



**Ministry of Mining,
Blue Economy and
Maritime Affairs**

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REPORT FOR PROPOSED AUGMENTATION OF MWAEPE FISHERIES LANDING SITE.

Coordinate: Latitude 4°20'35.10"S and Longitude 39°33'58.61"E.



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NOVEMBER, 2024

CERTIFICATION

This Environmental and Social Impact Assessment Summary Project Report has been prepared by a team of EIA experts lead by Mr. Godfrey Wabomba; NEMA registered EIA/EA Lead Expert No. 6127 and Mr. Michael Kuria Kamau. The Summary project report was prepared in accordance with the requirements of the Environmental (Impact Assessment and Audit) (amendment) Regulations, 2019, pursuant to *The Environmental Management and Coordination Act, (CAP 387)*.

DISCLAIMER

This Environmental Impact Assessment Summary Project Report is strictly confidential to the proponent and any use of the materials thereof should strictly be in accordance with the agreement between the client/proponent, Mr. Godfrey Wabomba (the lead EIA Expert) and Mr. Michael Kuria Kamau. It is, however, subject to conditions in the Environmental (Impact Assessment and Audit) (amendment) Regulations, 2019.

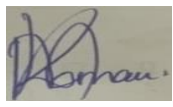
We, the undersigned, certify that the particulars given in this report are correct to the best of our knowledge.

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ABBREVIATIONS AND ACRONYMS

AOI	Area of Interest
CPC	County Project Coordinator
CPIU	County Project Implementation Unit
DOSHS	Directorate of Occupational Health and Safety Services
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
ESMoP	Environmental and Social Monitoring Plan
ESIA	Environmental Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environment Safeguard Specialist
ESSO	Environmental Social Safeguards Officer
FAO	Food and Agriculture Organization
GBV	Gender Based Violence
GO	Grievance Officer
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
JPSC	Joint Project Supervision Committee
KeFS	Kenya Fisheries Service
KEMFSED	Kenya Marine Fisheries and Socio-Economic Development Project
KP&LC	Kenya Power and Lighting Company
KWAWASCO	Kwale Water and Sewerage Company
KWS	Kenya Wildlife Service
LMMA	Locally Managed Marine Areas
NCA	National Construction Authority
NEMA	National Environmental Management Authority
NPCU	National Project Coordination Unit
OSHA	Occupational Safety and Health Act
PDP	Part Development Plan
PPE	Personal Protective Equipment
PvC	Polyvinyl Chloride
RH	Relative Humidity
SDFA&BE	State Department of Fisheries, Aquaculture and Blue Economy
SL-GRC	Site Level Grievance Redress Committee
SSS	Social Safeguards Specialist
STI	Sexual Transmitted Infection
VCT	Voluntary Counseling and Testing
VMGF	Vulnerable and Marginalized Group Framework
WIBA	Work Injury Benefit Act

EXECUTIVE SUMMARY

Management of priority fisheries stocks and availability of functioning public landing-site infrastructure play a critical role in; centralizing data collection for fisheries management, enable enforcement of compliance, stimulate private sector interest in the fisheries sub-sector, contributing to job creation, strengthening coastal communities' livelihood, increased household income, increase food security, increase the value of fish traded, minimizing post-harvest fish losses and strengthening capacity of community institutions responsible for fishery management. Yet it's an area that remains a major concern to Kenya fisheries sector management. It is in light of this that the Government of Kenya, through SDBE&F requested the World Bank to support the development of the sector through the Kenya Marine Fisheries and Socio-Economic Development (KEMFSED) project as means to exploit the potential and attain economic benefits from the coastal and marine resources. As part of the efforts under KEMFSED project, funding has been committed for the development of landing sites infrastructure. Mwaepe landing site in Kwale County, Msambweni Sub- County, Kinondo ward, Kinondo location and in Kinondo Sub-location is one of such facilities that remains dilapidated in spite of its potential to contribute to the objectives of the blue economy.

Due to dilapidated infrastructure at Mwaepe landing site, the site is faced with a myriad of challenges including: a dilapidated fish banda which does not ensure proper hygiene standards of the fish products. The design of the existing fish Banda does not provide for controlled access for fish entry, washing and selling points but instead has a free access exposing the products to contamination. The landing site does not have fish waste management measures in place, it does not have operational toilets and the existing pit latrines are dilapidated, the fishers do not have a bathing area forcing the fisher folk to clean in the open. The development on the site is haphazard and free for all without proper planning which poses a danger of the public plot being encroached. Most social amenities at Mwaepe landing site like water and electricity has been disconnected due to none payment of bills and the landing site has no boat yard.

