



**SUMMARY PROJECT REPORT FOR ENVIRONMENTAL & SOCIAL IMPACT
ASSESSMENT (ESIA) FOR THE PROPOSED CONSTRUCTION OF KILIFI
MAZINGIRA PARK ABLUTION BLOCK**

**PROJECT: WATER AND SANITATION DEVELOPMENT PROJECT
(WSDP)**

CREDIT NO.: IDA -60300KE

COUNTRY: REPUBLIC OF KENYA

**EMPLOYER: KILIFI MARIAKANI WATER AND SEWERAGE
COMPANY**

SUBMITTED ON: FEBRUARY 2025

REPUBLIC OF KENYA



**KILIFI MARIKANI
WATER & SEWERAGE
CO. LTD.
(KIMAWASCO)**



MINISTRY OF WATER & SANITATION

**PROJECT NAME:
WATER AND SANITATION DEVELOPMENT PROJECT**

CREDIT NO.: 51030-KE

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FOR THE PROPOSED CONSTRUCTION OF KILIFI MAZINGIRA PARK ABLUTION BLOCK**

DECLARATION

The report was prepared in accordance with the Environmental Management and Coordination Act no. 8 (1999) and the Environmental (Impact, Audit and Strategic Assessment) regulations (2009) for submission to the National Environment Management Authority (NEMA).

We, the undersigned certify to the best of our knowledge and belief.

NEMA EXPERT(S)

NAME: Dr. Joseph Tunje LEAD EXPERT REG NO: 1290
SIGNATURE: [Signature] DATE: 24/02/2025

FOR AND ON BEHALF OF THE PROJECT PROPONENT

KILIFI MARIAKANI WATER AND SEWERAGE COMPANY LTD,

NAME: PASCAL JIRA DESIGNATION: MD
SIGNATURE: [Signature] DATE: 24/02/25



NON-TECHNICAL EXECUTIVE SUMMARY

ES1: Project Background

The Government of Kenya (GoK) through the Ministry of Water & Sanitation and Irrigation (MOWSI) has received “credit” from International Development Association (IDA) to undertake the Wastewater Master Plan for Mombasa and Selected Towns within the Coast Region.

Kilifi Mariakani Water and Sewerage Company Limited (KIMAWASCO) was incorporated in November 2005 after the enactment of Water Act 2002 (now repealed by the Water Act 2016). It was a public owned company incorporated under the Company’s Act and wholly owned by Town Councils of Kilifi and Mariakani and the County Council of Kilifi.

In line with the Constitution of Kenya 2010, the provision of water and sanitation services is a devolved function. Consequently, since 2013, KIMAWASCO is owned by the County Government of Kilifi and is mandated to provide quality water and sewerage services within Kilifi North, Kilifi South, Ganze, Kaloleni, and Rabai sub-counties.

As at the 2009 population census, the area covered by KIMAWASCO (Kilifi -12,609.7 Sq. Kms) had a population of approximately 1,298,270 people. However, with population growth and migration resulting from the current development in residential and commercial properties, the population has significantly increased. The customer base in the area comprises domestic, institutional, commercial entities and industrial consumers.

The sources of water supply are Baricho Water Works and Mzima Springs. Baricho produces 85,000m³/day which is shared between Mombasa and Kilifi (KIMAWASCO & MAWASCO WSPs) Counties. KIMAWASCO gets 13,500m³/day from Baricho and 9,000m³/day from Mzima pipeline. The areas served by Mzima pipeline is Mariakani, Mazeras and partly Kaloleni. The rest of the areas are supplied from Baricho. Baricho water is sourced from shallow wells along River Sabaki and must be pumped to the respective areas for further distribution. Mzima is sourced from springs emanating from Mt. Kilimanjaro and is in Tsavo East National Park.

The main goal of the Wastewater Master Plan is to identify a sound and rational strategy for the development of sewerage services in Mombasa and selected Towns within the Coast Region over the next twenty-five (25) years to improve the quality of effluent to rivers, Indian Ocean, groundwater and to safeguard the health of the residents.

The key objective of the proposed Wastewater Master Plan for Kilifi Town is to come up with a phased investment programme for Immediate / Short Term Plan (2015 - 2020), Medium Term Plan (2021 - 2025), Long Term Plan (2026 - 2040) and recommend a treated effluent disposal / reuse strategy for the effluent in Kilifi Town.

This report covers the Environmental and Social Impact Assessment of the proposed 1No. Ablution Block in Mazingira Park, Kilifi Town. The Ablution Block will comprise of six (6) toilets

and two (2) Shower Rooms with an equal number for each gender i.e., Ladies and Gents. The allocated number of toilets in each Ablution Block ensures the provision of sufficient service levels for the target population. It is estimated that on average, a user spends 5 minutes in the facility. Thus, for a single facility with 6 toilets and 10 hours of operation in a day, a maximum number of 720 persons can be served in a day. Each section (ladies and gents) is provided with a toilet fitted with special amenities for use by persons living with disabilities, shower rooms, a spacious common area with hand-wash basins, hand driers and wall-mounted mirrors.

A Soak pit will provide secondary treatment and disposal allowing the effluent to filter into the ground for further treatment and eventual absorption into the water table. A septic tank with a holding capacity of 16 m³ and a soak pit is to be provided at each site for storage and partial treatment of sewage. The septic tank will require desludging after every three (3) months with septage disposal at a proposed Sludge Handling Facility, to be implemented as part of the immediate sanitation intervention. In addition, a 5,000-litre water tank mounted on a 3.5m high reinforced concrete tower within the facility is proposed to provide 3-day storage of potable water. The water will be supplied to the ablution block by KIMAWSCO through the existing pipeline network.

The strategic importance of this project lies in the need for overall improved sanitation in the ballooning population of the urban areas such as Kilifi. There is a significant rise in the rural-urban migration. The areas identified for the ablution blocks are under public utility parcels (**Appendix 4**) as identified by KIMAWSCO. The main beneficiaries will be: -

- The public attending public functions at some of the park
- Tourists and community members who come visit the park from various areas hence are hampered from utilizing their sanitation facilities.
- The local community members running the project.



Figure 1: Existing Sanitation Facilities in Mazingira Park

ES2: Need for the Project and ESIA

The objective of the project is to improve the public sanitation infrastructure within Kilifi Town. The town and its associated centres are growing in terms of population and the

economy meaning the increasing population has a direct effect on the sanitation facility requirements in the areas. The current sanitation system in the towns, comprising of on-plot sanitation such as septic tanks and pit latrines, and lacking proper sludge management and disposal facility, is a health hazard to the residents and environmental risk. Further, existing sanitation facilities within the area are either inadequate, dysfunctional or not properly managed hence they do not serve their intended purpose.

The implementation of the project will contribute to the improvement of the sanitation situation in the area, improved performance of the economic sectors and the delivery of social services in the project environs.

ES3: Study Method

The study approach and methodology adopted included screening, to determine the extent of the project; desktop data search and analysis for the baseline biophysical and socio-economic and environmental parameters of the project area. In addition, the consultant reviewed the designs already developed and currently being implemented as part of the project. This informed the environmental reporting requirements, with relevant design excerpts obtained for reference. The consultant carried out a public consultation process, including household social and environmental surveys analyzed from structured questionnaires, key informant interviews with institutions and lead agencies, and public consultation meetings.

Based on these findings and expert judgement, the consultant has compiled the projected social and environmental impacts (positive and negative) likely to emanate from proposed project activities and the Environmental and Social Management Plan (ESMP) which details how adverse impacts will be reduced or eliminated and by whom.

ES4: Legislative Framework for this Study

The principal National legislation governing issues of environmental concern in Kenya is the Environmental Management & Coordination (Amended) Act of 1999 as amended in 2015, typically referred to as EMCA. EMCA calls for Environmental Impact Assessment (EIA) (under Section 58) to guide the implementation of environmentally sound decisions and empowers stakeholders to participate in the sustainable management of natural resources. It is under this provision that the current study has been undertaken.

Other legislations adhered to during this study are the regulations borne of EMCA namely the Environmental Impact Assessment and Audit Regulations 2003; The Environmental Management and Coordination Act (Waste Management) Regulations 2006; the Environmental Management and Coordination (Water Quality) Regulations 2006; and the Environmental Management and Coordination (Noise and Excessive vibration pollution Control) Regulations 2009 (Legal Notice 617'84), Air quality Regulations 2014 among others.

Sectoral legislation applicable to this Project includes the Water Act (2016), the Constitution of Kenya 2010, The Public Health Act (CAP. 242), among others.

In addition to the local legislation, the various World Bank operational policies relevant to the project were identified. Some of these policies include Operational Policy (OP) 4.01 as well as the World Bank Policy on Access to Information, 2010.

As per Operational Policy 4.01 the Bank requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. EA should consider the natural environment, human health and safety and social aspects.

ES5: Conclusions from Public Consultation

Part of the ESIA process includes conducting a public consultation with the local community within the project area. There were 2 types of meetings conducted:

- i. Key Informant Interviews with the residents around Mazingira Park and Local Administrative leaders
- ii. A Public Participation Meeting in an open forum within the proposed project area held on 12th August 2024.

During these meetings, it was apparent that the area requires the proposed sanitation facility development projects. Key discussions focused on potential environmental and social impacts, including waste management, sanitation concerns, and project benefits. Community members raised questions about project implementation, maintenance, employment and access, which were addressed by the project team.

As part of the consultation, a Grievance Redress Mechanism (GRM) was introduced to ensure that any complaints or issues that arise during construction and operation are managed effectively. A Grievance Redress Committee (GRC) was formally established during the meeting, comprising of the village elder, community members, the area chief, the Mazingira Park Management committee to oversee the fair and transparent resolution of concerns. The public was fully in support of the projects as per their responses from the public participation fora

ES6: Expected impacts

The project has been rated Category B under the World Bank Operational Policy on Environmental Assessment (OP 4.01). This means that projected impacts will not affect an area broader than the site and facilities subjected to physical work. These impacts are easily reversible through appropriate mitigation measures provided in this assessment.

The expected impacts emanate from the Pre-Construction/Planning phase, the Construction Phase, the Operation phase and the De-Commissioning Phase of the project.

In general, successful implementation of the project will have high environmental and socio-economic benefits to the people and will contribute to their health and well-being. Overall, negative expected impacts are related to the planning and construction activities of the project. These impacts are localized and not considered significant and long-lasting and can be mitigated through appropriate mitigation measures. The severity and duration of these impacts can be minimized by ensuring that the construction and operation activities adhere

to the proper construction and operation standards specified by the design and supervision engineers.

The positive benefits of the project will include:

- i. Employment during construction
- ii. Improved supply of sanitation services
- iii. Overall improvement in hygiene

The major negative impacts of the project which will be felt during the planning, construction and operation phases. A summary of the impacts is represented in the table below.

Table 1:A summary of the negative Environmental and Social impacts of the Project

Environmental/ Social Variable	Phase	Impact type	Severity rating	
			Before mitigation	After mitigation
Vegetation cover	Construction	Direct	Negligible	Negligible
Impacts on private property and people's livelihood	Construction	Direct	N/A	N/A
Soil erosion, compaction and pollution	Construction	Direct	Moderate	Negligible
Impacts on water quality and surrounding water sources	Construction	Direct	Moderate	Negligible
Air quality degradation to residents	Construction	Direct	Negligible	Negligible
Gender-based violence and Sexual Harassment at the community level	Construction	Direct	Negligible	Negligible
Sexual exploitation and abuse of community members by project workers	Construction	Direct	High	Moderate
Solid and Liquid Wastes	Construction	Direct	Moderate	Negligible
Safety and health hazards	Construction	Direct	Moderate	Negligible
Water consumption and wastewater generation	Operation	Direct	Moderate	Negligible
Solid waste management	Operation	Direct	Moderate	Negligible
Hygiene and sanitation	Operation	Direct	Moderate	Negligible
Odor and air quality	Operation	Direct	Negligible	Negligible
Vector attraction (flies, mosquitoes, rodents)	Operation	Direct	Moderate	Negligible
Public safety and health	Operation	Direct	Moderate	Negligible
Misuse of facilities	Operation	Direct	Moderate	Negligible
Accessibility and inclusivity (for people with disabilities)	Operation	Direct	Moderate	Negligible
Groundwater contamination due to wastewater seepage	Operation	Direct	Moderate	Negligible

ES7: ESMP Summary and Implementation Arrangements

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility
Construction	Increased Traffic hence Congestion	<ul style="list-style-type: none"> • Provision temporary road signs or notices to indicate ongoing works. • Effecting traffic controls to avoid congestion and incidents • Choosing suitable traffic routes/diversions to reduce the impact in the neighbourhood. 	Contractor supervised by the Resident Engineer
Construction	Ambient air quality	<ul style="list-style-type: none"> • Use Respiratory Protective Equipment (RPE) like masks on construction crew and all visitors to the site. • Use equipment fitted with water suppression to minimize the amount of dust. 	Contractor Resident Engineer
Construction	Site Related Oil Spills	<ul style="list-style-type: none"> • The Contractor should ensure that the employees on site are aware of the company procedures for dealing with spills and leaks e.g., using dispersants or adding biological agents to speed up the oil breakdown for the construction machinery through induction and safety training (the contractor will propose a method of clean-up which will be subject to approval); • All vehicles and equipment should be kept in good working order, serviced regularly in accordance to the manufacturers specifications and stored in an area approved by the Resident Engineer/Supervising Consultant; 	Contractor, Resident Engineer
Construction	Soil Related Impacts	<ul style="list-style-type: none"> • Plan emergency response measures in case of accidental oil spills. 	Contractor Resident Engineer
Construction	Impacts on Water resources	<ul style="list-style-type: none"> • Ensure proper solid and liquid wastes disposal mainly from the construction camps, sites and offices. • Ensure proper measures are in place for collection and disposal of spilled oils and lubricants. 	Contractor, Resident Engineer County Water Officer
Construction	Noise and vibrations	<ul style="list-style-type: none"> • Ensure that construction equipment is operating optimally and with 	Contractor Resident Engineer

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility
Construction	Public & Occupational Safety & Health	<ul style="list-style-type: none"> • Ensure consistent use of PPE by workforce. The contractor should commit himself to strict implementation of OSHA regulations during construction and operations. • Develop a site safety action plan detailing safety equipment to be used, emergency procedures, restriction on site, frequency and personnel responsible for safety inspections and controls. 	Contractor Resident Engineer KIMWASCO
Construction	Liability for loss of life, injury or damage to private property	<ul style="list-style-type: none"> • Recording of all injuries that occur on site in the incident register, corrective actions for their prevention are instigated as appropriate. • Contractor to ensure compliance with the Workmen's Compensation Act, ordinance regulations and union agreements. • The Contractor to repair any damage done to private property. 	Contractor Resident Engineer
Construction	HIV & AIDS Impacts	<ul style="list-style-type: none"> • Sensitize workers and the surrounding communities on awareness, prevention and management of HIV/AIDS through staff training, awareness campaigns, multimedia and workshops or during community Barazas. Provide information, education and communication. • Use of existing clinics to provide VCT services to construction crew and provision of ARVs for vulnerable community members 	Contractor Resident Engineer The County Government KIMAWASCO
Construction	Socio-economic impacts	<ul style="list-style-type: none"> • Unskilled and skilled (if available) labour to be hired from the local population as far as possible to minimize on influx of non-residents into the community. • Use of manual labour during excavation and construction works where possible to ensure more employment of locals and hence ensure project support throughout the construction process. • Use of existing clinics to provide VCT services to construction crew and provision of ARVs for vulnerable community members • The Contractor should enforce and maintain a code of conduct for his employees 	Contractor Resident Engineer

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility
Construction	Child Labour and Protection	<ul style="list-style-type: none"> Ensure no children are employed on site in accordance with the law through adoption of child protection code of conduct Ensure that any child sexual relations offenses among contractors' workers are promptly reported to the police for prosecution. 	Contractor Resident Engineer Local Administration
Construction	Gender Equity, Sexual Harassment	<ul style="list-style-type: none"> The works contractor should be required, under its contract, to prepare and enforce a No Sexual Harassment and Non-Discrimination Policy, in accordance with national law where applicable. The contractor should prepare and implement a gender action plan, 	Contractor Resident Engineer Local Administration
Construction	Gender empowerment	<ul style="list-style-type: none"> Ensure equitable distribution of employment opportunities between men and women Provide temporary toilets and bathrooms for both male and female workers on site 	The contractor The Resident Engineer
SEA/GBV	Sexual Exploitation and Abuse by project workers against community members.	<ul style="list-style-type: none"> Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will follow guidance on the World Bank's Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018). 	Supervision Consultant GBV Expert Local CBO Local NGO
Construction	Crime Management	<ul style="list-style-type: none"> Fencing around project area. Working with local committees (e.g., "Nyumba Kumi Initiative) to provide security within the site in addition to the Contractor's own security. Removing any employee who persists in any misconduct or lack of care, carries out duties incompetently or negligently, fails to conform to any provisions of the contract, or persists in any conduct which is prejudicial to safety, health, or the protection of the environment. 	Contractor Resident Engineer

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility
Construction	Generation of solid and liquid waste	<ul style="list-style-type: none"> • Sorting of all wastes collected by the dustbins before transporting to the relevant facilities. 	KIMAWASCO Contractor
Operation	Air Quality	<ul style="list-style-type: none"> • The septic tank will be monitored and exhausted periodically by a licensed exhauster services provider. • The ablution block will be kept clean and odour free through regular washing with proper detergents. 	KIMAWASCO
Operation	Solid and Liquid waste management	<ul style="list-style-type: none"> ▪ Maintenance of proper hygiene in ablution blocks ▪ Regular emptying of attached septic tank to prevent filling and overflows. ▪ A sanitary bin will be provided in the women toilet to contain sanitary wastes. This bin will be replaced a service provider who will be identified and contracted by the operator. 	KIMAWASCO
Operation	Mosquito breeding and disease transmission	<ul style="list-style-type: none"> ▪ Eliminate spillage and all unnecessary standing water. ▪ Ensure that the covers to the septic tank manholes are maintained properly closed at all times. ▪ The septic tank shall be exhausted regularly to avoid it filling up and overflowing 	KIMAWASCO
Operation	Safety risks	<ul style="list-style-type: none"> ▪ Formulate and enforce standard operation and maintenance procedures including for cleaning and provide requisite PPE to the cleaners and operations and maintenance staff ▪ Establish and communicate emergency response plan with all parties ▪ First aid kit with adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. shall be made available 	KIMAWASCO
Operation	Contamination Risk: If not properly maintained, soak pit will contaminate ground water especially at the project site where	<ul style="list-style-type: none"> ▪ Ensure proper maintenance Plan: Implement regular maintenance checks on the soak pit system to prevent clogging and ensure proper functioning ▪ Environmental Monitoring: Regularly Monitor ground water quality effluent from the septic tank and nearby eco systems for signs of 	KIMAWASCO

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility
	the highly porous and permeable coral limestone is the dominant rock	contamination or degradation	
Operation	Maintenance Schedule	<ul style="list-style-type: none"> ▪ Remove sludge, check for blockages and inspect inlet pipes on monthly basis ▪ Test ground water quality for contaminants like nitrates or pathogens annually 	KIMAWASCO

ESMP IMPLEMENTATION ARRANGEMENTS

Water and Sanitation Project (WSP) responsibility

Since the Water and Sanitation Project (WSP) has a dedicated team for environmental and social management, it has the capacity to monitor the Environmental and Social Management Plan (ESMP) effectively.

- Verifying contractor compliance with Environmental and Social Management Plan requirements.
- Tracking compliance with environmental and social safeguards, along with national and donor policies. Environmental specialists will verify environmental safeguard compliance, while social safeguard specialists will handle community engagement and social risk reduction.
- Resolving issues raised by communities, government bodies, and other stakeholders.
- Evaluating reports and maintaining adherence to their environmental and social standards.

Supervision Consultant Role

The supervision consultant will be required to have an Environmental and Social (E&S) specialist to ensure the effective implementation of the Environmental and Social Management Plan (ESMP).

Their role will include:

- Monitor contractors' compliance with environmental and social safeguard protocols.
- Perform routine site visits to evaluate project operations, detect potential risks, and suggest mitigation measures.
- Review environmental and social management plans submitted by contractors to ensure they meet ESMP standards.
- Supervise Occupational Health & Safety (OHS) implementation to confirm appropriate worker and public protection measures are established.
- Manage social safeguard concerns including resolving community complaints and facilitating stakeholder participation.
- Coordinate with the WSP Environmental & Social Team by delivering regular updates and reports.
- Develop compliance documentation by recording observations and submit these reports to the appropriate Project Coordinating Teams.

Contractor's Safeguards' Team

- Develop a Contractor Environmental and Social Management Plan (C-ESMP) for approval based on the Environmental and Social Impact Assessment
- Implement all environmental and social risk mitigation strategies specified in the ESMP thoroughly.
- Verify that all project operations adhere to national environmental laws, donor specifications, and location-specific environmental and social protection measures.
- Establish and maintain occupational health and safety (OHS) standards to safeguard workers and nearby residents.

- Perform systematic environmental and social supervision, document findings, and deliver compliance documentation to the supervision consultant and Project Coordination Unit
- Maintain appropriate waste management, soil conservation, dust control, noise limitation, and other contamination prevention techniques.
- Interact with nearby communities, resolve issues, and handle complaints according to the project's established grievance resolution procedure.
- Provide environmental and social compliance training to workforce to enhance adherence to safeguard measures.
- Formulate and execute emergency protocols to manage environmental, health, and safety incidents.

Reporting

The contractor will be required to submit regular reports to ensure compliance with the **Environmental and Social Management Plan (ESMP)**. These reports will provide updates on environmental and social performance, mitigation measures, and any incidents occurring during project implementation. The required reports and their submission frequency include:

1. **Contractor's ESMP (C-ESMP) Compliance monthly Report** which will cover the contractor's adherence to the ESMP, including:
 - Environmental and social mitigation measures implemented.
 - Compliance with occupational health and safety requirements.
 - Grievance redress mechanism updates.
 - Waste management practices.
 - Workplace safety, PPE compliance, and health-related incidents.
 - Any corrective actions taken to address non-compliance.
2. **Monthly Labor Tracking Document which will provide details on:**
 - Workforce numbers and composition (gender, skill levels, etc.).
 - Working hours, wages, and contract conditions.
 - Compliance with labor laws and standards.
3. **Incident Reports (*Immediately, As Needed*)**
 - Reports any accidents, environmental spills, safety violations, or social conflicts.
 - Includes root cause analysis, corrective measures, and preventive actions.

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ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
CBO	Community Based Organization
CLO	Community Liaison Officer
EIA	Environmental Impact Assessment
EMCA	Environment Management Coordination Act
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
GHG	Greenhouse Gases
GIS	Geographical Information System
GoK	Government of Kenya
GPS	Global Positioning System
HASP	Health and Safety Plan
HIV	Human Immunodeficiency Virus
HMP	Health Management Plan
ID No.	Identity Card Number
IDA	International Development Association
K.Shs.	Kenya Shillings
KIMAWASCO	Kilifi-Mariakani Water and Sewerage Company Ltd
m ³	cubic metres
MOWS	Ministry of Water and Sanitation
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
NLC	National Land Commission
NMK	National Museums of Kenya
NPEP	National Poverty Eradication Plan
OP	Operational Policy
PAP	Project Affected Person
PDP	Part Development Plan
PPE	Personal Protective Equipment
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
SHF	Sludge Handling Facility
SOP	Standard Operating Procedure
STD	Sexually Transmitted Diseases
VCT	Voluntary Counselling and Testing
WaSSIP	Water and Sanitation Service Improvement Project
WaSSIP-AF	Water and Sanitation Service Improvement Project – Additional Financing
WB	World Bank
WHO	World Health Organisation
WRA	Water Resources Authority

WSP	Water Services Provider
WSS	Water Supply and Sanitation Services
WSSD	World Summit for the Social Development
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

1 INTRODUCTION

1.1 PROJECT BACKGROUND

The Government of Kenya (GoK) through the Ministry of Water and Irrigation (MWI) has received “credit” from International Development Association (IDA) to undertake the Wastewater Master Plan for Mombasa and Selected Towns within the Coast Region.

