossession and property evaluation; relocation and compensation arrangements
Construction activities;

Describe all associated activities during construction work such as extraction of raw materials and water; blasting; cut and fill; land clearance; soil and gravel compaction and levelling, demolition of structures along the road reserve; liquid and solid waste generation and disposal; etc.

Operation and maintenance activities;

Identify and describe all the associated activities to conducted during road operation and maintenance such as road safety measures, operation and management of road facilities along the road such as public toilets, etc

Demobilization and decommissioning activities;

Identify and elaborate on the activities to be conducted during demobilization or decommissioning of the road project including movement and demolition of construction facilities, restoration of borrow pits, termination of the temporary workers' employment, waste management, etc.

Project Requirements:

Identify all types, sources and quantities of construction materials, equipment and chemicals required by the project. Source and quantities of water, energy, manpower (Staffing and support) and other facilities and services required in each phase of project life cycle;
[Note: specify any other type of information relevant to the description of the project category.]

Sub-Task (iii): Provide Baseline Condition or Description of the Environment
In order to forecast the impacts, it will be necessary to determine the initial reference or baseline state. It is therefore, required to describe the existing environment that would be directly and/or indirectly affected by the construction of the proposed rod project. The 'environment' to be affected must be based on the broad definition of the term that would include biophysical, socio-economic, cultural and historical factors. Only those environmental factors that are necessary to understand the impacts of the planned development should be considered. Assemble, evaluate, and present baseline data on the relevant environmental characteristics of the study area. Include information on any changes anticipated before the project commences.
(a) Physical environment: This shall cover geology; topography; soils; climate and meteorology; ambient air quality; surface and groundwater hydrology; existing sources of air emissions; existing water pollution discharges; and receiving water quality;

(b) Biological environment: flora; fauna; rare or endangered species; ecologically Important or sensitive habitats, including Game and Forest reserves, significant natural sites; species of commercial importance; and species with potential to become nuisances, vectors, or dangerous (of project site and potential area of influence of the project); and Socio-cultural environment: population; land use; planned development activities; Community structure; employment; distribution of income, goods and services; recreation; public health; Gender issues and HIV/AIDS, cultural / historic properties; tribal peoples; and customs, aspirations, and attitudes to the project.

The consultant shall indicate sources of data and methodologies used to acquire data. The relevant international and national standards of noise levels, water and air quality etc. applied when comparing between the existing and anticipated impact of project.

Sub-Task (iv): Describe Legal, Policies and Administration Framework
Describe the policy, legal, institutional framework as well as Regulations, strategies, standards, international conventions and treaties that are of relevance to the environmental management and the proposed undertaking in particular. They should be those, which relate to but not limited to environmental quality, health and safety, protection of sensitive areas and protection of endangered species. The objective of this section is to show compliance of the developer with the existing policies, laws administrative/institutional conditions both at national and international levels.

The following, but not limited to, are the relevant policies and legislation to be cited in relation to the proposed project undertakings.

Policies, Regulations and Guidelines	Legislation
Tanzania Wildlife Policy (1998); National Environmental Policy (1997); National Water Policy (2002); National Forestry Policy (1998) National Gender Policy (2002) National Transport Policy (2003) National Agriculture and Livestock Policy (1997) National Land Policy (1995) National Mineral Policy (1997) National Energy Policy (1992) National Human Settlement Development Policy (2000) National Policy on HIV/AIDS (2001) Construction Industry Policy (2003) National Policy for National Parks (1994) **Regulations, Strategies and Guidelines:** Environmental Impact Assessment and Audit Regulations (2005); Mining (Environmental management and Protection) Regulation (1999) Environmental Assessment and Management Guidelines in the Road Sector (2004); Land Regulation (2001); and National Strategy for Growth and Reduction of Poverty (NSGRP - MKUKUTA -2003) Environmental Code of Practice for Road Works (2009); Tanzania Development Vision 2025 (2000) Road Sector Compensation and Resettlement Guidelines (2009)	Road Act (2007); Environmental Management Act (2004); Railway Act No 4 (2002) Energy and Water Utilities Authority (EWURA) Act (2001) Water Resources Management Act No 11 of (2009), Beekeeping Act No. 15 (2002) Mining Act No. 14/10 (2010); Occupational Health and Safety Act (2003) HIV and AIDS (prevention and Control) Act No. 28/08 (2008) Wildlife Conservation Act (2009); Local Government Laws (Miscellaneous Amendments) Act (2006), No. 13/06; TANAPA Act (1959); Village and Urban Land Acts (1999); Land Act No. 2/04 (2004), amendment of the Land Act (1999); Forestry Act No. 14 (2002); Antiquities Act (1964), Rules 1999 Tourism Act (2008) Employment and Labour Relations Act (2004) No. 6/04 Explosives Act (2002) Urban Planning Act (2007) Land Use Planning Act (2007) Worker's Compensation Act (2008) Public Health Act No. 1/09 (2009) Graves Removal Act (1969)

Furthermore, the consultant shall clearly describe the linkage between the functions of the relevant Institutional or administrative frameworks in Tanzania and the proposed project undertakings;

Apart from country policies and legislation the World Bank Environmental and Social Framework (ESF) which describes ten (10) Environmental and Social Standards (ESS) will also be used. The ten ESSs as per the WB ESF are: ESS 1: Assessment and Management of Environmental and Social Risks and Impacts; ESS 2: Labor and Working Conditions; ESS 3: Resource Efficiency and Pollution Prevention and Management; ESS 4: Community Health and Safety; ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities; ESS 8:

Cultural Heritage; ESS 9: Financial Intermediaries; and ESS 10: Stakeholder Engagement and Information Disclosure. Given the nature of activities of this project, with the exception of ESS 9: Financial Intermediaries almost all the ESSs will be relevant.

Sub-Task (V): Stakeholder Consultations and Public Involvement.

The Consultant shall identify and consult all the relevant stakeholders at national, regional and local levels. These include the Government Agencies, local NGOs, affected groups and other interested parties in order to obtain their views regarding the proposed road works. Indicate who are they, where are they, why they are important in this project, which issues are critical to them and how they will be involved in the ESIA study. Particular attention shall be paid to the disadvantaged groups (e.g. children, the elderly and women) that may be affected by the proposed road project.

The consultant shall describe methodology applied during stakeholder consultations and public participation such as consultative meetings, household, focus groups interviews and other most appropriate methods to establish public views on the proposed project. At least one meeting with municipal council Environmental Committee held to obtain their views on the project and its implication to the environment and social aspects.

Consultant shall propose public consultation programme during the ESIA study and the most appropriate methods to establish public views used. The consultation process should be open and transparent to ensure that the views of interested and affected parties incorporated in the project design. A summary of issues and response in table form indicting sections, which address them, should be prepared.

There should be evidence in the EIS to the effect that there were stakeholders' consultations at all levels. Photographs, minutes of the meetings, names and signatures of consulted people could be useful in this regard.

Among others, the consultations should ensure the involvement of the following:

- Kahama Municipal Council including the Municipal Director and the entire team (legal, community development, environment, physical planning, engineering)
- Kahama Water and Sewerage Authority (KUWASA)
- TANESCO, Kahama Office
- Association of people with disabilities
- Association of Traders in Sango market
- Representatives of Sango Traders
- Association of vendors at Sango market
- Association of Mama Ntilie at Sango market
- Office of the Mayor of Kahama Municipal Council
- Nyasubi Ward office
- Sango Street office

Sub- Task (Vi): Analysis of Alternatives to the Proposed Project

The Consultant shall describe different project alternatives that were examined in the course of designing the proposed project and identify other alternatives, which would achieve the same objectives. Including the 'No action' alternative to demonstrate environmental and social conditions without the project, consideration of alternatives should extend to sitting, design,

technology, construction techniques, phasing and schedule, and operating and maintenance procedures alternatives.

Compare alternatives in terms of potential environmental and social impacts; capital and operating costs; suitability under local conditions; and institutional, training, and monitoring requirements. When describing the impacts, indicate which are irreversible or unavoidable and which mitigated. To the extent possible, quantify the costs and benefits of each alternative, incorporating the estimated costs of any associated mitigating measures.
Various environmental and social criteria developed to select the best road alternatives.

Sub-Task (vii): Impact Identification and Assessment

The Consultant shall identify, analyze and assess environmental impacts of the proposed road works on natural resources, human beings and the ecosystems based on the phases of project life cycle i.e. mobilization or pre-construction phase, construction phase, operation phase and decommissioning and demobilization phase. Methods applied in impact identification and the criteria used in evaluating the levels of impacts significance of the proposed road works must be specified. The impacts analysis should focus on both positive and negative impacts and be able to state whether the impacts are positive or negative; direct or indirect; short term or long term; reversible or irreversible. The Assessment should focus on the potential for negative environmental and social impacts caused by planned and unplanned (spontaneous) in-migration of people; clearing of forestlands for agriculture; increased pressure on fuel wood, fodder and water resources; social disruptions and conflicts; and threats to woodlands and wildlife species composition and habitats.

The assessment should also examine the potential for linear resettlement that usually involves projects producing linear patterns of land acquisition. An overview provided of different groups of people and their cultural, ethnic, and socio-economic characteristics, and how they are likely to benefit and/or affected by the project. Negative impacts may include but not be limited to physical relocation, loss of land or other physical assets, or loss of access to livelihood. The consultant should identify the properties along the proposed road, which affected by the implementation of the road. The type and number of the properties to affected should be indicated and be evaluated for compensation. Furthermore, the names and address of the properties' owners indicated. The consultant shall utilize the information from the valuer to address resettlement issues and develop Resettlement Action Plan.

The ESIA study should clearly identify and analyses cumulative, residue and trans-boundary impacts. Wherever possible, describe impacts quantitatively, in terms of environmental components affected (area, number), environmental costs and benefits. Assign economic values when feasible. Characterize the extent and quality of available data, explaining significant information deficiencies and any uncertainties associated with the predicted impacts. The Consultant should take into consideration existing by-laws, national and international environmental standards, legislation, treaties, and conventions that may affect the significance of identified impacts. The Consultant shall use the most up to date data and methods of analyzing and assessing environmental and social impacts. Uncertainties concerning any impact indicated.
The Consultant shall conduct a review of gender issues in the project area, the study shall include

the road section influence to the lives of men, the elderly, women, children, and disabled so as to come up with a quantifiable analysis of the benefits which will accrue to them during and after the road construction**.**

Sub-Task (viii): Propose Impact Mitigation Measures

The Consultant shall suggest cost-effective measures for minimizing or eliminating adverse impacts of the proposed road works. Measures for enhancing positive or beneficial impacts recommended. The costs of implementing these measures shall wherever possible estimated and presented.

One of the mitigation measures for the resettlement impact is compensation. The consultant is therefore required to conduct properties valuation for those properties to affected by the project implementation to effect compensation. The Consultant shall review the ongoing measures on HIV/AIDS awareness creation within the project area and propose for the mitigation measures. The proposal shall include a plan of action, which will identify responsible key implementers, period and expected output.

The proposed mitigation measures and cost estimate shall be grouped in a separate Bills of Quantities (BOQ) for the project and include cost of supervision for the implementation of mitigation measures.

Sub-Task (ix): Resource Evaluation or Cost Benefit Analysis.

The Consultant shall undertake qualitative and quantitative analysis of costs and benefits to determine the viability of the proposed project on the environment, social and economic aspects. The Economic Internal Rate of Return (EIRR) and Net Present Value (NPV) of the project at recommended discount rate of 12% should be calculated and provide interpretation of the results.

Sub-Task (x): Environmental and Social Management Plan (EMP)

The Environmental Management Plan focuses on three generic areas: implementation of mitigation measures, institutional strengthening and training, and monitoring. The Consultant shall prepare Environmental and Social Management Plan, which will include proposed work programme, budget estimates, schedules, staffing and training requirements and other necessary support services to implement the mitigation measures. Institutional arrangements required for implementing this management plan indicated. The cost of implementing the monitoring and evaluation including staffing, training and institutional arrangements specified. Where monitoring and evaluation will require inter-agency collaboration, this indicated.

Identify institutional needs to implement environmental assessment recommendations. Review the authority and capability of institutions at local, regional, and national levels and recommend how to strengthen the capacity to implement the environmental management and monitoring plans. The recommendations may cover such diverse topics as new laws and regulations, new agencies or agency functions, inter-sectoral arrangements, management procedures and training, staffing, operation and maintenance training, budgeting, and financial support.

EMP should specify impact mitigation plan and environmental monitoring plan requirement. Inject costs, responsibility and timeframe for mitigating each impact and monitoring of each environmental parameter. Impact Mitigation plan and monitoring plan should be based on the project phases i.e. mobilization or Pre-construction, Construction, Operation, Demobilization and Decommissioning phase. Prepare Resettlement Action Plan (RAP) to be implemented in

accordance with the National Land Act No 4 and 5 of 1999 (revised in 2004). All properties likely to be affected by the road project should be evaluated for compensation arrangements.

TASK 3.4: REPORTING

Notwithstanding the above requirements, the contents and the structure of the Environmental and social Impact Assessment Report should be in accordance with the Environmental Impact Assessment and Audit Regulations of 2005: It is recommended that the Environmental Impact Assessment report closely contain the followings:

- The Report shall be presented as per format stipulated in Regulation 18 (2);
- The Executive Summary of the report should reflect the Regulation 18 (3) requirements;
- The Non-Technical Executive Summary should be a brief stand-alone document both in Kiswahili and English languages starting with the main findings, conclusions and recommendations as required by Regulation 19 (2).
- The cover page to indicate the names and address of the Client, ESIA Consultant and the Reviewer (NEMC)

It recommended that the Environmental and Social Impact assessment report closely contain the followings:

Chapters:

- Introduction
- Project Background and Description
- Policy, Legal and Administrative Framework
- Baseline or existing environmental Conditions
- Stakeholders Consultations and Public Participation
- Project alternatives
- Identification and analysis of Impacts
- Mitigation Measures
- Resources Evaluation or Cost Benefit analysis
- Environmental and Social Management Plan
- Action Plan for Management of impacts
- Environmental Monitoring Plan
- Action plan for Auditing
- Contingency Plan
- Decommissioning/demobilization Plan
- Summary and Conclusions
- References
- Appendices

4.0 STAFFING

The Consultant should employ an Environmental Impact Assessment Expert, Sociologist and a qualified Valuer for the carrying out of the services.

Appendix II: NEMC Letter for TOR Approval

THE UNITED REPUBLIC OF TANZANIA

VICE PRESIDENT OFFICE

NATIONAL ENVIRONMENT MANAGEMENT COUNCIL
(NEMC)

In reply please quote:

Ref: EC/EIA/2022/6467 **Date: 15/02/2023**

Kahama Municipal Council,
P.O. Box 472
Kahama

Re: **APPROVAL OF TERMS OF REFERENCE (ToR) FOR THE PROPOSED UPGRADING OF SANGO MARKET LOCATED AT SANGO MTAA IN NYASUBI WARD, KAHAMA MUNICIPAL COUNCIL IN SHINYANGA REGION**

Reference is made to the above captioned subject.

2. The National Environment Management Council (NEMC) acknowledges receipt of Terms of Reference (ToR) and Project brief for undertaking an EIA for the above mentioned project.

3. In regard to the above, the Terms of Reference were reviewed and found generally to be adequate and therefore can guide the Environmental and Social Impact Assessment (ESIA) study of the named project. The ESIA report should observe requirements of ESIA and Audit Regulations, 2005 specifically Regulation 51 and 52. Furthermore the following should also be included in the ESIA report:-

i. All key stakeholders are consulted including neighbors and the Local Government Authorities. Their views and concerns should be addressed. Records of meetings, communication and comments should be provided with proof of service. Consultation forms should bear **date** and each consulted stakeholder should **sign** against his/her **name** as the law requires;
ii. Ensure all copies of relevant documents/certificates including the land acquisition process documents showing properties impacted by the project are appended to the report
iii. Compliance status of all applicable legal and policy frameworks and their respective requirement is addressed in the ESIA report.

4. Upon submission of the ESIA report, the Council will arrange for a technical review of the document by the Cross-sectoral Advisory Committee (AC). Prior to

Head Office, Kambarage Tower, 6th Floor, P.O. Box 2724, Dodoma. Phone: +255 262960098, 0713608930,
Email Address: nemcdg@nemc.or.tz Website: www.nemc.or.tz

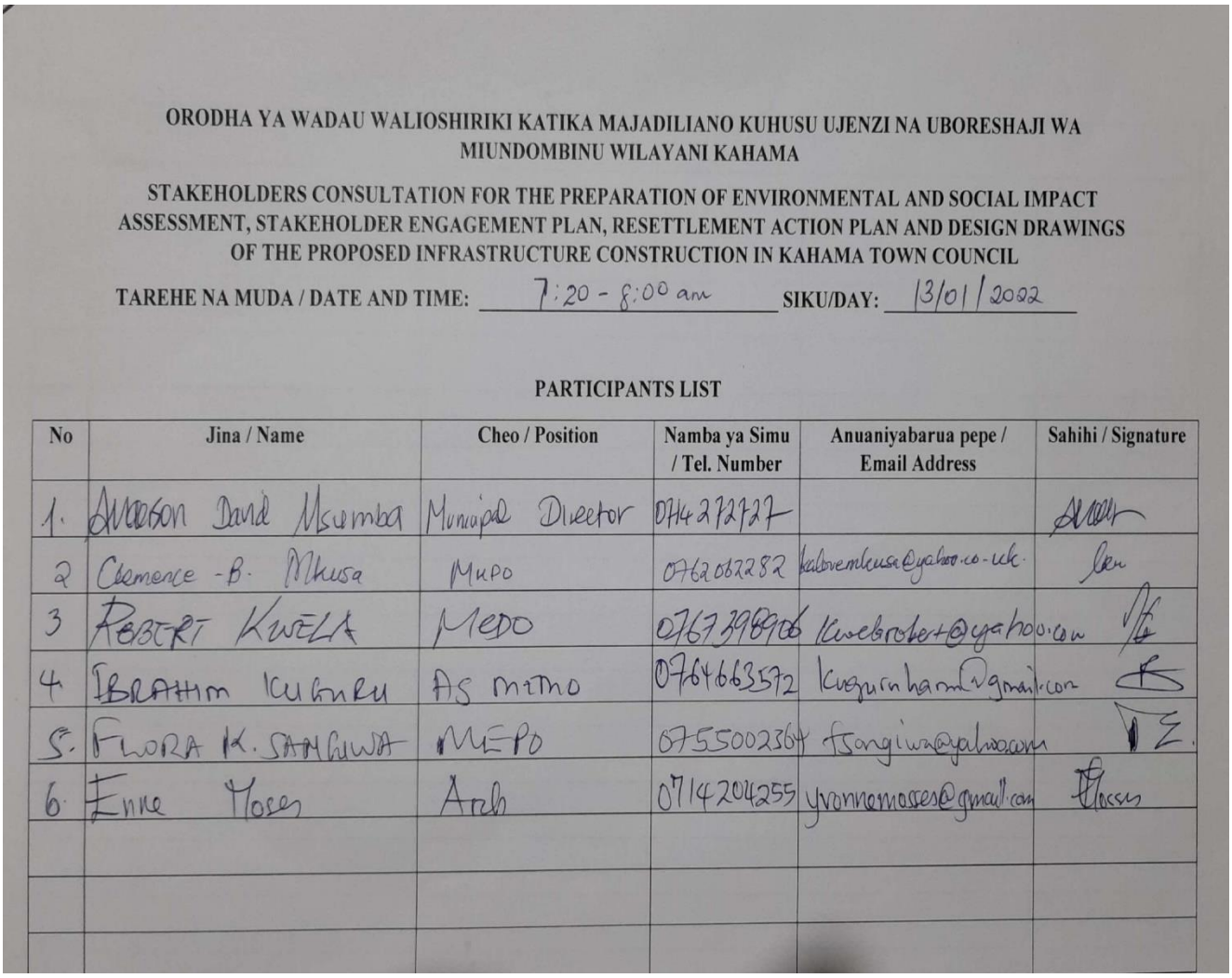
review, representatives of the AC will visit the project area to inspect the site and verify adequacy of the ESIA Report. As you submit the ESIA report you will be required to as well pay to the Council a review cost as generated by the system

5. We are looking forward to your cooperation concerning this project.

A. N. Sembeka
For: **DIRECTOR GENERAL**

Cc: ROSEMARY C. NYIRENDA,
P. O. Box: 38568,
Dar Es Salaam

Appendix III: Participants list for the upgrading of Sango market



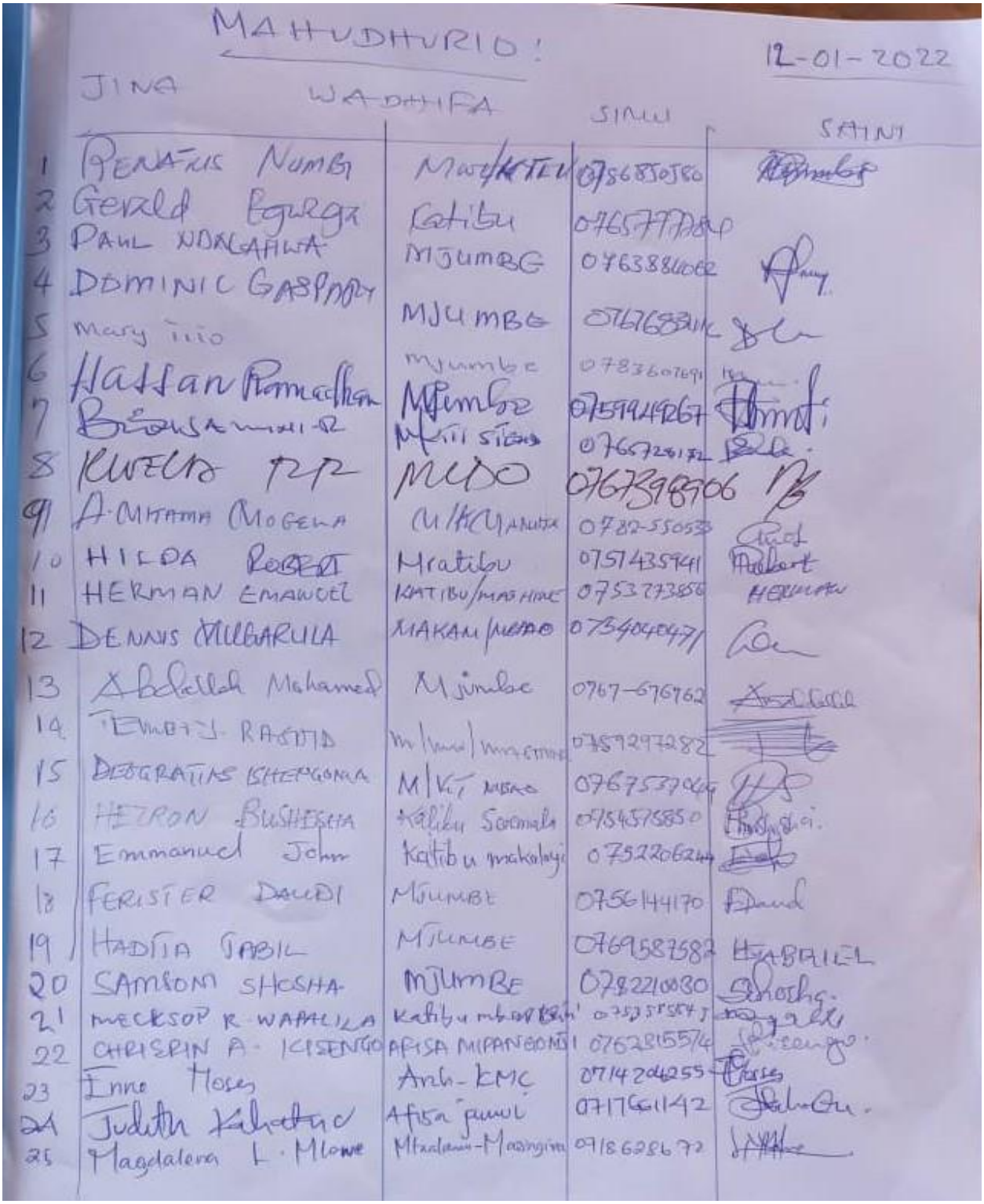
ORODHA YA WADAU WALIOSHIRIKI KATIKA MAJADILIANO KUHUSU UJENZI NA UBORESHAJI WA MIUNDOMBINU WILAYANI KAHAMA

STAKEHOLDERS CONSULTATION FOR THE PREPARATION OF ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT, STAKEHOLDER ENGAGEMENT PLAN, RESETTLEMENT ACTION PLAN AND DESIGN DRAWINGS OF THE PROPOSED INFRASTRUCTURE CONSTRUCTION IN KAHAMA TOWN COUNCIL

TAREHE NA MUDA / DATE AND TIME: 7:20 - 8:00 am SIKU/DAY: 13/01/2022

PARTICIPANTS LIST

No	Jina / Name	Cheo / Position	Namba ya Simu / Tel. Number	Anuaniyabarua pepe / Email Address	Sahihi / Signature
1.	Anderson David Msumba	Municipal Director	0744272727		
2	Clemence -B. Mkusa	MHPO	0762082282	kalolemkusa@yahoo.co.uk	
3	ROBERT KWELA	MEDO	0767398906	kwelarobert@yahoo.com	
4	IBRAHIM KUGURU	AS MTHO	0764663572	kugurunham@gmail.com	
5.	FLORA K. SANGIWA	MEPO	0755002364	fsangiwa@yahoo.com	
6.	Enne Moses	Arch	0714204255	yvonnemosses@gmail.com	



MAHUDHURIO:

12-01-2022

	JINA	WADHIFA	SIMU	SAINI
1	PENATUS NUMBI	Mwalimu	0756850560	
2	Gerald Egurga	Katibu	0765777780	
3	PAUL NDAGAHWA	MJUMBE	0763884008	
4	DOMINIC GASPARY			
5	Mary Tito	MJUMBE	0767688[illegible]	
6	Hassan Ramadhan	mjumbe	0783607691	
7	[illegible]	Mjumbe	0759949267	
8	KWELU PP	MJUMBE	0767396906	
9	A. MHAMA MOGELA	M/KITI MWALIMU	0782-550538	
10	HILDA ROBERT	Mratibu	0757435941	
11	HERMAN EMANUEL	KATIBU/MASHINE	0753773856	
12	DENNIS MUGARULA	MAKAMU MWENYEKITI	0754044471	
13	Abdallah Mohamed	Mjumbe	0767-676962	
14	EMBY J. RASHID	Mjumbe/mwenyekiti	0757297282	
15	DEOGRATIAS KIHEMGOMA	M/KITI MSAKO	0767537044	
16	HERON BUSHESHA	Katibu Somala	0754575850	
17	Emmanuel John	Katibu wa mkakati	0752206244	
18	FERISTER DAUDI	MJUMBE	0756144170	
19	HADIJA JABIL	MJUMBE	0769587582	HABRIEL
20	SAMSONI SHOSHA	MJUMBE	0782210030	
21	MECKSOP R WAMBURA	Katibu mbadala	0753575547	
22	CHRISPIN A. ICISENGO	AFISA MIPANGO	0762815574	
23	Enno Moses	Arch-KMC	0714204255	
24	Judith Kihaule	Afisa jamii	0717661142	
25	Magdalena L. Mlowe	Mhadhama-Maongezi	0786286772	

ORODHA YA WADAU WALIOSHIRIKI KATIKA MAJADILIANO KUHUSU UJENZI NA UBORESHAJI WA MIUNDOMBINU WILAYANI KAHAMA

STAKEHOLDERS CONSULTATION FOR THE PREPARATION OF ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT, STAKEHOLDER ENGAGEMENT PLAN, RESETTLEMENT ACTION PLAN AND DESIGN DRAWINGS OF THE PROPOSED INFRASTRUCTURE CONSTRUCTION IN KAHAMA TOWN COUNCIL

TAREHE NA MUDA / DATE AND TIME: 9:00 am -3pm SIKU/DAY: 13/01/2022 Thursday.