The proposed improvement of Mwaepe landing site will consist of the development of a poly-functional building; which will have BMU offices and an office for fisheries officer, a fish banda for landed fish, a boat yard for anchored repairs, 2 restaurants, 7 stalls to accommodate businesses identified as currently permitted by the BMU to operate at the site, a fish gear mending shed, an ablution block, monumental gate and a gate house, Painting of historical building, 1 No. prime rated 66 KVA 3 phase, 415V, 50Hz diesel generator with a silencer, 69 No 40KW 144 Cell, 585W Mono- Crystalline Solar Modules and civil works; developing slip way, drainage, landscaping works, road works and perimeter wall. The proposed Mwaepe landing site development will trigger the Bank's Safeguard Policies; OP/BP 4.04 Natural Habitat, OP/BP 4.11 Physical cultural resources, OP/BP 4.01 (*OP 4.01 Environment Assessment*) which requires undertaking environmental and social due diligence for all project activities and preparing ESIA for high risk sub-projects. TheWorld Bank general Environment, Health and safety guidelines

(EHS) and fish processing EHS guidelines have been reviewed to inform on various aspects under the sub-project. Also, as required by the national laws under Kenya's EIA requirement of section 58 of the Environmental Management and Coordination Act CAP 387, a proponent is required to prepare a project report for the authority to approve any development activities. This includes compliance with the Environment Impact Assessment and Audit Regulations of 2003 and consideration of other national legislations guiding conservation, management, and utilization of natural resources. Therefore, the assessment under this study was to identify significant potential impacts of the proposed sub-project to the landing site's physical, biological, social, and economic aspects.

EIA Regulation

In light of this and according to section 58 of the Environmental Management and Coordination Act CAP 387, it is a requirement under the national legal framework that a proponent carries out an ESIA study before being issued with an EIA license to undertake any project activities that may be considered harmful to the environment. This includes application of the "Environment Impact Assessment and Audit Regulations of 2003" and consideration of other national legislation as the Constitution of Kenya 2010, the physical and land use planning Act 2019, The Occupational Safety and Health Act Revised Edition 2020 [2007], The County Governments Act (2012), The National Construction Authority Act 2011, The National Environment Policy Session paper No. 10 of 2014, and the Environment and Land Court Act, among others. In this regard, a comprehensive project report shall be submitted to NEMA for ESIA licensing. The World Bank safeguards operational policies triggered under the proposed sub-project include; Environmental Assessment, Natural Habitats, Physical cultural resources, Involuntary resettlement, World Bank general Environment, Health and safety guidelines (EHS) and fish processing EHS. In response to the requirements of the law and World Bank safeguards policies, the NPCU and the county government safeguards team prepared the ESIA project summary report for the proposed construction of Mwaepe landing site.

Proposed Project Objectives

The project development objective is to improve priority fisheries and mariculture management and increase access to complementary livelihood activities in coastal communities. The aim of the sub-project is to improve fisheries landing site infrastructure under KEMFSED through improvement of Mwaepe Landing site. Implementation of the proposed sub-project is anticipated to fish handling practices and centralize landings for data collection for fisheries management and enforcement of compliance.

Proposed Project Design

The proposed works under construction of Mwaepe landing site shall consist of constructing of a 4-Storey Poly-functional building with a roof top and inclusive of a boat yard facility, a 2-Storey Modern Fish Banda with a roof top, 2 No. single-story restaurant buildings, a single-story ablution block building, 2No. Single-story stall buildings with a total of 7 stalls, a single-story

fish gear shed, Boundary wall, 2 No. Single-story gate houses, a monumental gate, painting of existing historical Ngozi therapy hub and USAID donated building. There will also be landscaping works, civil works (*slipway, road, parking and drainage construction*), buying of 1 No. prime rated 66 KVA 3 phase, 415V, 50Hz diesel generator with a silencer and purchasing of 69 No 40KW 144 Cell, 585W Mono- Crystalline Solar Modules.

Project Location

The proposed Mwaepe fisheries Landing site is located on a piece of land measuring about 0.75 acre (0.3035 hectares) owned by the fisheries department, the land ownership documents are attached in Annex II. The proposed project is located in Kwale County, Msambweni Sub-County, Kinondo ward, Kinondo location and in Kinondo Sub-location. The Landing site is located at Mwaepe as shown Figure 0-1: A Google Image of Mwaepe Landing site from a Google image. The area has an elevation that ranges from 7-12m depending on the distance from the shoreline with GPS coordinates of the project site being Latitude 4°20'35.10"S and Longitude 39°33'58.61"E.