Kilifi Mariakani Water and Sewerage Company Limited (KIMAWASCO) was incorporated in November 2005 after the enactment of Water Act 2002. It was a public owned company incorporated under the Company’s Act and wholly owned by Town Councils of Kilifi and Mariakani and the County Council of Kilifi.

In line with the Constitution of Kenya 2010, the provision of water and sanitation services is a devolved function. Consequently, since 2013, KIMAWASCO is owned by the County Government of Kilifi and is mandated to provide quality water and sewerage services within Kilifi North, Kilifi South, Ganze, Kaloleni, and Rabai sub counties.

As at the 2009 population census, the area covered by KIMAWASCO (Kilifi -12,609.7 Sq. Kms) had a population of approximately 1,298,270 people. However, with population growth and migration resulting from the current development in residential and commercial properties, the population has significantly increased. The customer base in the area comprises domestic, institutional, commercial entities and industrial consumers.

The sources of water supply are Baricho Water Works and Mzima Springs. Baricho produces 85,000m³/day which is shared between Mombasa and Kilifi (KIMAWASCO & MAWASCO WSPs) Counties. KIMAWASCO gets 13,500m³/day from Baricho and 9,000m³/day from Mzima pipeline. The areas served by Mzima pipeline is Mariakani, Mazeras and partly Kaloleni. The rest of the areas are supplied from Baricho. Baricho water is sourced from shallow wells along River Sabaki and must be pumped to the respective areas for further distribution. Mzima is sourced from springs emanating from Mt. Kilimanjaro and is in Tsavo East National Park. KIMAWASCO operates under the Parent Ministry of Water & Sanitation and Irrigation and in accordance with:

- The provisions and regulations of the Water Act, 2016;
- The State Corporation Act Cap 446;
- Other Relevant Provisions of the Laws of Kenya and
- Rules and Regulations given in form of circulars by the Parent Ministry and Ministry of Finance.

This report covers the Environmental and Social Impact Assessment of the proposed Mazingira Ablution Block in Kilifi Town.

Need For the Project

The strategic importance of this project lies in the need for overall improved sanitation in the ballooning population of Kilifi. As is described in Chapter 3.2.4 of this report, the town is

growing due to an increase in population caused by significant rural-urban migration and economic growth. The increasing population has a direct effect on the sanitation facility requirements in the area. The current sanitation system, comprising of on-plot sanitation means such as septic tanks and pit latrines, lacks proper sludge management and disposal facility and is, therefore, a health hazard to the residents and an environmental risk.

Additionally, existing ablution blocks within the public areas are either inadequate, dysfunctional or not properly managed hence they do not serve their intended purpose. The implementation of the project will also contribute to the improved performance of the economic sectors and the delivery of social services in the project environs. The current sanitation infrastructure in Kilifi Town is insufficient to meet the sanitation needs of the growing population and there is a need for the development of a sustainable water-borne sanitation system.

The main beneficiaries will be: -

- The public attending public functions at some of the park
- Tourists and community members who come visit the park from various areas hence are hampered from utilizing their sanitation facilities.
- The local community members running the project.

1.2 THE TERMS OF REFERENCE

The TOR requires an ESIA Study of proposed ablution blocks. The ESIA study will, therefore, be a study of potential environmental and social impacts and risks of the project. An Environmental and Social Management Plan (ESMP) with comprehensive mitigation measures and environmental monitoring plan will be drawn and the proponent advised accordingly. The analysis includes, but not limited to the following:

- Evaluation on the project impacts on flora, fauna, soils, air, water and identification of other impacts likely to be generated by the proposed project.
- A description of actions taking place during the main phases of the project (construction, operation, and maintenance) which could lead to environmental damage;
- Identification of the potential impacts of the ablution blocks relative to surrounding land use as well as the people living or operating in areas associated with the project.
- Preparation of an action plan for the repair of the damage done and for the prevention of any negative effects resulting from the proposed project.
- Formulation of a plan to prevent anticipated undesirable impacts from being actualized.
- Evaluation of the relationship of the proposed project to existing policies, legislation and institutional framework;

1.3 ESIA OBJECTIVES

The overall objective of the ESIA is to ensure that all environmental consequences due to the construction and operation of the proposed project were identified and where need be

ensuring mitigation measures have been put in place. The specific objectives of the assignment are:

- Analysing the physical, biological, and socio-economic environment of the project area with respect to the results of the proposed project's design.
- Analysing the physical, biological, and socio-economic environment of the project area with respect to the results of the proposed project's design.
- Screening of potential issues, concerns and impacts relative to siting, construction and operation of various design components to distinguish those that are likely to be significant for a particular subcomponent and warranting further study.
- To obtain background biophysical information of the site, legal and regulatory issues associated with the project;
- To generate baseline data for monitoring and evaluation of how the mitigation measures will be implemented during the Project cycle
- To allow for public participation;
- To make suggestions of possible alterations to the proposed project design, based on the assessment findings
- To verify the proposed Project compliance with environmental regulations both national and international;
- Recommending measures to mitigate adverse issues, concerns and impacts, and to enhance any likely positive impacts.
- To assess the legal and regulatory framework governing the project;
- Preparing an Environmental and Social Management and Monitoring Plan indicating impact areas, recommended mitigation measures, and method of monitoring impacts, particularly during construction and operation phases.
- To compile an ESIA project report for submission to NEMA.

Generally, ESIA also aims to ensure that development projects are implemented in a sustainable manner. Sustainable development is increasingly becoming a common synonym to environmental management in infrastructure development. It refers to a pattern of resource use that is aimed at meeting present-day human needs while preserving the environment so that these needs can be met in future generations. Sustainable development ties together concern for the carrying capacity of natural systems with the social challenges facing humanity.

1.4 METHODOLOGY

The ESIA was undertaken at a level that was commensurate with the scale, complexity and sensitivity of the project. The key stages in the process included scoping, which includes key informant & household consultations, impact assessment, mitigation, review, decision-making and monitoring as part of the preparation of this project report.

2 PROPOSED PROJECT DESCRIPTION

2.1 PROJECT AREA DESCRIPTION

2.1.1 Location and Administration

Kilifi County is one of the six counties in the Coast region. It is situated in the southeast of the Coast region. It lies between latitudes 2°18' and 4°2' south of the equator and longitudes 39°5' and 40°15' east. The County borders Tana River County to the North, Taita-Taveta County to the West, Kwale County to the South-West, Mombasa County to the South, and the Indian Ocean to the East. The County covers an area of 12,245.90 km².

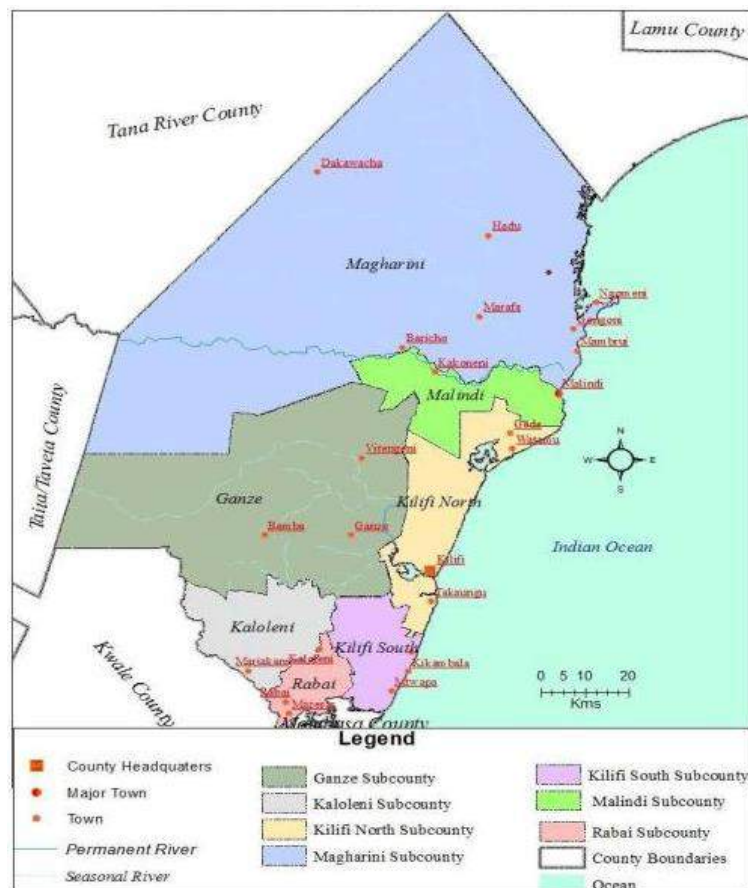


Figure 2: Kilifi County and Neighbouring Counties

The county has seven sub-counties namely: Kilifi North, Kilifi South, Ganze, Malindi, Magharini, Rabai and Kaloleni. It has 35 wards, 54 locations, and 165 sub-locations as shown in the table below. Magharini sub-county is the largest while Rabai is the smallest sub-county in terms of area.

2.1.2 Study Area

The study area considered was limited to the boundaries of Sokoni, Hospital, Kibarani and Tezo wards. The Study Area lies within 7 sub-locations of Kilifi North sub-County covering approximately 26% of the sub-County. According to Demographic data from Kenya National Bureau of Statistics (KNBS, 2019), the current population of the study area is approximately 53,000 persons.

Sub-locations within the study area are; Takaungu, Mnarani, Hospital, Konjora, Kibarani, Sokoni and Mtondia.

2.1.3 Background to the proposed project

There is no proper sludge facility or sewerage plant in Kilifi. The major problem faced is the lack of a proper sludge management system such as a Sludge Handling Facility for the discharge of septage by the exhaust vacuum tankers. Thus, septage from septic tanks is discharged directly to the ocean with no treatment.

The use of on-plot sanitation systems though unsustainable environmentally is manageable at present due to the constrained water supply in Kilifi. If additional water resources are developed and distribution network expansion carried out, the use of on-plot sanitation systems would generate significant waste that cannot be absorbed by the existing methods of disposal and would lead to significant health and environmental hazards.

The implementation of the proposed ablution block projects as an immediate measure to cater especially for the needs of the community under the WSDP program in Kilifi Town will be a major step in improving the sanitation infrastructure in congested and high catchment areas.

Generally, the residents have adequate toilets within their residences and a few in public utility areas. However, some important high catchment areas such as the market areas and bus stops have insufficient facilities to cater for the needs of the human traffic in the areas. Within the poorer areas of Kilifi town, people use unhygienic means of faecal disposal, usually open defecation or in some instances flying toilets and consequently increasing the risk of transmission of waterborne diseases.

The implementation of this project will provide a safe human waste disposal facility option for local residents, traders and tourists.

In summary, the current sanitation infrastructure in the towns is insufficient to meet the sanitation needs of the growing population and there is a need for the development of a waterborne sanitation system which is sustainable. The following is a brief description of the proposed project site.

2.1.4 Locations for Mazingira ablution block

Mazingira site is located within Kilifi town adjacent the Indian Ocean. The area has very high human traffic but has no sanitation facility. The Coordinates for this site are: 3° 38' 09" S 39° 51'05" E. (Attached PDP, Appendix)



Figure 3: Mazingira Park Site

2.2 EXISTING WATER SUPPLY, DEMAND AND SANITATION SYSTEMS

2.2.1 Water Supply

The main source of water supply for Kilifi Town is Baricho Wells located approximately 145km away at Sabaki River. Besides Kilifi, the wells also serve other coastal towns including Mombasa, Malindi and Watamu. In 2016 the capacity of the Baricho Wellfield and its potential production were 96,000 m³/d and 180,000 m³/d respectively. Before transmission to Kilifi Town, the abstracted water is chlorinated at Baricho and Break Pressure Tanks at Sokoke and Mavueni.

Details of the existing Water Supply System are summarized in the table below:

Table 2: Summary of Existing Water Supply System in Kilifi Town

Water Sources	Baricho wells at Sabaki River (which also serves Mombasa, Malindi and Watamu towns)
Water Treatment	Chlorination at Baricho and at Break Pressure Tanks located at Sokoke and Mavueni
Water Pumps	At Baricho wells
Water Mains	Gravity Transmission Mains DN 300mm -150mm AC, GI and uPVC pipes
Water Storage	2Nr. 250 m ³ at Boma 1 Nr. 500m ³ at Kilifi Town 2Nr. 150m ³ at Mavueni 2Nr. 50m ³ each reservoir at Sokoke
Water Distribution	180km of AC, GI, uPVC pipes, diameter varying in sizes from 50 to 300mm length approximate length 95km of tertiary mains

The Water Supply for Kilifi is generally insufficient and requires an extension of the Distribution Network to adequately serve the urban and peri-urban areas and cater for the future needs of the growing population.

2.2.1.1 Water Demand

Water demand forecast for Kilifi Town has been determined based on the regular/unsuppressed water consumption rates, projected populations, proposed Land-use (Health, Industrial, Commercial, Institutional & Residential Zones) and on the premise that the water distribution network has full coverage of the Study Area.

The figure below shows the water demand projection for Kilifi Town up to the Ultimate Design Horizon (year 2040).

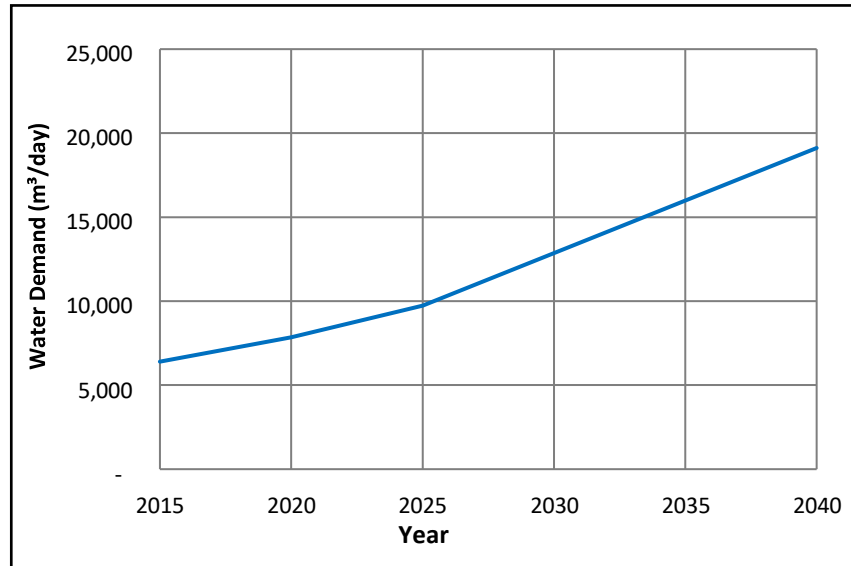


Table 3: water demand projection for Kilifi Town up to the Ultimate design horizon (2040)

Sanitation System

At present, Kilifi Town has no sewerage system. The use of on-plot sanitation systems such as pit latrines and septic tanks for disposal of effluent is prevalent. The major problem faced is the lack of a proper sludge management system such as a Sludge Handling Facility for the discharge of septage by the exhaust vacuum tankers. Thus, septage from septic tanks is discharged directly to the environment.

In situations of suppressed water supply, such as in Kilifi Town, the use of on-plot sanitation systems though unsustainable environmentally is manageable. If the water supply situation is improved through the development of additional water resources and expansion of water distribution networks, as planned for Kilifi Town, the use of on-plot sanitation systems will not suffice and thus health and environmental hazards are bound to occur.

In summary, the current sanitation infrastructure in Kilifi Town is insufficient to meet the sanitation needs of the growing population and there is a need for a development of water-borne sanitation system which is environmentally sustainable.

2.2.2 The Ablution Blocs

The Mazingira Ablution Block will improve public health by preventing waste-related diseases and promoting hygiene. It will enhance visitor experience by providing comfort and accessibility, encouraging longer stays and increased park usage. Additionally, it will help

protect the environment by preventing pollution and supporting sustainable waste management practices.

The Ablution Block will comprise of six (6) toilets and two (2) Shower Rooms with an equal number for each gender i.e., Ladies and Gents. The allocated number of toilets in each Ablution Block ensures the provision of sufficient service levels for the target population. It is estimated that on average, a user spends 5 minutes in the facility. Thus, for a single facility with 6 toilets and 10 hours of operation in a day, a maximum number of 720 persons can be served in a day.

Each section (ladies and gents) is provided with a toilet fitted with special amenities for use by disabled persons. The “Gents” are provided with separate urinals to increase the service levels, especially during the peak hours. The shower rooms are equipped with a dressing area and hand-wash basins. In addition, a spacious common area with hand-wash basins, hand driers and wall-mounted mirrors are provided.

Each of the units is fitted with coat hangers behind the doors for convenience. To enhance natural lighting within the facility, transparent polycarbonate roofing material have been incorporated in the design. Proper ventilation is ensured by the louvered windows and the gap between the ring beam and the roof. The gap is fitted with louvre blocks and plastic-coated coffee tray wires to prevent insect entry.

A septic tank with a holding capacity of 16 m³ is provided at the facility for storage and partial treatment of sewage. The septic tank will require desludging after every 3 months with septage disposal at the proposed Sludge Handling Facility, to be implemented as part of the immediate sanitation intervention but with a separate environmental assessment. In addition, a 5,000-litre water tank mounted on a 3.5m high reinforced concrete tower within the facility provides 3-day storage of potable water. The water will be supplied to the ablution block by the WSP (KIMAWSCO). This will be achieved by connecting it to the existing pipe network which serves Kilifi Town and the surrounding residential districts.

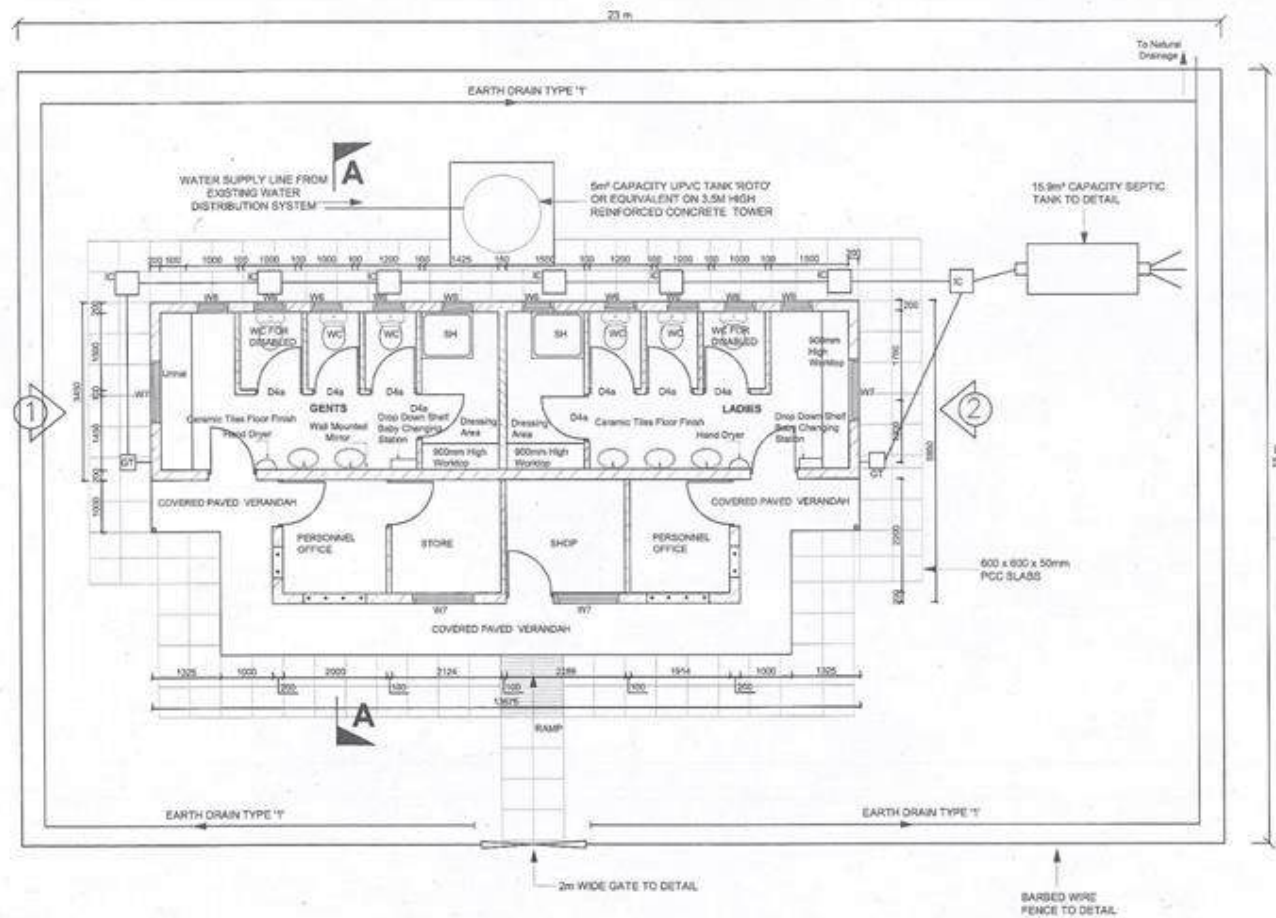
The key construction activities will include:

- Site clearance and top soil stripping
- Excavation for structure foundations and for septic tanks and backfilling for reinstatement as appropriate with approved hard-core filling, and Chemical anti-termite treatment to surface of filling with an approved insecticide
- General and steel - reinforced concrete works
- Walling using approved concrete blocks and cement mortar
- Installation of roof coverings on timber trusses
- General electrical, plumbing and plumbing works
- Finishes including plaster works, tiling and painting

It is anticipated that the contractor will establish camps that include office space, workshop, stores and vehicle parking among others. Staff accommodation will, however, be on rental basis.

During operation, the permission to use the facility is to be on a pay-per-use basis. This is an effective model used in many parts of the country to raise money required for operation and maintenance. A personnel office completes with a storage room including a shop for essential basic commodities shall be provided at the entrance of the facility with a grilled opening for ease of payment before use.

Management of the facilities will be handled by KIMAWASCO through youth and self-help groups subcontracted for the works. Management of the facilities will involve keeping the facilities clean, collecting funds from users of the facility, and sale of disposables such as toilet paper and soap. KIMAWASCO will be responsible for the repairs of the facility. It will also be responsible for the maintenance of the septic tanks. This will involve the provision of exhaustion services and the maintenance of the sanitary lanes to access the septic tanks.



ABLUTION BLOCK
TYPICAL SITE LAYOUT PLAN IN AREAS WITH LIMITED LAND
(AREA REQUIRED 350m²)

Figure 4: Typical site layout plan in areas limited with land.