PARTICIPANTS LIST

No	Jina / Name	Cheo / Position	Namba ya Simu / Tel. Number	Anuaniyabarua pepe / Email Address	Sahihi / Signature
01	[illegible]	District Manager TARURA	0786-211592	dm.kahama@tarura.go.tz	[signature]
02	Said Hamad	Ag. District OP. Enginer TANESCO	0767-202357	said.hamad@tanesco.co.tz	[signature]
03	Josephat John	Ag. PCE-KUWASA KHM.	0754-742005	josephatjohn 2@gmail.com	[signature]
04	Mbwana Karata	Makamu M/kiti CHAWATA	0764685253	mbwanakarata@gmail.com	[signature]
05	Marco Nkanjiwa	Mwenyekiti SHIVYAWATA	0755047015	shivyawatakahama@gmail.com	[thumbprint]

ORODHA YA WABAU WALIOSHIRIKI KATIKA MAJADILIANO KUHUSU UJENZI WA SOKO LA SANGO WILAYANI KAHAMA

STAKEHOLDERS CONSULTATION FOR THE PREPARATION OF ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT, STAKEHOLDER ENGAGEMENT PLAN, RESETTLEMENT ACTION PLAN AND DESIGN DRAWINGS OF THE PROPOSED UPGRADING OF SANGO MARKETIN KAHAMA TOWN COUNCIL

TAREHE NA MUDA / DATE AND TIME: 13:30 pm SIKU/DAY: 12/01/2022

PARTICIPANTS LIST SANGO - NYASUBI

No	Jina / Name	Namba ya Simu / Tel. Number	Anuaniyabarua pepe / Email Address	Sahihi / Signature
1.	Enne Mosses	0714 204255	yvonnemosses@gmail.com	
2.	CHRISPIN A. KISENGO	0762 315574	cri2ok10@gmail.com	
03	JOHANNES E. MWEBESA	0755017196	mwebesajohannes@gmail.com	
04	Innocent Kagee	0766456729	innocentkagee@gmail.com	WEO
05.	Jovenary Dews	0762388265	MKITI-SOKO	
06	THADEUS ASSET	0767.509855		
07	JAMES K JOHN	0744052759		
08	Khalid Madiba Mohamed	0748743889		
09	Sharifa yusufu Shangembe	0753905138		
010	KULWA ZOMO	0758003169		
11.	JUSTINA JOHN MASALU	0768780764		
12.	PENDO JOSEPH	0717154314		

NYASUBI - SANGO

10	PRISCA MASANA	0742423240	KATIBU - SOKO	
11	FESTO ISAYA	0685557851		
12.	BAKARI ABDALLAH	0742906644	MWENYEKITI - SOKO	
13	SAADA KHAMIS	0766963879		
14	HALIMA MOHAMED	0754022489		Halima
15	VERONICA PIRU			
16	VAILETH MAHILANE	0764786300		
17	MALIETA MASANJA			
18	JOYCE T. KAPUSPUR	0754925212		
19.	ESTA MANYANDA	0743600035		ESTA
20	AGNES ANTHON	0759956976		A. Anthony
21	MARIAM JUMA	0678439300		M. JUMA
22	ASIA YAHAYA	0699718842		Y. HAMISI
	AIDA STEPHANI	0655363884		
24	ESTA MARWA	0747273927		
25	MATOGEO MATHIAS	0626836883		M.M. Wiha
26	NAOMI ELIAKIMU	0782613253		
27	Festo Peter	0767345966		A.D
28	ASHURA DAUDI			
29	MARY THOMAS	0765331416		MARY

ORODHA YA WADAU WALIOSHIRIKI KATIKA MAJADILIANO KUHUSU UJENZI WA SOKO LA SANGO WILAYANI KAHAMA

STAKEHOLDERS CONSULTATION FOR THE PREPARATION OF ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT, STAKEHOLDER ENGAGEMENT PLAN, RESETTLEMENT ACTION PLAN AND DESIGN DRAWINGS OF THE PROPOSED UPGRADING OF SANGO MARKETIN KAHAMA TOWN COUNCIL

TAREHE NA MUDA / DATE AND TIME: 12/11/2022 SIKU/DAY: Binza Wednesday

PARTICIPANTS LIST — MNYUBI — SANGO

No	Jina / Name	Namba ya Simu / Tel. Number	Anuaniyabarua pepe / Email Address	Sahihi / Signature
1	TEDDY S. MANEGA	0755885905		
2	DIANA FRANK	071892 1878		
~~3~~	~~ASINA Abdu~~	~~0764216444~~		
~~4~~	~~Abdu Sudi~~	~~0757730806~~		
~~5~~	~~Pendo AMOSI~~	~~0682373569~~		
6	VICTORIA AYUBU	0763802561		V. AYUBU
7	BEATRICE DAUDI	0756239591		Beatrice
8	ELIZABETH HAMIS	0678002905		E hamis
9	LAULECYA STIVU	0783254095		L stivini
10.	IBELY SUIJA		DUWATU	
11.	SOZY M. MABULA	0757413062		MEO-SANGO
12.	HERITHER G. MAKAGA	0763043570	D/UITIMAALUM	Makaga

NYASUB I - SANGO -

10	SHARON JOSEPHAT	0688177113		
11	JUMA CHARLES	0717626683		
12	CHRISTINA MACHIBYA	075798577		C. M.
13	CLAUDIA MILTON	0766657729		
14	ABDALLA SHABANI	0764573002		BGM
15	HAMISA BARUANI	0766242461		
16	MARIAM SOSIPITA	0756700633		
17	MWITA RONDASAM	0727475748		
18	HILDA ROBERT	0757483941	472 KAHAMA	
19	MWAJUMA RAMADHAN	0742313109		MwR
20	ESTHER C. MKUMBAE	0742904029		
21	AGNES CHARLES	0766206418		
22	MUSA RAPHAEL	0762 306180		
23	MARIAM GEREVAS	0623866752		M. G. Pilu
24	SALEHE M. MOHAMA	0679325233		
25	EMMANUEL SAFARI	0762438221		S/LANGA
26	NAMI Etc 1 - 5 MBISE	0767097675		Mbise.
27	BEATRICE CHARLES	0754676181		B.C
28	SUDI CHARLES	0746123335		SC

ORODHA YA WADAU WALIOSHIRIKI KATIKA MAJADILIANO KUHUSU UJENZI WA SOKO LA SANGO WILAYANI KAHAMA

STAKEHOLDERS CONSULTATION FOR THE PREPARATION OF ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT, STAKEHOLDER ENGAGEMENT PLAN, RESETTLEMENT ACTION PLAN AND DESIGN DRAWINGS OF THE PROPOSED UPGRADING OF SANGO MARKETIN KAHAMA TOWN COUNCIL

TAREHE NA MUDA / DATE AND TIME: 13:30 pm SIKU/DAY: 12/01/2022

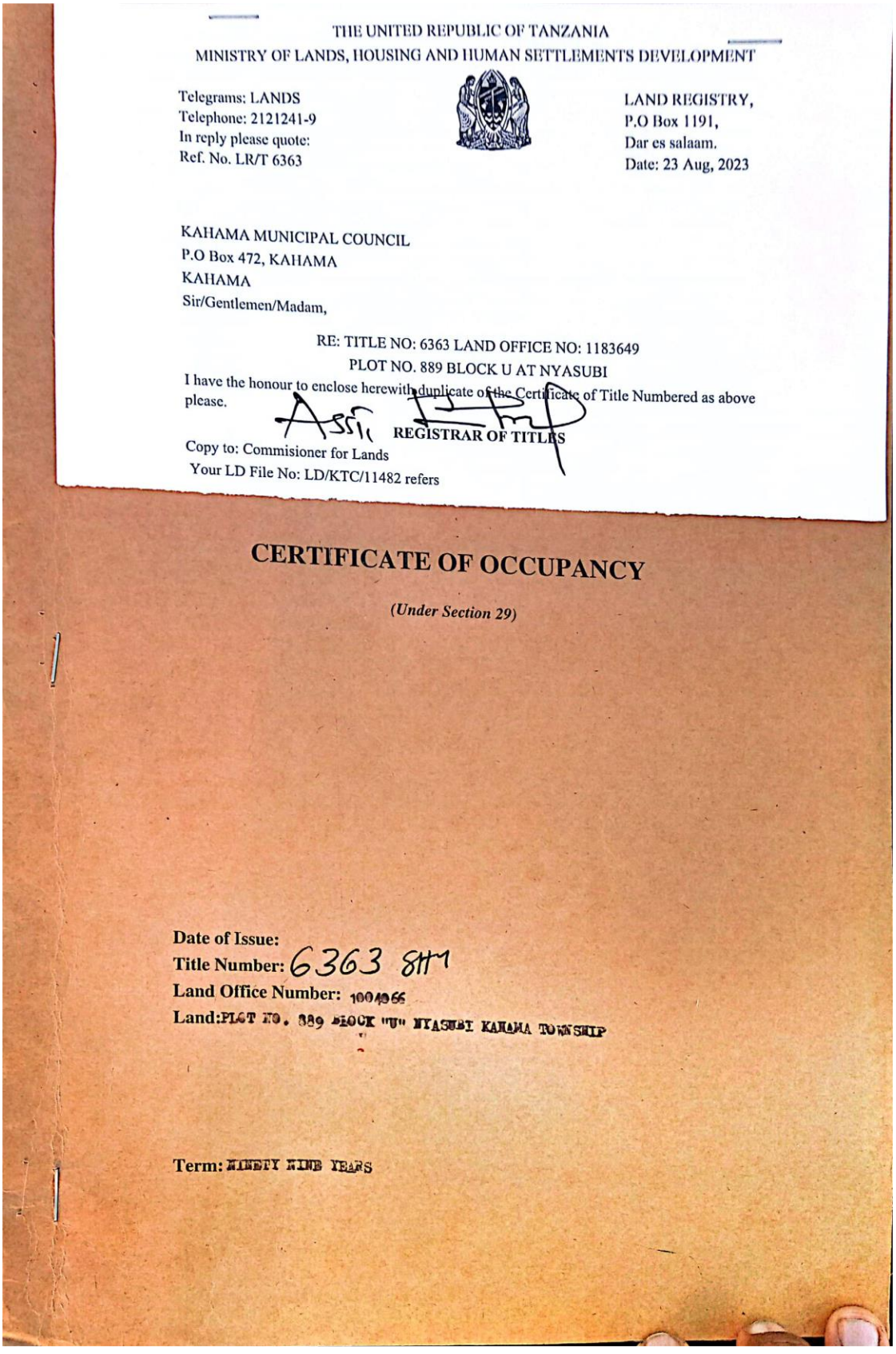
PARTICIPANTS LIST SANGO - KAHAMA

No	Jina / Name	Namba ya Simu / Tel. Number	Anuaniyabarua pepe / Email Address	Sahihi / Signature
1	SARAH W BONYO	0753906556	-	Sbilliam
2	DELAYA JOHN	0755-844848		D. John
3	NEEMA S. ANDELE	0672262081		N.S. Andele
4	JOYNESS J. KIENDE	0748298416		
5	MAGANGA ATHUMANI	0754527552		
6	MANKA MASEREE	0746233694		
7	FATUMA SILIA	0765649146		
8	MACHAGE BENEDICTOR	0714033193		
9	SUDI ULEDI	0746123335		
10	MUSSA J. RAMADHANI	0756648702	AEK.	

NYABUBI - SANGO

11.	SIMON NIELYA	0764-231996		
12.	VERONICA LIATUU	0764989022		
13.	Tatisoni Emanweeli	0719712608		
14.	SOLOMON R MASAKI	0628 227851		
15.	OMARY HASSAN	0713600832		
16.	[illegible]	0754549458		
17.	[illegible]	0755-277669		
18.	Josephine Balamoga	0755018493		
19.	[illegible]	0755-297469		
20	Leonard Mayala	0764231835		
21	Halma malusa	0748088268		
22	[illegible]	0758579888		MZO
23.	FATUMA MSEMGI	0762319578		
24.	[illegible]	0628494663		
25.	DAVID EMMANUEL	0765366757		
26.	SANDE JACKSON	0747525043		
27	[illegible]	0748757438		
28	JESCA MASHINDIKA	0755-71686		
29	Charles Mkonde	0755662106		
30	Mradulu Julius	0758955517		

Appendix IV: Certificate of Right of Occupancy (CRO) for Sango Market site



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF LANDS, HOUSING AND HUMAN SETTLEMENTS DEVELOPMENT

Telegrams: LANDS
Telephone: 2121241-9
In reply please quote:
Ref. No. LR/T 6363

LAND REGISTRY,
P.O Box 1191,
Dar es salaam.
Date: 23 Aug, 2023

KAHAMA MUNICIPAL COUNCIL
P.O Box 472, KAHAMA
KAHAMA
Sir/Gentlemen/Madam,

RE: TITLE NO: 6363 LAND OFFICE NO: 1183649
PLOT NO. 889 BLOCK U AT NYASUBI

I have the honour to enclose herewith duplicate of the Certificate of Title Numbered as above please.

REGISTRAR OF TITLES

Copy to: Commisioner for Lands
Your LD File No: LD/KTC/11482 refers

CERTIFICATE OF OCCUPANCY

(Under Section 29)

Date of Issue:
Title Number: 6363 8111
Land Office Number: 1004966
Land: PLOT NO. 889 BLOCK "U" NYASUBI KAHAMA TOWNSHIP

Term: NINETY NINE YEARS

TITLE No: 6363 DSM
REGISTERED ON: 23-08-2023
AT: 01:00 P.M
LAND REGISTRY
Senior Asst. Registrar of Titles

Land Form No. 22

TANGANYIKA STAMP DUTY ACT
Stamp Duty Shs: 100/= Paid
Receipt No: 923219194690223
of: 07-08-2023
Stamp Duty Officer

TANGANYIKA STAMP DUTY ACT
Stamp Duty Shs: 900/= Paid
On Original Receipt No: 923219194690223
of: 07-08-2023
Stamp Duty Officer

THE UNITED REPUBLIC OF TANZANIA

THE LAND ACT, 1999
(NO. 4 OF 1999)

CERTIFICATE OF OCCUPANCY

(Under Section 29)

Title No... 6363 DSM
L.O. No.**1004066**
LD No.KTC/**11482**

The 22nd day of August 2023.

THIS IS TO CERTIFY that **KAHAMA MUNICIPAL COUNCIL established under the Local Government (Municipal Authorities) Cap 288 Act No.7, 1982** of P.O. Box 472, **Kahama** (hereinafter called "the Occupiers") are entitled to the Right of Occupancy (hereinafter called "the Right") in and over the land described in the Schedule hereto (hereinafter called "the Land") for a term of **ninety nine (99)** years from the first day of **July, two thousand and twenty three** according to the true intent and meaning of the Land Act and subject to the provisions thereof and to any regulations made there-under and to any enactment in substitution thereof or amendment thereof and to the following special conditions:-

1. The Occupier having paid rent up to the thirtieth day of June, **2024** shall thereafter pay rent of shillings **Six million four hundred twenty nine thousand five hundred seventy (Tshs.6,429,570/=) only** a year in advance on the first day of July in every year of the term without deduction **PROVIDED** that the rent may be revised by the Commissioner for Lands.

2. The Occupier shall:-

   (i) Be responsible for the protection of all beacons on the land throughout the term of the Right. Missing beacons will have to be re-established at any time at the Occupier's expenses as assessed by the Director responsible for Surveys and Mapping.

(ii) Do everything necessary to preserve the environment and protect the soil and prevent soil erosion on the land and do all things which may be required by the authorities responsible for environment and to achieve such objective.

(iii) Maintain on the land (hereinafter called "the buildings") in permanent materials designed for use in accordance with the conditions of the Right and which conform to the line (if any) decide by the **Kahama Municipal Council** (hereinafter called "the Authority");

(iv) At all times during the term of the Right have on the land buildings as approved by the authority and maintain them in good order and repair to the satisfaction of Commissioner of Lands (hereinafter called "the Commissioner");

(v) Not erect or commence to erect on the land any building except in accordance with building plans and specifications which shall have been first approved by the Authority as here in before provided.

(vi) Approval of plans of any building by the authority shall not imply that the construction of such a building will satisfy the occupier's obligation under the conditions of the Right and shall not imply waiver or modification of any condition in the Right.

3. **USER:** The land and the buildings erected thereon shall be maintained and the same shall be used for **Special Retail Services and trade** Purpose Only Use group **'E'** Use class **(e)** as defined in the Urban Planning (Use Groups and Use Classes) Regulation 2018.

4. The Occupier shall not assign the Right within three years of the date hereof without the prior approval of the Commissioner.

5. The Occupier shall deliver to the Commissioner notification of disposition in prescribed form before or at the time the disposition is carried out together with the payment of all premia, taxes and dues prescribed in connection with that disposition.

6. The **President** may revoke the right for **good cause** and in **public interest**

KAHAMA TOWNSHIP

N

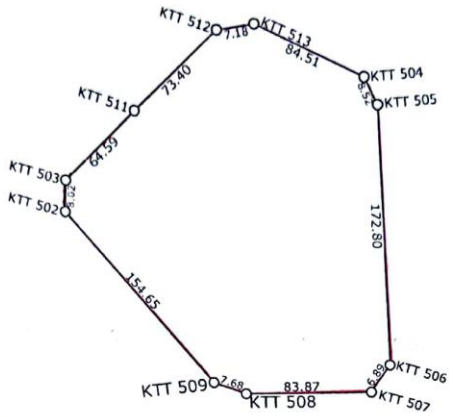
Locality.....NYASUBI.....

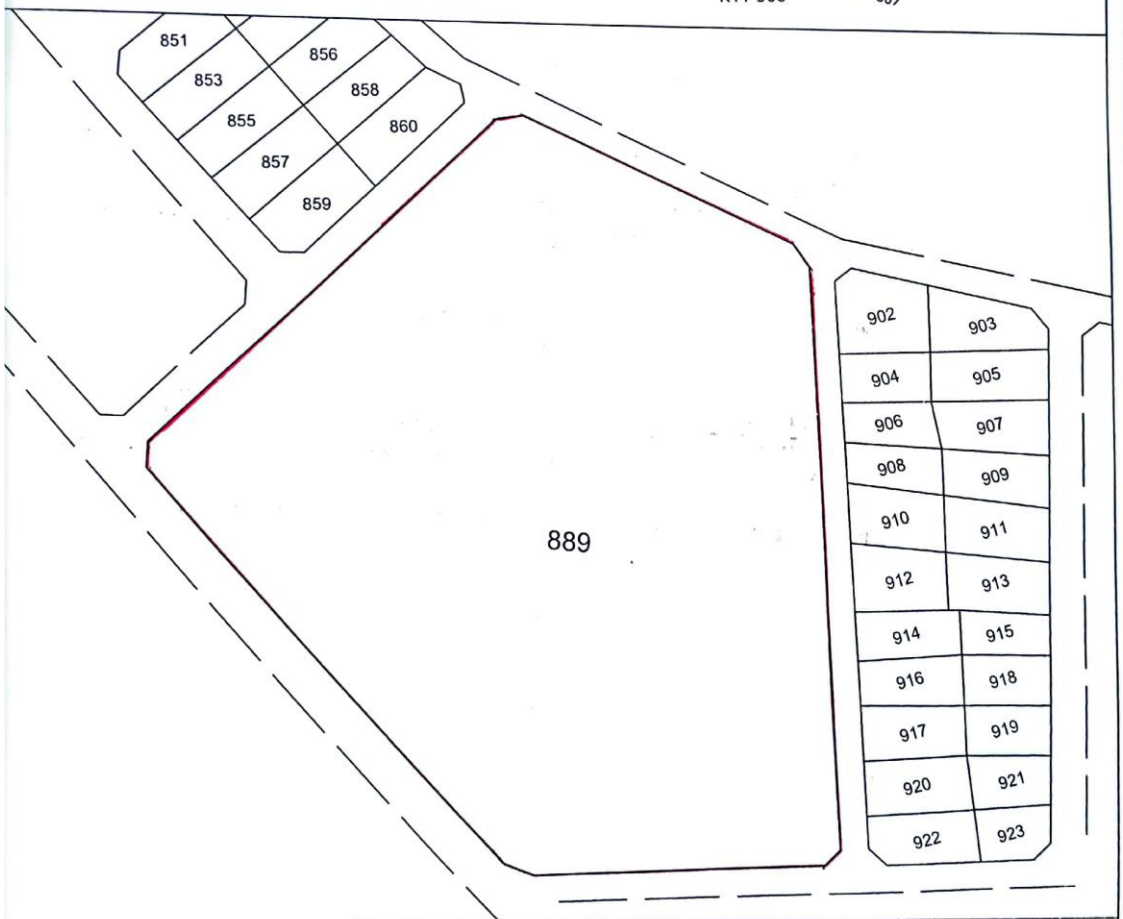
Block.....U".....

Plot No.....889.....

L.O No.....1004066.....

Area.....30,617 SQM.....





The issue of this plan implies no guarantee or admission of title by the government.

This Plan Prepared In accordance with Registered Plan No.....95562.....is approved for the purpose of Land Registration Act.

Director of surveys and Mapping.....Date.....13. 05. 2020

Surveys and Mapping Division, Ministry of Lands, Housing and Human Settlement Development, Dodoma.

SCHEDULE

ALL that Land known as Plot No. **889** Block **'U'** situated at **Nyasubi** in **Kahama Township** containing **Thirty thousand six hundred seventeen (30617) square metres** shown for identification only edged **red** on the plan attached to this Certificate and defined on the registered Survey Plan Numbered **95562** deposited at the Office of the Director for Surveys and Mapping at Dodoma.

Given under my hand and my official seal the day and year first above written.

ASSISTANT COMMISSIONER FOR LANDS

We, the within named **KAHAMA MUNICIPAL COUNCIL** hereby accept the terms and conditions contained in the foregoing Certificate of Occupancy.

SEALED with the **COMMON SEAL** by the said)
KAHAMA MUNICIPAL COUNCIL)
DELIVERED)
In our presence of us this 4th day of Aug 2023)
by.....)
Signature.....)
Postal Address..P.O Box 472.....)
Qualification..MUNICIPAL MAYOR...)
Signature.....)
Postal Address..P.O Box 472.....)
Qualification..MUNICIPAL DIRECTOR...)

Appendix V: Resettlement Action Plan (Temporary Relocation Plan)

1. INTRODUCTION

The President's Office, Regional Administration and Local Government (PO-RALG) has received fund from the World Bank to implement the Tanzania Cities Transforming Infrastructure and Competitiveness Project (TACTIC). The project intends to support urban management performance and deliver improved basic infrastructure and services in participating urban local government authorities.

TACTIC implementation is organized in three Tiers. Kahama Municipal Council (KMC) is under Tier 1, others being Kahama Municipal Council, Ilemela Municipal Council, and Mwanza City Council. Under this arrangement, KMC plans to develop community infrastructures and construction of strategic roads within town council. These investments are expected to benefit socio-economic development and revenue collection and thus helping in attaining the National Development Vision 2025. Five sub project investments are implemented including:

(i) Construction of Mbulu Bus Terminal;
(ii) Construction of Sango Market;
(iii) Improvement of Zongomela Industrial Park (construction of 12.6km of access roads, Minibus stand, and Commercial area);
(iv) Construction of approximately 10.6 km roads at Kahama Central Business District (CBD); and
(v) Construction of 3 km Storm Water Drains i.e., Chelsea-Lyazungu at Majengo and Mhongolo wards (1.5Km) and Shunu-Magobeko at Malunga Ward (1.5Km).

This Resettlement Action Plan (RAP) is prepared to address relocation impacts associated with the construction of the Construction of Sango Market. RAP has been prepared in accordance with national laws, World Bank Environmental and Social Framework Standards (ESS5), and the TACTIC project's RPF.

1.1. Project Objectives

The main objective of the proposed subprojects investments is to improve community facilities (bus stand, commercial area and urban transport infrastructures) in KMC as the proposed CBD roads connect town centre with the suburbs within the town. In KMC, most of town roads are earth roads as a result many areas are not well accessible by public transport such as minibuses which causes high costs of transport. Therefore, the overall objective of this project is to improve the livelihood of people by improving the minibus stand, commercial area, roads and drainage system infrastructures that will contribute to the improvement of the safety and wellbeing of the people by opening up the suburbs for new economic opportunities and investments.

1.2. Description of the Proposed Subproject in Kahama MC

1.2.1. Project Locations and Sites

Sango market is located at Sango Street in Nyasubi ward in Kahama Municipality's Central Business District area between 2Km to 3km from CBD and approximately 500m from the proposed site for the construction of Mbulu Bus Terminal. The market currently hosts over 400

traders who operate under a very poor working environment due to dilapidated market infrastructure. Varieties of commodities including vegetables, grains, and industrial products are sold in the market. The size of the Sango market area is 29,278 Sqm. The site can be accessed through a rough road about 500m from the Isaka – Nyakanazi – Rusumo main road. The land is owned by the Kahama Municipal Council with the certificate of right of occupancy (CRO) no. LD/KTC/11482 (**Appendix IV)** but the buildings and stalls at the market were constructed and owned by the individual traders.

1.3 Rationale and Objective of the Temporary Relocation Plan

The proposed subprojects investments in KMC (Sango market and improvement of Zongomela Industrial Area) will be implemented on the lands that are currently being used by traders for various commercial activities (market and minibus stand) hence will necessitate temporary relocation. In this regard, KMC is obliged to prepare a Temporary Relocation Plan to address temporary relocation issues instead of a full Resettlement Action Plan (RAP). Without this TRP, the project might result in long-term impacts on livelihoods and subsequent effects on individuals' income as well as their standard of living. TRP is therefore meant to ensure that, these projects' sub investments comply with the national laws and the World Bank Environmental and Social Framework Standards (ESS5). Specifically, TRP is designed to address the following objectives:

- To identify all current users at the Zongomela industrial Park and Sango market.
- To determine the types of the affected business following the improvement of the proposed facilities,
- To establish PAPs entitlements and eligibility and compensation framework.
- Identify the consultation approaches to be employed in TRP process;
- Assessment of the candidate sites for relocating the current users in terms of availability of basic facilities and the required improvements.
- Define the monitoring and evaluation arrangements including Grievance Redress Mechanisms (GRM); and
- Define the institutional and implementation arrangements for effecting TRP

Consequently, the aforementioned objectives define the scope of this TRP.