Figure 0-1: A Google Image of Mwaepe Landing site

Estimated Cost

The estimated cost for improving and augmenting the proposed Mwaepe landing site in Kwale County Ukunda-Diani is about KShs. 255,239,950¹. This cost include civil works, structural works, mechanical works, services, labour, environmental management and social monitoring costs, taxes and a factor on inflation for the proposed structures. The proposed sub-project shall

¹ The estimate cost is according to the figures provided in the bill of quantities as provided by the project engineer

be implemented within a period of 12 month with an additional 6 month for defect liability period.

Approach and Methodology

The main approach and methods employed during the ESIA study were desktop literature review and field survey. The desktop study involved; reviewing available published and unpublished reports including previous ESIA reports and project design report to compile relevant baseline biophysical and socio-economic information about the study area. Field surveys were conducted on several occasions as indicated in section 1.6 which included environmental and socio-economic data collection. Environmental profiling of the proposed project area was done through assessment of various environmental parameters, including; climatic factors, solid and liquid waste, noise receptors and sources, air quality sources and receptors, landscape, and aesthetic value of the proposed project area as indicated in sections 4.3 of this report. The socio-economic survey approach consisted of collecting data from community meeting and various key informants from institutions both for National government agencies and County government departments as indicated in chapter 5. A number of key informants were interviewed. Data needs were based on predetermined socio-economic parameters, as highlighted in section 4.5 and chapter 5.

Public Consultation and Stakeholder Engagement

There were several issues that were raised by the community during public participation meeting and the NPCU and CPIU teams gracing the community meeting discussions gave responses to the concerns of the community as captured in Table 0-1

Table 0-1: Summary of Stakeholder Issues Raised and the Response

NAMES	ISSUES	RESPONSES
Mr. Lazarus Kubasu	Have you agreed that the two restaurants present in the landing site will relocate to the new positions allocated within the development site plan?	The two restaurant owners are here and we wish that they tell us themselves if they agree.
Salim Mwakasi (One of the restaurant owners)	I have heard that the location of the restaurant will be moved, but what does that mean to us, where will we be working from while construction is ongoing? Explain us the plan, and will the new restaurants be ours or belong to us?	Mwaepe landing site lies on a public land so all developments done here will be on public land managed by the BMU. Those who wish to operate on the developments will have to get into agreement with the BMU where they will have to be paying the BMU rates according to their agreement. First priority for operation of the developed resources will be those that are already operating within the landing site. The engineers will factor the drawings of the restaurants

		<p>and include them in the BOQs. When construction begins they will begin with constructing the two restaurants first so that you can move into them and continue with operations as they now move to the other areas. This will be prioritized so that you do not lose business during the period. You will however had to enter into agreement with the BMU on operation rates as it is public property on public land given to the BMU to manage.</p>
Chief Riga	<p>I recall there is a time these members came to my office to ask me what will happen to their daily livelihood when they have to close due to the proposed developments. They also asked will there be compensation because I used my resources to build the restaurant in the first place.</p>	<p>The project will not be compensating anyone but doing a livelihood restoration and that is why we are building the two new restaurants at the new site plan's location.</p> <p>So that means the restaurants will remain in operation until the new restaurants are ready, then they relocate to pave way thus not interfering with their livelihood.</p> <p>I would also like to clarify that there are two projects here that do not relate; the roads project has nothing to do with KEMFSED project. In case the project developing the roads access comes first and demolishes for you don't rush KEMFSED project as it will still be implemented at its own pace. I want you to understand and separate the access roads project and KEMFSED project as they are unrelated.</p> <p>If the access roads development comes first then it has nothing to do with KEMFSED project.</p>
Salim Mwakasi (One of the restaurant owners)	<p>I am just asking if you can refund me my capital so that I can opt out of the restaurant business altogether</p>	<p>This is a public land any anyone who built here knew it's a public land for the BMU. So let's be clear that when the access roads development project comes and you are on the access road you will have to pave way for it. All the years you have operated on that access road no one came to ask for a share of your revenue. Let us understand that this is public land and no one is being forced to stay here even after being given first priority for relocation by KEMFSED project. Even on the stalls, there are those given first priority to restore their livelihoods but anyone else has a right to be given by the BMU. No one will be paid at all in this public land so let's understand this so we can be psychologically prepared. In the whole of Kwale county this is the largest project being implemented under KEMFSED project so let's support it for our own economic growth.</p> <p>It is good that even from the previous meetings you have been present and asking questions and that's why you have been given priority for livelihood restoration after your case was noted.</p>