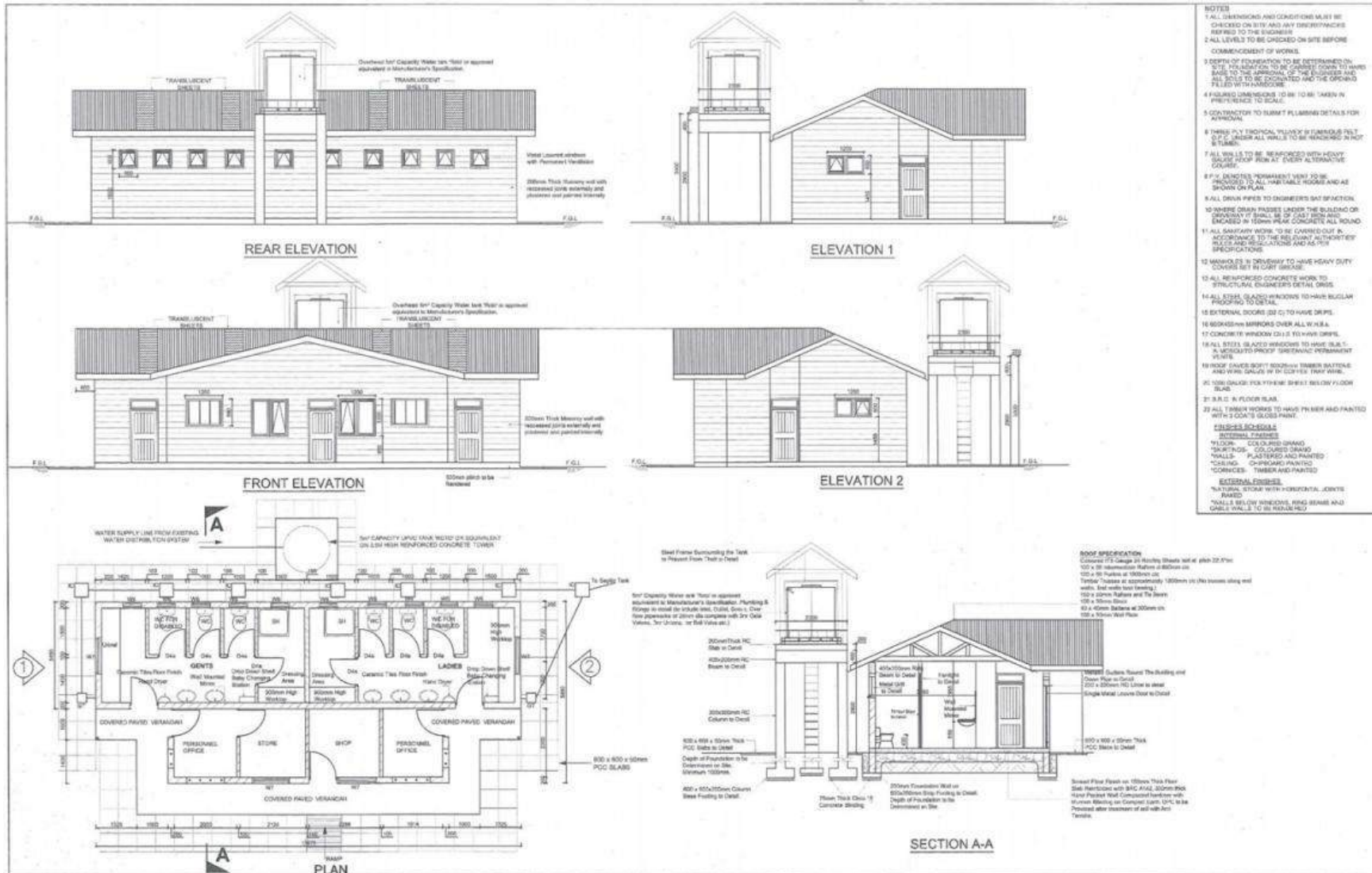


Figure 5: Typical plan, side and section views for an ablution block

2.2.3 Implementation Cost for Immediate Measures

Engineer's Cost Estimate determined for the Immediate Measures for Improvement of Sanitation Systems in Kilifi is based on the unit costs of the respective components of the Works obtained from recent contracts of similar scope and nature.

The Implementation Cost is given in the table below.

Table 4: Implementation Costs for Immediate Measures (copy attached in the appendix)

S/No.	Component	Number to be Provided	Cost, Kes	Cost, USD
1.	Ablution Blocks	1	9,979,650.00	77,271.78

3 PHYSICAL, BIOLOGICAL AND SOCIO-ECONOMIC BASELINE CONDITIONS OF PROJECT AREA

This Section discusses the baseline situation in respect of climate, topography, air quality, soils and geology, hydrology, terrestrial ecology, cultural heritage sites and socio-economic structure as well as existing infrastructure and utilities such as water, sewerage, transportation network, electricity, air transport, and solid waste management in the region of the proposed project.

3.1 FLORA AND FAUNA

The site in Mazingira Park contains some, *Leucaena collinsii* trees however no trees will be affected. There is an expansive open area where the ablution block will be constructed. The only animals that may come into contact with the construction sites are small animals such as rats and birds which will not be affected at all.

3.2 SOCIO-ECONOMIC ACTIVITIES AND INFRASTRUCTURE

3.2.1 Economic Activities

Introduction

Kilifi County is endowed with numerous natural resources that have determined its economies. These include numerous tourist sites in Malindi and Kilifi towns, arable land the ocean and pasture land for livestock. The main economic activities include Tourism, Farming, Fishing, Livestock farming, Cement manufacture and Food Processing.

Tourism and Conservation

The County is rich in endemic flora and fauna, attractive physiographic features and tropical climate, and sites of historical importance that makes it a unique tourist destination. The County possesses sunny and sandy beaches, magnificent landscapes, tropical and marine forests and swamps that are home to endemic flora and fauna.

Further, the County has a rich cultural and historical heritage that includes Swahili/Arab and Mijikenda cultures, world heritage sites like the Kaya forests and archaeological monuments such as those in Gede, Malindi, Takaungu, Mnarani and Rabai.

The attractions include scenic views, recreational, cultural, historical, nature and shared experiences. Along its 265km shoreline, the County has an unrivalled beach and marine-based recreational facilities. The long shoreline hosts marine sites that offer eco-tourism and water-sport attractions. They include the creeks at Mtwapa, Mida, Kilifi, Ngomeni and Fundisa bay. Malindi and Watamu Marine Parks are UNESCO designated biosphere reserves that are critical habitat for some indigenous and migratory bird species. They provide breeding and nursery grounds for various endemic fish species, marine turtles and several species of Crustaceans.

The county has over the years continued to be an investment destination which continues to attract different investors. The ongoing expansion of Malindi international airport and Mombasa Lamu Road will open more opportunities. The opening of Mariakani- Kilifi road has equally eased transport with Bamba-Kilifi and Tsavo East National Park-Malindi Road leveraging on infrastructure.

Some of the project sites have been in areas with high incidence of both local and international tourists. The site at Mazingira Park is one such site. The site is a recreational park that contains many trees and situated on an overhang next to the ocean.

Mining

Mineral resources present in the county have attracted significant investments in the mineral and extraction industry. Significant extractions of iron ore, manganese, cement manufacturing, coral rock harvesting, quarrying, ballast, salt and sand harvesting are evident in different parts of the county. For instance, Mombasa Cement and Athi River cement companies located at Takaungu and Kaloleni, respectively, manufacture cement. Several companies have invested heavily in the salt extraction in Magarini Sub County. Most of these investments are carried out by foreign companies.

3.2.2 Land Use

Natural pastures occupy almost half of County farmlands, woodlots 7%, improved pasture/forage production 8%, homesteads 9%, subsistence crop production 21%, commercial crop production 1.5% and unusable land (swampy, rocky, hilly, etc.) 8%.

The County's farmland use pattern indicates the availability of a relatively high average acreage per farming household and favourable physical conditions to produce a variety of food and cash crops. This is deduced from the fact that almost half of County farmland is natural pastures, with only 21% under subsistence crop production and a mere 1.5% under commercial crop production. The mean landholding size per household is 3.04 Ha while the mean holding size for large scale farmers is 8.09 Ha in the county.

The total Study area of Kilifi is approximately 8,235 ha. The types of land use evident in the Town are: residential, industrial, educational, recreational, transportation, public purpose, public utility, agriculture, hospitality and commercial. The largest portion of land is agricultural covering an area of approximately 72.62% of the total land, followed by residential land use which covers approximately 13.77% of total land. Recreational land use covers the least portion of land covering 0.04% of the total land.

3.3 PHYSIOGRAPHIC AND ENVIRONMENTAL CONDITIONS

3.3.1 Climate

The county has a bimodal rainfall pattern with average annual precipitation ranging from 300mm in the hinterland to 1,300mm in the coastal belt. The coastal belt receives an average

annual rainfall of about 900mm to 1,300mm while the hinterland receives an average annual rainfall of about 300mm to 900mm. The short rain season is experienced in the months of October, November and December while the long rains are experienced in the months of March–April and May. The most important season to the hinterland is the short rains for pasture regeneration and water recharge while the long rain season is the most important season for the coastal area for crop production. Areas receiving highest average annual mean evaporation ranges from 1800mm along the coastal strip to 2200mm in the Nyika plateau in the hinterland. The highest evaporation rates are experienced during the months of January to March in the county.

3.3.2 Topography

Kilifi County has three major topographical features with marked geological and rainfall characteristics which dictate the resource potential and land use patterns. These are the Coastal Plain, the Foot Plateau and the Coastal Range.

The Coastal Plain is a narrow belt, varying in width between 3 km and 20 km. It lies below 30 m above sea level, except for occasional prominent peaks on the Western boundary, which includes major hills like Mwembetungu and Mamburi sand dunes. The rest of the area is broken by creeks and estuaries, giving rise to excellent marine and estuarine swamps, with mangrove forests and untapped potential for marine culture. The zone is composed of Triassic sediments of marine and deltaic origin, and includes coral limestone, marble, clay stones and other alluvial deposits, yielding deep soils which support agriculture. Kilifi town lies within the Coastal Plains of Kilifi County. The zone is composed of Triassic sediments of marine and deltaic origin and includes coral limestone, marble, clay stones and other alluvial deposits. It yields deep soils favourable to agriculture.

The Foot Plateau is located to the west of the Coastal Plain. The terrain is slightly undulating; its elevations vary between 60 m and 135 m in altitude. The plateau is characterised by a seaward-sloping plain. Under the dry watercourses at the surface lie Jurassic sediments consisting of shell sandstone and impervious clays. The soils support grassland and stunted vegetation and are highly prone to erosion.

The Coastal Range Zone features a distinct range of sandstone hills, which are about 150 m to 420 m high. This zone has good rainfall rates and fertile soils and therefore provides some of the best farming areas in the district. This hinterland forms the rangelands.

In general, most of the soil formations along the coast are of coral parents. The soils within Kilifi Town are typically a mixture of well-drained, deep, dark red to reddish-brown, friable, sandy clay loam to sandy clay, with the topsoil of loamy sand and well-drained, very deep, yellowish red, very friable, fine sandy loam to fine sandy clay loam.

The topography of the project sites is generally flat with minimal undulations and changes in elevation and relief. The land generally slopes towards the ocean. The Mazingira Park is

located near the Kilifi shoreline and features a diverse range of tree species, including palm, coconut and a few baobab trees and various shrubs.

3.3.3 Geology and Soils

The geology of the Kenyan coast is dominated by rifting and breakup of the Paleozoic Gondwana continent and the development of the Indian Ocean. The Proterozoic gneisses of the Mozambique belt form the basement of an intracratonic basin, filled with continental permo- Triassic classics. The sea-level changes, isostatic readjustments and the tectonic movements contribute to the geomorphology of the Kenyan coast. The region is divided into three main physiographic belts namely the flat coastal plain. Next, are the broken severely dissected and eroded belts that consist of the Jurassic Shale overlain in places by a residual sandy plateau. Finally, there is the undulating plateau of sandstone that is divided from the Jurassic belt by a scarp fault.

Areas around the sea have Pleistocene coral reef mainly used as a source of limestone for the cement industry and source of building stone. The seashore of the Kenyan coast has extensive sand beaches which makes a town an attractive tourist destination area. The mineral sands occur in various parts of the Kenyan coast in almost similar geologic environments. Geochemically, mineral sand deposits contain ilmenite, rutile, zirconium as well as other minerals and trace elements that could be of radioactive nature, such as thorium.

Soils in the region gradually change to sandy clayey gravel at depths of 2 – 2.5m deep. The soil types have a strong correlation with the geology and topography of the region and differ widely in depth, texture, physical and chemical properties with variations running parallel to the coastal line due to sedimentation process. The significance of this geological and soil characteristics is the porosity associated with the sedimentary type of soils. Infiltration to the groundwater aquifers of polluting substances from the ground surface is also highly likely. There are five main categories namely;

- Soils developed on higher-level lagoon deposit, sands, which are light with very low fertility, they are excessively drained and very deep.
- Soils in the mangrove swamps, they are poorly drained soils, very deep and excessively saline, the soil texture is medium to heavy.
- Soils developed in shales, they are well-drained to imperfectly drained, they are shallow to moderately deep.
- Soils developed on raised coral reef limestone with a mixture of lagoon deposit; these are light soils, medium to heavy texture and of low fertility
- Soils developed on the lower-level lagoonal deposits are variable and of low fertility. They are complex of very deep soils of varied drainage, colour texture and salinity.

The soils in the project areas are primarily sedimentary of origin. It consists of consolidated sand, silts, clays and limestone. Sites near the ocean sit on soil and rocks of coral origin.

3.3.4 Hydrology and Drainage

The Indian Ocean is the largest water mass in the area and influences the general surface drainage pattern with all land sloping towards the ocean hence all the surface run-off is expected to drain to the sea through the natural drainage systems. However, due to the dense human settlements and activities of the natural drainage systems have been interfered with resulting in occasional flooding. The drainage of the coastal zone generally adjusts to the original slope towards the east that is typical of the general tilt of the Eastern African margin that has been altered by human activities.

Floods in Kilifi town have been observed in the past in Charo wa Mae market and in the areas surrounding Oloitiptip Market. None of the sites selected are expected to experience said flooding.

Due to the rugged topographic nature upstream and the relatively high soil porosity, drainage in the higher elevations is efficient with no possibility of flooding during rains. However, due to dense settlements, natural drainage systems and channels have been destroyed or blocked by human settlements, roadside economic activities and waste materials.

Surface drains are highly contaminated from sources including fuel surface stations (mostly discharging oil residuals into open drains), industrial effluents and domestic sewage (open sewers or direct discharge from unserved areas) as well as storm water transporting pollutants into the drains.

3.4 ENVIRONMENTAL AND SOCIO-ECONOMIC SURVEY

The socio-economic situation of the area was captured based on findings of a household survey carried out using a structured questionnaire. A sample group of 50 households for this project site, selected through random sampling was interviewed for purposes of the analysis.

3.4.1 Water Supply

The project areas majorly receive piped water either through public taps or private taps provided by KIMAWASCO as shown below. These account for a combined total of 81% of access to water. Only 19% of respondents use boreholes.

The consultant did not identify boreholes or other water sources near the proposed ablution block sites.

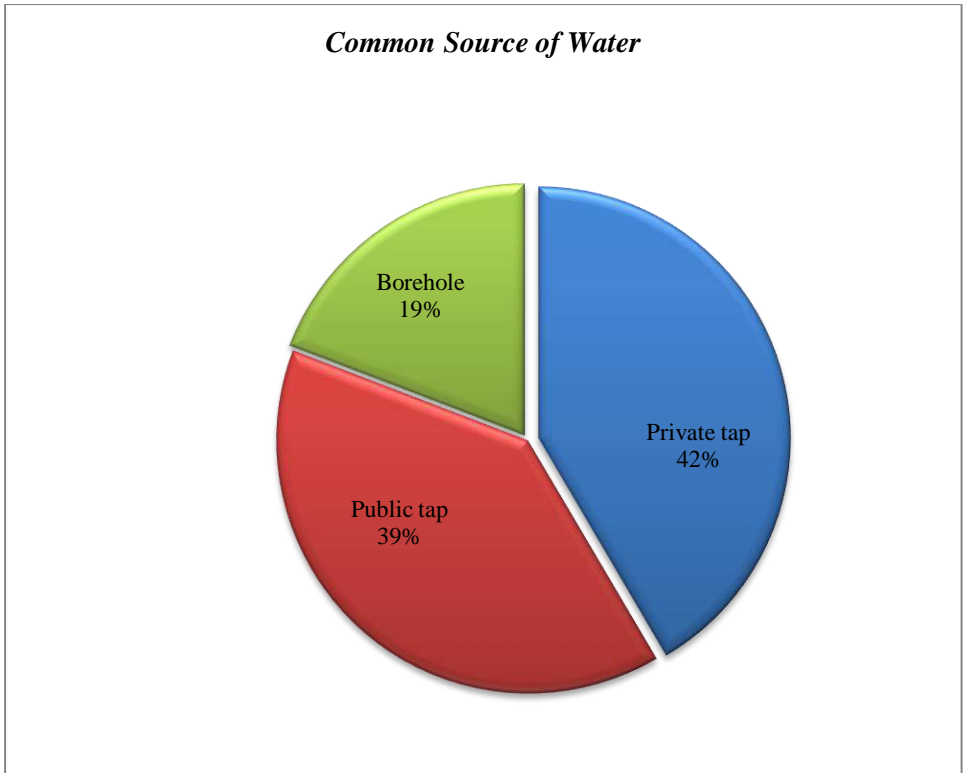


Figure 5: Main Sources of Water for the Community

Source: Survey data. 85% of the surveyed population pay for water.

3.4.2 Sanitation

Disposal of household waste is an important measure of the extent of pollution in the study area. There is a dumpsite designated to receive solid waste but only 22% of respondents who said they have their waste collected by the county have it disposed at the dumpsite. 14% said they have no specific site for disposal and just dump their waste in the area. 46% burn their waste and 18% compost it. There is no recycling done in the area.

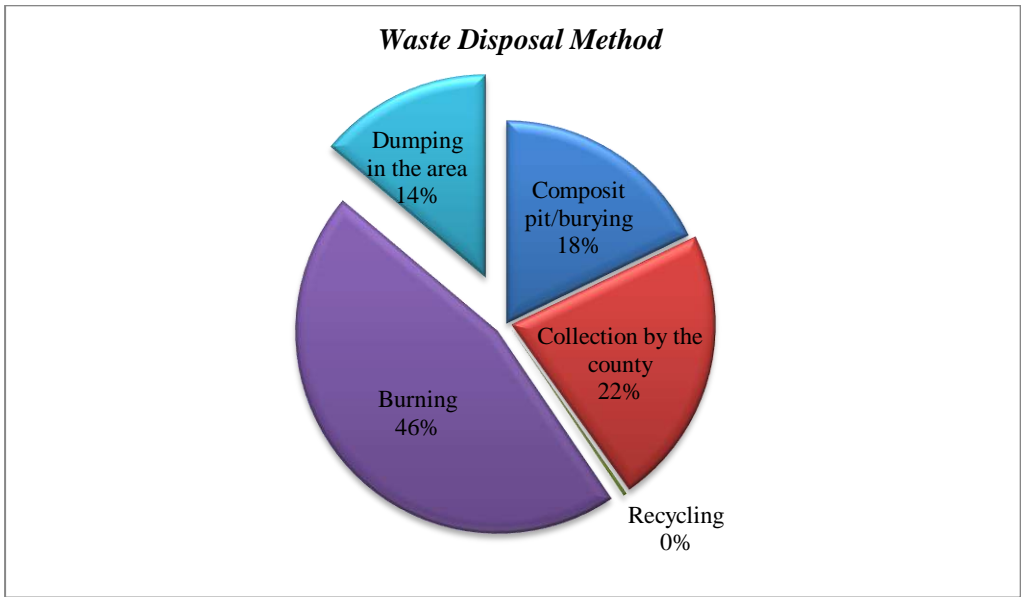


Figure 6: Common Waste Disposal Methods

Source: Survey data.

91% of the households interviewed have access to a toilet, while the rest lack the facility.

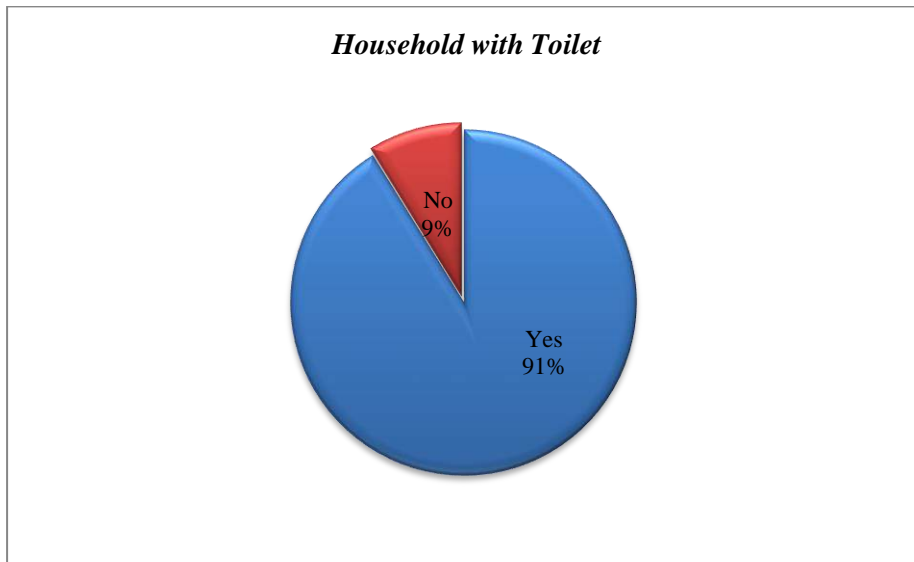


Figure 7: Respondents Who Have Toilets in Their Compound

Source: Survey data.

The most common type of toilet in use is a pit latrine. 67% of surveyed respondents said they used pit latrines. Flush toilets with septic tanks accounted for 30% of respondents and only 3% said they used flush toilets connected to the sewer line.

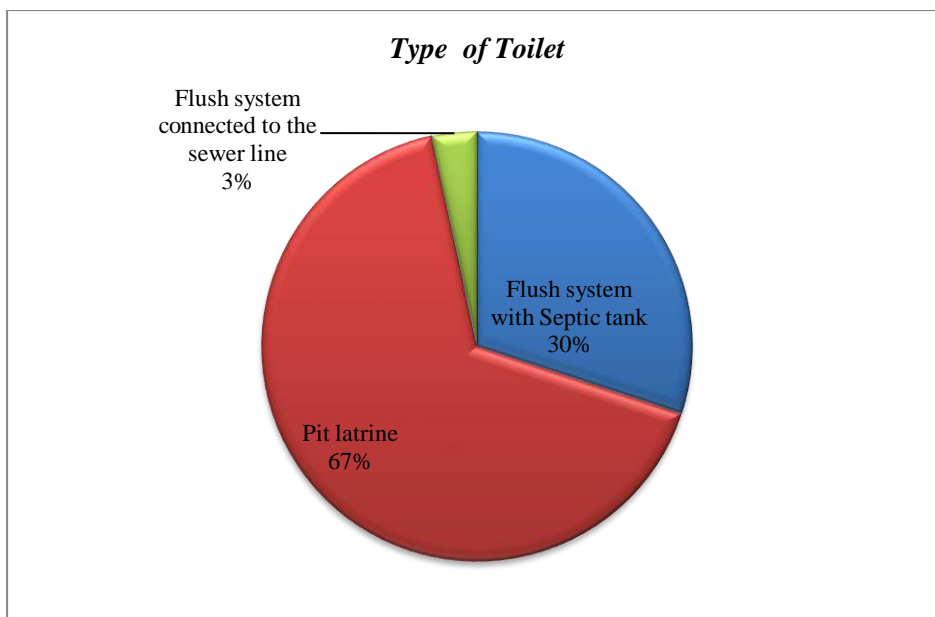


Figure 8: Types of Toilets Respondents Have in Their Compound

Source: Survey data.

4 STAKEHOLDER ENGAGEMENT AND PUBLIC CONSULTATION

4.1 GENERAL

Public and stakeholder consultation is required under the Environmental Management and Coordination (Amendments) Act 2015 as well as the Environmental Impact Assessment and Audit Regulations (2003). Public and stakeholder consultation is useful for gathering environmental and socio-economic information, understanding likely impacts, determining community as well as individual preferences. Through this process, stakeholders have an opportunity to contribute to the overall project design by making recommendations and raising concerns. In addition, the process creates a sense of responsibility, commitment and local ownership for smooth implementation of the project.