2. TRP DEVELOPMENT METHODOLOGY

The World Bank ESS5 requires for project implementers (Client) to prepare TRP regardless of the number of affected populations. This RAP therefore has been developed in accordance with WB ESF-ESS5 and it captures two dimensions. Resettlement Action Plan which addresses economic and physical displacement of individual assets along the proposed in Kahama Municipality. Diverse methods were employed in the preparation of this TRP such as review of project documents; stakeholders' consultation meetings; and key informant interviews. Asset, census, and socio-economic surveys were also employed to collect baseline information on affected assets along corridor of impact.

3. MAIN RESETTLEMENT IMPACTS

This section provides information on the project activities that will necessitate resettlement, types and magnitude of the identified resettlement impacts and measures undertaken by the project to minimize the impacts.

Project Activities that necessitate resettlement

Reconstruction of Sango market will be undertaken on the same land where these facilities exist, and businesses activities are ongoing. In this regards the traders at the two sites will have to relocate temporary to other sites to pave the way for construction activities. To minimize relocation impact, construction will be done on phases to accommodate traders who currently operating in permanent structure.

Identified Resettlement Impacts

According to the records by facilities' leadership and the census undertaken by the RAP team, at Sango Market a total of **509** traders will be affected area, this number includes traders who own stalls, tenants, traders without stalls (those who sells their commodities on the ground and those who moves around to sell them), tricycles (Auto Rickshaw) drivers and motorcycles drivers. The land is owned by KMC therefore, no PAPs losing either land or trees/crops.

4. RPF WITH FOCUS ON COMPENSATION POLICY / LEGAL FRAMEWORK

The consultant reviewed all relevant laws related to compensation and construction in Tanzania. The PIU is required to abide to them during execution of different sub investment projects in Kahama Municipal Council and during effecting compensation. The following are the legislations and regulations which should be adhered to during project implementation: Environmental Management Act (2004) of the Land Act (No. 4 of 1999) and The Land Act, Cap 113 R.E. 2002, as amended from time to time, Land Acquisition Act (1967) (and its subsequent amendments), Land (Compensation Claims) Regulations, 2001, Land (Assessment of the Value of Land for Compensation) Regulations of 2001, Land (Compensation Claims) Regulations, 2001, The Land Disputes Court Act. 2002 (Act No.2/2002) and The World Bank Environmental and Social Framework (ESS5), Comparison of National Legislation and WB ESS5.

5. BASELINE INFORMATION

Baseline information has been presented in this report in length and in details and covers several aspects and issues concerning the existing socio-economic situation in the sub-project area. These include; Socio-economic activities, infrastructure and available social services (e.g., health, education, sanitation, water, energy, etc.), major prevailing diseases, main sources of income in the sub-project and expenditure, housing conditions (building materials) and various uses, various assets / properties located within the road corridor, condition of the existing road, the situation and perception of HIV infections and AIDS epidemic, population in the ward, household composition particulars, to mention but few examples. Results of the survey census show that six (6) people whose properties will be affected by the said project.

6. INSTITUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

The following entities will be involved in implementation of this RAP implementation: WBCU Safeguards Unit, Local Government Authorities (Sub-ward and wards), Ministry of Finance, Project Implementation Unit (PIU) from Kahama Municipal Council, District Commissioner, Regional Commissioner, and Chief Government Valuer, The Bank (RAP Paying agent). The preparation of compensation schedule along with PAPSs involvement in the whole process will be done by the Council. The WBCU Safeguards Unit will oversee the process.

7. COMPLAINTS AND GRIEVANCES

TACTIC project in Kahama Municipal Council will use the existing grievance resolution procedures through local government system i.e., grievance resolution through negotiation and mediation at local government offices and through existing laws (court of law). All PAPs will be informed on the existence of a Grievance Redress Mechanism (GRM). These will include information on accessibility of the GRM; the procedures involved in logging of grievances; and the right and procedures to appeal if not satisfied with the resolution made. This information will be provided through respective "*Street"* leaders and awareness meetings that will be held during the preparation of the detailed RAP.

8. IMPLEMENTATION PROCESS AND SCHEDULE

PAPs will be informed on the implementation schedule for RAP including, the formation of the Project Implementation Unit, grievances procedures and selection representative from PAPs in the grievances committee. The time allocated to evacuate the site and removal and savage of remain materials. The date for starting road construction will also be communicated to the PAPs. No PAPs will be required to vacate the area before the compensation is being affected.

9. TEMPORARY RELOCATION PLAN COST AND BUDGETING

A TRP budget has been prepared in order to effect smooth relocation of traders to the temporary site. Budget include cost for site clearing, provision of basic facilities such as water, electricity, toilet facilities, sheds, waste management facilities, stall, and transport among others. The funds will be obtained from KMC budgets approved by Council Management Team.

Appendix VI: Health and Safety Management Plan

1.0 Introduction

Health Safety Management Plan (HSMP) helps in implementation, maintaining and continually improve Health and Safety management system in accordance with the requirements of Occupational Health and Safety Assessment Series (OHSAS) standards. It is therefore important that this is reflected in the operations and responsibilities of every level of management within an organization. This plan shall help to implement the Safety and Health direction of Sango market. It clearly states the requirements of donors, legislations, suppliers, management and employees in Safety and Health management.

1.1 Health and Safety Policy Statement

The management acknowledges that, the activities will have the potential to harm employees, customers and all other people who will be into contact with directly or indirectly. We firmly believe that all people will have the right to live and work in a safe environment that is not detrimental to their health and safety during the execution of the activities.

1.2 Purpose

The purpose of this Health and Safety Management plan for construction of Sango Market is to provide an overview of the contractor Management System that enables its health and safety policies and business objectives to be achieved by successfully performing the project work in compliance with donor requirements as well as the legal requirements of United Republic of the Tanzania. This plan shall define the execution strategy and methodologies for implementation to achieve the afore-mentioned purpose. Project shall in undertaking the works, aspire to:

- Achieve zero fatalities, zero permanent disabilities and improve safety performance year on year through
- Complying with all current Health and Safety Legislation and approved Codes of Practice
- Ensuring compliance with Contractors' and donor safety requirements and publish these as part of the Project requirements
- Project shall in aspiration provide a Safe and Health Working Environment for its employees

This HSMP shall be implemented in alongside site-specific Environmental and Social Management Plan (ESMP) as submitted to Employer.

1.3 Scope

This HSMP will be applicable to the construction project of the Sango Market and other relevant stakeholders including Kahama Municipal Council as Client of the Project and the Contractor while in the course of duties associated with the Project.

Definitions

Table 1.1: Definitions to be used by contractor on the construction of the Sango market in Kahama Municipal Council

Client	Kahama Municipal Council
Corporate	Generic term used to refer to the corporate level of management.

Employee	An employee is any person directly employed by a contractor, whether on an agency, limited Client, temporary, permanent staff, part time or full-time basis.
Environmental incident	An "Impact" which results in the accidental emission or discharge of a substance, categorised as harmful, to the environment.
Hazard	The potential for human injury or loss of life, damage to the environment or to material assets or a combination of these.
High Potential near miss (Hi-Po)	A near miss where the potential consequences could have resulted in a high-risk incident. The potential consequences are those that could reasonably be expected if one further barrier had failed, e.g., if a fall arrestor had not functioned or a different position of an individual could have resulted in a more serious injury.
Incident	Term to define an unplanned event or chain of events that results in harm to people, damage to property or the environment, loss of process.
Likelihood	Indicates the possibility of something to happen
Lost Workdays	Number of days where an employee could not return to work due to a work-related injury. No of LTI's X number of day's persons absent.
Lost Time Injury Frequency Rate (LTIFR)	The frequency of lost time injuries per 1,000 000 hours worked/at risk. $\text{LTIFR} = \frac{(\#\text{ of F} + \#\text{ of LTI}) \times 1{,}000{,}000}{\text{manhours worked}}$ where F is the Fatality, LTI is the Lost Time Injury/Illness
Lost Time Injury/Illness (LTI)	Work related occurrences, or related to the wider activities that resulted in a fatality, permanent disability or the person being incapable of performing any work on one day/shift or more, on any calendar day subsequent to the day of the occurrence occurring or the illness being identified. Due to inconsistencies of the medical profession in granting time off to a patient, contractor "may" challenge the decision of a medical practitioner if it is considered the medical practitioner has been overzealous in granting time off. Fatalities arising from suicide, inexplicable personal behavior or natural causes shall be excluded.
Medical Treatment Case (MTC)	Is a work-related injury or illness that requires treatment from a qualified medical practitioner (Note: if the treatment was given by a qualified medical practitioner but could have been performed by someone less qualified the category will be first aid case). They must be treated only by physician or licensed medical personnel if the injury or illness is of a nature where: They impair bodily function (i.e., normal use of senses, limbs, etc.): They result in damage to the physical structure of a non- superficial nature (e.g., fractures); or They involve complications requiring follow-up medical treatment. Physicians or registered medical professionals, working under the standing orders of a physician, routinely treat minor injuries. Such treatment constitutes first aid. In addition, some visits to a doctor do not involve treatment at all. For example, a visit to a doctor for an examination or other diagnostic procedure

	to determine whether the employee has an injury does not constitute medical treatment. Conversely, medical treatment can be provided to employees by laypersons; i.e., someone other than physician or registered medical personnel. The following are generally considered medical treatment. Work-related injuries for which this type of treatment was provided or should have been provided are almost always recordable: Treatment of infection Application of antiseptic during second or subsequent visit to medical personnel Use of prescription medications (Except a single dose administered on first visit for minor injury) Application of hot or cold compress(es) during second or subsequent visit to medical personnel Cutting away dead skin (Surgical debridement). Use of whirlpool bath therapy during second or subsequent visit to medical personnel. Admission to a hospital or equivalent medical facility for treatment. Medical treatment does not include first aid treatment even though provided by physician or registered professional personnel. If you have already counted the case as a lost workday or restricted workday case, do not count the case as a medical treatment case. This category is for cases in which medical attention (beyond first aid) is administered and the employee returns to his or her regular duties for the next scheduled shift.
Near Miss	Incidents, which, strictly by chance, do not result in actual or observable injury, illness, death, or property damage. These are measured by their potential rather than actual outcome.
Occupational illness and disease	An abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illness or diseases that may be caused by inhalation, absorption, ingestion or direct contact. Chronic conditions should be reported once in the period during which the condition was first diagnosed. Injuries are caused by instantaneous identifiable events in the working environment. Illnesses are caused by anything other than identifiable instantaneous events e.g. if repeated or prolonged exposure is involved the outcome is considered an illness. Additionally, a judgment needs to be made as to whether or not this exposure was work-related.
Occupational injuries and illness examples	General: Death (If work related) Injury sufficient to require medical treatment Loss of consciousness Restriction of work or motion Transfer to another job Significant injury or illness diagnosed by a physician or other licensed health professional, such as; Cancer (If work related)

	Chronic irreversible disease (If work related) Fractured or cracked bone, or Punctured eardrum Food poisoning Epidemic disease Specific: Needle sticks and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material Occupational hearing loss (current hearing test must show 10dBA shift from current baseline and total cumulative hearing loss must be 25 dBA or move above audiometric zero)
Property damage	Incidents that damage to property (contractor and/or third party). All incidents shall however be reported.
Recordable case	Recordable cases are the sum of the number of Fatalities, Lost Time Injuries, Restricted Work Cases and Medical Treatment Cases. Guidance note: Where contractor supplies resources to a customer and the control of management does not rest with contractor, this is deemed not to be recordable and all related data associated with any incident; (injuries, illness, environment, property damage and vehicle) will not be collected and maintained. However, where these resources are provided to a customer, contractor shall make all reasonable endeavours to ensure that effective HSE measures and arrangements are in place to ensure the health and safety of contractor personnel.
Restricted Work Case (RWC)	Is a work-related injury or illness which results in the person being incapable of performing the full range of their normal duties on any day/shift subsequent to the day of the injury occurring or the illness being identified, but is capable and has been assigned to "other" duties.
Risk	A combination of the likelihood of a hazardous event and the severity of the possible consequences of that hazardous event.
Road traffic incident	A work-related incident that takes place on any road (public or private) which results in damage to a project vehicle and/or a vehicle used in the execution of contractor business. Where damage to the vehicle is such that it has to be taken out of service "immediately" for repair and/or causes any injury to any person and/or damage to a third party. Incidents taking place within fenced yards or similar areas shall normally be treated as property damage. Note: In the event of an injury to contractor/subcontractor personnel arising from a road traffic incident, these injuries shall also be reported in their respective categories i.e., Lost Time Incident.
Road Traffic Incident Rate	The number of vehicle incidents per one million kilometres driven. $\frac{\text{No of Road traffic incidents x 1,000,000}}{\text{No of KM driven}}$
Subcontractor	Any company that has been contracted by the contractor to provide work and/or services.

Worked man-hours	The total number of hours of direct working activities within the project site boundaries, including paid overtime and training, but excluding leave, sickness and other absences.
Work related	Work relationship is established when the incident/injury/illness results from an event or exposure in the work environment. The work environment consists of: "Project premises" and other locations where employees/contractors are engaged in work related activities or are present as a condition of their employment. Travel on contractor business is considered work related, but this is limited to journeys where transport and/or purchase of airline, rail, and sea tickets have been provided by contractor. A hotel while being used on contractor business as a place of abode (sleeping, eating) shall be considered as "home" and any incident arising from this is not work related. Travel between home and work is not work related, unless the transport provided is provided by contractor. Injuries or illnesses that occur to employees or contractors while participating in voluntary activities (i.e. those that are provided or made possible by contractor but in which participation is voluntary and for personal benefit such as fitness facilities) shall not be considered work related. Unless the injury/illness was as result of the provision of faulty materials/equipment or unsafe premises by contractor.

2.0 PLANNING

2.1 HAZARD & RISK MANAGEMENT

Contractor shall establish and maintain procedures for the ongoing identification of hazards, assessment of risks and the implementation of necessary control measures to construction of Sango market. These include:

i. Routine and non-routine activities.
ii. Activities of all personnel having access to the workplace (including all visitors).
iii. Activities on site, whether provided by contractor or others.
iv. Contractor will ensure that the results of these assessments and the effects of these controls are considered when setting its OH&S objectives. The contractors shall continue to keep document and other information up to date.
v. Contractor believes that effective planning is a cornerstone of HSMP improvement, which performs assessment of legal requirements and the hazards of the project that can influence HSMP performance.
vi. Before undertaking any hazardous job, Contractor will ensure:
vii. Complete hazard analysis, this can be either a Risk Assessment or Job Safety Analysis depending on Client requirements.
viii. Ensure that all work permits required for performing the work is available as required.
ix. Before starting works all workers should attend toolbox talk
x. All personnel involved are aware of the hazards and control actions.
xi. Ensure the job is adequately supervised.

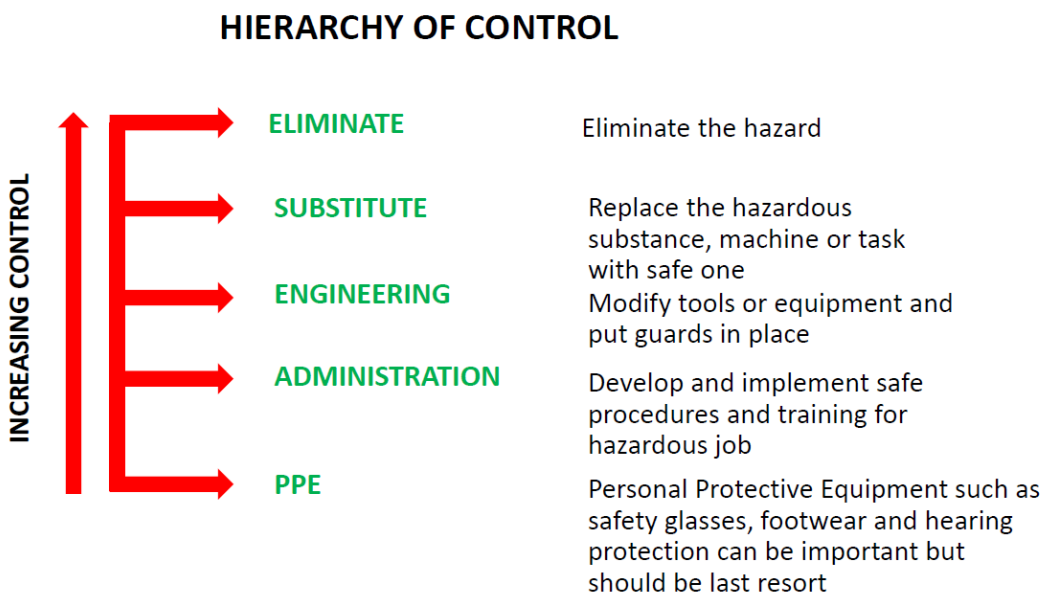
xii. A risk register will be maintained on site and will be a live document. This document will be reviewed on annual basis by Project Risk Assessment Teams and approved by Project Manager to ensure all risk assessments have been incorporated. This document if applicable may be submitted for approval to the Client prior to work commencing.

2.1.1 Risk Assessment

Contractor is committed for controlling and managing risk through a process of identifying hazards, assessing their likelihood and severity, analyzing the cause and implementing control measures.

The risk management process involves the development of the appropriate controls and reduction measures for each hazard.

The degree of risk control required is dependent upon the level of risk for each hazard. The methods of control are implemented using a hierarchy as follows:



2.1.2 Risk Register

The project risk register should list all types of hazards (physical, chemical, biological, ergonomic) identified for the type of activities present during the works.

Its purpose is to provide a system that will enable the project to identify and review hazards, assess potential risks and implement appropriate control measures.

The risk register is used as a database to record data obtained from several sources that deal with potential hazards.

The risk register, which will be kept by the business unit, will be progressively developed and initially contain where applicable the (HIP/HAZCON/SIMOPS) review listing of hazards. A duplicate risk register will be kept by project EHS team that includes all the risk assessments carried out.

2.1.3 Job Safety Analysis

Job safety analysis, commonly known as JSA, is a process used to determine hazards arising from and safe procedures for each specific step of a job.

JSA is used to assist in planning the safety of a job before it starts.

A specific job or work assignment can be broken down into a series of relatively simple steps; the hazards associated with each step can be identified, and solutions (treatment options) can be developed to control each hazard.

Where appropriate, either a RA or JSA will be developed independently or as part of work method statements

2.1.4 Simultaneous Operations

Where applicable, Simultaneous Operations (SIMOPS) studies will be carried out if there is scope for interaction to occur between major hazardous activities, and the design and construction intent is to carry out these activities concurrently.

The purpose of these studies is:

(1) To identify the additional levels of risk introduced by simultaneous operations

(2) To assess the acceptability of additional risks and to identify risk reduction methods

Findings and recommendations from the SIMOPS studies will be used to develop the simultaneous operations procedures.

2.1.5 Safe Work Instructions

Contractor is committed to control and manage risk through a process of identifying hazards, assessing their likelihood and consequence, analyzing the cause and implementing control measures.

To assist this process and for use on common activities a series of safe work instructions shall be develop to be use on the project.

2.1.6 Engineering Risk Assessment

Typically, during the engineering phase of the project, contractor assess potential hazards, and their associated risks, and ensure that adequate safety, loss prevention, and environmental requirements are included within the facility design to protect personnel and the environment by using Hazard Identification (HAZID), Safety Integrity Level (SIL) or the likes.

3.0 IMPLEMENTATION AND OPERATION

Organizational Chart and Responsibility

The chart provides an organizational chart for the implementation of this HSMP

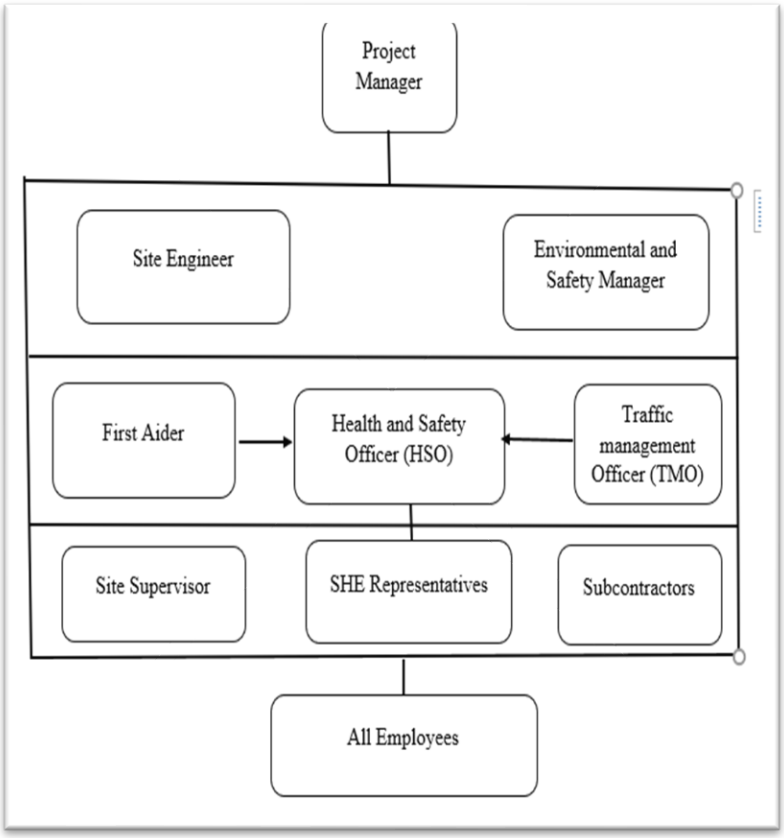


Figure 3.1: Contractor's Organization chart for Implementation of HSMP

3.1 STRUCTURE AND RESPONSIBILITY

The roles, responsibilities and authorities of personnel, who manage, perform and verify activities having an effect on Occupational Health and Safety (OHS) risks have been defined, documented and communicated in order to facilitate OHS Management.

3.1.1 Project Manager Responsibility

Ultimate responsibility for Safety and Health actions and the co-ordination of these actions with our workers and the general public

Provide all employees under their direct control with adequate support, supervision, information, instruction and training to enable them carry out their work safely and without risks to their health and safety

Establish effective lines of communication and consultation on safety and health issues among all employee

Ensure that suitable arrangements are in place for effective health and safety management

Allocate specific duties to key personnel to ensure that this health and safety management plan is produced, updated and effectively implemented

Ensure adequate provision of resources necessary to implement the Safety and Health management plan

Set objectives and performance targets and ensure they are regularly monitored, reviewed and communicated within the company

3.1.2 Health and Safety Manager Responsibility

Safety manager will be responsible for the provision of Safety and Health support and advice, and for promoting a culture of continuous improvement in safety performance throughout the projects.
Monitor performance against the requirements of Safety and Health plan and the relevant legislation.
Liaise with, and assist Project Manager and all workers in ensuring that a satisfactory level of Safety and Health awareness exists.
Co-ordinate and supervise the activities of Safety and Health representatives
Assist the HR Officer in the development and delivery of suitable Health and Safety training or induction program to new employer and company in general
Undertake a program of site Safety and Health inspections and audits in accordance with the policy.
Produce, implement and maintain a safety performance measurement, review and reporting system which comply with both statutory and corporate requirements.
Collect and report safety performance data and trends analysis in accordance with this policy.
Manage the development, regular review and update of the Safety Management System in order to ensure that it is comprehensive, relevant and up-to-date
Be familiar with current Safety and Health legislation relevant to undertake activities and advise senior management accordingly.

3.1.3 Site Engineer Responsibility

Site Engineer will be responsible for operation of the safety policies on their sites or projects. They should monitor each site to ensure the implementation of safety instructions. Responsibilities include
Understands the company policy and appreciate the responsibilities allocated to each grade.
Ensure adequate information is received regarding matters which might affect health and safety in order to determine the planning stages:
Most appropriate order and method of working
Allocation of responsibility to site controllers and subcontractors
Facilities for welfare and sanitation
Ensure Risk Assessment is undertaken and method statement prepared before work commenced on site.
Check over working methods and precautions with site management before work commenced on site
Ensure that once work started, it is carried out as planned and in conformity to relevant legislations.
Make sure that all workers on the project understand that management of Health and safety will be taken in to account when bonus and promotion is considered.
Release employees for SHE training

3.1.4 Site Controllers Responsibility

Site controllers are responsible to the project managers for ensuring the day-to-day implementation of safety policy and safe working practices. Main responsibilities
Organize site so that work is carried out to the required standard at a minimum risk to workers, equipment and material – and to give all subcontractor representatives precise responsibilities for correct working methods
Implement health and safety plan and provide relevant information to the subcontractors.

Regularly monitor site rules and other instructions are complied with.
See to it that all health and safety legal requirements are complied with on site. That are registers, records and reports are in order and the competent person appointed has sufficient knowledge to operate safely.
Plan and maintain a tidy site
To implement arrangement with workers and other subcontractors on site to avoid any confusion about area of responsibility
Ensure that all hazardous materials are properly marked to enable adequate precaution to be taken
Make sure that appropriate PPE is available on site and won all the working time
Ensure that first aid and emergency rescue materials are always on site and in good condition.
Create, ensure and encourage safe working environment
Reenforce positive safety initiatives and behaviour
Report unsafe acts and conditions

3.1.5 All other Employee Responsibility

All workers are responsible for ensuring the health and safety of themselves and others who might be affected by their actions and for co-operating at all times on health and safety matters. In particular, they should:

i. Follows safety rules procedures
ii. Participate in toolbox talks/meetings
iii. Wear PPE as required
iv. Safeguard life equipment before maintenance
v. Knows own responsibility
vi. Create a safe work environment for employees

3.1.6 Subcontractors Responsibility

All sub-contractors at present;

i. Understand and comply with the arrangements, rules defined in the health and safety plan
ii. Allocate sufficient resources to ensure effective management of risks arising out of their work activity
iii. Provide information to employees, including details of risk arising out of work activities
iv. Follow any directives of the company staff to enable them to comply with their duties under health and safety requirements
v. Inform the company of any injury, ill health, near miss or dangerous occurrence
vi. Provide adequate PPE for their employees
vii. Make sure that all their employees are inducted before allow to work on site
viii. Provide the company with all relevant confirmation of competence of employees working on the project
ix. Take liabilities of health and safety breaches/penalties of their employees.

3.2 TRAINING, AWARENESS AND COMPETENCE

Personnel are competent to perform tasks that may impact on HSE in the workplace. Competence defined in terms of appropriate education, training and/or experience. Includes applied skills, knowledge experience and ability towards correct attitude.
The Health and Safety Officer ensures that only personnel with suitable qualification and experience are employed on work tasks which have the potential to cause harm, will take action to

ensure that training requirements are met and that the effectiveness of training to meet requirements is monitored.
Health and Safety Officer ensure that all persons understand the importance of training and experience and how they can work effectively to ensure safe working, will also ensure that personnel are aware of the health and safety consequences of their work activities and the benefits of following safe working practices.