		<p>To clarify further let us separate KEMFSED project from the roads access project under the county tourism department.</p> <p>You have been considered for livelihood restoration and that is why the two restaurants have been factored in the designs and BQs.</p>
Masha (2 nd restaurant owner)	<p>I have attended all meeting held here on this proposed project. There is a <i>mzungu</i> who came here once and I asked are you going to remove us from here when you start the development? She said we are going to be relocated. Even in the first meeting we were told we would be relocated not removed.</p>	<p>The project design has factored the two restaurants for livelihoods restoration.</p>
Isihaka Mwachala	<p>This whole landing site has a total of 276 members of which 136 are fishermen. The BMU also has other landing sites not just this one; mentions landing sites. What is all of them came here and demanded for space since they also belong to the BMU? Let us who are here be grateful we are being given first priority as livelihood restoration.</p>	<p>Thank you for that.</p>
Masha (2 nd restaurant owner)	<p>When I came and requested to build here long ago, the BMU gave me an agreement that as you build here this is not your land. So you cannot sell it when you are done. In case you want to leave you cannot pass it to someone else without the consent of the BMU. And in case I am to be moved I will not be given any compensation. Of which I accepted.</p>	<p>All those who were operating at the landing site as of the cutoff date will sign an agreement with the BMU concerning the livelihood restoration. This will protect you to ensure you get first priority when the development is complete.</p>
Masha (2 nd restaurant owner)	<p>Let us be open, we have no BMU as of now until the elections are conducted in January.</p>	<p>This means for now you will sign through the office of the county director fisheries.</p> <p>The BMU will be operating through given by the county government through the fisheries office. The agreements will be signed through the fisheries department for security purposes.</p> <p>Which brings a point of the last cutoff date we agreed there were 5 stalls for livelihood restoration but ever since new</p>

		<p>stalls are being erected everywhere? Our request is for such new developments to halt until the proposed project development is complete.</p> <p>There will still be more space for stalls for the tourism department requested KEMFSED to do flat roofed stalls so that it can also later develop upwards.</p>
Mr. Lazarus Kubasu	<p>So are we taking the 5 stalls to be the ones originally present before the cutoff date and to be the ones given first priority for livelihood restoration?</p>	<p>Yes. However this does not mean others cannot come and benefit through the BMU afterwards. This is to just give priority to those present during the last cutoff meeting date.</p> <p>Yes. I wrote the minutes of that meeting and also kept a copy? (<i>massage lady</i>)</p> <p>Then those 5 stall owners plus the two restaurants are the ones we will sign the agreements with to ensure they are prioritized for livelihood restoration. (<i>Lazarus Kubasu</i>)</p>
Old man with stall at gate	<p>What of my stall, will it be affected? The one right at the landing site's entrance.</p>	<p>The whole landing site area will be affected.</p>
Old man with stall at gate	<p>But I am one of the original first developers at this landing site many years back.</p>	<p>If that is the case then we will also get into the livelihood restoration agreement with you.</p>
IsihakaM wachala	<p>The first ever development at this landing site is this building behind us hosting massage services. It is the main reason this landing site was able to avoid land grabbing in the past. The second development was that man's food stall right at the landing site entrance.</p>	<p>The proposed developments wont tough that building hosting massage services.</p> <p>In the site plan it has been marked as a historic building that is also protected under safeguards policies.</p>
Omar Mwamgai	<p>I am the area chairman of this area and even responsible for repeatedly applying for the development of that access road until it succeeded. My question is, at the entrance we need security lighting, can that be considered?</p>	<p>This has been factored in the site plan. We have street lights from the entrance up to down here at the beach.</p>
Massage lady	<p>As the operators of the massage stalls where will we be as the restaurants are operating? Will we also be relocated straight from our stalls to the new</p>	<p>Like we said everyone will be affected in one way or another and not everyone will be relocated.</p> <p>The new stalls will be built at the far end near the perimeter wall, those who are there will have to pave way</p>