Effective public participation requires the availability of adequate information in public inputs. The latter involves various values, critiques, questions, information, suggestions and other inputs, which are expressed by individuals, groups or organizations among the general public in an attempt to influence decision-making. Public consultations with Interested and Affected Parties (IAPs) were done in order to:

- Inform the local people, leaders and other stakeholders about the proposed project and its objectives;
- Initiate public involvement processes, in a bid to induce and cultivate a sense of peoples' belongingness to the project;
- Suggest and facilitate the peoples' roles in the project's sustainability, in terms of management, maintenance and productivity;
- Seek views, concerns and opinions of people in the area concerning the project.
- Establish if the local people foresee any positive or negative environmental effects from the project and if so, how they would wish the perceived impacts to be addressed;
- Find out if there are issues or places of cultural/or religious importance to the local communities that could be negatively impacted upon by the project and its infrastructure.

4.2 APPLICABLE LAWS, REGULATIONS AND POLICIES TO PUBLIC ENGAGEMENT

The Environmental Management and Coordination Act (2015) as well as the Environmental Impact Assessment and Audit Regulations (2003) set out the minimum requirements for stakeholder consultation and engagement. Further details of the legal and regulatory requirements that apply to the project are provided in Chapter 6 of this report.

4.3 PUBLIC PARTICIPATION METHODOLOGY

Public participation was mainly achieved through direct interviews, observations, questionnaire administration and a public meeting. The ESIA team began the public

consultation process by holding preparatory meetings to strategize on how to engage the stakeholders in the ESIA process. This was done in consultation with KIMAWASCO and County Administration including chiefs and the County Health Officer, who helped in the process of identification of the significant stakeholders who could provide data relevant to the proposed project. The following is a detailed discussion of public consultation methodology used by the ESIA team.

4.3.1 Questionnaire Administration

Questionnaires were prepared and administered to the sampled households. The team then organized visits to meet the representatives of all the stakeholders identified, whom they met and spent considerable time with and held discussions with them on their opinions about the proposed project.

4.3.2 Public Participation Meetings

Public Participation meeting was held on the 12th August, 2024 at Mazingira Site. The purpose of the Public Participation Meetings was to:

- Interview a number of people simultaneously;
- Generate dialogue about an issue in a small forum;
- Establish different values or perspectives within a community on an issue; and
- Provide information and an opportunity for key stakeholders to ask questions.

In attendance were the chiefs from the various locations, opinion leaders, and representatives of the Project Affected Persons. The meeting, held at the Chief's office involved participants from Mazingira Site.

Issues Discussed During the Public Participation Meetings

1) Acceptance of the Project

The public was generally in favour of the sanitation measures to be implemented in the project. Most viewed the proposed measures positively, saying that the measures would make the great strides in improving problems in sanitation that are associated with untimely and irregular disposal of waste.

2) Availability of water

Concerns were raised that water rationing would negatively impact the operation of the ablution blocks. Locals wanted assurance that once the blocks were completed, the water rationing they were currently experiencing would not continue. KIMAWASCO representatives informed the attendants to the meeting that the water problem was being resolved with connections being made to new water sources and expansions being made to existing sources.

3) Space to be used up by the ablution blocks

A major issue of concern was the amount of space being consumed by the ablution blocks. The consultant informed them that the ablution blocks will only require minimum space and no trees will be affected by the proposed construction.

4) The unsuitability of the English type toilets.

Locals attending the meetings informed the consultant that English type toilets would not be suitable for ablution blocks. This is because the large volume of people would make seat type toilets difficult to clean and maintain. They proposed that only the toilets for the disabled be English type and the remaining two be Indian type toilets.

5) Work and employment for the locals

The proposed project will present many employment opportunities both during construction and operation phases and the community members proposed that people from the households within the affected area should be given priority during recruitment. It was made clear that non-technical work would be given to the locals as a way of empowering them as it will increase the income potential of the people within the project area.

Details of the meetings are given in the minutes provided in the Appendix B.

4.4 CONSULTATION DURING PROJECT DURATION

The Consultant also proposes that continuous consultation be carried out throughout the construction phase of the project using focus group discussions to ensure interested stakeholders are aware of construction procedures and provide a forum for feedback and recommendations for implementation in the construction.

Interested stakeholders and the recommended means of communicating with them is summarised in the table below.

Table 5: Means of Communication with External Stakeholders

Stakeholder/s	Type of communication	Responsibility	Timing
External Stakeholders			
Local administration representatives Chiefs and Ward Representatives	Public meetings and monthly project progress updates	Contractor / KIMAWASCO	Throughout the project implementation phase
Interested NGOs and other civil societies operating in Kilifi	Local media (Radio stations) ESIA, disclosed ESIA at a location level. Translated copies of ESIA executive	Contractor / KIMAWASCO	Throughout the implementation of the Project
Relevant National Government and County Government Authorities	Official correspondence and meetings, progress reports	Contractor / KIMAWASCO	During project design, construction and implementation
Kenya National Museums due to chance find clause of OP 4.11 on physical cultural	Official correspondence and meetings	Contractor / KIMAWASCO	During the project construction phase

Table 6: Means of Communication with Internal Stakeholders

Internal Stakeholders			
Employees (Contractor,)	Notice boards, email, Grievance Redress Mechanism, meetings	Contractor	Throughout the project implementation
Casual workers and temporary staff	Notice boards, email, Grievance Redress Mechanism, meetings	Contractor	Throughout the project implementation

4.4.1 Community Relations in Construction Phase

The primary responsibility for liaison will be borne by the Contractor who will develop his own plan and more detailed proposals for community liaison. This will build on the approach outlined in this section. All potential contractors will be required to draw up this plan as part of the tender process.

The objectives of the Community Relations Programme will be to:

- Provide residents with regular information on the progress of work.
- Inform the project contractor of any community-related issues that may impact construction.
- Monitor implementation of mitigation measures and the impact of construction via direct monitoring and feedback from Project area.
- Identify any significant new issues that may arise during the construction period
- Manage any complaints against the project contractors from residents

The role of community relations officer will be assigned to someone whose responsibilities will be:

- The de-escalation of grievances that have not been resolved in either tier of the proposed GRM
- Maintenance of records of all grievances lodged and resolved.

4.4.2 Construction Contractor's Role in Community Liaison

The Contractor will be required to adhere to the requirements of the Environmental and Social Management Plan (ESMP) that sets out how the contractor will meet and monitor the mitigation measures recommended by the Plan.

The role and responsibilities of the Contractor's Community liaison include:

- Provide a primary interface between the project and affected or interested persons;
- Coordinate and implement required pre-construction activities, namely;

Produce management plans for community relations, construction camps and transport; train staff with community relations responsibilities;

- Implement induction training workshops for all construction staff;
- Assist in the local recruitment process;

- Ensure on-going communication with projects and affected or interested persons.

4.4.3 Community Relations in Operational Phase

The objective of the Community Relations Programme in this Phase will be to:

- Maintain constructive relationships between local residents to assist in the operation of the facilities.
- Maintain awareness of safety issues among local residents in the project areas;
- Ensure compliance with land use constraints among landowners in the project areas

4.4.4 Grievance Redress Management Plan

This ESIA provides for Grievance Redress Mechanisms (GRM) which includes instruments, methods and processes by which a resolution to grievance is sought and provided. This is discussed in detail in *Chapter 8.7* of this report.

5 ALTERNATIVES TO THE PROJECT

This chapter describes and examines the various alternatives available for the project. The consideration of alternatives is one of the more proactive sides of environmental assessment - enhancing the project design through examining options instead of only focusing on the more defensive task of reducing adverse impacts of a single design. This calls for the comparison of feasible alternatives for the proposed project site, technology, and/or operational alternatives. Alternatives must compare in terms of their potential environmental impacts, capital and recurrent costs, suitability under local conditions, and acceptability by neighbouring land users.

5.1 NO ACTION ALTERNATIVE

This leaves the status quo, currently, the only available sanitation facility consists of a single latrine and one bathroom, both of which are poor, deteriorated condition. As the project would not be implemented, the negative impacts associated with construction and development would not occur, but the ill effects of not having the sanitation facilities in place would remain and proliferate. These include.

- Health Risks: Increased disease transmission and poor sanitation leading to infections, plus potential contamination of park grounds.
- Environmental Damage: Risk of open defecation harming the ecosystem, contaminating soil and water sources.
- Poor Visitor Experience: Reduced comfort and accessibility, forcing visitors to cut their visits short due to lack of facilities.
- Social Impact: Limited accessibility especially for women, elderly, disabled persons, and those with specific cultural/religious needs.
- Economic Loss: Decreased visitor numbers and missed opportunities for events, leading to reduced park revenue.
-

This is therefore not a preferred alternative.

5.2 DESIGN ALTERNATIVE

1. Different design for the ablution blocks targeted solely for the education institutions were considered. This owes to the fact that the running of such a facility is different from that which is open to the public. A facility accessible to the public targets people who can pay a certain fee whose proceeds are meant to maintain the facility. A facility in an education institution for instance may access its running costs by charging the students a certain fee per term which may be included in their school fee. Also, the design of such a facility that targets a large education institution does not require additional features such as a store, shop or an office. Instead, such provisions should be modified to give additional toilet facilities to cater for the intermittent periods

when many students seek access to the facility. However, none of the sites provided fell under institutions.

2. There could be a provision to separate black water from grey water generated by the facility. This would also require dual plumbing, a significant increase in the initial cost. The grey water could be reused especially for flushing the toilets. As such, the running costs of such a facility are likely to reduce by a significant margin. In addition, there is an option for commercial grey water treatment systems which are too expensive to treat ablution water expected to be produced at the proposed projects, in comparison to paying for piped water from the local WSP. Such a typical system would include a sand trap, an ablution water collection tank, a filtration unit, chlorination chute, and treated water collection tank. Treatment and reuse is automated using submersible pumps and timers.
3. The public indicated that the English-type toilet proposed in the project would be difficult to maintain and would increase the likelihood of spreading diseases. As such, it could be wise to alter two of the toilets to be the Eastern/squatting type, while leaving one to cater for the old people as well as those with special needs.

5.3 SITE ALTERNATIVE

Due to the limited availability of public land, no other alternative sites were considered for the ablution blocks.

Some sites were proposed by the County Public Health Officers but neither the WSP nor County officials were able to ascertain whether the proposed sites were public land. These were therefore dropped and have not been considered for this report.

6 RELEVANT LEGISLATIVE/ REGULATORY FRAMEWORK

There are many laws and regulations governing issues of environmental concern in Kenya. The principal National legislation is the Environmental Management & Coordination Act Cap 387 typically referred to as EMCA. EMCA empowers stakeholders to participate in sustainable management of natural resources. It calls for Environmental and Social Impact assessment (ESIA) (under Section 58) to guide the implementation of environmentally sound decisions. Projects likely to cause environmental impacts require that an environmental impact assessment study to be carried out. It is under this provision that the current study is being undertaken.

In addition to the local legislation, the report has identified some World Bank Policies of relevance to the project.

The following is an outline of the legislative, policy and regulatory framework for which the Proponent shall observe and implement to comply with Environmental Sustainability.

6.1 KENYAN GOVERNMENT POLICY PROVISIONS

6.1.1 National Youth Development Policy (NYDP)

Kenya's **National Youth Development Policy (NYDP)** aims to empower young people by providing them with opportunities for education, employment, entrepreneurship, and active participation in national development. The policy focuses on key areas such as skills development, leadership, health, innovation, and environmental sustainability.

Relevance to the project

The National Youth Development Policy (NYDP) in Kenya can be integrated into an ablution block project by creating job opportunities for young people in construction, plumbing, and facility maintenance. Their involvement in planning and management ensures sustainability while also promoting entrepreneurship through facility management and hygiene-related businesses. Youth-led sanitation awareness campaigns enhance public health, and innovative solutions like biogas toilets and water conservation contribute to environmental sustainability. This approach not only improves sanitation but also empowers young people with skills, income opportunities, and active participation in national development.

6.1.2 The National Environmental Action Plan (NEAP)

The NEAP provides a framework for the implementation of the Environment Policy and realization of the National Millennium Development Goals and Vision 2030. The plan outlines measures to combat climate change including mitigation and adaptation, improving inter-sectoral coordination, mainstreaming sustainable land management into national planning, policy and legal frameworks and undertake research on impact of climate change on environmental, social and economic sector. The plan also aims to increase the country's forest cover and adopt economic incentives for management of forest products.

6.1.3 National Environment Policy (NEP) 2013.

The goal of this policy paper is to harmonize environment and development goals to ensure sustainability. It provides comprehensive guidelines and strategies for government action regarding the environment and development.

The Policy goal is geared towards a better quality of life for present and future generations through sustainable management and use of the environment and natural resources.

Relevance to the project

The proposed project will be implemented and operated to guarantee sustainability in conformity with provisions of this policy.

The planning stage of the project has put all this into consideration whereby the waste generated will be recycled/re-used or dumped in designated dumping sites to ensure a healthy and clean environment is maintained.

6.1.4 National Gender and Development Policy 2020

The National Gender and Development Policy provide a framework for advancement of women and men an approach that would lead to greater efficiency in resource allocation and utilisation to ensure empowerment of women.

The National Policy on Gender and Development is consistent with the Government's efforts of spurring economic growth and thereby reducing poverty and unemployment, by considering the needs and aspirations of all Kenyan men, women, boys and girls across economic, social and cultural lines. The policy is also consistent with the Government's commitment to implementing the National Plan of Action based on the Beijing Platform for Action (PFA).

The overall objective of the Gender and Development Policy is to facilitate the mainstreaming of the needs and concerns of men and women in all areas in the development process in the country. This policy will be of relevance to the contractor in ensuring that all genders are given an equal opportunity during recruitment during the construction phase and operation phase of the project. The employers will also provide adequate facilities for all genders within the project site.

6.1.5 HIV/AIDS Prevention and Control Act (2006) & National HIV/AIDS Prevention Policy

The Act and policy focus on preventing the spread of HIV/AIDS, ensuring access to healthcare, and promoting awareness. They state that:

- Employers must provide HIV/AIDS education in workplaces (Section 13).
- Public health programs should include sanitation and hygiene awareness (Policy Objective 5).
- No discrimination against workers or users based on HIV status (Section 32).

Relevance to the Project

Worker Health & Safety: Contractors should provide HIV/AIDS awareness training to construction workers.

Sanitary Disposal Facilities: The ablution block must include proper sanitary bins for menstrual hygiene to prevent infections.

Public Awareness Campaigns: Once completed, the facility can be used to promote hygiene and disease prevention education in the park.

6.2 LEGAL FRAMEWORK OF THE GOK IN REGARD TO LAND OWNERSHIP AND TRANSACTIONS

6.2.1 The Constitution of Kenya 2010

In the **Kenyan Constitution of 2010**, several sections are relevant to the **construction of an ablution block**, particularly in relation to the right to sanitation, environmental sustainability, and public health. The key provisions include:

- **Article 42 – Right to a Clean and Healthy Environment:** Guarantees every person the right to a clean and healthy environment, which includes proper sanitation facilities like ablution blocks.
- **Article 43(1)(b) – Right to Sanitation:** Ensures that every person has the right to reasonable standards of sanitation, which justifies government projects aimed at improving sanitation infrastructure.
- **Article 53(1)(c) – Rights of Children:** Guarantees children’s right to basic nutrition, shelter, and health care, which includes access to proper sanitation in schools and public spaces.
- **Fourth Schedule, Part 2 (Public Works and Services):** Assigns county governments the responsibility for water and sanitation services, meaning ablution block construction falls under their mandate.

6.2.2 Land Ownership in Kenya

Kenyan law recognizes three categories of land in Kenya subsequent to which, basic or radical title vests either in the Government for Government land, registered owners in the case of titles granted by the Government; and in the Community Land in the case of land held by a community.

Public land

Public land in Kenya is land owned by the government on behalf of the people and is designated for public use or held in trust for future development. According to **Article 62 of the Kenyan Constitution (2010)**, public land includes unalienated government land, land occupied by state institutions, land for public infrastructure (such as roads, rivers, and public buildings), and land that has been legally acquired by the state for public purposes. County governments manage public land within their jurisdictions and hold community land in trust. On the other hand,, while the National Land Commission has been mandated constitutionally

in Article 67 (2) to among other functions to ,
“Manage public land on behalf of the national and county governments”.

Community Land

It is land lawfully registered in the name of group representatives, land lawfully transferred to a specific community and any land declared to be community land by an Act of Parliament.

Private Land

This is registered land held by any person under freehold tenure, land held by any person under leasehold tenure and any other land declared private land under any Act of Parliament.

6.2.3 Legal Provision Governing Voluntary Land Transactions in Kenya

Towards safeguarding this unalienable constitutional right, legal provisions on land registration and ownership have been put in place as follows:

State-owned land

State owned land is governed by diverse laws depending on the purpose for reservation.

The Land Act 2012

It is very explicit in the Land Act, 2012, Section 107, that whenever the national or county government is satisfied that it may be necessary to acquire some particular land under section 110 of Land Act 2012, the possession of the land must be necessary for public purpose or public interest, such as, in the interests of public defence, public safety, public order, public morality, public health, urban and planning, or the development or utilization of any property in such manner as to promote the public benefit; and the necessity therefore is such as to afford reasonable justification for the causing of any hardship that may result to any person having right over the property, and so certifies in writing, possession of such land may be taken.

6.3 CHILDREN’S ACT (2022)

The Act states Children’s Act, 2022 is a comprehensive law that protects the rights and welfare of children in Kenya. It provides for:

- Right to a safe environment (Section 8) – Every child has the right to a clean, safe, and healthy environment.
- Protection from exploitation and abuse (Sections 14-16) – Children must be protected from economic exploitation and all forms of violence or neglect.
- Access to essential services (Section 33) – Children must have access to clean water, sanitation, and health services.

Relevance to the project

Site Safety: If children frequently visit the park, the construction site must be properly fenced, with warning signs and restricted access to prevent accidents.

Worker Vetting: Contractors must ensure that no child labor is used on-site and that workers are vetted to prevent potential child abuse cases.

6.4 SEXUAL OFFENCES ACT (2006)

The Sexual Offences Act criminalizes all forms of sexual harassment, exploitation, and gender-based violence (GBV). It states that:

- Sexual harassment is a criminal offense (Section 23).
- Indecent acts towards minors or vulnerable persons are punishable (Section 11).
- Public places must implement measures to prevent sexual offenses (Section 40).

Relevance to the Construction Phase

- Site Security: Since Mazingira Park is a public space, the construction site must have clear boundaries, adequate lighting, and security personnel to prevent any GBV risks.
- Worker Conduct: Contractors should train workers on appropriate behavior, ensuring zero tolerance for harassment of the public, especially women and children.

6.5 COUNTY GOVERNMENT ACT (2012)

The County Government Act gives counties the power to regulate and manage public facilities, including sanitation projects. It requires:

- Proper land use planning and development control (Section 102).
- Public participation in county infrastructure projects (Section 115).
- Compliance with public health and environmental laws (Section 160).

Relevance to the Construction Phase

- County Approvals: The ablution block must be approved by the County Planning and Public Works Department before construction begins.
- Public Consultation: Since the park is a public space, the county government must engage the local community to get feedback on the project.
- Infrastructure Standards: The design must comply with county sanitation guidelines, ensuring proper drainage and accessibility.

6.6 NATIONAL MUSEUMS AND HERITAGE ACT (2006)

This Act protects historical and cultural sites in Kenya. It states that:

- No construction should damage or alter a heritage site (Section 25).

- Any historical artifacts discovered must be reported to the National Museums of Kenya (Section 38).
- Developments near heritage sites must be approved by the relevant authorities (Section 41).

Relevance to the Project

A Chance Find procedure is provided in this SPR. If historical remains or artifacts are found during excavation, construction must pause immediately, and the National Museums of Kenya should be informed.

6.7 THE PHYSICAL AND LAND USE PLANNING ACT, 2019 (ACT NO. 13 OF 2019)

This is a legislative framework established by the Kenyan Parliament to guide the planning, use, regulation, and development of land within the country. Its primary objective is to ensure sustainable land use and to provide a structured approach to physical planning.

The Act establishes various bodies responsible for overseeing land use and planning, including:

- National Physical and Land Use Planning Consultative Forum: A platform for consultation on national development plans.
- National Land Commission: Oversees land use planning across Kenya.
- County Physical and Land Use Planning Consultative Forums: Operate at the county level to address local planning issues.
- Planning Procedures: It outlines the processes for preparing, approving, and implementing various physical and land use development plans at national, inter-county, and county levels.
- Development Control: The Act provides guidelines for development permissions, ensuring that land use aligns with approved plans and policies.
- Public Participation: Emphasizes the importance of involving the public in the planning process to promote transparency and inclusivity.

Relevance to the project

The Act ensures that all developments align with approved county land use plans and development policies, requiring project approvals from the relevant county authorities. It emphasizes sustainable development and environmental conservation, which aligns with the project's goal of enhancing public health while preserving the park's natural environment. The Act also enforces development control to ensure public infrastructure meets safety, design, and sanitation standards. Furthermore, it promotes public participation, encouraging community input to ensure the facility effectively serves park users. Collaboration with county planning bodies and institutions, such as the National Land Commission, is essential to navigate the approval process and maintain compliance with the law.

6.8 THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT (EMCA)

The Environmental Management and Co-ordination Act of 1999 as amended in 2015 covers virtually all diverse environmental issues which require a holistic and coordinated approach towards its protection and preservation for the present generation without compromising the interests of the future generation to enjoy the same. Consequently, the amended act provides for the legal regime to regulate, manage, protect and conserve biological diversity resources and access to genetic resources, wetlands, forests, marine and freshwater resources and the ozone layer to name a few.

The Environmental Management and Coordination (Amended) Act, harmonizes the various requirements of the other existing laws and regulations by stipulating that where the provisions of any existing law conflicts with itself, then the provisions of the Environmental Management and Coordination (Amended) Act, shall prevail. This way, the act can minimize any conflicts in enforcement of the various environmental laws and regulations as applied to the relevant sectors. The Environmental Management and Coordination (Amended) Act represents the culmination of a series of initiatives and activities coordinated by Government and stakeholders. It accentuates the right of every person in Kenya to live in a clean and healthy environment and obliges every one to safeguard and enhance the environment. It is the master plan for the environment in Kenya and contains a National Environment Policy, Framework Environmental Legislation and Environmental Strategy.

The Act gives power to the National Environment Management Authority (NEMA) which is a semi-autonomous government agency mandated to exercise general supervision and coordination over all matters relating to the environment and to be the principal instrument of the Government of Kenya in the implementation of all policies relating to the environment. NEMA is the body in charge of ensuring developments adhere to the policies and frameworks set out by the Authority.

The principle Act of 1999 was amended in 2015 to align to the constitution.

The major amendments to EMCA, 2015 are:

The section 4 of EMCA, which established the National Environment Council chaired by the Minister was repealed by the amended Act. Under Section 5 of the Act, the cabinet secretary in charge of the Environment is obligated to perform the functions of the Council that includes formulating policies in line with the Act; setting and prioritizing national goals for the protection of the environment; promotion of cooperation between stakeholders involved in environmental protection and enhancing public participation in the sector.

Section 29 of the EMCA, which established the District and Provincial Environment Committees has been repealed by Section 18 of the amended Act. The committees have been replaced by the county committees whose obligation under the Act are: management of the environment affairs at the county level by developing county environment strategic action

plan every five years and any additional functions prescribed under the Act or as assigned by governor by notice in the gazette.

National Environmental Complaints committee replaced the Public Complains Committee. Section 20 of the amended Act outlines the functions of the National Environmental Complains Committee which are: to investigate allegations or complains related to the environment: prepare annual reports on the state of the environment and undertake public interest litigation on behalf of the citizens in environmental matters.