3.2.1 Awareness and Information

Contractors shall make daily arrangements to check that personnel are provided with Health and Safety Information. All personnel attend the toolbox meeting prior to commencement of work on site, and arrangements made to all workers to carry out regular Tool Box Talks, the program and content of which will be communicated to contractor. In conformity with the laws of Tanzania, the company did not engage in acts that constitute child labor. If there is a need to engage students who are on educational attachment and are less than 18 years of age, special training was provided to them.

3.2.2 Induction Training

The company will ensure that all their staff on site/office receives adequate Health and Safety training for their duties, a training record is held in the company safety department. Subcontractors will also ensure that their employees hold the appropriate training and competences to perform their jobs effectively.

3.3 CONSULTATION AND COMMUNICATION

The company will communicate matters or sharing information regarding Occupational Health and Safety to internal and external stakeholders. This may include health and safety newsletters, legislation changes, policy and procedure updates, annual reports and significant incident and injury trends and information relating to OHS training.
Health and Safety Manager will communicate the following information to employees:
The risk profile (OHS Risk Register) of the workplace;
Policies and procedures specific to the workplace;

i. Risk assessments; and
ii. The following information should be prominently displayed both in company Offices and Sites
iii. Location of First Aid Boxes
iv. Identity of First Aiders
v. Emergency Procedures and emergency phone numbers e.g., fire brigade
vi. Insurance Details
vii. Statutory Notices
viii. Site Rule
ix. Assembly point

Company Safety policy

3.3.1 Consultation

The company always consult employees on Health and Safety issues. This leads to creating and maintaining a safe and healthy working environment. This consultation involves not only the company Management giving information to employee but also listening to, and taking into

account of what employees say before they make any decision on health and safety. Consultation to be carried out include
Any change that may considerably affect their health and safety at work, for example changes in procedure, equipment or methods of working
The health and safety consequences of introducing a new technology
The planning for health and safety training
3.3.2 Toolbox talks
Health and Safety manager will carry out toolbox talks on regular basis with workers every day or depending on timetable in the morning before work. A toolbox talk is carried out to give awareness on a new hazard or risk is identified, e.g., the introduction of new plant, equipment or a substance or in response to any health and safety related trends or in response to the needs of Risk Assessments and/or Method Statements.

3.3.3 Health and Safety Communication Procedure
The company will be committed to maintaining a safe and healthy working environment for all employees and non-employee members and would ensure that any complaint is dealt with in an expeditious and constructive manner.
Part of the continual systematic improvement of the OHS Management System is dependent on the feedback and reporting mechanisms from employees. Employees are actively encouraged to communicate issues or concerns relating to health and safety with their health and safety representative or management.
In the event that an employee reports a health and safety concern to their officer and they feel that there has been no action regarding the issue, they should discuss their concerns with the health and safety representative.
In attempting to resolve a matter that may be a risk to health and safety, Health and Safety Officer must use the applicable health and safety consultation arrangements and formally refer the matter to the manager. Management will consider the matter and respond in a timely manner.
If the matter is not resolved after the management have been given a reasonable opportunity to consider and respond, the health and safety representatives may request an investigation of the matter by the enforcing authority

3.3.4 Site Safety Meetings
Site safety meetings will be held on a monthly pre scheduled basis and will be shared and nominated by Project Manager
The Site safety meetings are to be attended by all workers who are currently working on site, or whose start is imminent.
Minutes will be prepared and circulated to all stakeholders

3.3.5 Safety Site Meetings Agenda
i. Introduction
ii. Approval of Previous Minutes
iii. Matters arising
iv. Accidents, diseases and dangerous occurrences – Review Site Details including lessons learnt.
v. Safety Inspection
vi. Safety performance monitoring

vii. Health and safety planning interface with public.
viii. Safety Training – inductions/Toolbox Talks etc.

1.3.6 Safety Promotion

The organization is committed to safety promotion. As part of this commitment, the OHS Management System Manual will be made fully available to all employers and employees.
General safety promotion exercises will be conducted regularly throughout the year. These will involve both employers and employees, and are designed to raise everyone's awareness of health and safety issues within the workplace.

4.0 HEALTH AND SAFETY MANAGEMENT PLAN

4.1 SAFE WORKING PROCEDURE FOR HIGH-RISK ACTIVITIES

4.1.1 Safe Work Procedures – Housekeeping on Construction Sites

A basic concept in any effective prevention endeavor will be a good housekeeping during construction and camp activities. The importance of good housekeeping must be emphasized from the beginning through to the final clean-up. The degree of attention given to housekeeping will normally be reflected in the accident record as well as the installation efficiency.
The company ensure that any waste generated by their work activities shall be cleared upon completion of a work process, or as minimum at the end of the shift/day. Failure to comply with these requirements shall result in a 'Clear up Notice' being issued.

4.1.2 Safety Instructions

Prior to commencement of work Supervisor must be appointed
Before excavation starts, the company will make sure the exact location of any underground electrical cables, water and sewage and telecommunications cables is well known. Do not rely solely on-site plans and drawings, as these are sometimes not accurate or complete. Seek assistance from the local services and distribution companies. Even then, proceed with caution. Older installations may not have been recorded.
The excavation work must be planned and the method of excavation and the type of support work, (if any) required decided. The stability of the ground must be verified by a competent person.
If necessary to prevent danger, land must be cleared of trees, boulders and other obstructions.
No load, plant or equipment shall be placed or moved near the edge of any excavation where it is likely to cause its collapse and thereby endanger any person unless precautions such as the provision of shoring or piling are taken to prevent the sides from collapsing.
Make sure all workers in excavations always wear safety gloves, safety helmets and applicable safety boots.
Safeguard workers and the public from falling into excavations. Make sure trenches, shafts and excavations are properly barricaded, covered or isolated to prevent people.
Employees must be protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.
Warning vests or other highly visible clothing must be provided and worn by all employees exposed to vehicular traffic.
Supervisors must ensure workers stand away from vehicles being loaded or unloaded.
Employees must be prohibited from going under suspended loads.

4.2 SAFE WORK PROCEDURES

4.2.1 Instruction, Training and Supervision

All operators shall receive information and training, including safety instructions provided by the manufacturer.

All operators must be instructed in safe work procedures specific to tasks done at the workplace and be made aware of the hazards and associated risks. This requirement has special significance when dealing with young, inexperienced workers.

All workers on site must receive induction training covering all possible hazards and risks, including hazards and risks that may occur during the use of concrete mixers or when hand mixing concrete. Proof of such induction must be available on site.

The site must be kept tidy in terms of waste / rubbish removal, storage and stacking of materials and of hazardous materials. Dangerous parts of plant and equipment must be guarded.

4.2.2 Safety Instructions – Manual Handling

Hand tools must be of good design and construction, taking into account, as far as possible, health and safety and ergonomic principles.

Hand tools and other equipment must be regularly inspected for safe condition. Ensure tool handles are free of splits and cracks and handles are wedged tightly in the heads of all tools.

Workers must be trained for the safe use of shovels, wheelbarrows, screeds and vibrating equipment.

Workers must be trained in safe manual lifting and proper working postures when required to work in fixed working positions or when they are carrying out repetitive work and keep a hand tool inspection register on site

Suitable alkali-resistant gloves, coveralls and gum boots must be worn by all members of the team involved in concrete mixing and pouring.

Sufficient rest periods must be allowed.

4.2.3 Hazards Peculiar to Concrete Production

Potential hazards for workers in concrete mixing include:

i. Exposure to wet concrete can result in skin irritation or even first-, second- or third-degree chemical burns. Compounds such as hexavalent chromium may also be harmful.
ii. Eye, skin, nose, mouth and respiratory tract irritation from exposure to cement dust;
iii. Inadequate safety guards on equipment;
iv. Inadequate lockout/tag out systems on machinery;
v. Overexertion and awkward postures, slips, trips and falls.

4.3 SAFETY GUIDELINES

Prevent or minimize skin contact with wet cement through wearing proper PPE like dust mask, gloves

Clothing or insides of shoes soiled with cement must be removed and cleaned before re-use.

Maintain good personal hygiene.

Eat and drink only in dust-free areas to avoid ingesting cement dust.

Do not use barrier cream on damaged skin.

Treat minor cuts and abrasions promptly.

4.4 PPE REQUIREMENTS

Eye and respiratory protection must be worn if dry cement dust is significant.
Wear alkali-resistant gloves, overalls with long sleeves, full-length pants and waterproof boots where there is uncontrolled risk of skin contact with wet / drying cement.

4.5 FIRST-AID

Rinse eyes splashed with wet concrete with water and then go to the hospital or clinic for further treatment.
Skin contact - wash with soap and water immediately. Contact a doctor if irritation or pain is persistent.

4.6 SAFE WORK PROCEDURES – BACKFILLING AND COMPACTION

4.6.1 Instruction, Training and Supervision

All workers involved in backfilling and compaction must receive information and training, including safety instructions. All workers must be instructed in safe work procedures specific to tasks done at the workplace and be made aware of the hazards and associated risks. This requirement has special significance when dealing with young, inexperienced workers. Workers must be made aware of hazards and risks when mobile earth moving and compacting equipment is being used.
One-to-one supervision must be provided for people receiving training, or who are unfamiliar with the use of hand tools and compacting equipment.
General supervision must be provided for all backfilling and compaction work.
Safety signage, i.e., protective clothing requirements, restricted area etc must be conspicuously placed on site.
All workers on site must receive induction training covering all possible hazards and risks, including hazards and risks that may occur during the backfilling and compaction process.
All backfilling and compaction work must be supervised by a competent person and all operatives doing the work must be given clear instructions.
The site must be kept tidy in terms of waste / rubbish removal, storage and stacking of materials and of hazardous materials. Dangerous parts of plant and equipment must be guarded. There must be full recognition that work near a public interface may need additional control mechanisms.

4.6.2 Safety Instructions

Ensure that any underground electrical cables, gas lines, water and sewage and telecommunications cables that may be present inside the excavated area are properly sleeved or otherwise protected, before backfilling and compaction commence. Extreme caution must be exercised around such installations when backfilling and compacting.
If earthmoving plant is being used for backfilling:
Check that plant operators are appropriately qualified and competent.
Make sure unattended front-end loaders, backhoes and excavators are always left with the bucket fully lowered to the ground.
If backfilling is done manually ensure:
Hand tools should be good design and taking into account, as far as possible, health and safety and ergonomic principles.

Hand tools and other equipment are regularly inspected for safe condition; tool handles are free of splits and cracks and handles are wedged tightly in the heads of all tools; cracked handles are replaced promptly, not repaired or covered with tape.
Workers must be trained for the safe use of shovels and wheelbarrows.
Workers must be trained in safe manual lifting and proper working postures when required to work in fixed working positions or when they are carrying out repetitive work since improper lifting, awkward postures and repetitive motions can lead to sprains, strains and other musculoskeletal disorders.
Warning vests or other highly visible clothing must be provided and worn by all employees exposed to public vehicular traffic.
Supervisors must ensure workers stand away from mobile plant.
Employees must be trained to use personal protective and other rescue and first aid equipment.
Supervisors have the authority to remove workers from the excavation immediately. Be that for reasons of imminent danger or for noncompliance to safety rules.

4.6.3 Safety Procedures

Before working, barricade was put around the working area to prevent coming traffic from crashing into the operator and to keep workers and bystanders out of harm way.
Work area has to be clear of debris and other objects that could cause damage to the compactor or bodily injury.
No untrained person is allowed to operate construction equipment.
KEEP hands and feet and loose clothing clear of rotating and moving parts as they will cause injury if contacted.
DO NOT operate or refuel a petrol or diesel motor in a confined area without adequate ventilation.
Not to come in contact with the muffler when the engine is hot, since it can cause severe burns.
ENSURE that petrol is only stored in an approved storage container. DO NOT refuel the motor while it is in operation or hot.

4.7 TRANSPORTING OF MATERIALS

All materials transported in a vehicle must be secured against excessive movement. Vehicles must not be overloaded in terms of weight and bulk.
Where goods or material are transported in the back of vehicles there is a risk that these items could cause injury or death to the driver or passengers in a collision, cargo barriers must be fitted.
Transportation of material has to be done during the night so that to reduce disturbances and spread of pollutants

4.8 DRIVER RESPONSIBILITIES

All employees who drive company vehicles must have the appropriate training for the type of vehicle and conditions. They must have read and understood the policies, procedures and safety guidelines before allowed to drive
Employees using the company vehicles must be familiar with routine maintenance before driving the vehicle. Such procedures include:

i. No employee may use a vehicle that they deem to be unsafe or which has been withdrawn from use for repair.
ii. Know what the correct fuel is when filling
iii. Checking the oil regularly and the water regularly

iv. Ensure vision is unimpaired
v. Ensure windscreen, windows, mirrors and lights are clean
vi. Ensure seat belts, lights and indicators work
vii. Ensure no other hazards are apparent
viii. Correct footwear must be worn whilst driving. Bare feet, sandals (flip-flops) and muddy boots are not allowed.
ix. In the event of an accident employees must follow the procedure as outlined in the guidelines provided with the vehicle.

4.8.1 DRIVERS GUIDELINES

Driver Fatigue

Driver fatigue is commonly thought of as filling asleep at the wheel. Falling asleep is the extreme stage of fatigue. You can be fatigued to the point of having your driving impaired well before you 'nod off' at the wheel.

The signs and symptoms for fatigue include forgetfulness, being fixated, poor decision making, apathy, slowed reaction times, lethargy, moodiness, poor communication and nodding off.

Fatigued drivers have slower reaction times, endangering themselves and others when they encounter unusual, unexpected or emergency situations.

Fatigue often combines with other factors such as drug/alcohol, loss of sleep, sleep disorders, stress, speed and circadian rhythms (in-built body clock in the brain that co-ordinates daily cycles experienced as the worst times of the day when you experience physical and mental performance of the day).

How to stay alert:

Wear a seat belt

Do not exceed speed limits.

Eat sensibly avoiding large meals.

Do not drink alcohol and drive

Avoid driving or take extra care driving in congested road especially in the campus

Driving at night is more hazardous than during the daytime so extra care is needed.

Speed

Speeding or driving too fast is putting you and other road users at risk. Contractor's drivers will abide safety travel. High speed may result to;

The faster you travel on a road, the more likely you are to crash.

The faster you travel the more likely you are to miss important hazard clues.

Higher speeds result in more severe injuries and damage.

The severity of injuries to a pedestrian is greater if the impact is greater due to the speed. The risks are higher for the elderly and young children.

Drug and Drink Driving

Once alcohol is absorbed into your bloodstream it is taken up by cells in your vital organs including the brain resulting in slower reactions, dulling your judgment and vision and impairing your ability to drive.

The chances of crashing are greater and you are three times more likely to be involved in a crash if your blood alcohol level is at the legal limit (80 mg per 100 ml) than if you have not had a drink.

No driver will be allowed even to enter into the site when suspected to be drunk.

1. Everyone's perception of how much you can drink is different. The law is precise. If you are an adult, the legal blood alcohol limit is not more than 80 mg of alcohol per 100 ml of blood.
2. If you are under 18 years of age, you should not drink any alcohol before you drive. Your limit is 30 mg per 100ml.

Prohibited (including controlled substances) and medicinal drugs impair mental and physical functions and can potentially contribute to road accidents.
Combination of prohibited or medicinal drugs with alcohol greatly increases the risk factor for an accident.
Many prohibited and medicinal drugs can directly affect the central nervous system therefore has an effect on the psychomotor performances and driving.
Medical and Health Conditions
A person with a medical condition such as allergies (bees/wasps), diabetes, epilepsy, dementia, poor vision or who has had a head injury, heart attack or stroke, must seek medical advice before driving.
Disabilities such as broken arms or legs, migraines etc., may not stop the person driving but may complicate their safety and the safety of other road users.
Inform your assistant project manager or the person responsible for the vehicle if any of these conditions

5.0 EMERGENCY PREPAREDNESS AND RESPONSE

5.1 Procedure for Emergency Preparedness Response

The contractor will establish and maintain plans and procedures up to date to identify the potential for, and responses to, incidents and emergency situations, and for preventing and mitigating the likeliness and injury that may be associated with them. Possible Emergency situations will include but not limited to the following;
Incidents leading to serious injuries or ill health. In an event that incidents leading to serious injuries or ill health occur, the following procedure will be followed.

- Inform the first aider around to receive first aid treatment.
- Report to the nearest medical facility for further treatment
- The incident should be reported to your site operator or assistant project manager to be recorded in the Incident register by the Health and Safety Officer.
- Loss time of injury or ill health should be reported and recorded in the register.
- Fires and explosions,
- In an event of fire and explosion the company employee should follow the following

5.1.1 Fire Exist Plan

The preservation of life shall override all other considerations, such as saving property and extinguishing the fire. If a fire is discovered, the alarm shall be raised immediately however small the fire. All staffs are empowered to raise a fire alarm if they believe there is a fire; no authority should be sought from any other person. In the event of fire, the three most important actions are, in chronological order, to:

- Raise the alarm
- Dismiss the fire brigade
- Evacuate the building

- When firm is alarm sounds: All nonemergency committee personnel will go out the first available exit that is safe and then to the parking lot.

5.2 Fire Response Instructions

- Without endangering yourself, notify any employees, or guests in immediate danger zone of smoke, heat, or fire.
- Close all doors to prevent the spread of the fire.
- If possible, and if trained to do so, help extinguish the fire by using one of the public/department fire extinguishers.
- Never permit the fire and or smoke to come between you and your route of escape.
- Advice all employees, students/ guests of the nearest safe fire exit.
- Do not attempt to use the elevator under any circumstances.
- If you encounter smoke in a hallway, stairwell, anywhere, stop; go back to a safe area and look for another means of escape.
- Keep doors and windows in the area of the fire closed, to minimize further fire spreading.

Traffic accidents.

- Procedure for Traffic Accident shall be:
- Report to the nearest police station and obtain Police form to go to the hospital
- Report the incident to your line manager

5.3 Evacuation Plan

Evacuation of the building should be done quickly and calmly. Safety of staffs, students and guests should be the primary concern. Each department will appoint one of its staffs to oversee fellow staff members' and students' evacuation from the building. This employee will be responsible for needed supplies and the general safety of the department's staff members.

5.4 Emergency Equipment

The contractor shall at all-time keep possible emergency equipment that will be used during an emergency situation and employees will be trained in the use of those equipment.

6.0 CHECKING AND PROTECTIVE ACTION

6.1 Protection of Workers against Dust

Dust control will be initiated prior to any activity in dusty condition. Such control will adopt but not limiting to de-dusting procedures. In case of unavoidable dust emissions, use of PPE will be adopted and in any case no personnel shall be exposed directly to harmful airborne contaminants of Silica, Rust (ferrous oxide), Blasting grit, Asbestos, Glass wool & Paint solvent mist. Water sprinkling shall be done at least three times in a day to control the dust on all identified areas of the project to prevent damaging dwellings or causing nuisance to persons and traffic or any other measures as directed by RE. Construction safety nets will be used as appropriate.

6.2 Protection of Workers against Noise

The Contractor shall comply with the applicable Tanzanian laws, orders and regulation concerning the prevention, control and abatement of excessive noise. Industrial deafness is cause by over exposure to high levels of noise from plant, machinery or construction processes. No employees

shall be exposed to noise dose that exceeds 85 dB (A), unless they are wearing suitable hearing protectors, which effectively reduce the sound level at the user's level to or below 85 dB (A). Consideration shall be given first to reducing the noise level at source. The precautionary measures for the exposure limits shall be as follows:

- 80 to 85 dB (A) – Provide hearing defenders with proper training to use them.
- 85 dB (A) – Signposts shall be erected to inform all employees that usage of ear muffles is mandatory in the area.
- 115dB (A) – No exposure to steady noise irrespective of hearing protection.
- 135 dB (A) – No exposure to impulse noise irrespective of duration of hearing protection.

In case of blasting, the use of Jackhammer, pile driving, rock crushing or other operational producing high intensity impact noise may be performed at night upon approval of the RE and giving prior (at least 24 hours) notice to the nearest receptors.

6.3 Protection of Workers against Hazardous Substances

Material Safety Data Sheet (MSDS) of all hazardous materials that are used on site shall be obtained. An inventory shall be kept of all such materials with the relevant MSDS and shall be available for the inspection by RE. An assessment shall be conducted in relation to the intended usage of the hazardous substances on site and adequate precautionary and control measures shall be taken according to the assessment. Such MSDS shall be available for inspection from Tanzania Health and Safety law in force. An assessment shall be conducted in relation to the intended use of the hazardous substances on site and adequate precautionary and control measures shall be taken according to the assessment.

6.4 Communication Arrangements

The results of OHS performance measuring exercises are to be communicated to all relevant personnel. Safety reviews are carried out monthly by the company health and safety officer. Lessons learned in terms of standards achieved compared with the standards set will be applied for future work where applicable. Safety reviews is used in updating this safety plan, and on completion of the project, an overall safety review will be held, the lessons learned contributing to future projects.

6.5 Indicators of OH&S Performance

The company will monitor the Health and Safety performance of its projects, employers and employees as a whole to ensure that we achieve what we have planned and work to improve. Site safety performance shall be measured in the same way, with projects being monitored against set Key Performance indicators. These KPI's will be with the use of checklist use during:

- Site inspections
- Equipment inspection
- Workplace condition standards and inspection
- The areas in the table below will also be considered in the performance assessment.

Table 6.1: Consideration area for Performance assessment

1	Project Team health, safety and Environmental Training	2	Risk Assessment
3	Standard Operation procedures (SOPs)	4	Site Inductions

5	Employer and employee Meetings	6	Accident Follow ups
7	Skills Certification	8	Safety Committee Meetings
9	Tool Box Talks		

6.6 Evaluation of Compliance

The company establish and maintain procedures for defining responsibility and authority for the handling and investigation of:

- Accidents
- Incidents
- Non-conformances
- The procedure adopted by the company is the use of Accident, incident and Non-Conformance form in the evaluation of compliance.

7.0 REPORTING OF ACCIDENTS/INCIDENTS

All workers and subcontractors will be familiar with these requirements and ensure that all personnel on site report any accident/incident, near miss or disease to them immediately. All injury accidents will be recorded in the project Accident Book. A copy of the entries is made available to the health and safety management team. The following accidents should be reported as soon as they occur to Health and Safety Officer or Assistant Project Manager.

- Fatal accidents/major Injury and Dangerous occurrence
- Environmental incident

7.1 INVESTIGATION

Health and Safety Officer and Project Managers shall ensure that for any incident/accident full investigation is carried out to determine the cause of the event. The investigation may require the taking of statements from witnesses, preparation of sketches and drawings and taking photographs. Areas where fatalities, major injuries or dangerous occurrences occur are to be sealed off, no further work undertaken until the investigation is complete and the enforcing authority through the company Manager.

7.1.1 Internal Audit

Contractor shall conduct audit as per its procedures in order to assess the implementation of OHSMP and its performance.

7.1.2 Management Review Meeting

The contractor top management shall carry out management review of Health and Safety management system, on a monthly basis. The review shall focus on the overall performance of the OH&S management system and not on specific details.

7.3 GENERAL SITE RULES

The following Site Rules will be briefed to all personnel during the Site Induction Course and will be displayed in all site offices. Visitors to site are advised and accompanied by members of the company team.

Rules:

- Site tidiness: a clean site is a safe site.

- PPE: these must be worn at all times. Employer provides safety helmets, Hi Visibility jackets and safety footwear, Gloves and Safety Glasses.
- Accidents: all accidents no matter how minor must be reported to the company Health and Safety officer or Assistant Project Manager immediately.
- Alcohol and Drugs and Smoking: alcoholic liquor and drugs are not to be brought onto, or consumed on the project sites. Do not enter the site if you are under the influence of either. Smoking will only be permitted in designated smoking zones.
- Electricity: do not tamper with, or alter, electrical installations. A qualified electrician must always carry out repairs and alterations.
- Plants, machines and Equipment: before using plant and equipment, personnel must receive adequate training and whenever possible Certificate of competence must be registered
- Security: materials, plant and equipment must not be removed from site without written authority from the company Site Controller. All individuals and subcontractors are responsible for security of their own property, including tools.
- Fire: take note of the emergency plan – Escape routes, Assembly Points and Fire points. Do not tamper with Fire Extinguishers: they are there for the safety of all. Smoking is not permitted at camp site and to highly flammability equipment during road construction.
- Radios: radios, CD's, personal stereos are not permitted at workplace during working time
- Safety violation: Safety violation notices is issued to any individual not complying with the site rules after a verbal warning (yellow card). On receipt of a second violation (red card) of the same rule the individual will be removed from site.

Appendix VII: Hydrology and Hydraulic Study

HYDROLOGY AND HYDRAULIC STUDY FOR SANGO MARKET

1.1 Introduction

Being the main goal of the project, Kahama Municipal Council is planning to implement some community infrastructure and road projects Under, the Tanzania Cities Transforming Infrastructure and Competitiveness (TACTIC) program. This program aims to strengthen urban management performance and deliver improved basic infrastructure and services, one among the three areas to be covered by the particular project is the upgrading of the Sango market. The overall objective of this project is to facilitate economic growth as it will serve time by giving good access of products and it will boost agricultural, livestock, tourism as well as other potentials in the project area. These potentials will be fully exploited when there is a reliable Market of good infrastructure.

1.2 Stakeholders' Consultation

In order to arrive at a right design of hydraulic infrastructures, stakeholders were involved for the purpose of providing necessary inputs to enable the successfulness of the design.

Stakeholders involved under this assignment were mainly the Kahama municipal council, KUWASA, TARURA and TANROADs.

Major concern of stakeholders was the absence drainages at Sango market. Stakeholders proposed to have a design which will accommodate the storm flow at the market area.

1.3 Terms of Reference

The hydrological and hydraulic studies were carried out for estimation of the design peak floods and provision of dimensions of the required hydraulic structures that will pass the floods flow safely across the Sango Market area.

The TRRL/ East African Flood Model was used to estimate the design flood flows across the study area. However, due to the limitation of the method to the size of catchment area, that has to be equal to $1km^2$or less than 200 km^2, the Rational method has to be used for catchments with smaller sizes less than $1km^2$.

1.4 The Methodology

The methodology for Hydrological and Hydraulics studies adopted the following five tasks:

Tasks 1: Demarcation of the catchments to determine their coverage (km^2) based on the available topographic maps.

Tasks 2: Carrying out field investigations to determine the catchment characteristics including land use and cover and the hydraulic parameters like the value of Manning's roughness coefficient, extent of flooding and flood marks on river banks and channel stability.

Tasks 3: Estimation of peak flood discharges that cross all roads under study for a given frequency.

Tasks 4: Estimation of the hydraulic capacities of the existing drainages where the flow from the market area is expected to be directed.