	stalls?	for 60 days for the construction to be complete. Those that are far from the wall can continue operation as construction is undergoing and relocate after. The restaurants and the stalls are the first priority proposed developments at the site for livelihood restoration.
Omar Mwamgai	Can she bring her concerns later to us we deal with it?	Thank you but no. We want to handle everything here in an open and transparent manner. I will not be affected since my stall is currently far from the perimeter wall space you plan to begin construction. (<i>massage lady</i>)
Massage lady	I heard of the mention of a religious activities space in the site plan that is near the stalls. I am concerned because religious activities and the activities we run at the stalls will interfere with one another. We have to respect the religious elders and our work also needs privacy and comfort.	In the site plan, the ablution block has been placed between the religious activities space and the stalls. This has already been considered to avoid such interferences. And as we said the livelihood restoration will give priority the now 6 stalls present at the site before the cutoff date meeting.
Salim Mwakasi	We had also requested for a watchtower with a light for the security of the fishermen at night	Yes. This has been catered for at the top of the staircase of the poly functional building since it will be the tallest building at the landing site after the proposed development.
Mr. Samuel Bandari – CPC	So have we agreed with the proposed development plan we have so far discussed?	Yes (<i>chorus answer</i>)

Impacts of the Project

The construction of the proposed social amenities in Mwaepe is anticipated to have both negative and positive impacts on; county fisheries infrastructure development, contribution to the blue economy, economic empowerment, to the environment and on the society in general, as indicated in chapter 6 of this report.

Positive Impacts

The project is anticipated to have an overall positive impact, particularly in enhancing the county fisheries infrastructure development, development and contribution to the blue economy in the county and improving the socio-economic potential of the community at Mwaepe. Some of the positive impacts are; Contribute to improved management of priority fisheries and mariculture, enhance general economic development, Provision of employment opportunities, maximize employee satisfaction, improve work productivity, Opportunity to provide state of the art

facilities and improved working relationship with fisher folks, business opportunities, and centralization of fisheries data collection point.

The Negative Impacts

The proposed project is anticipated to have some negative impacts. Some of the negative impacts are; Occupational Health and Safety (*accidents and Injuries*), Public health and safety (*accidents and Injuries*), Leakages and oil spills, Noise and vibrations, Air pollution, Solid Waste generation, Waste water generation, Fire Hazards, Increased Energy consumption, Gender-based violence at community level, Increased Water consumption, Risk of Spread of HIV/AIDS, increase in Grievances, Child Labour risk, Gender Equity in allocation of roles and responsibilities, Sexual Harassment and abuse amongst workers in the workplace, Gender-based violence at community level, GBV: Sexual exploitation and abuse (SEA), Spread of COVID-19 amongst community members during consultation processes and Spread of COVID-19 during construction at work sites. Measures have been put in place to mitigate for the negative impacts at construction, operation stages and decommissioning phase

Table 0-2: Environmental and Social Management Plan (ESMP) during sub-project construction phase

ASPECT	MITIGATION MEASURES
Occupational Health and Safety <i>(accidents and Injuries)</i>	<ul style="list-style-type: none"> ▪ Contractor to complete hazard identification and risk assessment develop a site occupational health and safety action plan detailing safety measures/procedure, equipment to be used, emergency procedures, restriction on site and personnel responsible for safety inspections and controls. This shall be ready and approved by the joint supervising committee before commencing of the proposed works. As a minimum, the plan shall cover hazards associated with deep excavations, confined spaces, equipment handling, falls from height, electrical safety, working near/over water, manual handling, noise and vibration, dust and chemicals. ▪ The occupational health and safety action plan shall include training and supervision/monitoring and reporting aligning to OSHA 2007 and WB EHS General OHS risks and requirements. ▪ Contractor shall hire and retain a duly qualified construction environment, safety and health officer throughout the construction period, to ensure implementation of the safety plan. ▪ Train workers on safety and first aid skills before commencing works. Encourage daily tool box talks on potential OSH hazards and mitigation measures. ▪ Ensure safety of the construction workers by putting a fully equipped first aid facility, and having trained first aiders among the workers and injury reporting mechanism. The ration of first aiders to works shall be in line with the OSHA First Aid Rules. ▪ Provide appropriate personal protective equipment (PPE) to workers and training on appropriate use. (Reflective jackets, helmets, face masks, ear plugs gloves, safety boots, fall arrestors, welding masks etc.). The safety plan shall identify the mandatory PPEs by the tasks performed. And workers trained on the appropriate use of the PPEs. ▪ Adequate provision of requisite sanitation facilities segregated by gender for human waste disposal for workers on site

- Ensure the work place is registered by Directorate of Occupational Health and Safety (DOHS) and maintain the log of all injuries that occur on site in the incident register, corrective actions for their prevention as appropriate.
- The site should have a functional grievance redress mechanism to allow workers to raise safety issues and propose improvements on site
- The contractor is required to have WIBA insurance policy to compensate workers in the event of injuries.
- Provide clean drinking water for the workers to mitigate against dehydration.
- Have an understanding with a nearby health facility for emergency cases on-site before decisions are made.
- Adherence to Covid-19 rules/guidelines as provided from time to time by the ministry of health and the bank with provision of easily accessible and adequate covid-19 PPE to all persons on site. The specific action to be captured in the contractor ESMP.
- Training of workers on covid-19 rules and requirements.