Section 3A of the amended Act grants any individual right to access information from the Environment Authority, Lead agencies or any other person that relates to implementation of the Act. Matters relating to the environment are to be addressed in the Environment and Land court that is established under the Environment and Land Court Act.

The EMCA act highlights the need for an ESIA which is required for, among other, waste disposal projects, including wastewater treatment plants and sewage treatment plants.

The risk assigned to this project can be classified as risk on the ecological considerations; social risk as households and businesses shall be displaced; Landscape change as it paves way for the project and land use shall alter e.g. multiple use

6.9 REGULATIONS OF THE ENVIRONMENT MANAGEMENT AND COORDINATION ACT

The Act has several regulations that aid in its implementation the relevant regulations are highlighted in the sections below:

6.9.1 Environmental (Impact Assessment and Audit) Regulations 2003

These Regulations stipulate the importance of conducting an ESIA as well as the procedure necessary. The Regulations highlight the various reports and their contents to be submitted to NEMA for licensing. The regulations highlight the ESIA process which includes:

- Submission of a ESIA project report to NEMA for review or licensing
- In some cases, the Authority will request a full study report for some projects for which the applicant will be required to prepare a Terms of Reference and submit a study report.

The project and study reports will be conducted before the implementation of the development in question, the reports will be subject to approval by NEMA, which will provide a license.

The regulations also calls for Environmental auditing and monitoring that will be carried out during the construction or operation of the enterprise, the regulations provide the format of the audit report which will be provided to NEMA.

Amendments made to the regulations in 2019 divides projects, businesses, trade, enterprises, actions or activities into low, medium and high risk. Section 7(1) says that “Every proponent undertaking a project specified in the Second Schedule of the Act as being a low-risk project

or a medium risk project, shall submit to the Authority a summary project report of the likely environmental effect of the project.”

Section 7(2) details the required contents of the report. These include the nature of the project, the location of the project and the potential environmental impacts of the project and the mitigation measures to be taken during and after implementation of the project.

6.9.2 The Environmental Management and Coordination (waste management) Regulation, 2006

The regulations provide details on management (handling, storage, transportation, treatment and disposal) of various waste streams including:

- Domestic waste
- Industrial waste,
- Hazardous and toxic waste
- Pesticides and toxic substances
- Biomedical wastes
- Radioactive waste

Relevant parts of the regulations include:

- Prohibition of any waste disposal on a public highway, street, road, recreation area or in any public place except in designated waste receptacle;
- All waste generator to collect, segregate and dispose such waste in a manner provided for under these regulations;
- All waste generators to minimize waste generated by adopting cleaner production methods;
- All waste transporters to be licensed according to the act;
- All vehicles used to transport waste to be labelled in such a manner as may be directed by the Authority;
- Collection and transportation of the waste to be done in such a manner no to cause scattering of the waste;
- The vehicle and equipment for waste transportation to be in such a manner not to cause scattering of or flowing out of waste;

6.9.3 The Environmental Management and Coordination (Water Quality) Regulations, 2006

These regulations were established under the **Environmental Management and Coordination Act (EMCA), 1999** to protect water resources from pollution and degradation. These regulations set standards for water quality, govern wastewater discharge, and ensure the sustainable management of water bodies.

Key provisions include:

- Prohibiting the discharge of pollutants into water sources beyond permissible limits.

- Requiring permits for effluent discharge from industries and other facilities.
- Mandating regular water quality monitoring and reporting.
- Protecting riparian zones and wetlands from encroachment and contamination.

These regulations help safeguard **public health, ecosystems, and water resources**, ensuring sustainable development and environmental protection.

6.9.4 Physical and Land Use Planning (Development Permission and Development Control) (General) Regulations, 2021

These regulations were introduced to operationalize the **Physical and Land Use Planning Act, 2019** (Act No. 13 of 2019).

Key Highlights of the Regulations:

- **Application for Development Permission:** Individuals intending to erect new buildings or make alterations to existing structures must submit detailed building plans to the relevant authorities. The application should include planning briefs, cadastral plans, architectural designs, and environmental assessments, among other documents.
- **Exemptions:** Certain minor constructions, such as small domestic dog kennels or poultry houses holding fewer than fifty chickens in urban areas, may be exempt from the full application process.
- **Enforcement Actions:** The regulations detail the steps to be taken in cases of contraventions, including the issuance of enforcement notices, avenues for appeal to County Liaison Committees, and judicial processes for non-compliance.
- **Maintenance of Registers:** County Executive Committee Members are mandated to maintain registers of all development permissions granted, ensuring transparency and accountability.
- **Management of Riparian Reserves:** Specific guidelines are provided for the management and measurement of riparian reserves to protect water bodies and their ecosystems.

As per the regulations, the Water Resources Authority conducted a riparian pegging exercise and produced a report confirming that the project site is located within the designated buffer zone and is deemed acceptable (**Appendix 7**)

6.10 WORLD BANK SAFEGUARD POLICIES

6.10.1 Operational Policy (OP) 4.01: Environmental Assessment, 2001

Environmental Assessment is used in the World Bank to identify, avoid, and mitigate the potential negative environmental impacts associated with Bank lending operations. The purpose of Environmental Assessment is to improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people have been properly consulted.

It was established that the Project activities will trigger World Bank Operation Policy (OP 4.01) on Environmental Assessment due to environmental and social impacts arising from the Project as presented in this report.

The project has been rated Category B under the World Bank Operational Policy on Environmental Assessment (OP 4.01). This means that projected impacts will not affect an area broader than the site and facilities subjected to physical work. These impacts are easily reversible through appropriate mitigation measures provided in this assessment. There are incremental costs required to achieve these.

6.10.2 Operational Policy (OP/BP) 4.11: Physical Cultural Resources

The objective of this operational policy is to assist countries in preserving physical cultural resources and avoiding their destruction or damage. PCR are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious (including graveyards and burial sites), aesthetic, or other cultural significance. PCR may be located in urban or rural settings, and may be above ground, underground, or under water. The cultural interest may be at the local, provincial or national level, or within the international community. This policy applies to all projects requiring a category A or B environmental assessment, project located in, or in the vicinity of recognized cultural heritage sites. Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices.

The Consultant did not identify any culturally significant sites or resources that would be affected by the construction of the ablution blocks. However, the project is expected to entail a significant amount of excavation and any items of cultural significance that may be uncovered during the construction will be covered under this Operational and Chance find procedures as described in Appendix C.

6.10.3 World Bank Policy on Access to Information, 2010

The World Bank policy on access to information sets out the policy of the World Bank on public access to information in its possession. This Policy supersedes the World Bank Policy on Disclosure of Information and took effect on July 1, 2010.

This Policy is based on five principles:

- ❖ Maximizing access to information.
- ❖ Setting out a clear list of exceptions.
- ❖ Safeguarding the deliberative process.
- ❖ Providing clear procedures for making information available.
- ❖ Recognizing requesters' right to an appeals process.

In disclosing information related to member countries/borrower in the case of documents prepared or commissioned by a member country/borrower (in this instance, safeguards assessments and plans related to environment, resettlement, and indigenous peoples, OP/BP 4.01, Environmental Assessments, OP/BP 4.10, Indigenous Peoples, and OP/BP 4.12 Involuntary Resettlement); the bank takes the approach that the country/borrower provides

such documents to the Bank with the understanding that the Bank will make them available to the public.

6.11 WORLD BANK GROUP ENVIRONMENTAL, HEALTH AND SAFETY GUIDELINES

These are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). When one or more members of the World Bank Group are involved in a project, these EHS Guidelines are applied as required by their respective policies and standards. These General EHS Guidelines are used in addition to the local guidelines in order to provide mitigation measures for the various environmental and social impacts that will be identified in this report. The relevant guidelines include:

- General EHS guidelines
- EHS guideline for water and sanitation

6.12 INSTITUTIONAL FRAMEWORK

6.12.1 Institutions under the EMCA 1999

The National Environmental Council

The National Environmental Council (the Council) is responsible for policy formulation and directions for the purposes of the Act. The Council also sets national goals and objectives and determines policies and priorities for the protection of the environment.

The National Environmental Management Authority

The responsibility of the National Environmental Management Authority (NEMA) is to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of government in the implementation of all policies relating to the environment.

In addition to NEMA, the Act provides for the establishment and enforcement of environmental quality standards to be set by a technical committee of NEMA known as the Standards and Enforcement Review Committee (SERC).

County and Sub County Environmental Committees

The county and sub county Environmental Committees also contribute to decentralized environmental management and enable the participation of local communities. These environmental committees consist of the following:

- Representatives from all the ministries;
- Representatives from local authorities within the province/district;
- Two representatives from NGO's involved in environmental management in the province/district;
- A representative of each regional development authority in the province/district.

Public Complaints Committee

EMCA also establishes a Public Complaints Committee, which provides the administrative mechanism for addressing environmental harm. The committee has the mandate to investigate complaints relating to environmental damage and degradation. Its members include representatives from the Law Society of Kenya, NGO's and the business community.

6.12.2 Institutions under the Water Act 206

The main functions of the Ministry of Water & Sanitation and Irrigation are to develop and formulate Water Resources Management Policy, Water and Sanitation Services Policy, Water Quality and Pollution Control Policy, Flood Control and Land Reclamation Policy, Waste Water Treatment and Disposal Policy, National Irrigation Policy and a policy on Water Schemes and Community Water Projects.

The relevant institutional framework for water and sanitation in Kenya was set up under the Water Act 2016. Institutions under this Act are presented in the following sections.

6.12.3 Water Resources Authority

The Water Act 2016 provides for a Water Resources Authority (WRA) to manage water in an integrated way. WRA is charged with responsibility for managing, regulating, protecting, apportioning and conserving water resources naturally, including Trans boundary waters.

Some of these powers and functions of WRA include:

- Developing principles, guidelines and procedures for the allocation of water resources;
- Monitoring the national water resources management strategy;
- Receiving and determining applications for permits for water use;
- Monitoring and enforcing conditions attached to permits for water use;
- Regulating and protecting water resources quality from adverse impacts;
- Managing and protecting water catchments

WRA may prosecute any offences arising under the Water Act.

6.12.4 Water Services Regulatory Board and Water Appeals Board

The Water Services Regulatory Board (WSRB) and Water Appeals Board (WAB) are independent institutions to regulate and deal with disputes respectively. The WSRB regulates the seven Water Services Boards in Kenya. The Water Appeals Board is established with the responsibility of hearing and determining appeals concerning a permit or license.

6.12.5 Water Works Development Agencies

In the case of water supply and sewerage, the Act gives responsibility for service delivery to Water Works Development one of which is the Coast Water Works Development Agency (CWWDA). The Agency in turn, retain service provider(s) such as water companies, NGOs, institutions and community owned schemes.

CWWDA's main responsibility is the provision of efficient and economical water and sanitation services to the people of the Coast region. Its area of jurisdiction coincides with the administrative boundaries of the Coast Province. This area covers twelve districts namely: Mombasa, Kilindini, Kilifi, Kaloleni, Kwale, Kinango, Msambweni, Tana River, Tana Delta, Taita, Taveta, Malindi and Lamu districts

6.12.6 Water Service Providers

These are mandated to provide day-to-day service within their areas of responsibility. They include water companies, NGOs, institutions and community owned schemes.

- The Water Company in Kilifi is Kilifi-Mariakani Water and Sewerage Company (KIMAWASCO)

7 ENVIRONMENT AND SOCIAL EFFECTS OF THE PROPOSED PROJECT

This Chapter presents an assessment of the issues likely to arise because of implementation of the proposed Ablution Blocks in Kilifi Town Project Area. An environmental or social impact is any change to the existing condition of the environment caused by human activity or an external influence. Impacts may be:

- Positive (beneficial) or negative (adverse);
- Direct or indirect, long-term or short-term in duration, and wide-spread or local in the extent of their effect.

Impacts are termed cumulative when they add incrementally to existing impacts. In the case of the Project, potential environmental impacts would arise during the construction and operation phases of the Project and at both stages positive and negative impacts would occur.

In general, successful implementation of the project will have high environmental and socio economic benefits to the people and will contribute to the health and wellbeing. Overall, expected negative impacts are related to the construction of the various sanitary measures as well as their general operation. These impacts are localized and not considered significant and long-lasting and can be mitigated through appropriate mitigation measures. The severity and duration of these impacts can be minimized by ensuring that the excavation and construction works are limited to short working sections, and that works are carried out rapidly and efficiently.

7.1 IMPACT IDENTIFICATION

The identification of impacts in the ESIA study generally used the following methods:

- Compilation of a comprehensive list of key environmental impacts. These are such as changes in air and water quality, noise levels, wildlife habitats, bio-diversity, landscape, social and economic systems, cultural heritage, settlement patterns, and employment levels.
- Identification of all the sources of impacts such as dust, spoils, vehicles emissions, water pollution, construction camps, etc. using checklists or questionnaires. This was followed by listing possible receptors in the environment (e.g., crops, communities, and migrant labourers) through surveying the existing environmental and socio-economic conditions and consultation with concerned parties.
- Identifying and quantifying various environmental and socio-economic impacts using checklists, interaction matrices and overlays.

7.2 IMPACT PREDICTION

Prediction of impacts technically characterizes the causes and effects of impacts, and their secondary and synergistic consequences for the environment and the local community. It

examines each impact within a single environmental parameter into its subsequent effects in many disciplines (e.g., deterioration of water quality). It draws on physical, biological, socio-economic, and anthropological data and techniques. In quantifying impacts, it employs socio-cultural models, economic models, and expert judgments.

It is worth noting that as prediction techniques of environmental impacts, by their nature, involve some degree of uncertainty.

7.3 MITIGATION OF IMPACTS

Each predicted adverse impact is evaluated to determine whether it is significant enough to warrant mitigation. This judgment of significance has been based on one or more of the following:

- Comparison with laws, regulations or accepted standards;
- Consultation with the relevant decision makers;
- Reference to present criteria such as protected sites, or endangered species
- Consistency with government policy objectives
- Acceptability to the local community or the public

7.4 IMPACT CATEGORIES

Likely potential areas of concern have been determined and ranked according to the following:

Impact

- Potential environmental impacts which are deemed to be highly significant and need thorough investigation in the ESIA
- Potential environmental impacts that are deemed to be moderately significant, and will require reasonable investigation in the ESIA
- Potential environmental impacts that are deemed low/unlikely to be significant, and will need to be listed, and addressed in some way, but which will not require detailed assessment in the ESIA.

Nature:

- Positive: applies to impacts that have a beneficial economic, environmental or social result, such as additional economic activity or enhancement of the existing environmental conditions.
- Negative: applies to impacts that have a harmful or economical aspect associated with them such as economical cost, loss or degradation of environmental resources.

Effect:

- Direct: applies to impacts which can be clearly and directly attributed to a particular impacting activity.

- Indirect: applies to impacts which may be associated with or subsequent to a particular impacting activity, but which cannot be directly attributed to it.

Time Range:

- Short Term: applies to impacts whose effects on the environment will disappear within a 1-year period, or within the construction phase.
- Medium Term: applies to impacts whose effects on the environment will disappear within a 5-year period following the construction phase.
- Long Term: applies to impacts whose effects on the environment will disappear in a period greater than 5 years following the construction phase.

Reversibility:

- Reversible: applies to impacts whose significance will be reduced and disappear over time (either naturally or artificially), once the impacting activity ceases.
- Irreversible: applies to impacts whose significance will not be reduced nor disappear over time (either naturally or artificially), once the impacting activity ceases.

A characterization of expected impacts is shown in the table below.

Table 7:: Characterization of Negative Impacts in the construction phase

Aspect	Predicted Impact (Construction Phase)	Characterization of Impacts											
		Impact			Nature		Effect		Time Range			Reversibility	
		High	Medium	Low	Positive	Negative	Direct	Indirect	Short Term	Medium Term	Long Term	Reversible	Irreversible
Traffic	Increased traffic along the project routes		X			X	X		X			X	
	Landscape change and Visual Intrusion		X			X		X			X		X
Loss of Structures & Property	Loss of livelihood			X		X	X				X		X
Ambient Air Quality	Increased local pollutant emissions and trace constituents		X			X	X		X			X	
	Increased levels of dust and particle emissions from construction vehicles and equipment		X			X	X		X			X	
oil/water pollution	Contamination of subsurface water	X				X	X			X	X		X
	Surface water pollution from construction wastes		X			X	X		X			X	
Noise and vibrations	Increase of noise and vibration levels due to construction activities and traffic		X			X	X		X			X	

Aspect	Predicted Impact (Construction Phase)	Characterization of Impacts											
		Impact			Nature		Effect		Time Range			Reversibility	
		High	Medium	Low	Positive	Negative	Direct	Indirect	Short Term	Medium Term	Long Term	Reversible	Irreversible
Health & Safety	General construction related health and safety risks for workers		X			X	X		X			X	X
	HIV/AIDS and increased disease risks.	X				X	X	X	X	X	X		X
solid and liquid waste	generation of both solid and liquid waste at the construction camps		X			X	X		X	X	X	X	
Gender	Increased harassment of females within and around the site		X			X	X		X			X	
Crime Management	Increased insecurity around the project sites			X		X		X		X		X	
Child Labour and Protection	Potential for exploitation of child labour		X			X	X		X			X	
Labour influx	Risk of social conflict because of increase in influx population		X			X	X	X		X		X	
GBV/SEA	SEA	X				X	X				X		X

Table 8: Characterization of Operation Phase Impacts

Aspect	Predicted Impact (Operation Phase)	Characterization of Impacts											
		Impact			Nature		Effect		Time Range			Reversibility	
		High	Medium	Low	Positive	Negative	Direct	Indirect	Short Term	Medium Term	Long Term	Reversible	Irreversible
Air Pollution	Increased particulate and gaseous pollutants		X			X	X				X		X
Mosquitos breeding	Possibility of disease transmission		X			X					X	X	
Pollution of ground water sources	Pollution of water sources due to seepage	X				X	X				X	X	
Health & Safety	Operation related health and safety risks for workers and general public	x				x	x		x			x	
Health & Safety	Improvement in public health and sanitation through reduced pollution of the seasonal rivers	X			X		X		X	X	X		
Socio economics	Improvement of local and regional socio-economy	X			X			X			X		
	Employment and job creation during construction and operation phases		X		X		X		X	X	X		
Improved local economy	Money spent treating diseases saved		X		X			X			X		X

Improved quality of life	Elimination of odours resulting from poor waste collection		X		X		X				X		X
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7.5 IMPACTS EMANATING FROM THE PROPOSED PROJECT

The impacts are identified at three stages: -

- Pre- construction/Planning Phase Impacts
- During construction and
- Post-construction (operation phase)

7.5.1 Pre-Construction/Planning Phase Impacts – , s.

The site is within public land owned by the county government of Kilifi as the sites were selected based on the accessibility and the traffic in the location. There will be no displacement whatsoever.

Positive impacts during the planning phase of the project will arise from the planning and design of the project as well as from the stakeholder engagement. The design process involved the participation of the local community and has had the result of improving awareness of the project.

7.5.2 Construction Phase Impacts

Most of the potential environmental and social impacts associated with the construction phase will be negative and temporary, and can be mitigated with the use of standard environmental management procedures. The potential social impacts or nuisance will be those typically associated with construction activities involving vehicles, equipment, and workers.

The predicted impacts of the project include the following:

Positive Impacts

The primary positive impact of the project during the construction phase will be the creation of employment opportunities for the local communities. This will have the effect of;

- ❖ Creating employment for both skilled and unskilled labourers directly involving the project.
- ❖ Creating business opportunities especially for locals as most of them will be involved in small time trades such delivering food to site workers;
- ❖ Acting as a source of livelihood for the community members/the youth who will be used to run the project;
- ❖ Acting as a source of income for those supplying materials for the project.

Negative Impacts

Air Quality

There is expected dust pollution from the site clearance, excavation works and, in some cases, the roads leading to the project sites as well as deviations to reroute traffic if need be. This situation will be mitigated by periodical pouring of water to reduce the harmful effects of dust.

Construction workers at the project construction site will be exposed to high dust levels under hot and dry environmental conditions for many hours each day. However, being a localised project with short construction timelines, such effects may not have serious long-term health implications on the workers.

Mitigation measures;

- Spray water regularly on excavation areas, access roads, and material stockpiles to reduce dust, especially in dry conditions.
- Cover soil and material heaps with tarpaulins or geotextiles to minimize dust dispersion.
- Use enclosed or covered trucks when transporting excavated material.
- Require workers to wear dust masks when working in dusty conditions.

Traffic Congestion

Traffic congestion is anticipated from site related traffic from Contractor vehicles. The project sites in a high population circulation catchment area hence traders and businesspeople will be affected by congestion through increased traffic and interaction between the Contractor’s vehicles and local traffic (motorized and non-motorised traffic). The mitigation measures will be as follows:

- Implement a traffic management plan, including designated routes for construction vehicles.
- Schedule excavation and material transport during off-peak hours to minimize disruption.
- Use traffic controllers and clear signage to direct vehicles and pedestrians safely.
- Engage local authorities to coordinate temporary detours or road-sharing measures.

Solid and Liquid Waste Generation

There is a wide variety of waste generated during construction. This includes debris, domestic and human waste, timber, stones, rock, metals, paper, plastics, etc. The quantity of waste can be substantial and can be both a health hazard and an eyesore. It also poses the potential for contamination of soils and watercourses as a result of improper disposal of liquid and solid waste from construction activities.

Mitigations

- Segregate construction waste into reusable, recyclable, and non-recyclable materials.
- Provide designated collection points for different types of waste (e.g., excavated soil, concrete debris, plastic waste).
- Transport excavated soil to designated disposal sites or reuse it for landscaping and backfilling where possible.
- Ensure proper disposal of human waste from temporary worker sanitation facilities.
- Establish a wastewater management system to handle construction runoff.

Site Related Oil Spills

During construction, oil spills may result from construction site equipment and storage, which may affect the flora, fauna, soils, and surface as well as underground water ways in the area after being swept by rainwater into water courses and seeping into the soil.

If the machinery yard and workshops are not properly protected, birds could be poisoned if they drink contaminated water caused by accidental spillage of oil, petroleum products, solvents and similar category of materials.

Mitigation Measures

- Designate specific fueling and maintenance areas equipped with spill containment measures.
- Store oils, fuels, and lubricants in bunded areas to prevent leakage into soil and water.

- Machine and equipment servicing should be done in designated service stations.
- Train workers on spill response procedures and provide spill containment kits on-site.

Soil-Related Impacts

Accidental oil spills, and petroleum products (amongst other liquid waste) particularly in areas of concentrated activities, may infiltrate into soils and cause soil pollution. This is only possible during the construction phase of the project and the impact is expected to be minor and highly localized, hence the impact is considered insignificant.

Mitigation measures

- Implement erosion control measures such as silt fences and sediment traps to prevent soil loss.
- Stabilize excavation areas with proper shoring techniques to prevent collapse.
- Use geotextile fabrics and replant vegetation on exposed soils after construction.
- Ensure that excavated soil is properly stored and not left in a way that could lead to runoff pollution.

Impacts on Existing Water Resources (Water Quality)

Oil spills, bitumen and grease generation by construction traffic as well as traffic during operation could lead to pollution by altering the chemical and biological characteristics of surface and ground water resources. This may occur when spilled compounds are swept by rain water from the construction sites, traffic routes and contractor's camp and into water courses.

There is potential for contamination of water resources because of improper disposal of liquid and solid waste from construction activities and construction camps. No sources of water, shallow wells or otherwise were identified near the ablution block sites. The impacts on water sources are therefore expected to be minimal.

Mitigation measures

- Construct drainage channels to manage stormwater runoff and prevent contamination of nearby water sources.
- Ensure proper disposal of wastewater from worker facilities to prevent contamination of groundwater.
- Store hazardous materials, such as paints and solvents, in leak-proof containers away from water bodies.
- Conduct regular inspections and water quality monitoring in nearby water sources.