Tasks 5: Determination of the types, sizes, shapes and number of proposed structures required to adequately pass the design peak discharges.

1.5 Catchments Characteristics

Drainage

The study area is basically drained with streams which may influence flooding at the location. The deatailed delineation was done to identify the extent of draining streams in relation with their effect to the study area (Figure 1). The preliminary observation on drainage perten of the area was indicated that there is a medium flow which comes to the study area and a proper mitigation to accommodate the flow should be addressed.

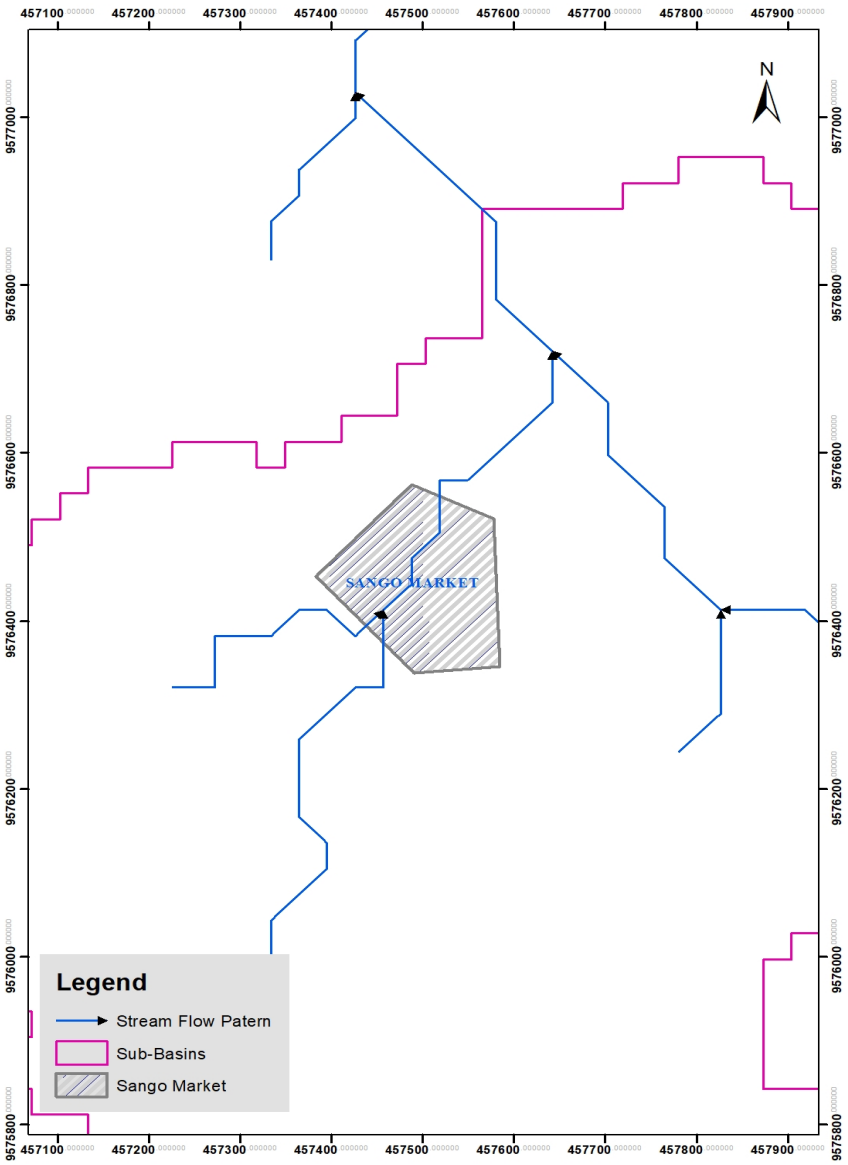


Figure 1: Drainage pertern of the study area- Sango Market Area

1.6 Flood Estimation

Introduction

There are number of models which can be used to analyze both discharge from un-gauged channels and the flood flow frequencies from gauged channels. However, there are several factors which outweigh applicability of these models in different environments.

The main objectives of using range of method/approaches were to meet the standards and requirement of methods and catchment characteristics.

The Rational Method of Flood Estimation

The rational method is a suitable method for small catchment areas. Thus, all the catchments with areas less than $1km^2$ in the study area have been analyzed using this method. This method has been one of the most widely used methods for predicting peak discharges on un-gauged catchments. All criteria in the use of this method has been considered and addressed accordingly. Some of the major criteria which was highly considered in the use of this methods are:

Catchment areas are less that $1km^2$;

The runoff coefficient was carefully chosen for each of the catchment.

The basic equation for the rational equation is given by:

$$Q_T = \frac{CIA}{3.6} \qquad Eqn(1)$$

Where: Q_T = The peak discharge (m^3/s);

I = The average Rainfall Intensity over the catchment (mm/hr);

C = The rational runoff coefficient;

A = Catchment area (km^2).

While the area (A) is obtained from measurement on the topo sheet/DEM, the rational runoff coefficients are read directly from the tables. The coefficients are given in Table 1.

The rainfall intensity is always provided in the form of relation with time of concentration (T_C). Time of concentration is a principal factor used to link rainfall and runoff and it can be estimated using Bransby William empirical equation (Eqn 2) below.

Table 1: Runoff coefficient values for different catchment types

Runoff coefficient (C) C = Cs + Ck + Cv

Cs (Topography)			Ck (Soils)		Cv (Vegetation)	
Very Flat	<1%	0.03	Sand and Gravel	0.03	Forest	0.04
Undulating	1-10%	0.08	Sandy Clays	0.08	Farmland	0.11
Hilly	10-20%	0.16	Clay and Loam	0.16	Grassland	0.21
Mountainous	>20%	0.26	Sheet Rock	0.26	No Vegetation	0.28

$$T_c = \frac{0.615 x L}{A^{0.1} x S_C^{0.2}} \qquad Eqn\ (2)$$

Where:

SC = Slope of the main channel;

L = Is the length of the channel (km);

A = Catchment area (km^2).

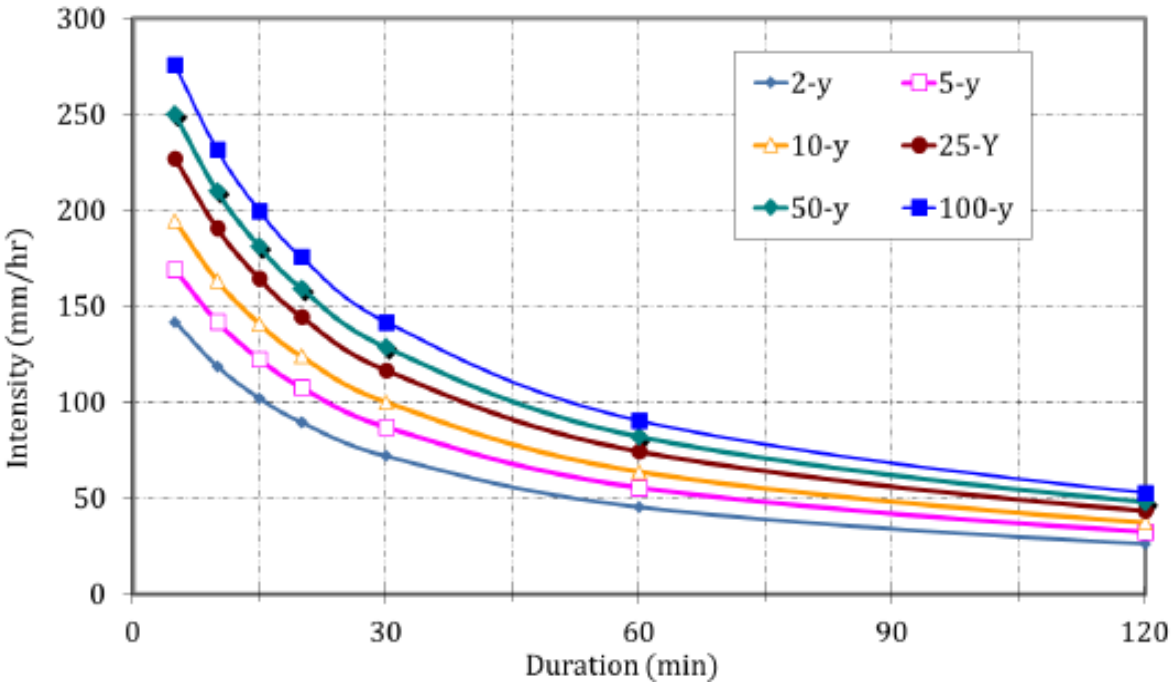


Figure 2: Rainfall intensity duration curves for Kahama

After obtaining all the data required by the Rational method (RM), a computerized RM model which comprised of all the equations and conditions discussed above was developed. The model was designed in such a way that it automatically provided the required size of hydraulic structures. The details of computation and results is well indicated in *appendix 1* of this report.

The Transport and Road Research Laboratory-East African Flood Model - TRRL EAFM

Transport and Road Research Laboratory-East Africa flood model is the method that is used for flood estimation on drainage area greater than $1km^2$ and less than $200km^2$.The model was developed by D, Fiddes, Department of the Environment, TRRL laboratory report 706: It was developed after study on four years of data from 13 small representative rural catchments in Kenya and Uganda.

The uses of TRRL model in estimating the peak flow for a design storm are as follows. (Tables and Figures from a) to n) below refers to TRRL EAFM Model:

Delineation of catchment area (km^2), computation of average catchment slope % and longest flow length (km) and stream slope %.

Estimation of catchment type and hence lag time (K) was done basing on the following tables;

Catchment type	Lag time (K) hrs
Arid	0.1
Very steep small catchments (slope > 20%)	0.1
Semi-arid scrub (large bare soil patches)	0.3
Poor pasture	0.5
Good pasture	1.5
Cultivated land (down to river bank)	3
Forest, overgrown valley bottom	8
Papyrus swamp in valley bottom	20

Table 2: Lagtime based on catchment type

Basing on the basin model, two sub basins have area greater than $1km^2$. The correspondence between land use plan and catchment type for these sub basins was established basing on the site condition with the consideration of the urbanization projection in the future. Also the existing catchment response time was used to calibrate the lag time parameter.

The soil type and land slope were established and the standard contributing area coefficient (C_S) was estimated basing on the following table and figure;

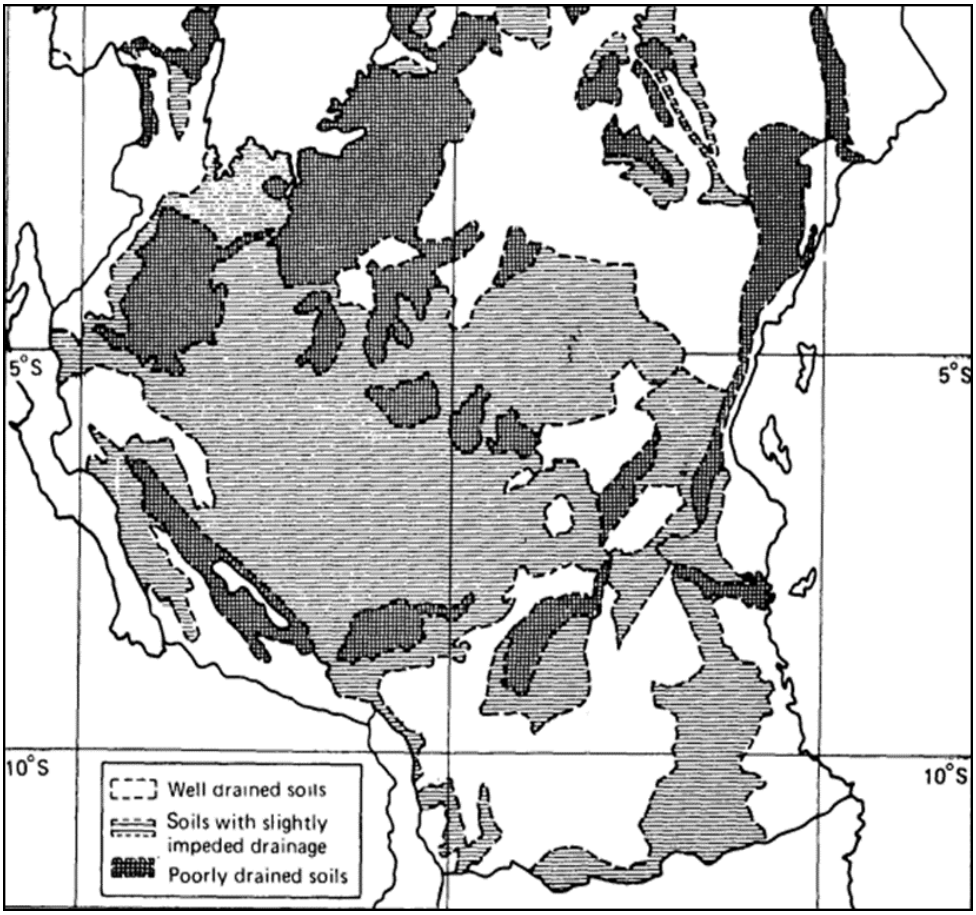


Figure 3: Soil Type - TRRL 706

The initial soil moisture due to antecedent rainfall zone was established and checked whether the catchment is wet, dry or semi-arid. The area is found to be within central Tanzania as per TRRL EAFM

The catchment wetness factor was estimated basing on the following table

Table 3: Catchment wetness factor

Rainfall zone	Catchment wetness factor (C_W)	
	Perennial streams	Ephemeral streams
Wet zones	1.0	1.0
Semi-arid zone	1.0	1.0
Dry zones (except west Uganda)	0.75	0.5
West Uganda	0.6	0.3

From site inspection, the land use/cover was established, paying particular attention to areas close to the stream. Then land use factor (C_L) was estimated.

Table 4: Land use factors

Base assume short grass cover	Land use factors (C_L)
Largely bare soil	1.5
Intense cultivation (particularly in valleys)	1.5
Grass cover	1.0
Dense vegetation (particularly in valleys)	0.5
Ephemeral stream, sand filled valley	0.5
Swamp filled valley	0.33
Forest	0.33

The correspondence between land use plan and land use type as per above table was established basing on the site condition with the consideration of the urbanization.

The contributing area coefficient (C_A) was estimated by using the following equation; $C_A = C_S \times C_W \times C_L$

The antecedent rainfall zone was defined and the initial retention was taken to be zero as the project area is not found in semi-arid.

The rainfall time was estimated basing on the following figure.

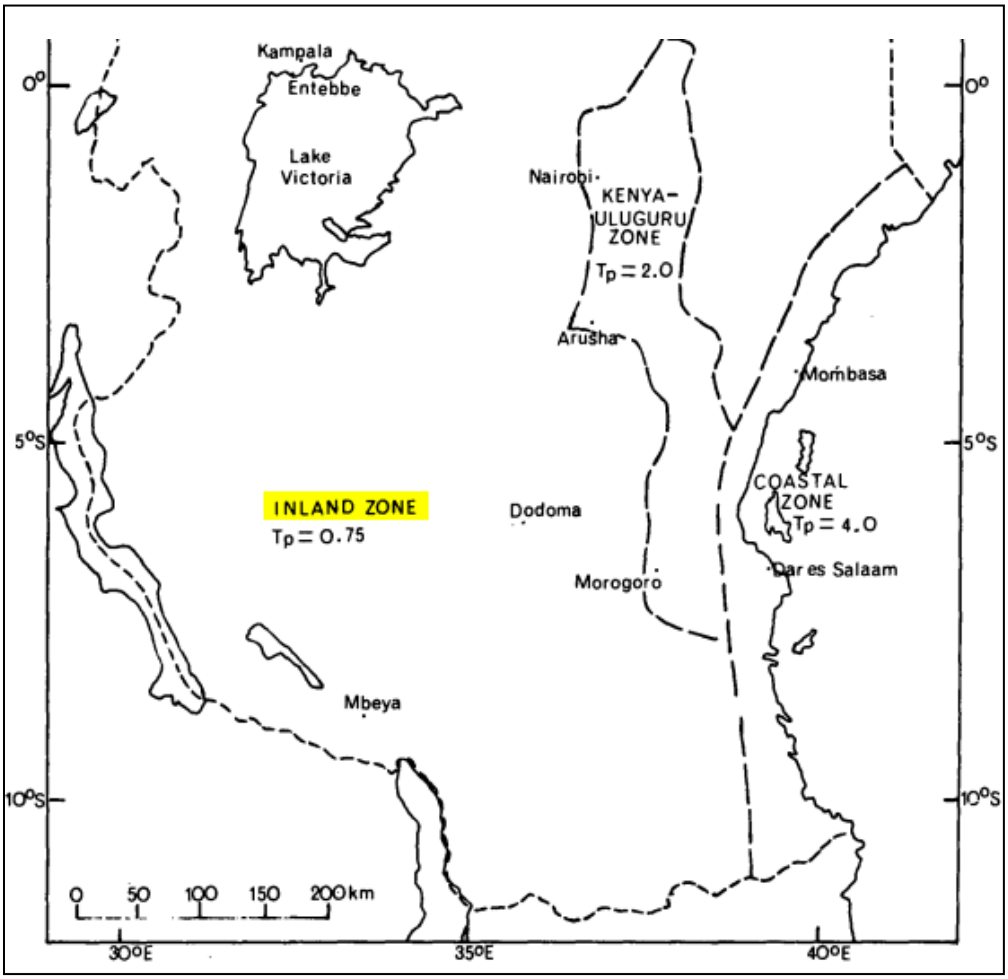


Figure 4: Rainfall time zone

The design storm was calculated during time interval T_B hours Here, design storms from Mwanza station was used.

The volume of runoff was calculated in m^3 by equation below

$$RO= CA \times (P-Y) \times A \times 10^3$$

Equation 1: Volume runoff

The average flow was calculated by equation below

$$Q= 0.93 \times Ro/(3600 \times TB)$$

Equation 2: Average volume flow

The base time (TB) was recalculated using the following equation.

$$TB= Tb +2.3k +TA$$

Equation 3: Base time

Where; $TA= 0.028\ XL/(Q^{1/4} \times S^{1/2})$

Equation 4: Attenuation time

The design peak flow was computed using the following equation.

$Q= F \times Q$ average

Equation 5: Design peak flow

Where flow factor (F) peak is:

F=2.8, K less than 0.5 hr

F=2.3, K more than 0.5hr

The computations are well described on *Appendix 2* of this report. However, it does not contain any input data as there is no catchment area draining the study area with catchment greater than $1km^2$.

1.7 Hydraulic Analysis

Hydraulic analysis is a crucial step in design of all hydraulic structures. It provides all the conclusions regarding the structures and their capacities.

However, there are a limited number of methods for determining sizes of structures in open channels. The most popular method is the Manning equation and is discussed and applied in this study. In addition, the common hydraulic structures which will be used in this design are discussed below:

The key consideration in using the Manning equation is the selection of the roughness coefficients

$$Q_T = \frac{A}{n} R^{2/3} S^{1/2} \qquad Eqn\ (3a)$$

$$d = 1.39\left[\frac{1.96nQ_T}{S^{1/2}}\right]^{3/8} \qquad Eqn\ (3b)$$

$$A = 0.51d^2 \qquad Eqn\ (3c)$$

Hydraulic drainage proposed

General: Site visiting conducted in the time between February to July 2022, and other catchment characteristics extracted from the analysis played a significant basis for the hydrological and hydraulic analysis of the Sango Market. This information enabled the proper selection of accurate flood model to be used.

External Drainage Network

Considering the fact that there are streams draining toward the Sango Market area, the natural flow was carefully studied and diverted by external drainage. The external drainage is proposed to be constructed to carry the anticipated flow before reaching the market area. Open channels are with trapezoidal section are proposed to be installed.

Internal Drainage Network

Since the large area of the Sango Market will be paved to large area, internal drainage system is inevitable. All internal drainages will be provided to convey the storm flow toward the external drainage system which will further be connected with the existing drainage system (Road drainage)

Details of proposed drainages under the Sango Market is well presented at *Table 6* of this report.

1.8 Storm Water Design Proposal

The main target of the storm water management works at the market area is to restrict the flow spread of rainwater on market area surface to a limit that will not obstruct or pose a hazard to market users.

In the planning of the design of storm drainage works, control measures must generally comply with a number of criteria, such as:

- Minimizing the risk of damage to property.
- Minimizing public inconvenience caused by frequent storms.
- Protecting the public from severe floods and/or malfunctioning drainage systems.
- Preventing erosion.
- Preserving the environment.
- Minimizing costs.

The proposed storm water management system in project area is designed to collect and dispose

of the run-off generated over parking areas, access roads and other market buildings through a network that is to discharge to the existing drainages of the town (Existing Road drainage).

The surface storm water at the market place will be collected through proposed closed ditches located under sidewalk, Ditches section is trapezoidal and water will be intercepted through curb openings.

Ditches will direct water flows to the natural streams following the drainage pattern shown in figure 1 above. The natural stream coming toward the market will be accommodated by provision of external ditches as shown in figure 5 below. The storm from the market will be directed through internal drainages provided by following its natural path to external ditches outside the market then will be connected to the existing drainage systems of other infrastructures basically highway drainages. The following figure is the proposed drainage scheme of an area which its drainage sizing is linking up with the Table 5 below (Figure 5).

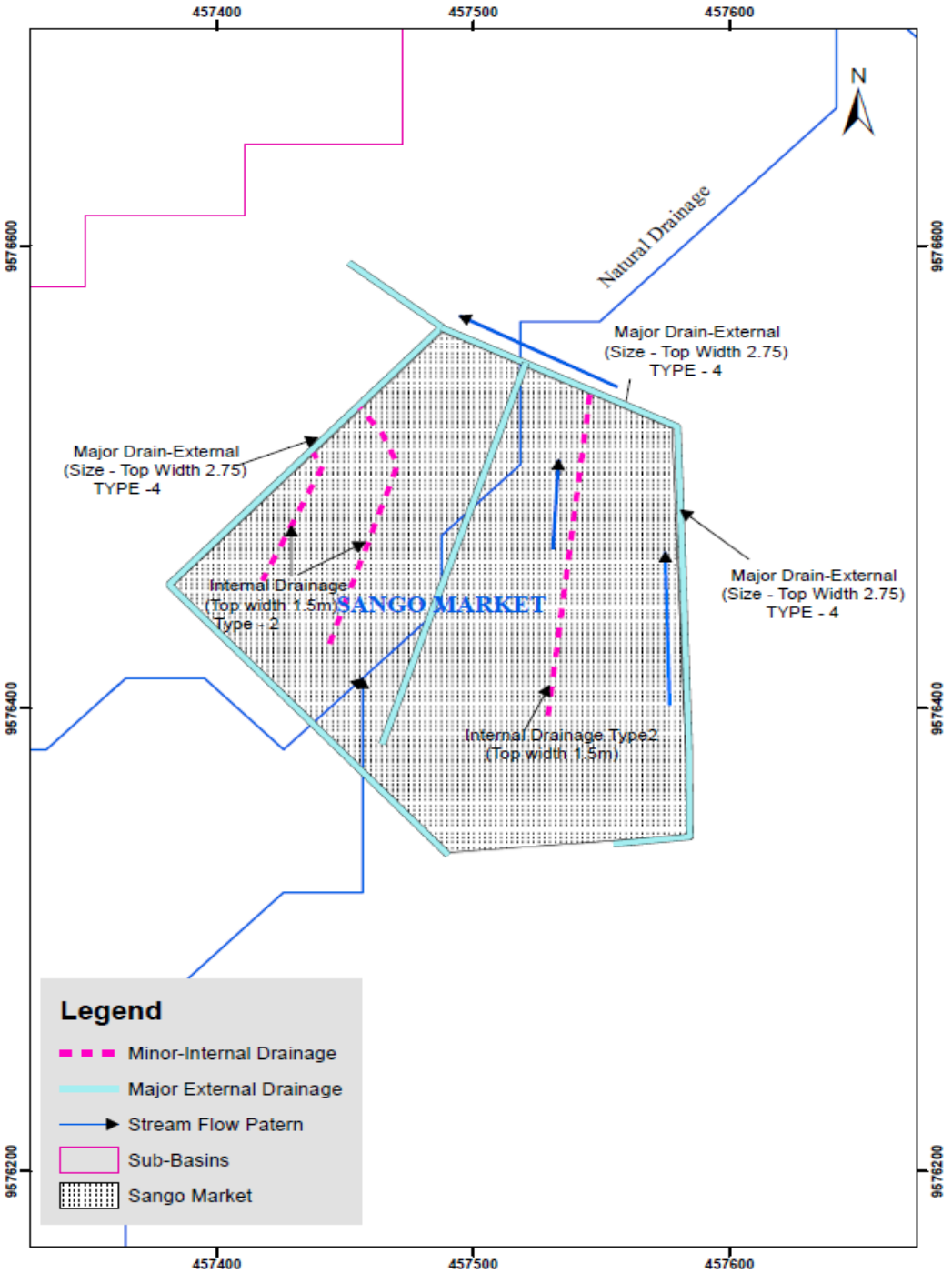


Figure 5: Proposed Drainage at Sango Market area

Longitudinal Drainage

Design Philosophy

The design of the longitudinal drainage was performed according to the standard cross sections of market access roads alignments and was defined for each alignment and implemented as an associated feature to it.

Ditches Types and Lining

Ditches will be primarily trapezoidal and lined in concrete. Four concrete types should be considered for the design as described in Table 1. The discharge capacity calculated by Manning's equation for each type of ditch related to slope.

Table 5: Proposed standard ditch types

TYPE	BASE WIDTH (M)	HEIGHT (M)	TOP WIDTH (M)	% MAX WATER DEPTH	Manning	Wet Area (m2)	Wet Perimeter (m)	Discharges for S=1%	Discharge for S=0.4%
1	0.4	0.4	1.5	75%	0.016	0.210	1.249	0.4	0.25
2	0.5	0.5	1.5	75%	0.016	0.328	1.561	0.725	0.459
3	0.75	0.75	2.25	75%	0.016	0.738	2.341	2.138	1.352
4	1.25	0.75	2.75	75%	0.016	1.020	2.841	3.218	2.035

The ditches will be disposed according to their capacity, the contributing area and the geometric design of the main line platform.