As applicable, only qualified personnel shall be allowed to operate construction equipment on site that may require specialized skills

OHS risks from working above and falling into deep waters

- The OHS risks from working above and falling into deep waters shall be adopted into contractor site occupational health and safety action plan.
- To the extent possible, consider working during low tide periods or use pilling for the foundations
- The workers to be provided with appropriate footwear to reduce the risk of slipping.
- Ensure workers are provided with life jackets and enforce use at all times when exposed to sites or working under deep waters
- Ensure workers working on such sites are experienced swimmers
- Train workers in safety measures when working above deep waters
- Avoid working at night to reduce cases of drowning
- Having rescue teams on site in the event of an accidents

Provide necessary information on rescue during emergencies.

Public health and safety (accidents and Injuries)

- The contractor shall assess traffic risks while accessing the site based upon specific planned supply of materials to and from site and identify necessary measures.
- Consider having a road marshal, at the Diani beach junction, particularly during delivery of construction materials or waste disposal to avoid any incidents when construction vehicles leave the construction site or deliver materials.
- Ensure the safety of visitors and operators at the landing site by providing safety signs at strategic places around the access roads.
- Hoarding off working sites to protect the public or unauthorized persons from entry.
- Use of signs and warnings on sites on areas with high risks.
- Reduce unnecessary speeding to 30KPH by the construction vehicles to control for accidents from the movement of pedestrians in the area and particularly Mwaepo landing site access road.
- Prior creation of awareness and sensitization of the public and the operators at the site of any activities that is likely to have an impact in adequate time (2 weeks) before commencement.
- Implement Grievance mechanism and use feedback to improve any management measures as may be necessary.

Vendors selling food to construction workers should have valid public health

	permits to mitigate risks related to food contamination
Visual/aesthetic Impacts	<ul style="list-style-type: none"> • Cleaning of the site and organized siting different construction materials. • Backfilling of soil cuttings • Landscaping of the project site <p>hoarding of the construction site using appropriate screening materials</p>
Leakages and spills	<ul style="list-style-type: none"> ▪ All areas where fuel and hazardous chemicals are stored must be concretized and bunded ▪ In the event of hazardous waste leakage or spills, engage authorized waste handlers to dispose of contaminated soils. ▪ Disposing of contaminated soils in cutting pit if volumes are low. ▪ Use of NEMA licensed hazardous waste handlers to dispose off in licensed disposal areas. ▪ Development of site-specific incident management or response plan. ▪ Use of an authorized garage or fuel station in the project area by the contractor. <p>No servicing of construction equipment shall be undertaken on site. For emergency works, fuel and oil trays shall be used.</p>
Excessive Noise	<ul style="list-style-type: none"> • The contractor to use equipment with low noise levels or fitted with silencers where appropriate. • Regular servicing of the equipment to reduce the possibility of noise from worn-out parts. • Informing the public about the possibility of unusual noise levels, particularly to residents and those operating at the site, whenever working on such activities. • Ensure adherence to PPE by workers² working on excessive noise and vibration activities • Minimize unnecessary hooting and speeding by construction vehicles. • Restricting noisy activities to be during the day and no noisy activities should be conducted on site at night. <p>Regular measurement of noise levels and devising control measures. The contractor, during baseline survey, shall and planning for regular monitoring shall indicate the frequency, human receptors, sensitive receptors and location of monitoring, control measures and which is to be captured in the C-ESMP for approval.</p>
Air pollution	<ul style="list-style-type: none"> • Vehicles to be used on-site to meet NEMA emission standards as required under NEMA air quality regulations. • Reduce unnecessary speeding or idling of construction vehicles • Use of non-lead paints during construction. • Use of clean fuels e.g. low Sulphur diesel fuels. • Adherence to proper uses of PPE by the workers, especially those working on activities requiring mixing of cement. • Inform the public and residents about activities with possibility of unusual air pollutants • Use of silt and dust screens to reduce dust from site. • The contractor shall minimize time of exposed soils during excavations, wetting of exposed areas during dry and windy periods, conduct regular measurement of particulate matter. • The contractor shall conduct baseline survey with clear plan for frequency and location of monitoring, put dust control measures in place which shall be presented in the C-ESMP for approval.