Noise Pollution

Noise generation and vibrations in an otherwise quiet environment from construction machinery and activities could adversely affect the local people. Activities associated with sanitation facility construction will cause increase in noise levels in the vicinity of the construction sites. This impact can be of concern at construction sites within the larger urban environments

Mitigation measures

- Use low-noise construction equipment and regularly maintain machinery to reduce excessive noise.
- Carry out excavation and heavy-duty work during daytime hours to minimize disturbance to nearby communities.
- Install temporary noise barriers or enclosures around noisy equipment if construction is near residential or sensitive areas.
- Provide ear protection (earplugs or earmuffs) for construction workers operating noisy machinery

The operation and maintenance phases of the project will be accompanied by significant increases in traffic (both motorised and non-motorised), which will in turn increase noise levels significantly within the vicinity of the project sites. Generally, construction noise exceeding a noise level of 70 decibels (dB) has significant impacts on surrounding sensitive receptors within 50m of the construction site. These sensitive receptors include, people’s residences, schools and clinics in the area.

Community Occupational Safety and Health Hazards

Construction staff and the public will be exposed to safety hazards arising from construction activities. It is proposed that the projects be located within existing public lands belonging to the county government. Despite this, there is the possibility of disrupting public functions, and houses especially during construction. The project will expose workers to occupational risks due to handling of machinery, construction material and noise, electromechanical works etc. Construction activities of site clearance, excavation, materials delivery, and concrete mixing as well as construction traffic will generate a lot of dust and this may affect the respiratory system of all site users. Construction sites may be a source of both liquid and solid waste. If these wastes are not well disposed these sites may become a breeding ground for disease causing pests such as mosquitoes and rodents.

- **General Safety Hazards** – Secure the worksite with barriers and warning signs, engage the public on risks, and implement an emergency response plan.
- **Occupational Health and Safety Risks** – Provide PPE, train workers on machinery use, control noise exposure, and ensure fall protection measures.
- **Air Quality and Dust Control** – Suppress dust with water, enforce mask usage, and regulate vehicle speeds to reduce airborne particles.
- **Waste Management** – Implement proper waste disposal, encourage recycling, and control pests by covering and timely removing waste.
- **Excavation Safety (Septic Tank & Soak Pit)** – Prevent collapses with shoring, ensure safe entry points, conduct regular inspections, and have emergency protocols in place.

7.5.3 Impacts during Operation & Maintenance

During the operation of the ablution block, the positive impacts greatly outweigh the negative impacts, and with proper maintenance, potential negative impacts can be mitigated.

Positive Environmental and Socio-Economic Impacts

The several positive impacts are summarized below:

- ❖ Improved overall hygiene of the congested areas hence better overall health and reduction of potential water-borne diseases such as bilharzia and cholera.
- ❖ A reduction in health risks that were associated with inadequate access to sanitation services, as a result of improvements in project roads;
- ❖ Economic benefits to the section of the community that shall be selected to run and maintain the project for the rest of the project life hence reduced idleness which in most cases leads to crime and drug abuse.
- ❖ Improved access to sanitation facilities by many private septic facility owners who emit the waste into the environment affecting the natural environment and all who depend on it.
- ❖ Eliminate open defecation on the beach.

Other potential impacts typically associated with operation and maintenance activities are such as:

Generation of Solid Waste

The establishment of an improved sanitation facilities within the park will mostly create benefits but with the provision of such services comes the increase in the generation of solid and liquid waste. When operational, the blocks will generate waste in form of plastics, cartons and wrappings from supplies bought for the maintenance of the ablution blocks.

Mitigation measure

- Implement a waste segregation system to separate plastics, cartons, and organic waste.
- Install labeled waste bins for different types of waste and ensure regular collection.
- Partner with local waste collection and recycling programs to ensure proper disposal.
- Encourage the use of biodegradable cleaning materials to reduce plastic waste.

Waste water management

The ablution block will generate wastewater comprising greywater (from sinks and showers) and blackwater (from toilets and urinals). This wastewater contains organic matter, nutrients, and pathogens, posing potential environmental and public health risks if untreated.

Mitigations measures

- **Septic Tank Installation:** Wastewater from the ablution block will be directed to a septic tank for primary treatment, allowing solids to settle and decompose.
- **Soak Pit System:** Partially treated effluent will flow into a soak pit for safe infiltration into the soil, utilizing natural filtration processes.
- **Regular Maintenance:** The septic tank will be exhausted periodically to prevent overflow and system failure.
- **Water Quality Monitoring:** Periodic testing of surrounding soil and groundwater to check for contamination and ensure environmental compliance.

Operational health and safety hazards

Potential of exposure to safety events during operation activities such as slipping and tripping, exposure to cleaning chemicals, electrical fire hazards etc. Unhygienic practices in the ablution blocks can lead to

potential health hazards and outbreak of diseases such as cholera due to cross contamination among the cleaners and maintenance staff as well as members of the public using the facility

Mitigation measure

- Train staff on safe handling and disposal of cleaning chemicals.
- Conduct routine safety inspections to identify and eliminate slipping/tripping hazards.
- Install proper signage to guide users and warn of potential hazards.
 - Establish a health surveillance system to monitor hygiene-related illnesses.
 - Provide personal protective equipment (PPE) such as gloves, masks, and non-slip boots for cleaners and maintenance staff.

Air Quality

The establishment of any sanitation facility may lead to bad odour and poor air quality if the facilities are not well maintained according to plan. This can be more profound in the case of the ablution blocks, which will definitely affect the immediate surroundings as material involved at the facility is faecal matter.

Mitigation Measure

- Ensure frequent cleaning and maintenance of the ablution blocks to prevent odor buildup.
- Use ventilation systems such as exhaust fans to improve air circulation.
- Implement routine desludging of septic tanks to prevent odor accumulation.
- Use bio-additives or deodorizers in sanitation facilities to control odor.

Mosquito breeding and disease transmission

Mosquito larvae generally live in small, shallow water bodies where disturbance of the surface layer is uncommon. Waste accumulating in the septic tank can provide opportunity for the breeding of vectors. This can also occur due to spillage that may accumulate near the ablution block site during exhaustion of the septic tanks.

Mitigation Measure

- Mosquito breeding and disease transmission
- Ensure septic tanks are tightly sealed to prevent mosquito entry.
- Implement routine monitoring and cleaning of drainage systems to eliminate stagnant water.
- Apply environmentally friendly larvicides if necessary.
- Ensure proper maintenance of waste collection points to prevent water accumulation.

Infiltration into soils, ground water and water supply

Pollution of ground water may occur due to wastewater infiltrating through the soil through the Septic tanks. Steps should be taken to ensure there is minimal infiltration during the early stages of the treatment.

This may occur when waste spilled during exhaustion is swept by rainwater from the ablution block site into water courses. However, no sources of water, shallow wells or otherwise were identified near the ablution block sites. The impact on water sources are therefore expected to be minimal.

Mitigation Measure

- Infiltration into Soils, Groundwater, and Water Supply
- Use properly designed and impermeable septic tanks to prevent leakage.
- Conduct regular inspections to check for leaks and repair any identified issues immediately.
- Ensure proper containment and disposal of waste spilled during desludging.
- Develop an emergency response plan to manage accidental spillages
- Construct soak pits or reed-bed treatment systems to enhance wastewater treatment before infiltration

7.5.4 Cumulative impacts during Operation and maintenance

Cumulative impacts are those that result from the successive, incremental, and/or combined effects of an action, project, or activity when added to other existing, planned, and/or reasonably anticipated future ones. The assessment of cumulative impacts considers the environmental and socio-economic cumulative effects of the Project in combination with other existing, planned and reasonably predictable future projects and development activities in that region.

7.5.5 Impacts during De-Commissioning

De-commissioning of the Project is not envisaged. Project components, however, will be rehabilitated and/or expanded over time having served their useful life as projected by the design engineer to be 30 years. As per NEMA requirements, a decommissioning plan shall be prepared and approved by NEMA at least three months before commencement of decommissioning. As a guide, the following presents assessment of likely decommissioning impacts to be considered.

Table 9; Summary Of Social Impacts And Their Mitigation Measures

Issue	Negative Impacts	Mitigation Measures
Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH)	<ul style="list-style-type: none"> • Increased risk of exploitation and abuse, especially among vulnerable populations. • Tension between workers and community members. • Legal and reputational risks for the project. • Psychological trauma and reduced workplace productivity. 	<ul style="list-style-type: none"> • Conduct awareness and sensitization sessions for all workers and community members. • Enforce strict codes of conduct prohibiting GBV/SEA/SH, with penalties for violations. • Establish a confidential grievance redress mechanism for reporting cases. • Provide gender-sensitive training and hiring processes. • Partner with local NGOs to support survivors and provide referral services.
HIV/AIDS	<ul style="list-style-type: none"> • Increased transmission risk due to interaction between workers and local communities. • Reduced productivity due to illness. • Stigma and discrimination against affected individuals. 	<ul style="list-style-type: none"> • Implement HIV/AIDS awareness and education programs for workers and communities. • Provide voluntary counseling and testing (VCT) services on-site. • Ensure access to preventive measures (e.g., condoms, health screenings). • Encourage a non-discriminatory workplace policy for workers living with HIV/AIDS. • - Collaborate with health agencies for treatment and support services.
Child Labour	<ul style="list-style-type: none"> • Violation of child rights and exploitation of minors. • Risk of workplace injuries and long-term developmental harm to children. 	<ul style="list-style-type: none"> • Strictly enforce zero-tolerance policies on child labour. • Require age verification documents during worker recruitment. • Conduct regular inspections to ensure compliance. • Work with local authorities to report and take action against offenders. • Promote community engagement on child rights and access to education.

Issue	Negative Impacts	Mitigation Measures
	<ul style="list-style-type: none"> • Reputational and legal consequences for the project. 	
Labour Influx	<ul style="list-style-type: none"> • Increased pressure on local resources (housing, water, healthcare, security). • Potential conflict between workers and community members. • Increased risks of GBV, SEA, and crime. • Spread of communicable diseases. 	<ul style="list-style-type: none"> • • Support local employment by prioritizing hiring from the community.

8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

8.1 SIGNIFICANCE OF ESMP

An Environmental and Social Management Plan (ESMP) for developing projects is used to provide a logical framework within which identified negative environmental impacts can be avoided, mitigated and monitored. In addition, the ESMP assigns responsibilities of actions to various actors and provides a timeframe within which mitigation measures and monitoring can be done. The ESMP is a vital output of an Environmental and Social Impact Assessment as it provides a checklist for project monitoring and evaluation. The ESMP outlined below will address the identified potential negative impacts and mitigation measures of the Project.

8.2 PURPOSE AND OBJECTIVES OF ESMP

The specific objectives of the ESMP are to:

- Serve as a guiding document for the environmental and social monitoring activities for the supervising consultant, contractor and the client management including requisite progress reports.
- Provide detailed specifications for the management and mitigation of activities that have the potential to impact negatively on the environment.
- Provide to relevant project personnel regarding procedures for protecting the environment and minimizing environmental effects.
- Document environmental concerns and appropriate protection measures; while ensuring that corrective actions are completed in a timely manner.

8.3 AUDITING OF ESMP

KIMAWASCO and the contractor shall conduct regular audits to the ESMP to ensure that the system for implementation of the ESMP is operating effectively. The audit shall check that a procedure is in place to ensure that:

- The ESMP being used is the up-to-date version;
- Variations to the ESMP and non-compliance and corrective action are documented;
- Appropriate environmental training of personnel is undertaken;
- Emergency procedures are in place and effectively communicated to personnel;
- A register of major incidents (spills, injuries, complaints) is in place and other documentation related to the ESMP; and
- Ensure that appropriate corrective and preventive action is taken by the Contractor once instructions have been issued

8.4 PROJECT IMPLEMENTATION

The programme should incorporate practical timeframes for the construction contract lengths and the periods required for the construction stages.

8.5 THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Mitigation measures have already been discussed in Chapter 7. However, a summary is included in the Environmental and Social Management Plan (ESMP) in Table 8-1. Also considered in this management and monitoring plan are the persons responsible for implementation.

The cost of some of the proposed mitigation measures will have been included in the main engineering Bills of Quantities and therefore need not be included in the Environmental mitigation costs. These costs will also include cost of supervision for implementation of mitigation measures. These costs will be added to the Bill of Quantities as the Environmental Mitigation Cost.

Table 10 shows cost estimates for environmental and social risk mitigation. The brief description of the items is for identification purposes and does not supersede or modify the detailed descriptions of works in other sections of this report.

Table 10: Environmental and Social Management Plan (ESMP)

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
Construction	Increased Traffic hence Congestion	<ul style="list-style-type: none"> • Provision temporary road signs or notices to indicate ongoing works. • Effecting traffic controls to avoid congestion and incidents • Choosing suitable traffic routes/diversions to reduce the impact in the neighbourhood. • Traffic marshals 	Contractor supervised by the Resident Engineer	No additional costs 10,000.00
Construction	Ambient air quality	<ul style="list-style-type: none"> • Use Respiratory Protective Equipment (RPE) like masks on construction crew and all visitors to the site. • Use equipment fitted with water suppression to minimize the amount of dust. • Drivers should be instructed on the benefits of driving practices that reduce both the risk of accidents and fuel consumption, including measured acceleration and driving within safe speed limits; • Vehicles and construction machinery to be properly maintained and to comply with relevant emission standards. • All waste must be transported off- site for processing, not burnt or stored for any longer than is necessary. 	Contractor Resident Engineer	<ul style="list-style-type: none"> • Kshs.8,350 to cater for dust masks for the whole project period for all site users. • Kshs 10,000 for spraying water on roads and excavated surfaces for dust control
Construction	Site Related Oil Spills	<ul style="list-style-type: none"> • The Contractor should ensure that the employees on site are aware of the company procedures for dealing with spills and leaks e.g., using dispersants or adding biological agents to speed up the oil breakdown for the construction machinery though 	Contractor Resident Engineer	Kshs. 45,850 to cater for the safety training seminars throughout the project for one site

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
		<p>induction and safety training (the contractor will propose a method of clean-up which will be subject to approval);</p> <ul style="list-style-type: none"> All vehicles and equipment should be kept in good working order, serviced regularly in accordance to the manufacturers specifications and stored in an area approved by the Resident Engineer/Supervising Consultant; 		
Construction	Soil Related Impacts	<ul style="list-style-type: none"> The valuable top soil containing organic material, nutrients as well as seeds and the soil fauna should be excavated separately and piled in an adequate manner for re-use where applicable. Plan emergency response measures in case of accidental oil spills. 	Contractor Resident Engineers	Kshs 12,500 to cater for accidental oil spills and tests on soil to ensure compliance
Construction	Impacts on Water resources	<ul style="list-style-type: none"> Ensure proper solid and liquid wastes disposal mainly from the construction camps, sites and offices. Ensure proper measures are in place for collection and disposal of spilled oils and lubricants. 	Contractor, Resident Engineer County Water Officer	Costs included in solid and liquid waste management below.
Construction	Noise and vibrations	<ul style="list-style-type: none"> Contractor to agree noise limits/ noise control stations with NEMA and obtain a Construction Noise Permit prior to the commencement of construction work. Positioning Powered Mechanical Equipment (PME) so that noise is directed away from sensitive areas such as the Kilifi Lands offices; 	Contractor Resident Engineer	No additional Costs

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
		<ul style="list-style-type: none"> • Contractor to prepare for approval by KIMAWASCO a Health Management Plan (HMP) detailing means to protect site workers and community from excessive noise and vibrations • Special care should be taken when construction is taking place near sensitive receptors such as schools and hospitals. • To the extent possible, heavy vehicles and equipment should not be used at night across populated areas. • Ensure that construction equipment is operating optimally and with operational noise mufflers where possible. 		
Construction	Community & Occupational Safety & Health	<ul style="list-style-type: none"> • Ensure consistent use of PPE by workforce. The contractor should commit himself to strict implementation of OSHA regulations during construction and operations. • Ensure the installation of barriers like fences around active sites and other locations to prevent access to facilities by unauthorized persons. • The workers should receive requisite training especially on the operation of the machinery and equipment • There should be adequate warning and directional signs. • Ensuring that the prepared code of conduct for staff is followed to prevent accidents. • Develop a site safety action plan detailing safety equipment to be used, emergency procedures, restriction on site, frequency and personnel responsible for safety inspections and controls. • Cordon off unsafe areas • Provide first Aid kit within the construction site. 	Contractor Resident Engineer KIMWASCO	Toolbox meetings and awareness trainings shall be included in the safety trainings listed above. 15,000 for personal protective equipment

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
		<ul style="list-style-type: none"> Creation of awareness of the Grievance Redress Mechanism (GRM) amongst all the stakeholders through public awareness campaigns 		
Construction	Liability for loss of life, injury or damage to private property	<ul style="list-style-type: none"> Recording of all injuries that occur on site in the incident register, corrective actions for their prevention are instigated as appropriate. Contractor to ensure compliance with the Workmen's Compensation Act, ordinance regulations and union agreements. The Contractor to repair any damage done to private property. 	Contractor Resident Engineer	No additional Costs. WIBA and Contractors all Risk Insurance. Allow 50,000.
Construction	HIV & AIDS Impacts	<ul style="list-style-type: none"> Sensitize workers and the surrounding communities on awareness, prevention and management of HIV/AIDS through staff training, awareness campaigns, multimedia and workshops or during community Barazas. Provide information, education and communication. Use of existing clinics to provide VCT services to construction crew and provision of ARVs for vulnerable community members 	Contractor Resident Engineer The County Government KIMAWASCO	20,000.00 to cater for a comprehensive awareness program including VCT services and provision for ARVs throughout the project period.
Construction	Socio-economic impacts	<ul style="list-style-type: none"> Unskilled and skilled (if available) labour to be hired from the local population as far as possible to minimize on influx of non-residents into the community. Use of manual labour during excavation and construction works where possible to ensure more employment of locals and hence ensure project support throughout the construction process. Ensure effective and matching contractual provisions for contractor to manage labour influx. 	Contractor Resident Engineer	No additional cost

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
		<ul style="list-style-type: none"> Sensitize workers and the surrounding community on awareness, prevention and management of HIV / AIDS through staff training, awareness campaigns, multimedia, and workshops or during community Barazas. Use of existing clinics to provide VCT services to construction crew and provision of ARVs for vulnerable community members The Contractor should enforce and maintain a code of conduct for his employees 		
Construction	Child Labour and Protection	<ul style="list-style-type: none"> Ensure no children are employed on site in accordance with the law through adoption of child protection code of conduct Ensure that any child sexual relations offenses among contractors' workers are promptly reported to the police for prosecution. 	Contractor Resident Engineer Local Administration	No additional Costs
Construction	Gender Equity, Sexual Harassment	<ul style="list-style-type: none"> The works contractor should be required, under its contract, to prepare and enforce a No Sexual Harassment and Non-Discrimination Policy, in accordance with national law where applicable. The contractor should prepare and implement a gender action plan. All Workers (Contractor, Supervising Consultant and Client staff involved) to sign Codes of Conduct. 	Contractor Resident Engineer Local Administration	5000.00
Construction	Gender empowerment	<ul style="list-style-type: none"> Ensure equitable distribution of employment opportunities between men and women 	The contractor	100,000.00 to cater for hiring mobile toilets for male and female site.

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
		<ul style="list-style-type: none"> Provide temporary toilets and bathrooms for both male and female workers on site 	The Resident Engineer	
SEA/GBV	Sexual Exploitation and Abuse by project workers against community members.	<ul style="list-style-type: none"> Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will include how the project will ensure necessary steps are in place for: <ul style="list-style-type: none"> Prevention of SEA: including COCs and ongoing sensitization of staff on responsibilities related to the COC and consequences of non-compliance; project-level IEC materials; Response to SEA: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management; Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights; 	Supervision Consultant GBV Expert Local CBO Local NGO	Cost to be met from the contractors' budget Kshs. 25,000

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
		<ul style="list-style-type: none"> o Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistle blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers. 		
Construction	Crime Management	<ul style="list-style-type: none"> • Fencing around project area. • Working with local committees (e.g., “Nyumba Kumi Initiative) to provide security within the site in addition to the Contractor’s own security. • Removing any employee who persists in any misconduct or lack of care, carries out duties incompetently or negligently, fails to conform to any provisions of the contract, or persists in any conduct which is prejudicial to safety, health, or the protection of the environment. • Taking all reasonable precautions to prevent unlawful, riotous or disorderly conduct by or amongst the contractor’s personnel, and to preserve peace and protection of persons and property on and near the site. • Prohibiting alcohol, drugs, arms, and ammunition on the worksite among personnel. 	Contractor Resident Engineer	60,000.00 to hire local security company

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
		<ul style="list-style-type: none"> The contractor and Supervision Consultant should register in a log all events of a criminal nature that occur at the worksite. The contractor and Supervision Consultant should report all activities of a criminal nature on the worksite or by the contractor's employees (whether on or off the worksite) to the police and undertake the necessary follow-up. Crime reports should include nature of the offense, location, date, time, and all other pertinent details. 		
Construction	Generation of solid and liquid waste	<ul style="list-style-type: none"> Sorting of all wastes collected by the dustbins before transporting to the relevant facilities. Continuous removal of solid waste to prevent overloading of the drainage system to ensure its efficiency All transporters used should have a license from NEMA. 	KIMAWASCO Contractor	<p>2500.00 to cater for solid waste management such as colour coded bins (red-hazardous, yellow-recyclable & green-organic); as well as sealed collection drums for used oil disposal.</p> <p>4,170.00 cater for the capital of acquiring dustbins to be used during the operation period of the project. Other costs to be included in the O&M Manual.</p>
Operation	Air Quality	<ul style="list-style-type: none"> Provide adequate framework for disposal of septic waste from ablution block and an adequate provision for the sludge drying beds to handle the waste generated by the ablution blocks. 	KIMAWASCO	1000 per month for water bills

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
		<ul style="list-style-type: none"> • Constant monitoring of the behaviour of the ablution blocks to prevent overflow of septic waste which may render the facility toxic. • Ensure reliable water supply to the ablution blocks and regular cleaning • Odours generated by the facility can be controlled by use of suppressants. 		
Operation	Solid and Liquid waste management	<ul style="list-style-type: none"> ▪ Maintenance of proper hygiene in ablution blocks • Regular emptying of attached septic tank to prevent filling and overflows 	KIMAWASCO	20,000.00 for exhauster services and 10000 for cleaners
Operation	Mosquito breeding and disease transmission	<ul style="list-style-type: none"> ▪ Eliminate spillage and all unnecessary standing water. ▪ Ensure that the covers to the septic tank manholes are maintained properly closed at all times. ▪ The septic tank should be emptied regularly to avoid it filling up and overflowing 	KIMAWASCO	No additional costs
Operation	Safety risks	<ul style="list-style-type: none"> ▪ Formulate and enforce standard operation and maintenance procedures including for cleaning and provide requisite PPE to the cleaners and operations and maintenance staff ▪ Display hygiene posters to create awareness on good hygiene practices ▪ Undertake workers training and awareness on the occupation safety and health risks and the SOPs ▪ Ensure all works and storage areas are tidy, all material deliveries shall be planned to minimize accumulated materials ▪ First aid kit with adhesive bandages, antibiotic ointment, antiseptic 	KIMAWASCO	No additional costs

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (KShs.)
		wipes, aspirin, non-latex gloves, scissors, thermometer, etc. shall be made available <ul style="list-style-type: none"> ▪ Conduct regular medical surveillance for cleaning and O&M staff in line with the Medical Examination rules 		
Operation	Contamination Risk: If not properly maintained, soak pit will contaminate ground water especially at the project site where the highly porous and permeable coral limestone is the dominant rock	<ul style="list-style-type: none"> ▪ Ensure proper maintenance Plan: Implement regular maintenance checks on the soak pit system to prevent clogging and ensure proper functioning ▪ Environmental Monitoring: Regularly Monitor ground water quality effluent from the septic tank and nearby eco systems for signs of contamination or degradation 	KIMAWASCO	No additional Costs
Operation	Maintenance Schedule	<ul style="list-style-type: none"> ▪ Remove sludge, check for blockages and inspect inlet pipes on monthly basis ▪ Test ground water quality for contaminants like nitrates or pathogens annually 	KIMAWASCO	No additional Costs

The estimated cost for implementing the ESMP during construction is Kshs. **439,700.00.00**(Four Hundred Thirty Nine Thousand Seven Hundred shillings only) for the site.