Table 6: List of proposed drainage structures for the Sango Market

TABLE 6: List and Location of all structures at Sango Market											
ID	Start Point		End Point			Existing Structure			Proposed Structure		Remarks
Major/Min or Structures	UTM Easting	UTM Northing	UTM Easting	UTM Northing	UTM Zone	Type	BRG = Span x Depth; CBC = Span x Depth; CPC= Diameter; Units (m), OP =(Span xDepth	No. of Cells	Type	OPEN DRAINAGE PROPOSED SIZES (m) = (Bottom width X Top Width X Height)	
D1	457490.9	9576334	457488.3	9576562	36S				OD	1.25x2.75x0.75	New Proposed structure due to discharge
D2	457537.5	9576338.3	457520.08	9576547.4	36S				OD	1.25x2.75x0.75	New Proposed structure due to discharge
D3	457474	9576397.2	457488	9576562.2	36S				OD	0.75x2.25x0.75	New Proposed structure due to discharge
D4	457413.8	9576432.9	457423.37	9576490.9	36S				OD	0.5x1.5x0.5	New Proposed structure due to discharge
D5	457446.3	9576432.1	457459.88	9576523.4	36S				OD	0.5x1.5x0.5	New Proposed structure due to discharge
D6	457527	9576362	457552	9576531					OD	0.5x1.5x0.5	New Proposed structure due to discharge

KEY					
		OD			Open Drainage

APPENDICES

Appendix 1: Results from Rational method

APPENDIX 1: Results from the Rational Methods of Flood Estimation (Catchment Size of less than 1km^2)

				Input Data							Hydrological Analysis							Hydraulic Modeling			Hydraulic Design				
S/No.	Road-Name	Easting	Northing	A	L	Es	Ee	C_S	C_K	C_V	S	C	T_C	T_C	I	Q		Box Culvert/Bridge		Pipe Culvert	Box Culvert/Bridge		Pipe Culvert		Head water elevention above invert diameter
				km^2	km	m	m	unitless	unitless	unitless	m/m	unitless	hr	Minutes	mm/hr	m^3/s	Slope	Span (l)	Height (h)	Diameter (d)	Span (l)	Height (h)	No of cells	Diameter (d)	Hw/D
1	Sango-Market Stream-1	457490.9	9576334.0	0.4268	1.35	1239	1215	0.88	0.16	0.28	0.018	1.32	3.20	192.15	31.80	4.98	0.015	2.9	1.0	1.9	3.0	1.2	1.0	2.0	0.96
2	Sango-Market Stream-2	457537.5	9576338.3	0.3100	1.26	1248	1226	0.88	0.16	0.28	0.018	1.32	3.07	184.36	32.93	3.74	0.015	2.4	1.0	1.7	2.5	1.2	1.0	1.8	0.96

Appendix 2: TRRL/East Africa Flood Model

APPENDIX 2: Results from the East African Model of Flood Estimation (Catchment Size of 1km^2 - 200km^2)

PART I: INPUT DATA AND INITIAL ANALYSIS

	Catchment input data to be fed into the EAFM													Computerized analysis according the conditions and requirements of the East A										Mean Flow and Peak Flow at 10 yrs by EAFM					Hydraulic Modeling (Unit in meters)			Hydraulic Design (Unit in mete		
	Sources include: Topographic map; Tables, Figures and Maps applicable to the EAFM																															Nos
S/No	A	s	L	Es	Ee	K	C_S	C_W	C_L	T_P	n	$R^2/24$	r	S	C_A	T_B	$R^{10}/24$	R_{TB}	ARF	P	RO	Q_m	T_A	Q_m	Q_{10}	Q_{50}	Q_{100}	Slope	Box Culvert/Bridges		Pipe Culvert	Box Culvert & Open Drain Proposed Size		
	km^2	m/m	km	m	m	hr	unitless	unitless	unitless	hr	unitless	mm	unitless	m/m	unitless	hr	mm	mm	unitless	mm	m^3	m^3/s	hr	m^3/s	m^3/s				Span (l)	Height (h)	Diameter (d)	Span (l)	Height (h)	
						1.5	0.40	1.00	1.50	0.75	0.96	60	1.64	0.03	0.60	4.20	98.40	86.47	0.93	80.70	351008.04	21.59	0.46	19.67	45.24	71.01	81.43	0.02						

Appendix VIII: Geotechnical Study Report

1 GEOTECHNICAL

1.1 Introduction

The main aim of this section of the report is to illustrate the adopted geotechnical design basis, design criteria, and geotechnical design and recommendations that will be used for the road design/ construction and for foundation recommendations of the buildings constructed in Municipality; that would satisfy the building function; type; shape and fulfil the geotechnical requirements of safety, stability, serviceability and durability.

1.2 Project Location

The project includes the LGAs of Mwanza, Ilemela, Geita and Kahama that are located at the northern part of Tanzania.

Geita is a town in northwestern Tanzania, with a population of 99,795 (2012 census). It is located in the center of a gold mining area. In March 2012 it became the administrative headquarters of the newly created Geita Region.

1.3 Geological Study

The geologic setting of Tanzania is represented by several major litho-structural provinces that include different types of rocks and range in age from the Archean to the Recent. The Precambrian basement rocks cover most of the western two thirds of the country and consist mainly of Igneous and metamorphic rocks of Tanzanian Craton. The Phanerozoic is characterized by a series of sedimentary units of Paleozoic to Mesozoic age (at western and eastern borders) which are followed by Cenozoic intrusive and extrusive phases that accompanied the active rifting phase. (Semkiwa et al., 2005).

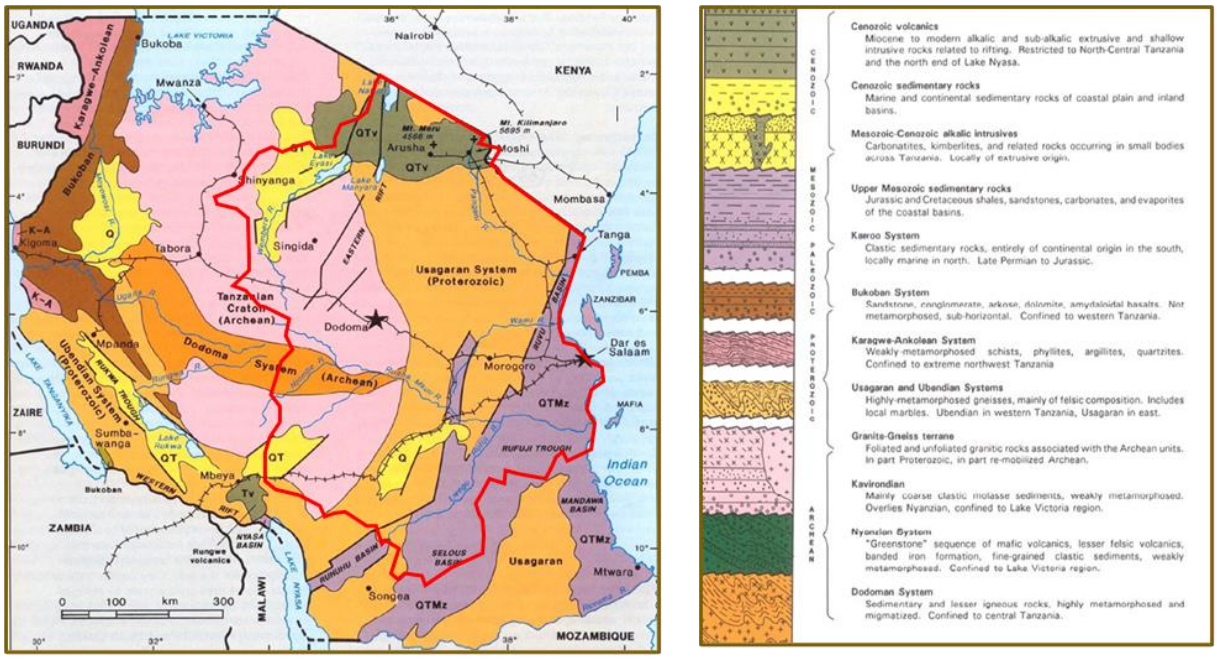


Figure 1: Google Earth satellite Images showing the site history of the project area.

1.3.1 General Geological Setting of Geita

The City of Geita is located in the north western part of Tanzania to the south of Lake Victoria. It is characterized by flat topography and surrounded by a group of hills of different elevations that are dissected by valleys/wadis. The rock units of the Geita area are composed mainly of; Granitoid and sediments of Nyanzian and Kavirondian supergroups, and greenstone belt with BIF and phyllite intercalations. Theses rocks are partially covered by Tertiary to Quaternary soil layers. The rocks are affected by two sets of faults-oriented NW and NE. Magogo bus terminal is on an elevation of about 1221m MSL. The culverts in Nyankumbu – Kivukoni Road are on elevation in the range from 1223m to 1232m MSL.

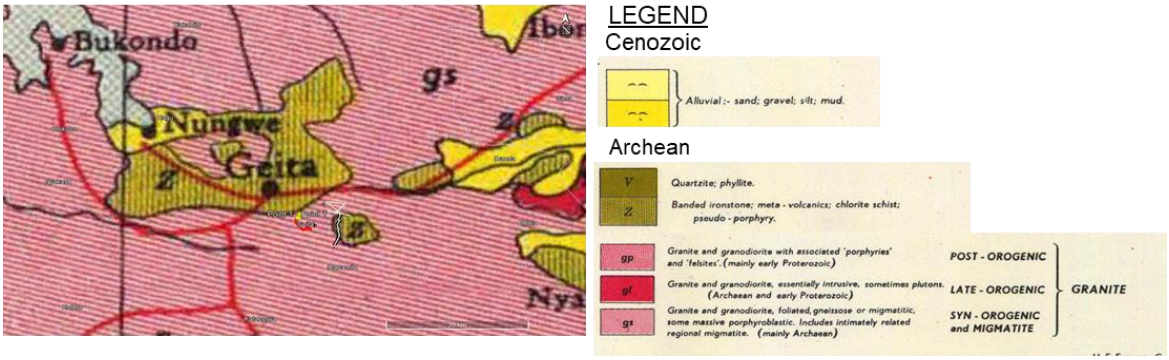


Figure 2: Geologic map of Tanzania, Geological Survey of Tanzania, 1959. (Scale 1:2,000,000)

1.3.2 Potential Geological Constraints

Based on the desk study of the available geological data, the following geological concerns are revealed to be considered:

i. Problematic soil

- The lateritic soil is weak, collapsible and contains dissolution cavities, in places.
- The black clayey soil may have swelling/shrinking properties.
- The soil contains rock blocks in some locations.

ii. Seismicity

- The project areas are located in a low to moderate seismic zone. However, national, and international seismic codes and standards should be followed in the detailed design stage.

1.4 Exposure/Environmental Conditions and Durability Requirements for Concrete

This section discusses the exposure conditions and the durability requirements in addition to the relevant measures that shall be taken into consideration for the protection buried structural concrete elements.

The exposure conditions and necessary protection measures of reinforced substructure concrete elements shall be assessed according to BS EN 206 standard and its complementary BS 8500-1 Standard. The concrete protection measures will be adopted to ensure dense and durable concrete over the project design life of 50 years for the building structures and 100 years for the infrastructure/culvert concrete.

Kahama Municipality

The chemical composition test results of soil and groundwater samples obtained from test pits and boreholes drilled at the project location reveal high levels of sulphates and chlorides in the tested soil samples and low levels of sulphates and chlorides in the tested groundwater samples with neutral pH levels, as summarized in the below table.

	Soil Samples			Water Samples		
	Chlorides (as Cl), (mg/l)	Sulphates (as SO4), (mg/l)	pH	Chloride (as Cl), (mg/l)	Sulphate (as SO4), (mg/l)	pH
Min.	632.3	901.1	5.99	85.90	20.30	6.37
Max.	1053.8	5299.7	8.82	343.6	223.5	7.78
Average	832.98	3000.22	7.58	240.52	136.53	7.05
Adopted in Analysis*	983.53	4,755	8.37	343.6	223.5	7.78
Count	14	14	14	19	19	19

*For the soil samples and noting the number of tested samples, the average of the highest two test results were considered for the analysis of the exposure conditions whereas the maximum concentrations were considered for the groundwater samples.

The foundations and other substructure concrete elements are anticipated to be in contact with shallow groundwater. Considering the above test results and the shallow groundwater, the exposure conditions are defined as follows:

- BS 8500: XD2/ DC2 (DS-2/AC-2)
- BS EN 206: XD2/ XA1

The protection measures for the foundation and other substructure concrete elements in contact with soil/groundwater to ensure very dense and durable concrete against potential chemical and chloride attacks are as in item 1.6.2 below.

1.5 Geotechnical Recommendations

Based on the mentioned in the above section, the following recommendations shall be followed.

1.5.1 Foundation Recommendations

- Shallow Isolated Footing connected with ground beams and/or continues footing are adopted as foundations for the proposed project.
- The appropriate foundation depth would be chosen at a depth not less than 1.50m below the ground level.
- Due to the relatively high fines content, and for the structural safety and to avoid any excessive differential movement between the footings, excavation should extend to a satisfying depth below the foundation level.
- The bottom of excavation is to be flooded by water for at least 48 hours. Any loose layers fill materials, soft spots, and any inferior materials such as broken or loose rocks or gypsum at the excavation level should be totally removed and replaced by an approved material, and as directed by the Engineer.
- The excavation level should be well compacted to its maximum dry density using heavy vibratory roller of a static weight of not less than 15 tons, under the supervision of a competent Geotechnical engineer.

- An approved replacement backfill material (replacement layer of 1.5m thickness (and 1.0m thickness for underground tank) consists of a mixture of gravel and sand (1 Sand: 1 Gravel) should be then placed in compacted layers of maximum thickness of 200mm (at least 95% of its maximum dry density as per modified Proctor test), from the excavation level to reach the foundation level with a protrusion not less than the replacement layer thickness.
- The footings are to be connected with ground beams in both directions (if applicable) at the foundation level.
- Unless shoring/side support is used, the Contractor is to follow the default construction sequence. This includes the excavation and erection of deeper footings adjacent to any shallower ones. Excavation close to existing foundations/raft is prohibited unless special guarantee safe excavation side slopes not steeper than 2.0 Horizontal: 1 Vertical.
- If the ground water is encountered during the foundation excavation, or need arises to excavate below the groundwater level, a dewatering system is to be maintained to lower the water level below the proposed excavation levels by a minimum of 0.50 m to enable inspection, cleaning and casting of concrete in the dry, the dewatering system is to be designed by the Contractor to ensure that there is no migration of fines and sand particles during the dewatering procedures.
- The Contractor should provide standby equipment on the project site for immediate operation to maintain dewatering on a continuous basis in the event that any part of the system becomes inadequate or fails.
- The dewatering system is to be designed to ensure that there is no migration of fines and sand particles during the dewatering procedures.
- Dewatering works shall be carried out in accordance with project specification. Contractor shall undertake all necessary temporary works to accomplish dewatering without damaging site improvements adjacent to excavation.
- The Contractor shall ensure that all diversions of existing utilities are carried out prior to excavation and to the approval of Engineer.
- Field and laboratory tests are to be conducted to assure that each replacement layer achieving the specified required properties.
- In case of the GWT is higher than the foundation level, full tanking system (with retaining wall as a water barrier against water ingress) should be considered.
- The maximum net allowable bearing pressure at the proposed foundation level is 150.0kPa for the buildings & 80kPa for underground tank.

1.5.2 Protection Measures for the Foundation

- From durability perspective, a minimum compressive strength Grade of C35/45 (cylinder/cube) is required.
- Portland cement conforming to BS EN 197-1 Type CEM I 42.5N, C3A content between 5% and 8%, shall be used in the concrete mix in combination with either fly ash (21% to 35% of cementitious weight), GGBS (36% to 65% of cementitious weight) or Silica fume (5% to 10% of cementitious weight).
- Maximum water to cementitious ratio of 0.4.
- Minimum Cementitious Content of 380 kg/m^3.
- The concrete shall be dense and durable with “Low” permeability level, satisfying minimum two test requirements out of the below specified requirements:

- Water Absorption of 2.0% maximum when tested according to BS 1881: Part 122 standard.
- Depth of penetration of 15mm maximum when tested according to BS EN 12390-8 standard.
- Chloride Ion Penetration of 2,000 Coulombs maximum when tested according to ASTM C1202.

- Minimum cover to reinforcement of 55mm for concrete in contact with blinding or prepared ground and 100 mm for concrete in direct contact with soil/groundwater.
- The application of full tanking waterproofing membrane protection is necessary for surface protection of buried concrete elements.

1.5.3 Foundation Recommendations for the Culverts

- Allowable bearing capacity of the soil under the culvert is 100 kPa. The foundation depth is 1.50m for culverts at C-BH-01 & C-CU-01. The foundation depth is 1.0m for the culvert at C-CU-02.
- For Culvert at the location of C-BH-01: Excavation should proceed below foundation level down 2.2m. For culvert at C-CU-01: Excavation should proceed below foundation level down 1.0m. For culvert at C-CU-02: Excavation should proceed below foundation level down 0.5m. Any loose layers fill materials, soft spots and any inferior materials such as broken or loose rocks at the excavation level should be totally removed and replaced by an approved material as directed by the Engineer.
- The excavation level should be flooded with water, where applicable, for not less than 48 hours and then left to dry. The excavation level should be well compacted using a vibratory roller with a static load that is not less than 15.0 tones to its maximum dry density under the supervision of a qualified geotechnical engineer.
- An approved replacement back-fill material (Engineered fill) of 2.2m thickness for the culvert at C-BH-01, 1.0m for the culvert at C-CU-01, and 0.5m for the culvert at C0-CU-02 should be then placed in compacted layers as per earthmoving Specifications from the excavation level to reach the foundation level with a protrusion of the same thickness all around.
- In case of open excavation, the Contractor is to guarantee a safe excavation slope not steeper than 2.0 Horizontal: 1.0 Vertical. Otherwise, an excavation supports and protection systems/shoring capable of safely resisting soil and groundwater pressures, shall be designed, provided, installed, monitored and maintained for supporting the sides of the excavation without disturbing the underlying soil or causing any damage to adjacent structures, utilities, pavements, or other facilities, in a manner accepted to the Engineer, at the Contractor's sole risk and responsibility. The Contractor is also responsible for removing the excavation supports and protection systems when they are no longer needed without disturbing the underlying soil or causing any damage to adjacent structures, utilities, pavements, or other facilities.
- Unless shoring/side support is used, the Contractor is to follow the default construction sequence. This includes the excavation and erection of deeper footings adjacent to any shallower ones. Excavation close to existing foundations/raft is prohibited unless special precautions are taken after consulting the Engineer.
- If the ground water is encountered during foundation excavation, or need arises to excavate below the groundwater level, a dewatering system is to be maintained to lower the water level below the proposed excavation/foundation levels by a minimum of 0.50 m to enable inspection, cleaning and pouring of concrete in the dry. The dewatering system is to be designed to ensure that there is no migration of fines during dewatering.

- The backfill behind and above the walls of the culverts is to follow the "soil filling and backfilling for roads" Specifications
- The soil/GW is to be considered aggressive requiring protection against chemical attacks.

1.5.4 Earthwork and Excavation Support

Open cuts may be applied whenever the soil and site conditions allow for unsupported cut slopes. Otherwise, an adequate temporary shoring system will be used such as sheet pile walls, secant piles walls, and/or others. The temporary shoring system shall be designed, provided, installed, operated, maintained and dismantled (upon completion of works) by the Contractor wherever required. The Supervising Engineer shall ensure the review of the Contractor's relevant design notes, method statement, and Quality Control system.

Based on the stability and nature of the soil, it is recommended to use earth slopes not steeper than 2.0H: 1.0V at the excavation levels.

The backfill to be used behind retaining walls shall consists of well graded granular soil such as A-1-a as per AASHTO classification and should be placed in layers not exceeding 25cm in thickness and compacted to the required 95% compaction of the maximum dry density according to ASTM D-1557 specification.

In general, it is recommended to use filling material classified as (A-1-a) and/or (A-1-b) according to AASHTO for structural filling works, while (A-2-4) can be used for general fill works, (A-3) can be used only in confined areas.

All fill material shall be compacted as per project specifications and approved by the Engineer, so as to produce a minimum degree of compaction of 95 percent. Clean sands and gravel fill shall be defined as cohesionless granular material meeting the following requirements: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940; with at least 90 percent passing a 37.5-mm sieve, maximum Plasticity index 6%, maximum percentage by Dry Weight passing #200 sieve is 12%.

2 PAVEMENT DESIGN

2.1 Introduction

The pavement design criteria are in accordance with the following reference standards:

- Tanzania Pavement and materials Design Manual 1999
- Tanzania Low Volume Roads Manual, 2016
- AASHTO Guide for Design of Pavement Structures

2.2 Material Source

Existing and Virgin Sources of gravel, rock/aggregate, sand and water were sampled and tested in the study area as detailed in this section (refer to Appendices of factual data).

The performed tests for the potential Gravel sources are:

- Grading (particle size distribution),
- Atterberg Limits,

- Moisture/density relationship,
- California Bearing Ratio (CBR)
- Any other necessary tests as per PMDM.

The performed tests for the potential sources of hard stone are:

- Los Angeles Abrasion,
- Aggregate Crushing Value (ACV) and or Ten Per Cent Fine Value (TFV),
- Sodium Sulphate Soundness,
- Bitumen Affinity,
- Specific Gravity and Water Absorption,
- Soluble salts content,
- Aggregate Impact Value (AIV),
- Any other necessary tests as per PMDM.

Moreover, the existing water sources for supplying water for construction works were identified and its quantity and quality (pH, Chloride content, and Sulphate content) were assessed. The tests on Sand sources included the gradation, fines content and the organic content.

2.2.1 Locations of Sources of Material

A list of the coordinates of the material sources and estimated quantities is tabulated here below:

Gravel Sources

- KAHAMA Gravel - Mwima Mwendakulima: The estimated quantity is 60000 active quarry.

The test results on some samples show that the gravel is clayey Gravel with sand (71-83% Gravel, 9-23% Sand, 7-18% fines and PMDM class is G15 and G25.

- KAHAMA Gravel - Nyandekwa: The estimated quantity is 15000 not active.

The test results on some samples show that the gravel is clayey Gravel with sand (54-66% Gravel,21-35% Sand, 11-13% fines and PMDM class is G15.

- KAHAMA Gravel - Lowa: The estimated quantity is 16000 not active.

The test results on some samples show that the gravel is clayey Gravel with sand (75-90% Gravel, 5-9% Sand, 5-16% fines and PMDM class is G25.

Sand Sources

- KAHAMA Sand - Zongomela: The estimated quantity is 8500 active, pit sand.

The sand source has a high fines content and has too many organic impurities. It is not suitable for use in concrete work. Other sources need to be explored

Rock sources

- KAHAMA Quarry - Zongomela: The estimated quantity is 550000 active quarry.

Water source

- KAHAMA – Kofija Mbulu.
- KAHAMA – Bijampola Zongomela

The test results on some samples show that: pH value is 7.34, Chloride content 207 mg/l, and Sulphate content 117 mg/l. The water sources are both suitable for construction works. Care should be taken not to contaminate or deplete adjacent public water sources.

	Area	Easting	Northing	Estimated Quantity	Distance from city (km)
	GRAVEL SOURCES				
1	KAHAMA Gravel Mwima - Mwendakulima	461,922.30	9,572,812.20	60000 - Active	7.5
2	KAHAMA Gravel - Nyandekwa	447,044.00	9,569,243.10	15000 - not Active	10
3	KAHAMA Gravel - Lowa	443,383.50	9,568,124.40	16000 - not Active	13.5
	SAND SOURCES				
1	KAHAMA Sand - Zongomela	448,273.90	9,571,328.40	8500 - Active Pit Sand	7.8
	QUARRY / Rock Sources				
1	KAHAMA Quarry - Zongomela	448,233.50	9,571,480.80	550000 Active quarry	8
	WATER SOURCES				
1	KAHAMA - Kofija Mbulu	459,542.30	9,575,667.80	Dam	4.6
2	KAHAMA - Bijampola Zongomela	454,776.10	9,575,370.30	Dam	0.5

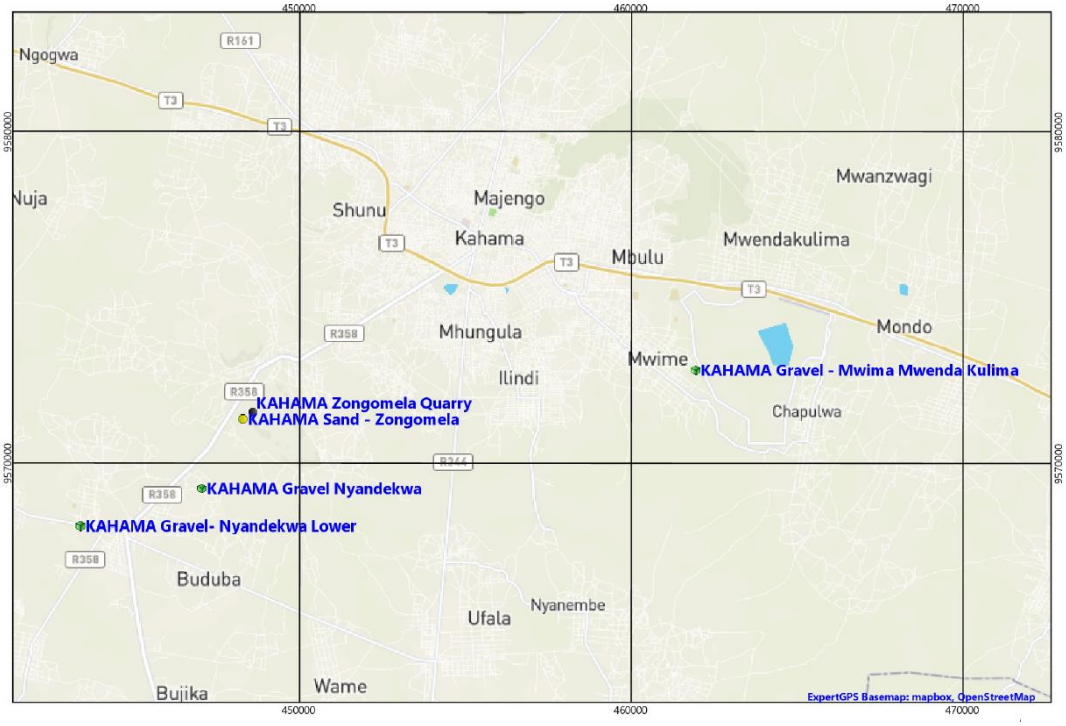


Figure 4: Coordinates and locations of Sources of materials for Kahama

Appendix IX: Grievance Receipt and Resolution Form for Project Affected Persons (PAPs)

Grievance/Complaint Registration Number: ……. Date: ……

A. COMPLAINANT

1. Important information of the Complainant

First Name .....Middle Name .....Last Name: .....

Occupation:.....Tittle.....

Address:.....

..

Mob. Phone..... E-mail:…….....

2. Who is complaining

i. Project Affected Persons (PAPs)..... ☐

Specific PAPs are:

- Municipal staff..... ☐
- Labourer ..... ☐
- Representative of complainant. ☐
- Others ..... ☐

ii. Technicians/Local masonry..... ☐

B. EXPLANATION OF THE GRIEVANCES

1. Source of Grievance/ Complaint.....

2. Brief explanation of the Grievance/Complaint emanating from the project implementation.....
.....
.....
.....
.....

3. Event/person being complained about .....

.....
.

4. Place where the event occurred .....

5. Date of the event .....

6. Have you ever filed the same grievance before? .....**Yes**..... ☐ .....**No**..... ☐

C: LODGING THE GRIEVANCE/COMPLAINT

1. Method used to lodge the grievance/complaint

☐ Letter ☐ Phone ☐ Face to face ☐ E-mail ☐ Others (Mention).....