² The measure should be according to the law (Occupation safety and health Act 2007, National Construction Act

	<p>Consider wetting all the sand or soil materials being transported to or from the construction site. Where appropriate, cover the materials being transported to avoid being blown by the wind during transportation.</p>
Increased Solid Waste generation	<ul style="list-style-type: none"> • The contractor shall formulate a site-specific waste management plan informed by waste characterization³ and consistent with NEMA and WB EHSG General. • The site-specific waste management plan to contain measures to promote and adopt the principles of waste avoidance, reduction, reuse and recycle. Through avoiding unnecessary generation of waste, use of debris for backfilling where possible, use of waste materials on-site for other purposes where appropriate, or selling to recycling merchants. • Designate proper waste transfer stations onsite with adequate waste receptacles that encourage segregation and controlled access. • Sensitize workers on appropriate solid waste management. • Seek appropriate approvals from NEMA and County Government on management and Disposal of the waste⁴.<i>(this may include using authorized disposal sites, use of NEMA authorized waste pickers/transporters, acquiring dumping certificates, and keeping proper records or use of authorized vehicles to ferry waste from site)</i> <p>Observing waste management standards proposed under NEMA waste management regulations 2006. (with a particular focus on waste separation and management before disposal)</p>
Increased waste water generation	<ul style="list-style-type: none"> • Provision of adequate mobile sanitation facilities for adequate human waste management⁵ during the construction phase for workers and persons on site. <p>Contractor shall follow guidelines on toilet provision as outlined in OSHA Act 2007 and the Public Health Act.</p>
Increased Water consumption for construction	<ul style="list-style-type: none"> • Sensitization and awareness creation among construction workers on significance of water conservation measures. • Curing the concrete structures during evening and early morning to reduce evaporation. • Covering the concrete structures to be cured with sand or any water retaining material to shield from direct sunlight • Regular maintenance and prompt response to leakage in the water system during construction phase. <p>Use of alternative water sources if available, particularly rain water if any during construction phase</p>
Risk of Spread of HIV/AIDS and other STIs	<ul style="list-style-type: none"> • Promote STI and HIV/AIDS Prevention messaging through outreaches and presentations • Access to safe sex (Condoms-Male and female) • Install HIV testing services at the construction site or a MoU with an existing government health facility in the area. • Support infected workers with access to ARVs from local public health facilities especially those open about their status. <p>Assist workers access counseling services at the nearest health centre to the site</p>
Grievances	<ul style="list-style-type: none"> • Establish grievance redress committees at the site.

³ Waste characterization should consider waste from construction site and the contractors' camp if any.

⁴ Waste management and disposal procedures need to be in accordance to waste management standards proposed under NEMA waste management regulations of 2006 (legal notice 121).

⁵ According to the Public Health Act Cap 242, 2012 and Occupation safety and Health Act 2007 requirements

	<ul style="list-style-type: none"> • Ensure that there is a trained focal person to facilitate the receipt and management of the grievance resolution process • Ensure contractor staff grievance structures exist <p>Sensitization and awareness creation among workers and the public on grievance redress mechanisms in place</p>
Effects of Immigrant workers	<ul style="list-style-type: none"> ▪ Contractor should use the local workforce as much as possible (preference to local community members on skills locally available). ▪ Effective community engagement and strong grievance redress mechanisms on matters related to labour ▪ All workers to sign an employment contract including a Code of Conduct governing appropriate behaviour ▪ The workforce should be sensitized to local social and cultural practices and be educated on the expected behaviour and conduct ▪ Contractor should prepare and enforce a No Sexual Harassment and Non-Discrimination Policy ▪ Contractor should prepare and implement a gender action plan ▪ The contractor as part of the C-ESMP will Prepare labor Management Plan (LMP) that included mandatory requirement to procure all unskilled, and as much as possible, semi-skilled labour locally. <p>Consider use of quality locally available materials from the local community while ensuring equal pay for equal work for men, women and people with disability</p>
Child Labour and Protection	<ul style="list-style-type: none"> ▪ Ensure no children are employed on site in accordance with national labour laws. This can be done through incorporating prohibitive provisions in the code of conduct and also having the recruitment policies that prohibits child labour. ▪ Ensure that any defilement cases among contractors' workers are promptly reported to the police. <p>Ensure that the CoC and the employment contract has clear measures in dealing with such contraventions</p>
Gender Equity, Sexual Harassment and abuse amongst workers in the workplace	<ul style="list-style-type: none"> ▪ The contractor will strive to ensure equitable distribution of employment opportunities between men and women. ▪ The contractor should prepare and enforce a No Sexual Harassment and Non-Discrimination Policy ▪ Provision of gender disaggregated bathing, changing, sanitation facilities ▪ Whenever harassment are recorded on site, the contractor should ensure prompt and effective remedial action ▪ The employees should be trained and sensitized on appropriate behavior ▪ All workers should sign a code of conduct ▪ Ensure an attendant whistle blower policy which will protect those who raise issues that may be uncomfortable to management ▪ Sensitization and awareness creation <p>Measures that will allow for the uptake of complaints without the fear of retaliation (whistle blower policy)</p>
Gender-based violence at community level	<ul style="list-style-type: none"> ▪ The contractor will implement provisions that ensure that gender-based violence at the community level is not triggered by the Project, including: ▪ Effective and on-going community engagement and consultation, particularly with women and girls; ▪ Review of specific project components that are known to heighten GBV risk at the community level,