8.6 ENVIRONMENTAL AND SOCIAL MONITORING PLAN

The purpose of the Environmental and Social Monitoring Plan for the proposed project is to initiate a mechanism for implementing mitigation measures for the potential negative environmental impacts and monitor the efficiency of these mitigation measures based on relevant environmental indicators. The Environmental and Social Management Plan identified certain roles and responsibilities for different stakeholders for implementation, supervision and monitoring. The objectives of the Environmental and Social Monitoring Plan therefore are:

- To ensure that the recommendations in the approved report are adhered to by the various institutions
- To ensure that the environmental and social mitigation and their enhancement actions are well understood and communicated to all involved stakeholders.
- To ensure that the proposed environmental and social remedial measures are implemented during the project execution stage.
- To evaluate the effectiveness of environmental and social remedial measures.
- To evaluate the effectiveness of various evaluation techniques and procedures.
- To provide the Proponent and the relevant Lead Agencies with a framework to confirm compliance with relevant laws and regulations.

Conversely, environmental monitoring provides feedback about the actual environmental impacts of the project. Monitoring results help judge the success of mitigation measures in protecting the environment.

Reporting

During implementation, the Contractor will report monthly to the Project management team comprising of the Consultant and KIMAWASCO on progress of implementation of the ESHS provisions detailed in this report.

In accordance with the requirement of the Occupational Health and Safety Act (OSHA) 2007, EMCA 1999 and its 2015 revisions, and World Bank EHS guidelines, all ESHS incidents, accidents, dangerous occurrences including occupational diseases shall be promptly reported to the respective regulatory institution in the prescribed manner and template outlined in DOSH ML/DOSH/FORM 1 and further to the World Bank. Records of All incidents shall also be maintained and available for inspection through the project implementation phase. Investigation shall be conducted, and a corrective action plan developed for every reportable incident to prevent recurrence.

Table 11: Proposed Environmental and Social Monitoring Plan

Phase	Environmental Component	Performance Indicators	Monitoring Requirements	Frequency of monitoring	Responsibility	Corrective Action
Construction	Increased Traffic hence Congestion	<ul style="list-style-type: none"> Level of traffic generated. Provision and maintenance of adequate signages to reroute vehicles. 	<ul style="list-style-type: none"> Physical inspection Number of complaints 	Weekly	Environmental Supervisor Contractor	Implement recommendations
Construction	Ambient air quality	<ul style="list-style-type: none"> Level of dust generated. Provision of PPE. Respiratory infections reported in the nearby health facility. 	<ul style="list-style-type: none"> Physical inspection Interview residents including workers Liaise with other stakeholders 	Weekly	Environmental Supervisor	Implement recommendations
Construction	Site Related Oil Spills	<ul style="list-style-type: none"> Presence of oil spillage due to the construction activities. Availability of approved plan to cater for oil spills 	<ul style="list-style-type: none"> Physical inspection Number of complaints 	Monthly	Environmental Supervisor Contractor	Implement recommendations
Construction	Soil	<ul style="list-style-type: none"> Presence of oil spills on the construction site. Flow of wastewater on the ground surface. 	<ul style="list-style-type: none"> Physical inspection Number of complaints 	Monthly	Environmental Supervisor Contractor	Implement recommendations
Construction	Impacts on Water resources	<ul style="list-style-type: none"> Presence of solid and liquid waste in water resources. Evidence of oil spills in water resources. 	<ul style="list-style-type: none"> Physical inspection Number of complaints 	Monthly	Environmental Supervisor Contractor	Implement recommendations

Phase	Environmental Component	Performance Indicators	Monitoring Requirements	Frequency of monitoring	Responsibility	Corrective Action
Construction	Noise and vibrations	<ul style="list-style-type: none"> • Level of noise generated. • Provision of PPE. • Compliance with existing noise standard issued by NEMA. 	<ul style="list-style-type: none"> • Liaise with other stakeholders. • Documentation on complaints about noise 	Monthly	Environmental Supervisor	Implement recommendations
Construction	Public & Occupational Safety & Health (including Liability for loss of life, injury)	<ul style="list-style-type: none"> • Prevalence rates of common diseases. • Provision of condoms, contraceptives and mosquito nets. • Conduction of campaign meetings on transmission of diseases like HIV/AIDS and other STDs. • Availability of adequate solid waste bins. • System of safe disposal of both solid and liquid waste in place. • Presence of barriers to restrict access to facility by unauthorised persons • Availability of first aid facilities. • Availability of worker insurance for the contractor's personnel 	<ul style="list-style-type: none"> • Physical inspection • Documentation Number of complaints • Interview with residents 	Weekly	Environmental Supervisor	Investigate non-compliance and make recommendations Implement recommendations

Phase	Environmental Component	Performance Indicators	Monitoring Requirements	Frequency of monitoring	Responsibility	Corrective Action
		<ul style="list-style-type: none"> Outpatient attendance registers. Compliance with the Health and Safety Act. 				
Construction	Liability for loss of life, injury or damage to private property	<ul style="list-style-type: none"> Record of accidents and damages done to property outside the demarcated project area Clear demarcation of working Availability of approved site safety plan 	<ul style="list-style-type: none"> Review of records Interviews with staff and local community. 	Monthly	Environmental Supervisor	Implement recommendations
Construction	HIV & AIDS	<ul style="list-style-type: none"> Number campaign meetings on transmission of diseases like HIV/AIDS and other STDs. Number of condom dispensers within the site. Number of ARVs provided to vulnerable persons 	<ul style="list-style-type: none"> Inspection of HIV/AIDS prevention services within the site. Number of condoms, ARVs provided. 	Monthly	Contractor Environmental Supervisor	Implement recommendations
Construction	Gender Empowerment	<ul style="list-style-type: none"> Number of female employees Number of male and female toilets 	<ul style="list-style-type: none"> Review of company staff records. Physical Inspection 	Monthly	Environmental Supervisor	Implement recommendations
Construction	Child Labour and Protection	<ul style="list-style-type: none"> Code of conduct Record of employees including IDs 	<ul style="list-style-type: none"> Review of records Interviews with staff and local community 	Monthly	Environmental Supervisor	Implement recommendations

Phase	Environmental Component	Performance Indicators	Monitoring Requirements	Frequency of monitoring	Responsibility	Corrective Action
Construction	Gender Equity, Sexual Harassment	<ul style="list-style-type: none"> • Presence of Contractor's SH Policy • Number of trainings for staff on SH • Number of complaints • HR trained in SH 	<ul style="list-style-type: none"> • Review of grievance redress forms. • Interviews with local community 	Monthly	Environmental Supervisor	Implement recommendations
Construction	SEA	<ul style="list-style-type: none"> • SEA Action Plan • Code of Conduct • Number of staff trainings • SEA FP • Community Liaison Officer trained in PSEA • IEC materials for worker's sites and community • Discrete SEA reporting pathway • Relevant policies, e.g. investigations and discipline and whistle-blower protection • Monthly minutes from SEA coordination meetings 	<ul style="list-style-type: none"> • Review SEA action Plan • Self-aware staff • SEA incident Reports 	Monthly	Community Liaison Officer Trained SEA/GBV Officer	Implement recommendations
Construction	Crime Management	<ul style="list-style-type: none"> • Number of reported crimes • Number of complaints 	<ul style="list-style-type: none"> • Review of records • Interviews with staff and local community 	Monthly	Environmental Supervisor	Implement recommendations
Construction	Flora and fauna/Biodiversit	<ul style="list-style-type: none"> • Amount of vegetation (Number of trees) removed 	<ul style="list-style-type: none"> • Documentation of uprooted trees • Physical Inspection 	Bi-Monthly	Environmental Supervisor	Implement recommendations

Phase	Environmental Component	Performance Indicators	Monitoring Requirements	Frequency of monitoring	Responsibility	Corrective Action
	y within the project site	and those planted as part as site landscaping				
Construction & Operation	Solid & Liquid waste	<ul style="list-style-type: none"> Scattered litter Flow of wastewater on the ground surface. Provision of sanitary facilities to the construction crews. Pollution of the underground water sources 	<ul style="list-style-type: none"> Physical inspection Number of complaints. 	Monthly	Environmental Supervisor Contractor	Implement recommendations
Operation	Air Quality	<ul style="list-style-type: none"> Status of housekeeping at the ablution blocks Availability of regular water supply Level of odour generated and any associated complaints. 	<ul style="list-style-type: none"> Physical inspection Interview residents including workers Liaise with other stakeholders 	Quarterly	Environmental Supervisor	Implement recommendations
Operation	Safety risks for operation workers	<ul style="list-style-type: none"> health and safety incidents on the sites Medical examination reports Staff induction and training records 	<ul style="list-style-type: none"> Standard operation and maintenance procedures Reports on injury to workers on the site Medical examination records 	Quarterly	Environmental Supervisor	Implement recommendations

8.7 GRIEVANCE REDRESS MECHANISM

A grievance redress mechanism (GRM) is presented below to ensure the project's social and environmental safeguards are adhered to. The purpose of the GRM is to record and address any complaints that may arise during the implementation phase of the project. The GRM is designed to address concerns and complaints promptly and transparently with no impacts (cost, discrimination) on project affected persons. The GRM works within existing legal and cultural frameworks, providing an additional opportunity to resolve grievances at the local, project level.

The key objectives of the grievance redress mechanism are:

- Record, categorize and prioritize the grievances;
- Settle the grievances via consultation with all stakeholders (and inform those stakeholders of the solutions)
- Forward any unresolved cases to the relevant authority.

This procedure will not replace the existing legal system for dealing with grievances, however the affected persons and interested parties will be persuaded to use the proposed mechanism, and make use of the legal redress as a last resort at their own cost.

8.7.1 Possible Sources of Grievances

Local communities and stakeholders may always raise a grievance to the KIMAWASCO or County representatives on site and to the area chiefs. The complainants should be informed about this possibility and contact information of the respective organizations at relevant levels should be made available. Many of the factors that may give rise to conflict between complainants and proposed project investments can be a source of conflict with non-complainants as well. These include:

- Inadequate engagement or decision-making processes
- Inequitable distribution of benefits
- Broken promises and unmet expectations of benefits
- Failing to generate opportunities for employment, training, supply or community development
- Environmental degradation
- Disruption to amenities and lifestyle
- Loss of livelihood
- Violation of human rights
- Social dislocation

In addition, however, there are some contextual factors that have salience for vulnerable and marginalized people and their relations with project investments. For example, a lack of respect (perceived or actual for indigenous customary rights or culture, history and spirituality), is likely to trigger a strong reaction. Similarly, issues around access to and control of land and the recognition of sovereignty are very important

for many indigenous people and can lead to serious conflict if they are not handled sensitively and with due respect for the rights of affected groups.

8.7.2 Committees Involved in the Grievance Redress Process and the Management Process

Grievance Redress Committees (GRC)

These committees will be based in each administrative location. It will be established by committee through stakeholder consultative meetings chaired by a representative of implementing agency KIMAWASCO/he will be assisted by the locational chief, who is the government local representative at the location. The committee will be meeting in the local chief's office or the resident's association office and will be made up of:

- The locational Chief, who is the national Government administrative representative at the locational unit and who deals with community disputes will represent the Government in the local Community/Department's Representative.
- Assistant Chiefs, who support the locational Chief and Government in managing local community disputes in village units will form membership of the team.
- Youth representative, elected by youths, will represent youth related concerns
- Vulnerable persons' representative will deal and represent vulnerable persons issues
- Business representative, will represent business people's concerns
- CBO representatives
- The Contractor's Community Liaison Officer

8.7.3 Grievance Redress Procedure

The grievance redress mechanisms are designed with the objective of solving disputes at the earliest possible time which will be in the interest of all parties concerned and therefore implicitly discourages referring such matters to the law courts for resolution which would otherwise take a considerably longer time. If the committee cannot adequately address the grievance the affected person will make use of the legal redress as a last resort at their own cost.

If a complaint pattern emerges, the implementing agency which is KIMAWASCO, and the committee will discuss possible remedial measures. The above institutions will be required to give advice concerning the need for revisions of procedures. Once they agree on necessary and appropriate changes, then a written description of the changed process will be made

The procedure for managing grievances under will be as follows:

- 1) The affected person will file his/ her grievance, relating to any issue associated with the contractor's activities, in writing to the committee, through a complaints box placed at the local chief's office or physically to a member of the GRC. The grievance note should be signed and dated by the aggrieved person. A selected member of the Committee will act as the Project Liaison Officer (PLO) .

- 2) The Contractor's Community Liaison Officer (CLO) will be working in collaboration with the GRC. Where the affected person is unable to write, the CLO will write the note on the aggrieved person's behalf. Any informal grievances will also be documented by the Project Liaison officer. The note should be embossed with aggrieved person's signature or thumbprint. A sample grievance form is provided.
- 3) The Community Liaison Officer will consult then committee to determine the validity of claims. If valid, the Committee will notify the complainant that s/he will be assisted and a response will be given in the due time.
- 4) The GRC will meet and respond within 14 days during which time any meetings and discussions to be held with the aggrieved person will be conducted. If the grievance relates to valuation of assets, a second or even a third valuation will be undertaken, at the approval of GRC until it is accepted by both parties. These should be undertaken by separate independent valuers than the person who carried out the initial valuation. The more valuations that are required to achieve an agreement by both parties, the longer the process will take. In this case, the aggrieved person must be notified by the Project Liaison Officer that his/her complaint is being considered.
- 5) If the complainant's claim is rejected by the Committees, the Community Liaison Officer will assist the aggrieved person to take the matter to the Committee. The committee will look at the complaint raised by the aggrieved party and provide direction, explanation and a response. Sometimes, it will necessitate the aggrieved person to present him or herself to GRC to explain him/herself. All efforts will be made to try and reach some consensus with the complainant.
- 6) If the aggrieved person does not receive a response or is not satisfied with the outcome by GRC within the agreed time, s/he may lodge his/her grievance to the County NEMA Office, also mandated to help resolve such matters). If requested, or deemed necessary by the project Committee, the Community Liaison Officer will assist the aggrieved person in this matter.
- 7) Where the matters cannot be resolved through local routes, the grievance will be referred to the NEMA tribunal. The GRC will help at all stages to the aggrieved person to facilitate resolution of their complaint and ensure that the matter is addressed in the optimal way possible.

After the process, a grievance resolution form will be filled to document the resolution made. A sample of the form is provided below:

The Community Liaison officer will ensure that each complaint has an individual reference number, and is appropriately tracked and recorded actions are completed. This will be done via a grievance log which will also contain a record of the person responsible for an individual complaint, and records dates for the following events:

- ⊕ Date the complaint was reported;
- ⊕ Date the grievance log was uploaded onto the project database;
- ⊕ Date information on proposed corrective action sent to complainant (if appropriate);
- ⊕ The date the complaint was closed out; and
- ⊕ Date response was sent to complainant.
- ⊕ Nature and type of grievances being raised

The entire grievance redress procedure can be summarized in the figure below

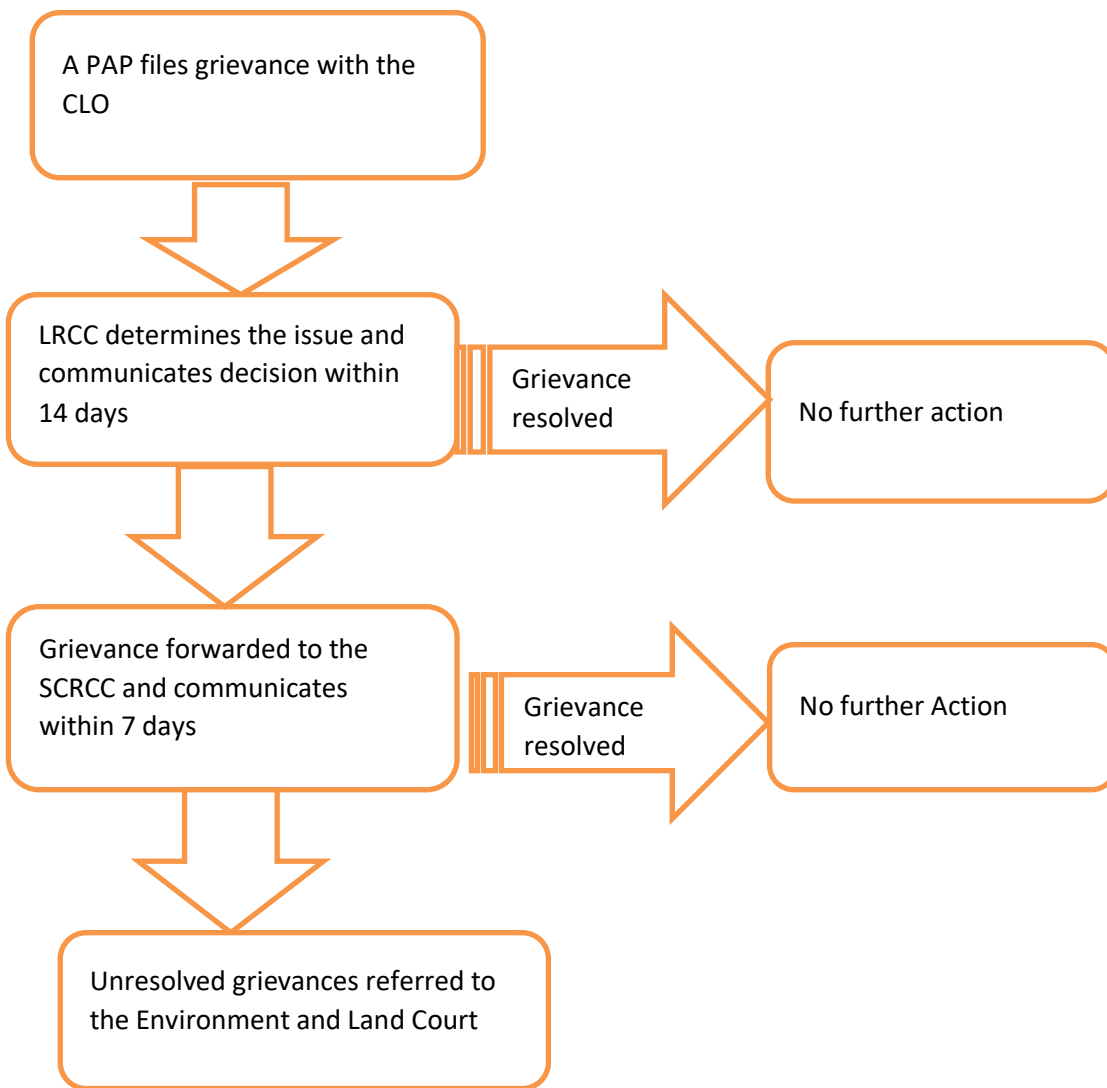


Figure 9: Grievance Redress Procedure

8.8 INSTITUTIONAL FRAMEWORK FOR IMPLEMENTATION OF THE PROJECT AND THE ESMP

The organizational structure elaborates on the role of various stakeholders in administering the ESMP. It further clarifies the role of GRC and stakeholders and their responsibility in the exercise in relation to ESIA. The table below shows the various institutions and their role in the implementation of the ESMP.

Table 12: Institutional Framework for ESMP

Name of Institution	Role of Institution
Ministry of Water and Sanitation	<ul style="list-style-type: none"> • Central agency responsible for holding all information on the ESIA • Mobilization of financial resources from Government/ County Governments for resettlement and compensation purposes of the approved ESIA
County Government of Kilifi	Responsible for providing land for the project as per the integrated spatial plans.
KIMAWASCO	<ul style="list-style-type: none"> • Responsible for contracting the works, and supervising and managing the contractor, under the project • Responsible for day-to-day coordination and implementation of the project. • Oversee the contractor's work • Seek approval from NLC for the acquisition of any parcels required for the sub-projects. • Assist in the establishment of the GRC • Establish the GRC operations. • Monitor the ESMP implementation.
NEMA	<ul style="list-style-type: none"> • Provide approval of the ESIA report • Review and provide a NEMA license for the ESMP. • Be part of the GRC and participate in the resolution of grievances. • Escalate unsolvable grievances to the tribunal.
Contractor	<ul style="list-style-type: none"> • Implementing the project • To ensure strict compliance environmental specifications of this ESMP
Supervision Consultant	<ul style="list-style-type: none"> • Ensure that the proposed ESMP is up to date and is being used by the contractor. • Periodic audits of the ESMP will have to be done to ensure that its performance is as expected.

9. CONCLUSIONS AND RECOMMENDATIONS

In summary, the implementation of the proposed ablution block project as an immediate measure to cater especially for the needs of the community under the WSDP program in Kilifi Town will boost the sanitation aspect of the Town through improved overall hygiene. Since the facilities' sites are within high catchment areas, they will also assist passers-by who often get stranded when in need of such a facility. Furthermore, it is vital for the facilities to be properly maintained as per the guidelines that will be provided by the WSP-KIMAWASCO in order for them to survive the test of time. While there are some public toilet facilities within the town, they are not adequate to cater for the growing needs of the ballooning population

The negative impacts identified in this report during all the phases of the project including waste generation, air pollution, noise pollution, occupational health and safety impacts, community health and safety impacts, traffic, labour influx and gender impacts will be limited to the specific project location and can be readily mitigated through the measures proposed in the ESMP as well as the preparation and implementation of safeguard plans including but not limited to:

- Occupational Safety and Health Plan
- Waste Management Plan
- Labour influx strategy
- Gender-based violence plan
- SEA/SH prevention action plan
- Child protection strategy
- Employment plans
- Decommissioning Plan
- Hazard Material Management Plan

Other plans to aid the safe project implementation can be included as the project continues.

In addition, the recommendations from the public consultation and participation process were incorporated into the findings of this report, some of the major issues addressed in the public participation include how the facility shall be maintained during the operation of the project as well as the water scarcity concerns among the locals within the project area. The local community members consulted also expressed concern that the Western type toilets proposed in the design would not be appropriate for a public toilet. They requested that Eastern type squatting toilets be installed instead as these would be easier to clean and to maintain. Therefore, it is recommended that the eastern type squatting toilet be adopted while the English type only retained in few toilets to serve persons living with physical disabilities.

This report concludes that the short-term benefits of the project will be realized once the project is fully implemented according to plan. However, the town in its entirety require several additional ablution blocks notably in public institutions such as the hospitals.

The project has been rated Category B under the World Bank Operational Policy on Environmental Assessment (OP 4.01). This means that projected impacts will not affect an area broader than the site and

facilities subjected to the physical works. These impacts are easily reversible through appropriate mitigation measures provided in this assessment. There are incremental costs required to achieve these.