2. Name of Person registered and Filed the complaint
   Name……Position…….Date…….
3. Agreed time frame for feedback on the processed grievance/complaint:
   (a) Immediately ☐ (b) Three days ☐ (c) One week ☐ (d) Two weeks …… ☐

GRIEVANCE/COMPLAINTS RESOLUTION

1. Date of conciliation session.....☐.....
2. Was the complainant present? **Yes** ☐ **No** ☐
3. Was field verification of complaint conducted? **Yes** ☐ **No** ☐
4. Findings of field investigation…
   ……
   ……
   .....
5. Summary of Conciliation Session……
   .....
   .....
   .....
6. Was agreement reached on the issues? **Yes** ☐ **No** ☐
7. If agreement was reached, give the details of the agreement
   ……
   …….
8. If agreement was not reached, specify the points of disagreement and promise given to the client
   .....
   .....

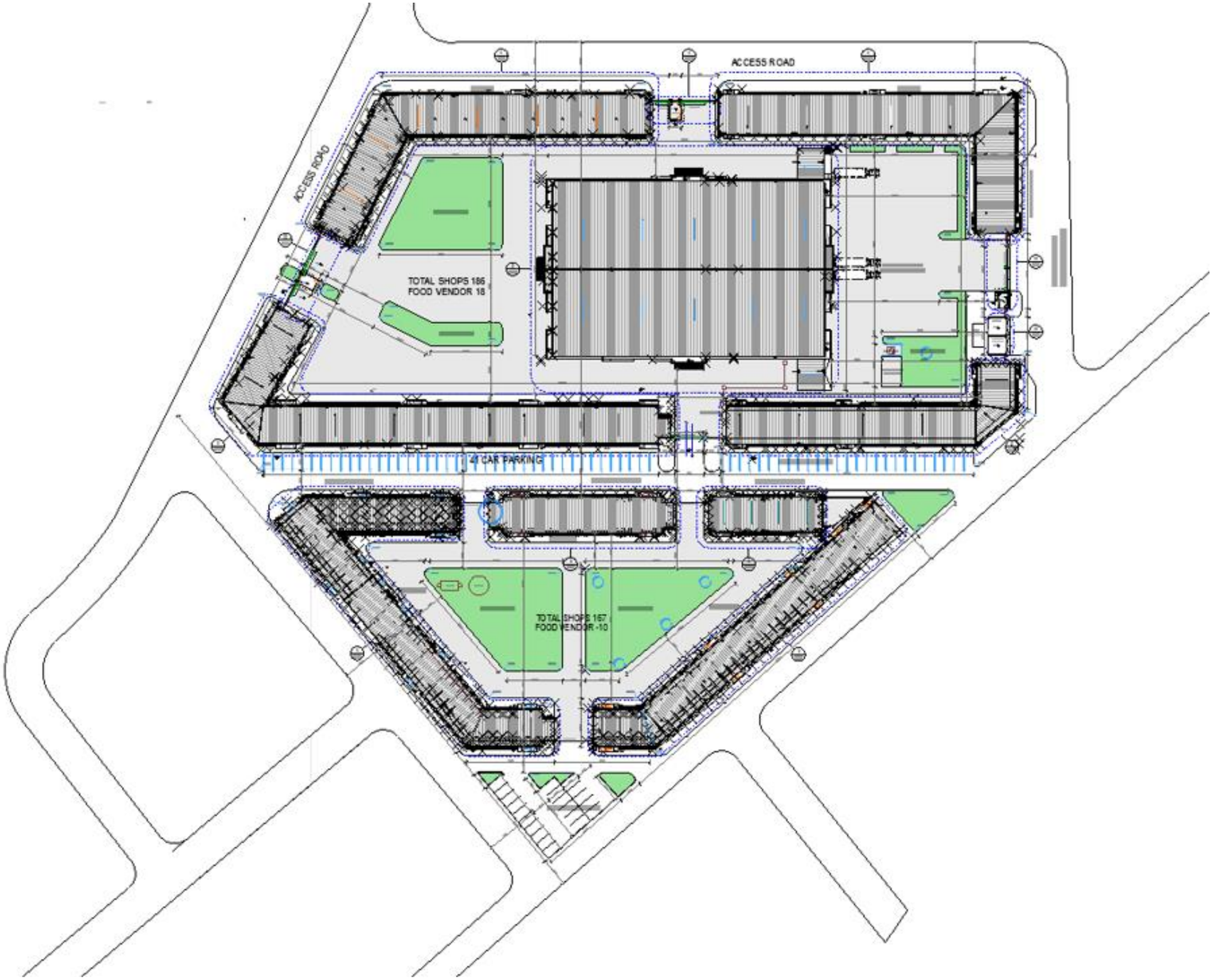
Signed (Arbitrator/ Complaints handling Officer-GHO): ……Date.....

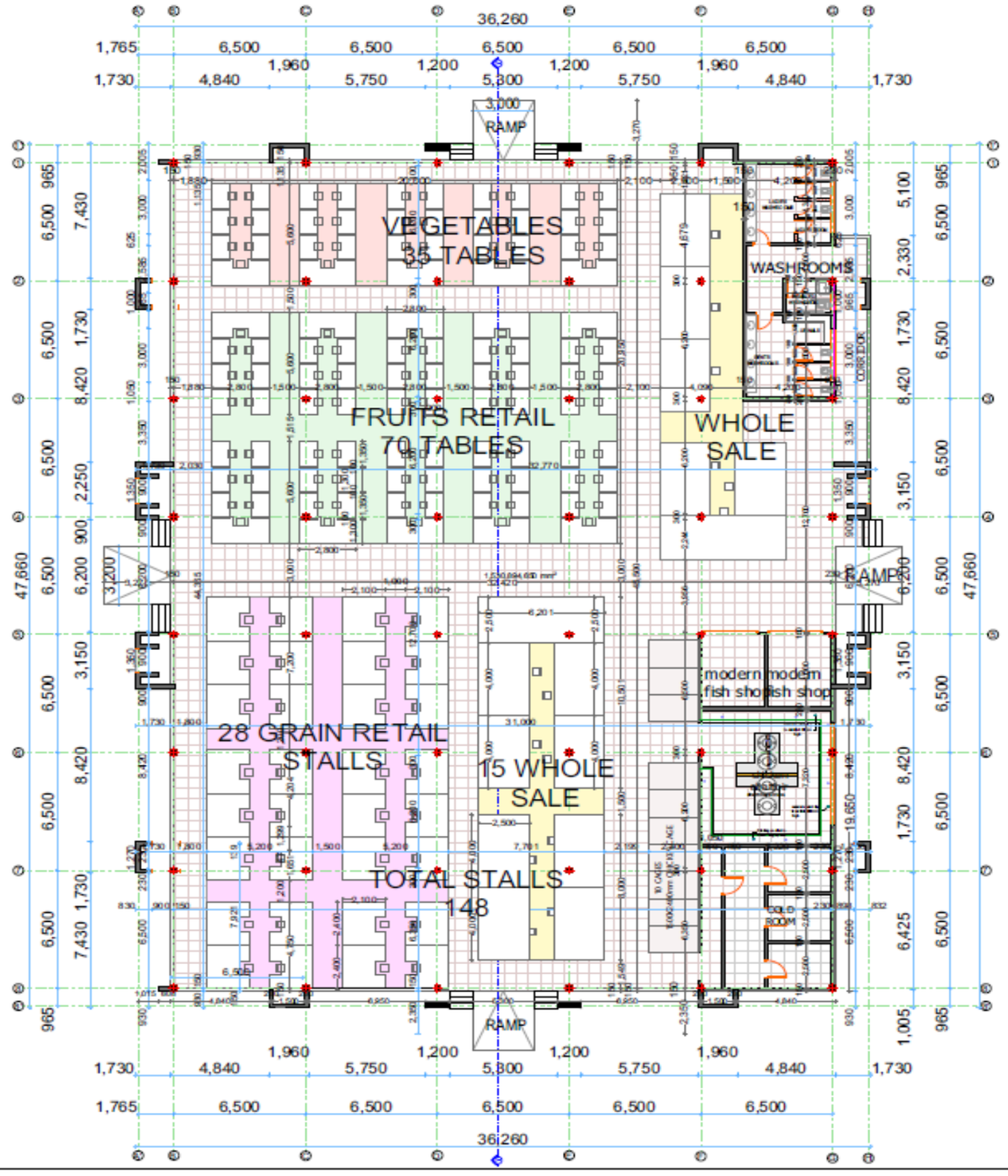
Signed (Complainant).....Date.....

Signed (Independent Observer) .....Date.....

Appendix X: Architectural Drawings

1. 1. SITE LAYOUT PLAN





GROUND FLOOR PLAN

PRESIDENT'S OFFICE,
REGIONAL ADMINISTRATION
AND LOCAL GOVERNMENT
TANZANIA (PO-RALG)

dar

DON CONSULT LTD.

TA212/5-0100D-FD-AR-SN-03

2. 3D VIEW OF THE PROPOSED ZONGOMELA INDUSTRIAL PARK

Appendix XI: Design for Storm water Drainage

Ditches will be primarily trapezoidal and lined in concrete. The discharge capacity calculated by Manning's equation for each type of ditch related to slope.

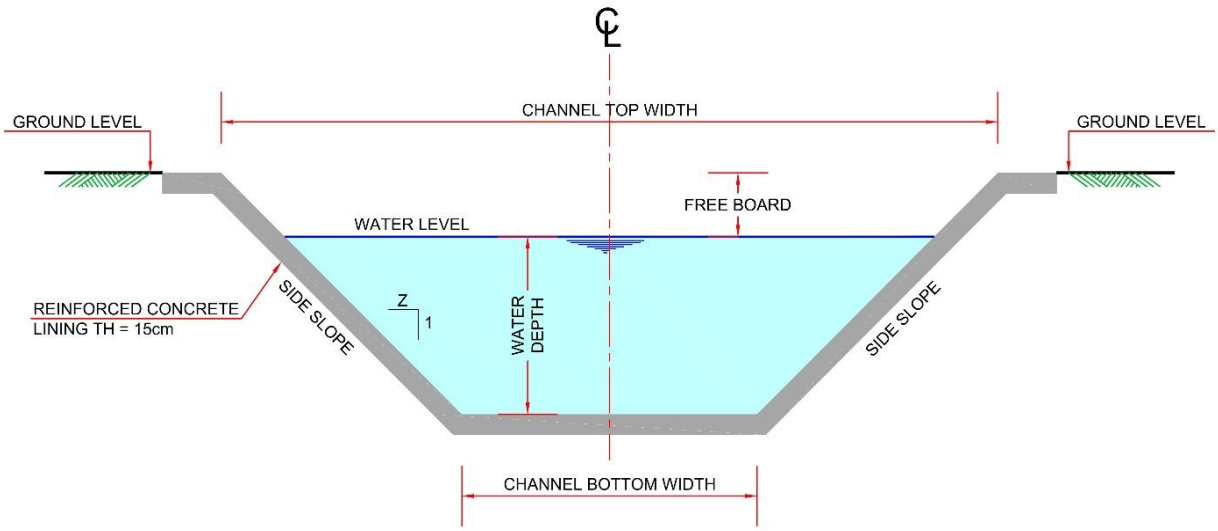


Figure 1: Typical Cross-Section for a Concrete Lined Channel (Bed and Sides)

ENGLISH-SWAHILI VERSION OF NON-TECHNICAL EXECUTIVE SUMMARY FOR THE PROPOSED UPGRADING OF SANGO MARKET ON PLOT NO. 889, BLOCK "U" LOCATED AT SANGO MTAA, NYASUBI WARD IN KAHAMA MUNICIPAL COUNCIL IN SHINYANGA REGION

PROPONENT:
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SUBMITTED TO:
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Email: dg@nemc.or.tz

CONSULTANT:
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Email: rosemary.nyirenda35@gmail.com

SUBMISSION DATE: 22ND JUNE, 2023

NON-TECHNICAL EXECUTIVE SUMMARY

1. Title and location of the project/undertaking

Environmental and Social Impact Assessment for the Upgrading of Sango Market on Plot No. 889, Block 'U' located at Sango Mtaa, in Nyasubi Ward, Kahama Municipal Council in Shinyanga Region.

2. Name of the proponent and contacts

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E-Mail : md@kahamamc.go.tz / info@kahamamc.go.tz
Web: www.kahamamc.go.tz

3. Names and address of Firm of Experts conducted the EIA

Rosemary C. Nyirenda
Mobile: +255 713 030 865/ +255 753 880 424
Email: rosemary.nyirenda35@gmail.com

4. Brief outline and justification of the proposed project

(a) Brief description of the project environment

The government of the United Republic of Tanzania in collaboration with development partners intends to finance the construction of Sango Market in Kahama Municipality as part of the Tanzania Cities Transforming Infrastructure and Competitiveness (TACTIC) project financed by the World Bank (WB). The former Sango Market was old and not designed or organized to accommodate a large number of traders and customers, old and not sufficient to meet the growing demand and its access roads are rough. The quality of service offered is very poor. Also due to rapid increase of population in Kahama Municipality hence demand. There is a need to have a modern market at Sango Mtaa which consists of all necessary services in order for it to function including but not limited to retail section with the wide range of shopping facilities, shaded, semi shaded and opened market, area for refrigerators, mechanical and electrical services, security

gates, storage, toilets, administration, space for ATM machines, open spaces, Mama lishe area, shared/access, truck loading zone, parking zone and other features necessary for market operations.

The EIA study was conducted in accordance with the Environmental Management Act (Cap 191) and the Environmental Management Act (Environmental Impact Assessment and Audit) Regulations of 2005 as amended in 2018. The Regulations give mandate to NEMC to oversee the EIA process, which culminates with an award of the Environmental Impact Assessment Certificate by the Vice President's Office - Ministry responsible for the Environment. The Environmental Impact Assessment Certificate is among the prerequisite approvals required before the project takes off. This project will need this approval before it is implemented.

(b) Project Description

The proposed project is expected to take place at Nyasubi Ward in Kahama Municipal Central Business District Area. The current Sango market area is owned by Kahama Municipal Council, Plot No.883 Block 'U'. It is located between 2Km to 3km from CBD and approximately 500m from the proposed site for the construction of Mbulu Bus Terminal. The market currently hosts over 400 traders who operate under a very poor working environment due to dilapidated market infrastructure. Varieties of commodities including vegetables, grains, and industrial products are sold in the market. The size of the Sango market area is 29,278 Sqm. The site can be accessed through a rough road about 500m from the Shinyanga Kahama road. The market area is surrounded by settlements which are planned and surveyed.

The market being a community service is projected benefit more than 20,000 people who will use the market for different purposes including buying and selling of products and there will be shops/ stores for other food products.

5. Policy, Legal and Institutional Framework

Tanzania is committed to attaining Sustainable Development Goals. A few policies and legislation that have a close bearing to urban development are but not limited to National Environmental Policy (NEP) of 2021, Construction Industry Policy (2003), National Land Policy (1995), National Gender Policy (2002), Environmental Management Act (Cap 191), Water Supply and Sanitation Act (2019), Land Act No. 4 of 1999, The Urban Planning Act (2007), Occupational Health and

Safety Act (2003), Employment and Labour Relations Act (2015), Engineers Registration Act (2007), the Contractors Registration Act (1997), The Local Government (Urban Authorities) Act (Cap 288), the Architects and Quantity Surveyors Act (1997), the HIV and AIDS (Prevention and Control) Act (2008), the Tanzania 2025 Development Vision and Environmental Impact Assessment and Audit Regulations (2005) as amended in 2018.

Others are the World Bank Environmental and Social Framework (ESF) which describes ten (10) Environmental and Social Standards (ESS). The ten ESSs as per the WB ESF are: ESS1: Assessment and Management of Environmental and Social Risks and Impacts; ESS2: Labor and Working Conditions; ESS3: Resource Efficiency and Pollution Prevention and Management; ESS4: Community Health and Safety; ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities; ESS8: Cultural Heritage; ESS9: Financial Intermediaries; and ESS10: Stakeholder Engagement and Information Disclosure.

Given the nature of activities of this project, with the exception of ESS9: Financial Intermediaries almost all the ESSs are relevant. The World Bank's Environmental and Social Framework sets out the Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social standards that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity. The E&S Framework comprises of: (1) Vision for Sustainable Development, which sets out the Bank's aspirations regarding environmental and social sustainability; (2) The World Bank Environmental and Social Policy for Investment Project Financing, which sets out the mandatory requirements that apply to the Bank; and (3) The Environmental and Social Standards, together with their Annexes, which set out the mandatory requirements that apply to the Borrower and projects. Other document is the World Bank Environmental, Social, Health and Safety (ESHS) Guidelines.

6. Stakeholder Consultations and Public Involvement and the results

Generally, most of stakeholder's views and concerns support the proposed project. All the comments received from the stakeholders were compiled, summarized and sorted to identify issues

that have been addressed in the full and detailed Environmental Impact Assessment. A matrix with planned schedule of visits was prepared to guide the team to consult all stakeholders that were identified. Stakeholders were identified using simple methods such as focus group discussion and key informant interviews. In all the process of stakeholder consultation professional discussion was key especially when exploring technical issues. The stakeholders identified include but not limited to Surrounding Communities, District Authority, Government Institutions such as TARURA, utility companies such as Tanzania Elictric Supply Company Ltd (TANESCO) and Kahama Water and Sewerage Authority (KUWASA), Association of People with Disabilities (PwDs), youth, women and other potentially affected community members.

Major issues of concern raised were;

- Stakeholders' categorization
- Designs to consider various climatic and social issues;
- Bus Stand and Market to accommodate all current users;
- Interaction between local communities and influx of labourers during construction should be monitored; and
- Designs to consider energy use efficiency

1. Assessment of Impacts

Impact identification in this EIA aimed at ensuring that all potential significant impacts were identified and addressed. The EIA team used tools to identify various impacts particularly adverse impacts. These impacts were identified during the stakeholders' consultative meetings, interview, literature review and observation. Some of the issues/impacts identified were thus regarded as possible impacts.

(a) Mobilization and Construction phase

- Positive Social Benefits
    i. Benefits to communities resulting from employment at the market
    ii. Benefits to the government resulting from revenue and tax
    iii. Benefits to businessmen due to improved transportation

- Negative Social Impacts
    i. HIV / AIDS among workers and nearby communities

ii. Community safety caused by the influx of workers
iii. Unwanted pregnancy

- Positive Environmental Benefits
  i. Improved environment which consists of standard drainage system
  ii. Improved air quality due to expected greenery

- Negative Environmental Impacts
  i. Loss of natural vegetation
  ii. Increased Dust and noise levels
  iii. Waste management problems during construction
  iv. Safety and health risks
  v. Population influx from labourers
  vi. Vibration pollution

(b) Impacts associated with Operation Phase

- Positive Social Benefits
  i. Benefits to communities resulting from employment
  ii. Availability of conducive business space
  iii. Increased security of the area
  iv. Improved social services
  v. Increased revenue to Kahama Municipal Council and country as whole

- Negative Social Impacts
  i. HIV / AIDS among workers and nearby communities
  ii. Community safety caused by the influx of workers
  iii. Unwanted pregnancy

- Positive Environmental Benefits
  i. Improved environment which consists of standard drainage system
  ii. Improved air quality due to expected greenery

- Negative Environmental Impacts

i. Increased pressure on social services and utilities
ii. Increased Dust and noise levels
iii. Increased waste during operations
iv. Safety and health risks due to fire hazards

(c) Impacts associated with Demobilization Phase

The following key issues are associated with decommissioning phase:

- Negative Social Impact
  i. Loss of employment which might lead to poor quality of life

- Negative Environmental Impact
  i. Production of rubble and associated disposal problems
  ii. Noise and Dust Pollution

2. Mitigation Measures

Many of the mitigation measures put forward are nothing more than good engineering practice that shall be adhered to during all the project phases. Other major mitigation measures for each of the identified impacts to be observed include;

- **Higher noise levels:** Machine operators in various sections with significant noise levels shall be provided with noise protective gear.
- **Dust emission:** Trucks transporting construction materials shall be covered if the load is dry and prone to dust emissions.
- **Waste management:** The contractor shall have adequate facilities for handling the construction waste. A large Skip Bucket shall be provided at the site.
- **Health and safety of workers:** Appropriate working gear (such as nose, ear mask and clothing) and good construction site management shall be provided. During construction the contractor shall ensure that the construction site is fenced and hygienically kept with adequate provision of facilities including waste disposal receptacles, sewage, firefighting and clean and safe water supply.
- **Lack of employment for local community:** The contractor shall deploy locally available labour

- **Traffic management:** Adequate sign boards will be placed at the relevant location and flag man will be assigned whenever necessary.
- Pressure on community services such as water and electricity: Alternative measures like use of solar power, drilling a borehole at site, water recycling shall be explored and implemented if found feasible. For instance, use of energy savers bulbs shall be given high priority
- **Accidents and fire incidences**: The design of the market shall strictly adhere to the Fire Safety Standards
- **Poor maintenance of the market during operation**: A private cleanliness firm with adequate number of staff shall be commissioned to clean the market, its facilities and the surrounding daily.

7. Alternative Analysis

From the environmental safeguard viewpoint, alternative analysis is an important tool for the best selection of the project site, technology to be followed, and operational mechanism in terms of environmental acceptability of the chosen method. The following alternatives have been considered by this project.

(a) "No action" alternative of the project

The no project alternative entails retaining the current status quo (No Upgrade of Sango Market). Adopting this option would mean avoiding most of the negative effects associated with the presence of the market and missing all the positive benefits such as benefits to communities resulting from employment during construction and availability of conducive and adequate business spaces.

(b) Alternative Analysis for Selection of Sites

The option of using another site apart from that of the proposed one was also considered. However, the Proposed site was observed to have the following advantages over others;

- The site is owned by Kahama Municipal Council (No need to buy a new piece of land and does not need compensation).
- The site is located on a favourable piece of land which is close to transportation facilities (road network) and health service

- The plot is located on a favourite piece of land. It is surrounded by residential and institutional activities; it is in the CBD area.
- Availability of water and electricity mains supply

(c) Alternative Analysis for Technology and materials options

Generation of noise from the construction activities (welding, compaction, drilling, trenching etc) will raise the noise level at the site. Thus, to prevent these adverse effects to the surrounding community, the contractor will use machines that do not generated a lot of noise. Therefore, the proposed project will employ the use of locally and internationally accepted materials and equipment to achieve public health, safety, security and environmentally aesthetic requirements.

(d) Alternative analysis for energy options

The use of other alternative energy sources apart from power from the National grid and diesel generators were considered. As it is the case in most of developing countries, supply of electricity from national grids is not reliable as it mostly originates from hydroelectric power generators, which depend on rainfall frequency, intensity and pattern. On the other hand, diesel generators, which are mainly used during power interruptions, emit a lot of greenhouse gases especially when they are run for a long time. Solar energy was considered, and the design team shall explore the feasibility of using this alternative.

8. Environmental and Social Management Plan, Environmental Monitoring Plan and Auditing

The Environmental and Social Management Plan (ESMP) is presented in the Environmental Impact Statement. The options to minimize or prevent the identified adverse social and environmental impacts as well as a monitoring plan have been suggested and they are based on good engineering practices. It also, defines roles and responsibility of different actors of the plan. The plan during the implementation of the project is important in order to measure the success of the mitigation measures. The contractor shall implement components relevant to the actual construction and operation phases. Developer shall be responsible for overall implementation of proposed Plan.

The estimated costs for implementing the mitigation measures are just indicative. Additionally, the ESPM include an estimate of the costs of the measures so that the project Developer can budget the necessary funds. Appropriate bills of quantities should clearly give the actual figures. In any case, the consultant used informed judgment to come up with these figures. The project shall ensure that the activities which are causing impacts to the environment are managed in a comprehensive, systematic, planned and documented manner. Developer shall communicate the environmental and social management plan and environmental and social monitoring plan to its employees and its contractors to ensure that implementation is done accordingly.

Furthermore, Developer shall ensure availability of resources which are required for implementation of its environmental management plan. The plan shall be monitored to ensure that environmental objectives are met, Kahama Municipal Council shall carry out routine auditing and communicate the audit report to the top management to ensure continued sustainability of the environmental management system.

9. Resources evaluation

Kahama Municipal Council has set aside a total of over 1.61 billion Tanzania shillings as initial cost for the development and construction of Sango Market. All these funds will cover costs of civil and building works; electrical and Information, Communication and Technology works, procurement of medical devices; and cross cutting issues. The estimated costs for implementing impact management as well as monitoring process as outlined in Environmental Impact Statement is TZS. 151,000,000.00 and TZS. 57,500,000.00 respectively. The estimated costs for mitigation do not include the environmental costs, which could not be accurately calculated. Since some of the impacts will only be realized during construction phase, the costs for these will also be short term, especially if mitigation measures are fully implemented the project benefits outweighs the project costs by far.

10. Decommissioning

As decommissioning will take place in the remote future, the specific conditions for mitigation are generally inherently uncertain. In view of this, specific mitigation measures pertaining to environmental impacts of decommissioning works cannot be proposed at the moment with a reasonable degree of certainty. A Detailed decommissioning plan that takes environmental issues

into consideration shall be prepared by the developer prior to the decommissioning works. Should it be done, decommissioning may entail change of use (functional changes) or demolition triggered by change of land use. Therefore what is presented here is just a Preliminary Deccommissioning Plan which give light to what shall be done if the need for decommissioning arise.

11. Summary and Conclusion

The proposed upgrading of Sango market located at Sango Street in Nyasubi Ward in Kahama Municipal Central Business District area in Shinyanga Region. The project has large socio-economic benefits to both the Kahama Municipality and the nation at large. The project as such, entails minimal adverse environmental impacts of which adequate mitigation measures have been proposed and incorporated in the project design. It can therefore be concluded that, the proposed project will entail no significant impacts provided that the recommended mitigation measures are adequately and timely implemented. The identified impacts will be managed through the proposed mitigation measures and implementation regime laid down in this ESIA. The proponent is committed in implementing all the recommendations given in this ESIA and further carrying out the environmental auditing and monitoring schedules.

MUHTASARI USIOKUWA WA KIUFUNDI WA TATHMINI YA ATHARI ZA MAZINGIRA NA JAMII ZA UJENZI WA SOKO LA SANGO KWENYE KIWANJA NAMBA 889, KITALU "U", KATIKA MTAA WA SANGO, KATA YA NYASUBI, MANISPAA YA KAHAMA, MKOANI SHINYANGA

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TAREHE YA KUWASILISHA: 22 JUNI, 2023

MUHTASARI USIO WA KIUFUNDI

1. Kichwa na eneo la mradi/shughuli

Tathmini ya Athari za Kimazingira na Kijamii kwa mapendekezo ya kuboreshwa kwa Soko la Sango kwenye kiwanja namba 889, kitalu 'U' katika Mtaa wa Sango, Kata ya Nyasubi, Manispaa ya Kahama , Mkoa wa Shinyanga.

2. Jina la Mwekezaji na anwani

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3. Majina na anuani za Kampuni ya Wataalamu iliyofanya TAM

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4. Muhtasari mfupi na uhalali wa mradi unaopendekezwa

(a) Maelezo mafupi ya mazingira ya mradi

Serikali ya Jamhuri ya Muungano wa Tanzania kwa kushirikiana na wadau wa maendeleo inatarajia kufadhili ujenzi wa soko la Sango katika Manispaa Ya Kahama ikiwa ni sehemu ya mradi wa maboresho ya miundombinu na ushindani wa Miji Tanzania (TACTIC) unaofadhiliwa na Benki ya Dunia (WB). Soko la Sango ni la zamani na halipo kwenye mpangilio mzuri wala halijasanifiwa ili kutoshelesha idadi ya wafanyabiashara na wateja. Ubora wa huduma zinazotolewa katika soko la Sango ni duni sana. Pia kutokana na kasi ya ongezeko la watu katika mji wa Shinyanga kuna haja ya kuwa na soko la kisasa ambalo litakuwa na huduma zote muhimu zinazotakiwa kuwepo katika soko hilo ikiwa ni pamoja na jengo la uongozi na utawala wa soko, sehemu ya ukaguzi wa ubora,sehemu ya manunuzi, sehemu za kuuzia mbogamboga, matunda na viungo, maegesho ya magari, stoo, eneo la mama lishe, eneo la friji, sehemu ya maduka, eneo la

ATM, vyoo, vyumba vya kubadilishia nguo,eneo la maegesho ya malozi, eneo la kukusanyia taka na huduma zingine muhimu.

Tathmini ya Athari kwa Mazingira (TAM) ilifanyika kwa mujibu wa Sheria ya Usimamizi wa Mazingira (Sura ya 191) na Kanuni za Usimamizi wa Mazingira (Tathmini na Ukaguzi wa Athari kwa Mazingira) za 2005 kama ilivyorekebishwa mwaka wa 2018. Kanuni hizo zinaipa NEMC mamlaka ya kusimamia mchakato wa TAM, ambao unafikia kilele, pamoja na kutunukiwa Cheti cha Tathmini ya Athari kwa Mazingira na Ofisi ya Makamu wa Rais - Wizara yenye dhamana ya Mazingira. Cheti cha Tathmini ya Athari kwa Mazingira ni miongoni mwa vibali vya lazima vinavyohitajika kabla ya kuanza kwa ujenzi wa mradi. Mradi huu pia utahitaji cheti hiki kabla ya utekelezaji wake.

(b) Maelezo ya Mradi

Mradi pendekezwa utajengwa katika kata ya Nyasubi lililopo katika eneo kuu la kibiashara la Manispaa ya Kahama. Soko la sasa la Sango lipo chini ya umiliki wa Halmashauri ya Manispaa ya Kahama katika kiwanja namba 883 Kitalu ‘U’. Iko kati ya kilomita 2 hadi kilomita 3 kutoka CBD na takriban mita 500 kutoka eneo lililopendekezwa kwaajili ya ujenzi wa kituo cha mabasi. Soko hilo kwa sasa lina wafanyabiashara zaidi ya 400 ambao wanafanya kazi katika mazingira duni sana kutokana na uchakavu wa miundombinu ya soko. Aina mbalimbali za bidhaa zikiwemo mboga, nafaka na bidhaa za viwandani zinauzwa sokoni. Ukubwa wa eneo la soko la Sango ni Sqm 29,278. Eneo hili linaweza kupitika kupitia barabara mbovu takribani mita 500 kutoka barabara ya Shinyanga Kahama. Eneo la soko limezungukwa na makazi ambayo yamepangwa na kupimwa.

Soko hilo jipya ni sehemu ya huduma za kijamii, hiyvo litawanufaisha zaidi ya watu elfu ishirini (20,000) watakaokuwa wanauza na kuninua bidhaa mbali mbali za chakula kwa nyakati mbalimbali. Halmashauri ya Manispaa Ya Kahama, Wizara ya Fedha, TAMISEMI na Sekta ya Uchukuzi na Idara ya Kazi ndio wahusika wakuu katika uandaaji na usimamizi wa fedha kabla na wakati wa ujenzi. Mradi unaopendekezwa utahudumia wakazi wa Halmashauri ya Mji Wa Shinyanga na wafanya biashara wengi kwa takribani zaidi ya miaka 30 baada ya kukamilika.

5. Mfumo wa Sera, Sheria na Kitaasisi

Sera na sheria mbalimbali ambazo zinahusiana na zinaongoza utekelezaji wa mradi huu ni pamoja na Dira ya Maendeleo ya Tanzania 2025, Sera ya Taifa ya Mazingira ya 2021, Sera ya Sekta ya Ujenzi (2003), Sera ya Taifa ya Ardhi (1995), Sera ya Taifa ya Jinsia (2002) na Sheria ya Usimamizi wa Mazingira (Sura ya 191), 2004, na Kanuni za Tathmini na Ukaguzi wa Athari kwa Mazingira (2005) kama ilivyorekebishwa mwaka 2018. Sheria nyingine ni kama vile; Sheria ya Majisafi na Usafi wa Mazingira (2019), Sheria ya Ardhi namba 4 ya 1999, Sheria ya Mipango Miji (2007), Sheria ya Afya na Usalama Kazini (2003), Sheria ya Ajira na Mahusiano Kazini (2015), Sheria ya Usajili Wahandisi (2007), Sheria ya Usajili wa Makandarasi (1997), Sheria ya Serikali za Mitaa (Mamlaka za Mijini) (Sura ya 288), Sheria ya Wasanifu Majengo na Wakadiriaji Majenzi (1997), na Sheria ya VVU na UKIMWI (Kinga na Kudhibiti) (2008).

Pia kuna Mfumo wa usimamizi wa mazingira na jamii wa Benki ya Dunia unaoeleza Viwango kumi (10) vya Mazingira na Kijamii ambavyo vinapaswa kufuatwa wakati wa utekelezaji wa miradi hususani ile inayofadhiliwa na Benki ya Dunia. ESS1: Tathmini na usimamizi wa Hatari na Athari za Mazingira na Kijamii; ESS2: Masuala ya Ajira na Mazingira ya Kazi; ESS3: Ufanisi wa Rasilimali na Kuzuia na Kusimamia Uchafuzi; ESS4: Afya na Usalama ya Jamii; ESS5: Utwaaji wa Ardhi, Vizuizi vya Matumizi ya Ardhi na Uhamishaji wa Watu na Makazi bila Hiari; ESS6: Uhifadhi wa Bioanuwai na Usimamizi Endelevu wa Maliasili Hai; ESS7: Wenyeji/Jamii za wenyeji zenye mfumo wa kiasili wa maisha za Kiafrika Kusini mwa Jangwa la Sahara ambazo Kihistoria zimekuwa haziangaliwi kwenye masuala ya maendeleo kutokana na mfumo wao wa Maisha na tamaduni zao; ESS8: Urithi wa Kitamaduni; ESS9: Waamuzi wa Fedha; na ESS10: Ushirikishaji wa Wadau na upashanaji wa habari/taarifa.

Kwa kuzingatia asili ya shughuli za mradi huu, isipokuwa ESS9: Waamuzi wa Kifedha; karibu ESS zote zinahusika katika mradi huu. Mfumo wa Mazingira na Jamii wa Benki ya Dunia unaweka wazi dhamira ya Benki ya maendeleo endelevu, kupitia Sera ya Benki na seti ya viwango vya Mazingira na Kijamii ambavyo vimeundwa kusaidia miradi ya Wakopaji, kwa lengo la kumaliza umaskini uliokithiri na kukuza ustawi wa pamoja. Mfumo wa E&S unajumuisha: (1) Dira ya Maendeleo Endelevu, ambayo inaweka wazi matarajio ya Benki kuhusu uendelevu wa mazingira na kijamii; (2) Sera ya Benki ya Dunia ya Mazingira na Kijamii inaweka masharti na vigezo vya lazima vya kimazingira na kijamii ambavyo Miradi ya Uwekezaji, inayofadhiliwa na Benki ni lazima ikidhi; na (3) Viwango vya Mazingira na Kijamii, pamoja na Viambatanisho vyake,

ambavyo vinaweka mahitaji ya lazima yanayotumika kwa Mkopaji na miradi. Hati nyingine ni Miongozo ya Benki ya Dunia ya Mazingira, Kijamii, Afya na Usalama.

6. Mashauriano ya Wadau na Ushirikishwaji wa Umma na matokeo

Kwa ujumla, maoni ya wadau wengi yanaunga mkono mradi uliopendekezwa. Maoni yote yaliyopokelewa kutoka kwa wadau yalikusanywa, kufupishwa na kupangwa ili kuainisha masuala mbalimbali ambayo yameshughulikiwa katika Tathmini kamili na ya kina ya Athari kwa Mazingira. Jedwali lenye ratiba ya ziara lilitayarishwa ili kuiongoza timu kushauriana na wadau wote waliotambuliwa. Wadau walitambuliwa kwa kutumia mbinu rahisi kama vile majadiliano ya vikundi na usaili wa watoa taarifa muhimu wenye uelewa mkubwa wa mradi. Katika mchakato wote wa mashauriano ya wadau mjadala wa kitaalamu ulikuwa muhimu hasa wakati wa kuchunguza na kutathmini masuala ya kiufundi. Wadau hao waliobainika ni pamoja na Ofisi ya Rais Tawala za Mikoa na Serikali za Mitaa (Kitengo cha Uratibu wa Miradi), Halmashauri ya Manispaa ya Kahama, Mamlaka ya Majisafi na Usafi wa Mazingira Kahama, (KUWASA), Shirika la usambazaji umeme Tanzania (TANESCO), Jumuiya ya Watu Wenye Ulemavu, Viongozi wa Kata na Mtaa pamoja na majirani.

Masuala makuu na maangalizo yaliyotolewa yalikuwa:

- Uainishwaji wa wadau uzingatiwe;
- Miundo inapaswa kuzingatia masuala mbalimbali ya hali ya hewa na kijamii;
- Stendi ya mabasi na soko iwe na uwezo wa kutoa huduma kwa watumiaji wote wa sasa;
- Muingiliano kati ya jamii za wenyeji na kufurika kwa vibarua wakati wa ujenzi unapaswa kufwatiliwa; na
- Miundo izingatie ufanisi wa matumizi ya nishati.

7. Tathmini ya Athari

Uainishaji wa athari katika TAM hii ulilenga kuhakikisha kuwa athari zote muhimu zinazoweza kutokea zina ainishwa na kushughulikiwa. Timu ya TAM ilitumia zana kutambua athari mbalimbali hasa athari mbaya. Athari hizi zilibainishwa wakati wa mikutano ya mashauriano ya wadau, mahojiano, mapitio ya maandiko na uchunguzi. Baadhi ya maswala/athari zilizoainishwa kwa hivyo zilichukuliwa kuwa ni athari zinazorekebishika.

(a) Awamu ya Uhamasishaji na Ujenzi

• Faida Chanya za Kijamii

i. Manufaa kwa jamii yanayotokana na ajira katika soko la Sango
ii. Faida kwa serikali kutokana na mapato na kodi
iii. Faida kwa wafanyabiashara kutokana na uboreshaji wa miundombinu ya soko.

• Athari Hasi za Kijamii

i. VVU/UKIMWI miongoni mwa wafanyakazi na jamii ziishizo Jirani na eneo la mradi
ii. Usalama wa jamii unaosababishwa na kufurika kwa wafanyakazi
iii. Mimba zisizohitajika

• Faida Chanya za Mazingira

i. Mazingira yaliyoboreshwa ambayo yana mfumo wa kawaida wa mifereji ya maji
ii. Kuboresha ubora wa hewa kutokana na kuweka ukanda wa kijani (upandaji wa miti ya kivuli na mapambo)

• Athari Hasi za Mazingira

i. Kupoteza uoto wa asili
ii. Kuongezeka kwa viwango vya vumbi na kelele
iii. Ongezeko la taka na matatizo ya usimamizi wa taka wakati wa ujenzi
iv. Hatari za usalama na afya
v. Ongezeko la watu wanaotafuta fursa za ajira na biashara katika eneo la mradi
vi. Athari zitokanazo na mitetemo.

(b) Athari zinazohusiana na Awamu ya Operesheni

• Faida Chanya za Kijamii

i. Kuongezeka kwa fursa za ajira na kuboreka kwa viwango vya maisha kwa jamii
ii. Upatikanaji wa fursa za biashara na ongezeko la kipato
iii. Kuongezeka kwa usalama wa eneo hilo
iv. Kuboreshwa kwa huduma za kijamii
v. Kuongeza mapato kwa Halmashauri ya Manispaa Ya Kahama na nchi kwa ujumla kutokana na kodi mbalimbali.

• Athari Hasi za Kijamii

i. Kuongezeka kwa maambukizi ya VVU/UKIMWI miongoni mwa wafanyakazi na jamii ziishizo karibu na mradi.
ii. Hatari za kiafya na usalama wa jamii unaosababishwa na shughuli za mradi
iii. Mimba zisizohitajika.

• Faida Chanya za Mazingira

i. Mazingira bora yaliyoboreshwa ya soko ambayo yana mfumo wa mifereji ya uondoshaji ya maji ya mvua.
ii. Huduma bora za usafirishaji wa abiria na mizigo
iii. Kuboresha ubora wa hewa kutokana na kijani kibichi kinachotarajiwa.

• Athari Hasi za Mazingira

i. Kuongezeka kwa shinikizo kwenye huduma za kijamii na huduma
ii. Kuongezeka kwa viwango vya vumbi na kelele
iii. Kuongezeka kwa taka wakati wa uendeshaji wa mradi
iv. Hatari za usalama na afya kutokana na hatari za moto

(c) Athari zinazohusiana na Awamu ya ufungaji wa mradi

Masuala muhimu yafuatayo yanahusishwa na awamu ya kufunga mradi:

• Athari Hasi za Kijamii

i. Kupoteza ajira ambayo inaweza kusababisha hali duni ya maisha

• Athari Hasi kwa Mazingira

i. Uzalishaji wa kifusi na matatizo yanayohusiana na utupaji wa taka za ujenzi
ii. Kelele na Uchafuzi wa utokanao na vumbi

2. Hatua za Kukabiliana

Mradi huu umezingatia njia mbalimbali za kuweza kukabiliana na athari zitokanazo na shughuli za ujenzi wa wa mradi katika awamu zote. Njia nyingi ni zile zinazohusiana na kuwepo kwa mfumo mzuri na miongozo ya kukabiliana na athari katika hatua zote za mradi kulingana na aina ya athari husika kama zilizoainishwa hapa chini.

- **Viwango vya juu vya Kelele**: Vifaa na mitambo yote ya ujenzi itafanyiwa ukaguzi na marekebisho ya mara kwa mara kama ilivyoelekezwa katika vijitavu vya maelekezo ya kifaa/mtambo husika. Waendeshaji mashine katika sehemu mbalimbali zilizo na viwango

vikubwa vya kelele watapewa vifaa vya kuzuia kelele. Shuguli za mradi zinazohusisha mitambo yenye viwango vikubwa vya kelele zitafanyika nyakati za mchana.

- **Uchafuzi wa hewa kwa njia ya vumbi**: Malori yanayosafirisha malighafi na vifaa vya ujenzi yatafunikwa ikiwa mzigo ni mkavu na unaweza kusababisha utoaji wa vumbi. Wafanyakazi walio katika maeneo yenye viwango vikubwa vya vumbi watapewa vifaa vya kujikinga na vumbi. Unyunyizaji wa maji utafanyika mara kwa mara katika sehemu zote za kazi za ujenzi ikiwemo barabara za kuingia na kutoka katika eneo la mradi pamoja na katika maeneo yote ya machimbo ya malighafi za ujenzi. Kwa kuongezea, sehemu za barabara zinazopitiwa sana na magari ya ujenzi pia zitanyunyiziwa maji mara kwa mara.
- **Ongezeko la taka**: Mkandarasi ataandaa mpango maalumu wa udhibiti wa taka zitakazozalishwa wakati wa shughuli za ujenzi wa mradi. Mkandarasi atahakikisha kuwa vifaa vifaa vya kutosha vya kukusanyia taka za ujenzi vimewekwa katika maeneo yote muhimu ndani ya eneo la mradi ikiwemo vizimba na mapipa makubwa ya kukusanyia taka. Pia Mkandarasi atahakikisha kuwa, taka zilizokusanywa katika eneo la mradi zinaondolewa kwa wakati na kwenda kutupwa katika maeneo maalumu ya kutupia taka katika Manispaa wa Kahama. Wakandarasi waliosajiliwa na Baraza la Mazingira la Taifa tu ndio watakao husika na ukusanyaji na uondoshwaji wa taka katika eneo la mradi.
- **Afya na usalama wa wafanyakazi**: Vifaa vya kujikinga na hatari mbalimbali mahala pa kazi vitagaiwa kwa wafanyakazi kulingana na aina ya kazi wanazofanya (kama vile barakoa, vizuizi vya kelele vya kuvaa masikioni, mavazi maalum ya kazi, kofia ngumu, miwani inayofunika macho vizuri, viatu vigumu n.k.) na usimamizi mzuri wa kambi za wafanyakazi utazingatiwa. Wakati wa ujenzi mkandarasi atahakikisha kuwa eneo la ujenzi limezungushiwa uzio na kuhifadhiwa kwa usafi na vifaa vya kutosha ikiwa ni pamoja na vyombo vya kutupa taka, maji taka, zima moto na usambazaji wa maji safi na salama.
- **Fursa za ajira kwa jamii ya wenyeji:** Mkandarasi ataandaa mpango wa ajira na kazi ambapo ataainisha idadi na aina ya fursa za ajira zitakazotolewa kwa wanachi waishio jirani na mradi.
- **Shinikizo kwa huduma za jamii kama vile maji na umeme**: Hatua mbadala kama vile matumizi ya nishati ya jua, kuchimba kisima kwenye tovuti, kuchakata maji zitachunguzwa na kutekelezwa ikipatikana inawezekana. Kwa mfano, matumizi ya balbu za kuokoa nishati yatapewa kipaumbele cha juu

- **Ajali na matukio ya moto**: Muundo wa soko utazingatia kikamilifu Viwango vya Usalama wa Moto.
- **Matengenezo duni ya soko wakati wa operesheni**: Kampuni ya kibinafsi ya usafi yenye idadi ya kutosha ya wafanyakazi itaajiriwa kusafisha soko, vifaa vyake na mazingira yanayozunguka kila siku.

8. Uchambuzi Mbadala

Kutoka kwa mtazamo wa ulinzi wa mazingira, uchambuzi mbadala ni nyenzo muhimu kwa uteuzi bora wa eneo la mbadala la mradi, teknolojia ya kufuatwa wakati wa ujenzi na uendeshaji, na gharama zitokanazo na mbadala husika. Njia mbadala zifuatazo zimezingatiwa na mradi huu.

a) "Hakuna hatua" mbadala ya mradi

Hakuna mbadala wa mradi unahusu kubaki na hali ilivyo sasa (Hakuna ujenzi wa Soko la Sango). Kupitisha chaguo hili kunaweza kumaanisha kuepuka athari nyingi mbaya zinazohusiana na uwepo wa soko hilo na kukosa manufaa yote chanya kama vile manufaa kwa jamii yanayotokana na ajira wakati wa ujenzi na upatikanaji wa maeneo ya biashara yanayofaa na ya kutosha.

b) Uchambuzi Mbadala wa Uchaguzi wa Maeneo

Chaguo la kutumia eneo jingine la mradi mbali na ile lililopendekezwa pia ilizingatiwa. Hata hivyo, uchaguzi huu ulionekana kuwa na faida zifuatazo juu ya nyingine;

- Kiwanja kinamilikiwa na Halmashauri ya Manispaa Ya Kahama (Hakuna haja ya kununua kipande kipya cha ardhi na hakihitaji fidia).
- Eneo liko kwenye kipande cha ardhi kinachofaa ambacho kiko karibu na vyombo vya usafiri (mtandao wa barabara) na huduma za afya
- Kiwanja kiko kwenye kipande cha ardhi unachopenda. Imezungukwa na shughuli za makazi na taasisi; iko katika eneo la kibiashara la katikati ya mji.
- Upatikanaji wa maji na usambazaji wa njia kuu za umeme

c) Uchambuzi Mbadala kwa ajili ya chaguzi za Teknolojia na nyenzo

Kuzalisha kelele kutoka kwa shughuli za ujenzi (kulehemu, kukandamiza, kuchimba visima, kuchimba mitaro nk) kutaongeza kiwango cha kelele kwenye tovuti. Hivyo, ili kuzuia athari hizi mbaya kwa jamii inayowazunguka, mkandarasi atatumia mashine ambazo hazitoi kelele nyingi.

Kwa hivyo, mradi uliopendekezwa utatumia matumizi ya vifaa vinavyokubalika ndani na kimataifa ili kufikia mahitaji ya afya ya umma, usalama, usalama na uzuri wa mazingira.

d) Uchambuzi mbadala wa chaguzi za nishati

Matumizi ya vyanzo vingine vya nishati mbadala mbali na umeme kutoka gridi ya Taifa na jenereta za dizeli yalizingatiwa. Kama ilivyo katika nchi nyingi zinazoendelea, usambazaji wa umeme kutoka gridi za taifa si wa kutegemewa kwani mara nyingi hutoka kwa jenereta za umeme zinazotokana na maji, ambazo hutegemea kiwango cha mvua, ukubwa na muundo. Kwa upande mwingine, jenereta za dizeli, ambazo hutumiwa hasa wakati wa kukatika kwa umeme, hutoa gesi nyingi chafu hasa wakati zinaendeshwa kwa muda mrefu. Nishati ya jua ilizingatiwa na timu ya kubuni itachunguza uwezekano wa kutumia mbadala huu.

9. Mpango wa Usimamizi wa Mazingira na Kijamii, Mpango wa Ufuatiliaji wa Mazingira na Ukaguzi

Mpango wa Usimamizi wa Mazingira na Kijamii umewasilishwa katika Taarifa ya Athari kwa Mazingira. Chaguo za kupunguza au kuzuia athari mbaya za kijamii na kimazingira zilizotambuliwa pamoja na mpango wa ufuatiliaji zimependekezwa na zinatokana na mazoea mazuri ya uhandisi. Pia, inafafanua majukumu na wajibu wa watendaji mbalimbali wa mpango. Mpango wakati wa utekelezaji wa mradi ni muhimu ili kupima mafanikio ya hatua za kupunguza. Mkandarasi atatekeleza vipengele vinavyohusika na awamu halisi za ujenzi na uendeshaji. Msanidi atawajibika kwa utekelezaji wa jumla wa Mpango uliopendekezwa.

Gharama zilizokadiriwa za kutekeleza hatua za kupunguza ni dalili tu. Zaidi ya hayo, Mpango wa Usimamizi inajumuisha makadirio ya gharama za hatua ili Msanidi wa mradi aweze kupanga bajeti ya fedha zinazohitajika. Bili zinazofaa za kiasi zinapaswa kutoa takwimu halisi. Kwa hali yoyote, mshauri alitumia uamuzi sahihi kuja na takwimu hizi. Mradi utahakikisha kwamba shughuli zinazosababisha athari kwa mazingira zinasimamiwa kwa kina, utaratibu, mipango na kumbukumbu. Msanidi programu atawasilisha mpango wa usimamizi wa mazingira na kijamii na mpango wa ufuatiliaji wa mazingira na kijamii kwa wafanyikazi wake na wakandarasi wake ili kuhakikisha kuwa utekelezaji unafanywa ipasavyo.

Zaidi ya hayo, Msanidi programu atahakikisha upatikanaji wa rasilimali ambazo zinahitajika kwa ajili ya utekelezaji wa mpango wake wa usimamizi wa mazingira. Mpango huo utafuatiliwa ili

kuhakikisha kuwa malengo ya mazingira yanafikiwa. Halmashauri ya Manispaa ya Kahama itafanya ukaguzi wa kawaida na kuwasilisha taarifa ya ukaguzi kwa uongozi wa juu ili kuhakikisha uendelevu wa mfumo wa usimamizi wa mazingira.

10. Tathmini ya rasilimali

Halmashauri ya Manisipaa ya Kahama imetenga jumla ya zaidi ya shilingi bilioni 1.61 za kitanzania kama gharama za awali za uendelezaji na ujenzi wa soko la Sango. Fedha hizi zote zitagharamia kazi za kiraia na ujenzi; kazi za umeme na Habari, Mawasiliano na Teknolojia, ununuzi wa vifaa tiba; na masuala mtambuka. Makadirio ya gharama za utekelezaji wa usimamizi wa athari pamoja na mchakato wa ufuatiliaji kama ilivyoainishwa katika Taarifa ya Athari kwa Mazingira ni Tanzania shilingi. 151,000,000.00 na 57,500,000.00 mtawaalia. Gharama zilizokadiriwa za kupunguza hazijumuishi gharama za mazingira, ambazo hazikuweza kuhesabiwa kwa usahihi. Kwa kuwa baadhi ya athari zitapatikana tu wakati wa awamu ya ujenzi, gharama za hizi pia zitakuwa za muda mfupi, haswa ikiwa hatua za kupunguza zitatekelezwa kikamilifu faida za mradi zitazidi gharama za mradi kwa mbali.

11. Kufungwa kwa mradi

Kwa vile uondoaji utafanyika katika siku zijazo za mbali, hatua mahususi za kupunguza zinazohusu athari za kimazingira za kazi za uondoaji kazi haziwezi kupendekezwa kwa sasa kwa kiwango cha uhakika. Mpango wa uondoaji unaozingatia masuala ya mazingira utatayarishwa na msanidi programu kabla ya kazi za uondoaji. Iwapo itafanyika, uondoaji unaweza kuhusisha mabadiliko ya matumizi (mabadiliko ya kiutendaji) au ubomoaji unaosababishwa na mabadiliko ya matumizi ya ardhi.

12. Muhtasari na Hitimisho

Soko la Sango linalotarajiwa lipo katika Mtaa wa Sango, Kata ya Nysubi Iliyopo Mkoani Shinyanya. Mradi huo una manufaa makubwa ya kijamii na kiuchumi kwa halmashauri ya Manispaa ya Kahama na taifa kwa ujumla. Mradi kama huo, unahusisha athari ndogo mbaya za kimazingira ambapo hatua za kutosha za kukabiliana nazo zimependekezwa na kujumuishwa katika muundo wa mradi. Kwa hivyo inaweza kuhitimishwa kuwa, mradi uliopendekezwa hautajumuisha athari kubwa mradi hatua zilizopendekezwa za kupunguza zinatekelezwa vya kutosha na kwa wakati. Athari zilizoainishwa zitadhibitiwa kupitia mapendekezo ya hatua za

kupunguza na mfumo wa utekelezaji uliowekwa katika TAM hii. Mwekezaji amejitolea kutekeleza mapendekezo yote yaliyotolewa katika TAM hii na kutekeleza zaidi ratiba za ukaguzi na ufuatiliaji wa mazingira.