REFERENCES

1. Final Waste Water Master Plan for Kilifi County – MIPB and Partners Consulting Engineer
2. Republic of Kenya, Environmental Management and Coordination Act (EMCA, Cap 387), Government Printer, Nairobi
3. Republic of Kenya, Water Act (2016), Government Printer, Nairobi
4. Republic of Kenya, Public Health Act, Cap 242, Government Printer, Nairobi.
5. Republic of Kenya, Environmental Impact Assessment/Audit Regulations 2003, (Legal Notice No.101) Government Printer, Nairobi
6. The Constitution of Kenya, 2010
7. The Land Act, No. 6 of 2012
8. The Physical and Land use Planning Act, of 2019
9. The Occupational Health and Safety Act, 2007
10. The HIV and AIDS Prevention and Control Act, No. 14 of 2006
11. The Sexual Offences Act, No. 3 of 2006
12. The County Governments Act, No. 17 of 2012
13. International Finance Corporation and World Bank Environmental, Health and Safety (EHS) Guidelines

APPENDIX 1: PUBLIC PARTICIPATION NOTICE



KIMAWASCO
KILIFI MARIAKANI WATER AND
SEWERAGE COMPANY LIMITED

Call: 0727-110 711 / 0737-442 525
Email: info@kilifiwater.co.ke
Website: www.kilifiwater.co.ke
P.o. Box 275-80108 KILIFI

Our Ref: KMWSC/MD CORR/VOL.II/264

9th August 2024

THE CHIEF,
MINISTRY OF INTERIOR COORDINATION,
KILIFI




**RE: PUBLIC PARTICIPATION FOR THE CONSTRUCTION OF
ABLUTION BLOCK AT MAZINGIRA SITE**

The subject matter refers.

Following the acquisition of Mazingira site to construct a modern ablu-
tion block, KIMAWASCO requests for your support to mobilize the public for a
public participation session on **12th August, 2024**. This is required to ensure the
community participate in public decisions and collaborate in implementation of
this project.

Yours faithfully

For and on behalf of Kilifi-Mariakani Water and Sewerage Company,


Pascal Dume Jira
MANAGING DIRECTOR

C.C: TOM/WSDP PROJECT COORDINATOR
/SAFEGUARDS OFFICER

APPENDIX 2: WATER RESOURCE AUTHORITY REPORT



WATER RESOURCES AUTHORITY

Coastal Athi Sub Region,
P.O. Box 41090 – 80100,
Mombasa– Kenya.

Tel: 0797545995
Email: mombasawra2018@gmail.com
Website: www.wra.or.ke

WRA/ACA/CA/EIA/3/9/Vol. 2(220)

Date: 12th February 2025

The County Director,
National Environment Management Authority
KFS Building, off Bofa Rd
P. O. Box 247
Kilifi

RE: SUMMARY PROJECT REPORT FOR ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED CONSTRUCTION OF KILIFI MAZINGIRA PARK ABLUTION BLOCK

The above project report refers: After evaluation and a subsequent site visit, the comments are hereby provided.

Project Description

The proponent intends to build one (1) ablution block. The Ablution Block will comprise of six (6) toilets and two (2) Shower Rooms with an equal number for each gender i.e., Ladies and Gents. The allocated number of toilets in each Ablution Block ensures the provision of sufficient service levels for the target population 720 persons. A septic tank with a holding capacity of 16 m³ is to be provided at each site for storage and partial treatment of sewage. The septic tank will require desludging after every three (3) months with septage disposal at a proposed Sludge Handling Facility, to be implemented as part of the immediate sanitation intervention. In addition, a 5,000-litre water tank mounted on a 3.5m high reinforced concrete tower within the facility is proposed to provide 3-day storage of potable water. The water will be supplied to the ablution block by KIMAWSCO through the existing pipe network.

Project Site

Mazingira site is located within Kilifi town adjacent of the Indian Ocean along the Kilifi Creek. The area being public park has very high human traffic but has no sanitation facility. The distance measured from the edge of the cliff to the site is 60 meters and hence it is not within riparian reserve of the Indian Ocean. The site is geo-referenced X-595483, Y-9598074 Alt 18M.

S/NO	THEMATIC AREAS	COMMENTS
1	Suitability of project site	1) The site is suitable for the project of construction of ablution a) Proximity to Users: The site is easily accessible to the intended users because (it's near a beach and public space).

		<p>b) Safety: from the observation its free from hazards like flooding and landslides</p> <p>c) Transportation: The site is reachable by foot and vehicle, there is adjoining road connecting the area to the site.</p>
2	Identification of potential impact	<ul style="list-style-type: none"> Contamination Risk: If not properly maintained, soak pit will contaminate groundwater especially at the project site where the highly porous and permeable coral limestone is the dominant rock.
3	Identification of appropriate mitigation Measures	<ul style="list-style-type: none"> Maintenance Plan: Implement regular maintenance checks on the soak pit system to prevent clogging and ensure proper functioning. Environmental Monitoring: Regularly monitor groundwater quality Effluent from the septic tank and nearby ecosystems for signs of contamination or degradation.
4	Consideration of alternative site, Technologies and materials	No alternative site viable due to the limited availability of public land and no other cheap technology to treat effluent at the site
5	Adequacy of EMP	<p>The EMP is not adequate</p> <p>No Maintenance Schedule:</p> <p>Monthly: Remove sludge, check for blockages, and inspect inlet pipes</p> <p>Annual: Test groundwater quality for contaminants like nitrates or pathogens.</p>
6	Any other relevant information from the report	There is detailed engineering drawing plan of ablution block but no drawing/ design for the of the soak pit.
7	Sectoral concerns	<ol style="list-style-type: none"> No comments on groundwater monitoring. The proposed site is not within the riparian reserve.

In reference to the above observations, this office recommends that the project be licensed but under conditions as indicated in thematic area (7) above and other management options as indicated in this report.

Susan Mwangi
Ag. Sub-Basin Area Coordinator

APPENDIX 3: IMPLEMENTATION COST OF ONE ABLUTION BLOCK

WATER AND SANITATION SERVICE IMPROVEMENT PROJECT-(WSDP)		
CONSTRUCTION OF ABLUTION BLOCKS		
CONTRACT NO. KE-KIMAWASCO-459000-CW-DIR		BILL
NO.2 ABLUTION BLOCK 1Nr		
ITEM No.	DESCRIPTION	AMOUNT
1	BILL NO. 2	9,979,650.00


**TECHNICAL & OPERATIONS
MANAGER**
22 NOV 2024
KIMAWASCO
P.O. Box 275 - 80108, KILIFI

APPENDIX 4: PUBLIC CONSULTATION MEETING MINUTES



KIMAWASCO
KILIFI MARIAKANI WATER AND
SEWERAGE COMPANY LIMITED

Call: 0727-110 711 / 0737-442 525

Email: info@kilifiwater.co.ke

Website: www.kilifiwater.co.ke

P.o. Box 275-80108 KILIFI

PUBLIC PARTICIPATION MEETING FOR THE PROPOSED CONSTRUCTION OF ABLUTION BLOCK AT MAZINGIRA PARK SITE ON 12TH AUGUST ,2024

AGENDA

1. Introduction
2. Projects progress
3. A.O.B

Item Nr	Description
1.	<p><u>Introduction And Agenda</u></p> <p>The meeting was chaired by the Chief, who welcomed all participants to the meeting followed by self-introduction by all members present. The Chairperson then invited the Client -KIMAWSCO to lead the public participation meeting</p>
2.	<p>Kilifi Mariakani Water and sewerage company has received funding from the World Bank to implement the following projects</p> <ol style="list-style-type: none">1. Water Distribution in Mtwapa and Kilifi2. Sanitation projects<ol style="list-style-type: none">a) Construction of 2no. Ablution Blocks andb) Construction of 2no. Sludge Treatment facilities

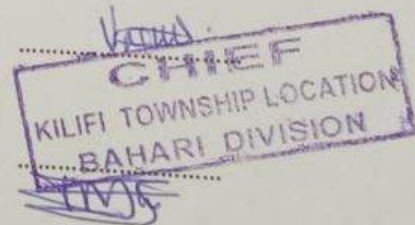
Item Nr	Description
	<p><u>Ablution Blocks Project Components</u></p> <p>At present, Kilifi Town has no sewerage system. The use of on-plot sanitation systems such as pit latrines and septic tanks for disposal of effluent is prevalent. Generally, the residents have adequate toilets within their residences and a few in public utility areas. However, some important high catchment areas such as the market areas and bus stops and slums have insufficient facilities to cater for the needs of the human traffic in the areas. The major problem faced is the lack of a proper Sludge Handling Facility for effluent discharge by the exhaust vacuum tankers (Waste Stabilization Ponds or Sludge Drying Beds).</p> <p>The implementation of the proposed ablution block projects and Fecal Sludge Treatment Facilities as an immediate measure to cater especially for the needs of the community under the WSDP program in the county will be a major step in improving the sanitation infrastructure in the area.</p> <p>The key construction activities will include:</p> <ul style="list-style-type: none"> • Site clearance and top soil stripping • Excavation for structure foundations and for septic tanks and backfilling for reinstatement as appropriate with approved hard-core filling, and Chemical anti-termite treatment to surface of filling with an approved insecticide • General and steel - reinforced concrete works • Walling using approved concrete blocks and cement mortar • Installation of roof coverings on timber trusses • General electrical, plumbing and plumbing works • Finishes including plaster works, tiling and painting <p>During operation, the permission to use the facility is to be on a pay-per-use basis. This is an effective model used in many parts of the country to raise money required for operation and maintenance. A personnel office completes with a storage room including a shop for essential basic commodities shall be provided at the entrance of the facility with a grilled opening for ease of payment before use.</p> <p>Mtwapa 4 Nr.</p> <ul style="list-style-type: none"> • New Mtwapa Market Site 1 • New Mtwapa Market Site 2 • New Mtwapa Market Site 3 • Mtwapa Copacabana Site <p>The ministry of lands has the responsibility to give land documents for the assigned sites. Since Mazingira has been approved, the site is now viable for construction of ablution block.</p> <p>The residents showed appreciation of the project and accepted through a show of hands. This development shall ensure environmental cleanliness and</p> <p>Project impacts</p>

Item Nr	Description
	<ul style="list-style-type: none"> ✓ Assessment of the baseline environmental and social conditions. ✓ Consideration of feasible and environmentally & socially preferable alternatives. ✓ Requirements under Kenya country laws and regulations, World Bank Guidelines and applicable international treaties and agreements. ✓ Protection of human rights and community health, safety and security (including risks, impacts and management of project's use of security personnel). ✓ Protection and conservation of biodiversity. ✓ Sustainable management and use of renewable natural resources (including sustainable resource management through appropriate independent certification systems). ✓ Use and management of dangerous substances and major hazards assessment. ✓ Labour issues (including the four core labour standards), and occupational health and safety. ✓ Socio-economic impacts & fire prevention and life safety. ✓ Impacts on affected communities, and disadvantaged or vulnerable groups. ✓ Cumulative impacts of existing projects, the proposed project, and anticipated future projects. ✓ Consultation and participation of affected parties in the design, review and implementation of the project. ✓ Pollution prevention and waste minimization, pollution controls (liquid effluents and air emissions) and solid and chemical waste management. <p><u>QUERIES:</u></p> <ol style="list-style-type: none"> 1. A member requested to know when the construction works will begin:- The construction works shall begin as soon as it is practically possible 2. A member wanted to know whether the community will be considered as workers since women can also work:- the immediate community shall be considered for the job 3. Will there be enough water to operate the toilets:- Water supply has been a challenge by KIMAWSCO since the community only gets water on fridays and Mondays:- 4. A member asked if the project can be completed before October since the area needs the ablution block as soon as possible :- the project shall be completed as soon as it is practically possible for use 5. Are there subsidies during bill payment:- The official bill rates shall be applied 6. What are the social groups represented in this meeting?:- Kunacha Self Help Group, Mazingira CMI and Mzuka, Friends for Climate, Ecosystem Conservation, Acrobats and Project Implementation Committee
	<p>A. <u>O.B</u></p> <p>There being no other Business the meeting Ended at 1600hrs</p>

Item Nr	Description
	<ul style="list-style-type: none"> ✓ Use and management of dangerous substances and major hazards assessment. ✓ Labour issues (including the four core labour standards), and occupational health and safety. ✓ Socio-economic impacts & fire prevention and life safety. ✓ Impacts on affected communities, and disadvantaged or vulnerable groups. ✓ Cumulative impacts of existing projects, the proposed project, and anticipated future projects. ✓ Consultation and participation of affected parties in the design, review and implementation of the project. ✓ Pollution prevention and waste minimization, pollution controls (liquid effluents and air emissions) and solid and chemical waste management. <p><u>QUERIES:</u></p> <ol style="list-style-type: none"> 1. A member requested to know when the construction works will begin:- The construction works shall begin as soon as it is practically possible 2. A member wanted to know whether the community will be considered as workers since women can also work:- the immediate community shall be considered for the job 3. Will there be enough water to operate the toilets:- Water supply has been a challenge by KIMAWSCO since the community only gets water on Fridays and Mondays:- 4. A member asked if the project can be completed before October since the area needs the ablution block as soon as possible :- the project shall be completed as soon as it is practically possible for use 5. Are there subsidies during bill payment:- The official bill rates shall be applied 6. What are the social groups represented in this meeting?:- Kunacha Self Help Group, Mazingira CMI and Mzuka, Friends for Climate, Ecosystem Conservation, Acrobats and Project Implementation Committee
	<p><u>A.O.B</u></p> <p>There being no other Business the meeting Ended at 1600hrs</p>

Minute Confirmed By: The Secretary:- Nyambura Virginia

The Chairman: DICKSON M. KITOLE





ATTENDANCE LIST



COMMUNITY POLICY PUBLIC BARAZA MINUTES CONVENED BY

KAMUKUWO ON 21.05.2024
FOR ENVIRONMENTAL IMPACT ASSESSMENT

AT: TIME 10 AM/PM. VENUE MAZONGIRA PARK

ATTENDANCE RECORDED MALE.....FEMALE.....TOTAL.....

S/N	NAMES	DESIGNATION	CONTACT	LOCALITY	SEX		SIGN/REMARKS
					f	m	
1	DENNIS M. MISONGA	MAZONGIRA MEMBER	0758337911			✓	DM
2	OMAR KHAMISI	RESIDENCE	0714900045			✓	OK
3	TUMAINI KAHINDI		0791641147			✓	FK
4	FARIDA JUMA		0708496309		✓		Fandis
5	KATANA G. MBOTI		0711317905			✓	Katana
6	LAWRENCE SAHUMU		0745977065			✓	LS
7	ABDULAHI JUMA		0794084388			✓	Abdullahi
8	HALIMA KAINGU		0710767053		✓		H.K
9	MWAKA SAUMU		0711924042		✓		mwaka
10	JUMA ALI		0762888611			✓	JUMA
11	MOHAMED SALIM		076156058			✓	MS
12	PRAISE MWENDA		0790721431		✓		Praise
13	NORMAN DECHE		0743243845			✓	HD
14	HUSEIN CHANGAWA		0792644176			✓	Husein
15	KIBIBI MBARUX		0748764464		✓		K.M
16	HALIMA ALI		0718463412			✓	Halima
17	JOSPHINE LUYUNO		0716520374			✓	Josephine

42
32
79

15	EMMANUEL JGUMPAO	RESIDENCE	0716132994	✓	• Kit
19	ELIZABETH ZIMBA	RESIDENCE	0759554833	✓	Kit
20	DOCTOR KITHOME	RESIDENCE	0703781171	✓	① Do
21	MOSES KATAMA	RESIDENCE	0718555293	✓	MR
22	SALAMA KARISA	"	0741713066	✓	Kelani
23	HALIMA SWALEH	"	0743849076	✓	HS
24	SHABAH SALIM	"	0716167243	✓	S. Salim
25	OSMAN ALI	"	0769608402	✓	Osman
26	EUNIC MBITHA	"	0741938385	✓	Em.
27	DIANA KADZO	"	0700153224	✓	Drotzo
28	FAITH KADZO	"	0111245275	✓	Faith K
29	TATU KHASANI	"	0711853446	✓	T. K.
30	VINDA RANDU	"	0748240556	✓	Vinda
31	ASMA ALI	"	0796351737	✓	Asma
32	ROBERT KETIGA	"	0792005245	✓	RR.
33	SARA DAMA	"	0792425880	✓	Sara
34	AKIM GAMBO	"	0708570928	✓	Akima
35	HURIA ALINUR	"	0729657774	✓	NA
36	ASHA MWAPEMBE	"	0797606989	✓	Am
37	HURU CHIMWAGA	"	0741223547	✓	H Chimwaga
38	EVGIN KAPOMBE	"	0759246321	✓	Evgin
39	AMANI KATAPA	"	6712578258	✓	Akama
40	ALI KHASANI	"	0742672890	✓	Ali
41	KHADIJA MOHAMMED		0752153456	✓	Mohammed
42	MOHAMED ABDUL		0798623802	✓	M. Abdul
43	EDISON THOTA		0796267537	✓	Edison



COMMUNITY POLICY PUBLIC BARAZA MINUTES CONVENED BY

KIMAWASCO ON 12/08/2024
FOR ENVIRONMENTAL IMPACT ASSESSMENT

AT: TIME 10 AM/PM: VENUE MAZINGIRA PARK

ATTENDANCE RECORDED MALE.....FEMALE.....TOTAL.....

S/N	NAMES	DESIGNATION	CONTACT	LOCALITY	SEX		SIGN/REMARKS
					f	m	
1	DICKSON KITOLE	Chief	0720877800	Tumwa		✓	
2	MASOUD ABDULLA	Chair	0713207056	Sokoni		✓	
3	ANDREW AMINGA	REP MCA	0701745048	Said Sokoni		✓	
4	KENNETH RIMBA	N/Admin	0723466462	Kifungu		✓	
5	Mohamed Said	MAZINGIRA MEMBER	0704213331	SOKONI		✓	
6	Dula Ombat	PMC	0728847323	SOKONI		✓	
7	DIANA HEEMA	MAZINGIRA MEMBER	0710760698	SOKONI	✓		
8	Joy OGamba	RESIDENCE	0713322441	SOKONI	✓		
9	Laurence Fahamu	RESIDENCE	0745977669			✓	
10	GODWILL LUCKY	RESIDENCE	0790929538	SOKONI		✓	
11	HAMIS IBRAHIM KDI	"	0794349137	SOKONI		✓	
12	MUSILO DANCAN	"	0714106466	SOKONI		✓	
13	KATANA CY MBOTI	"	0711317105	Sokoni		-	EG
14	MICHAEL KATANA	"	0793530271	SOKONI		✓	
15	John Jonyo	"	0718556589	SOKONI		✓	
16	KENNEDY MWANZIA	"	0793768778	SOKONI		✓	
17	SWALEH SANJA	"	0702287044	SOKONI		✓	

43
24
07


F M

18	HUSSEIN CHANGAWA	0792644176	SOKONI	RESIDENCE		✓	HS
19	CHARLES ADEA	0723164887	SOKONI	RESIDENCE		✓	CS
20	JAMECK MUSTA	0704484142	SOKONI	"		✓	LM
21	ALI AMANI RUBOA	0722893456	SOKONI	"		✓	AL
22	Njambura Virginia	072878687	KIYI	"	✓		VAD
23	Alex Mungu	0727460548	KIMWARA	"		✓	MS
24	ANDERSON CHAI	0711639471	L. ARAT	"		✓	CS
25	ALI MOHAMMED	0759902730	SOKONI	"		✓	AKRUF FLA
26	Fatuma Kea	0799391771	SOKONI	"	✓		
27	Halima Swaleh	0795875519	SOKONI	"	✓		HGLMG
28	Fatuma Salim Ali	0712405974	SOKONI	"	✓		BS
29	Khadija Kea	0799393436	SOKONI	"	✓		Khadija
30	SAUMU SALIM	0720849533	SOKONI	"	✓		SM
31	Halima Salim	0701834606	SOKONI	"	✓		AS
32	Furaha Kibwa	0709870600	SOKONI	RESIDENCE	✓	✓	Furaha
33	Furaha Kibwa	0728240695	SOKONI	RESIDENCE	✓		R
34	LELE MASHO	071999413	SOKONI	"			Kea
35	ABDALLA DETHAM						AD
36	KHANTIS KAGWA	0707552979	SOKONI	"		✓	AK
37	JAMES MASHA	074332006	SOKONI	"		✓	MS
38	ALEX KARINA	074078313	SOKONI	"		✓	AKM
39	Juhet Jilani	0700463702	SOKONI	"	✓		JJ

Appendix 5: MAZINGIRA PARK APPROVED PDP



Appendix 6: PROJECT PROPONENT DOCUMENTS



No. C.120860

CERTIFICATE OF INCORPORATION

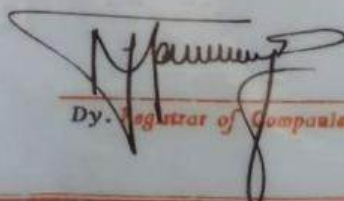
I hereby Certify, that—

KILIFI - MARIAKANI WATER & SEWERAGE COMPANY LIMITED.....

is this day Incorporated under the Companies Act (Cap. 486) and that the Company is LIMITED.

Given under my hand at Nairobi this THIRTIETH day

of NOVEMBER Two Thousand AND FIVE.


Dy. Registrar of Companies

CPK 426-428-12/2003-18/6/2014



www.kra.go.ke

PIN Certificate

For General Tax Questions
Contact KRA Call Centre
Tel: +254 (020) 4999 999
Call: +254(0711)099 999
Email: callcentre@kra.go.ke

Certificate Date : 06/09/2017
Personal Identification Number
P051187346E

This is to certify that taxpayer shown herein has been registered with Kenya Revenue Authority

Taxpayer Information

Taxpayer Name	KILIFI - MARIAKANI WATER AND SEWERAGE COMPANY LIMITED
Email Address	INFO@KILIFIWATER.CO.KE

Registered Address

L.R. Number :	Building KIMAWASCO
Street/Road OFF MSA MLD	City/Town : KILIFI
County : Kilifi	District Kilifi District
Tax Area Kilifi	Station PUBLIC SECTOR DIVISION
P. O. Box 275	Postal Code 80108



Tax Obligation(s) Registration

Sr. No.	Tax Obligation(s)	Effective From Date	Effective Till	Status
1	Income Tax - Company	30/11/2005	N.A.	Active
2	Income Tax - PAYE	01/10/2006	N.A.	Active
3	Value Added Tax (VAT)	01/11/2016	N.A.	Active

The above PIN must appear on all your tax invoices and correspondences with Kenya Revenue Authority. Your accounting end month is June unless a change has been approved by the Commissioner-Domestic Taxes Department. The status of Tax Obligation(s) with 'Dormant' status will automatically change to 'Active' on date mentioned in "Effective Till Date" or any transaction done during the period. This certificate shall remain in force till further updated.

Disclaimer : This is a system generated certificate and does not require signature.

Appendix 7: LEAD EXPERT CERTIFICATE

 nema <small>Maendeleo juu ya maji, wazi na wazi</small>		Payment Receipt	
Applicant Details: PIN:A005467290G Name:CLARE MBOGO AKUMU Phone:0724253398 Email:clarembogo@gmail.com		Invoice Number:EPL_28186 Invoice Status:PAID Payment Date:30/08/2024	
Service	Description	Amount (KES)	
Expert License	Payment for Expert License	3,000	
Convenience Fee	Ecitizen Convenience Fee	50.00	
Total Amount Paid		3,050	
Balance		0	
Payment Mode 			
<small>Note :This document is computer generated and therefore not signed. Present it during licence or permit collection</small>			



**NATIONAL ENVIRONMENT MANAGEMENT
AUTHORITY(NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT
ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING
LICENSE**

License No NEMA/EIA/ERPL/20037

Application Reference No NEMA/EIA/EL/28348

M/S CLARE MBOGO AKUMU
(individual or firm) of address
P.O Box 643 - 80108 MOMBASA

is licensed to practice in the
capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Associate Expert**
registration number **7655**

in accordance with the provision of the Environmental Management and Coordination
Act Cap 387.

Issued Date: 8/31/2023

Expiry Date: 12/31/2023

Signature.....

(Seal)

Director General

The National Environment Management Authority



2023/08/31 10:11:00 AM