	<ul style="list-style-type: none"> ▪ Specific plan for mitigating these known risks, e.g. sensitization around gender-equitable approaches to employment, representation, management, school pupils etc <p>The contractor will enhance capacity of already existing referral mechanisms- if a case of GBV at the community level is reported related to project implementation.</p>
<p>Sexual exploitation and abuse (SEA)</p>	<ul style="list-style-type: none"> ▪ Develop and implement a SEA/SH prevention and response Action plan with an Accountability and Response Framework as part of the 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. ▪ 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-centred 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; <p>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.</p>
<p>Spread of COVID-19 amongst community members during consultation processes</p>	<ul style="list-style-type: none"> • Electronic means of consulting stakeholders and holding meetings shall be encouraged, whenever feasible. One-on-one engagements with stakeholders while observing social distance and adhering to PPE wearing shall be enforced; • The team carrying out engagements within the public on one-on-one basis will be provided with appropriate PPE for the number of people and stakeholders they intend to meet. • Use traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements and mail) when stakeholders do not have access to online channels or do not use them frequently. Ensure to allow participants to provide feedback and suggestions. • Hold meetings in small groups, mainly in form of FGDs if permitted depending on restrictions in place and subject to strict observance of physical distancing and limited duration. • In situations where online interaction is challenging, disseminate information through digital platform (where available) like Facebook and WhatsApp & Chat groups. <p>Ensure online registration of participants, distribution of consultation materials and share feedback electronically with participants.</p>
<p>Spread of</p>	<ul style="list-style-type: none"> • The Contractors will develop standard operating procedures (SOPs) for managing

COVID-19. During construction at work sites	<p>the spread of Covid-19 during project execution and submit them for the approval of the Joint Supervision committee and the client, before mobilizing to site. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific project conditions;</p> <ul style="list-style-type: none"> • Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel including workers and visitors; • Install hand washing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used; <p>Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, door knobs, hand rails etc.;</p>
Physical cultural resources	<ul style="list-style-type: none"> • Preserve historical and cultural resources as is. • Design the scope of work around the existent historical and cultural resources. Provide reinforcement support to the existing historical and cultural resources where need be,
Critical habitats	<ul style="list-style-type: none"> • Ensuring all construction does not go beyond the high-water mark • Restricting all construction operational activities away from then beach areas. Capacity building all workers on the marine reserve regulations
Excavation and soil management	<ul style="list-style-type: none"> • Having an understanding by a nearby quarry for tipping of the spoils as part of rehabilitation. • Regular back filling and compact of any loose soils on site. Immediate disposal of soil cuts to avoid sedimentation and siltation
Labour Related disputes	<ul style="list-style-type: none"> • Prioritize to the extent possible recruitment of local labor • Adherence to labor laws and practices such as the working hours, payment, and no child/forced labor in their workforce • No child labour is allowed on site, children below 18 years shall not be employed in dangerous work. • Ensure the workers have contracts with terms and conditions consistent with national labour laws and policies <p>The Contractor shall keep complete and accurate records of the employment of labor at the Site to include the names, ages, genders, hours worked, wages paid to all workers</p>

Table 0-3: Environmental and Social Management Plan (ESMP) During sub-project Operation Phase

ASPECT	MITIGATION MEASURES
Occupational Health and Safety (accidents and Injuries)	<p>Before commissioning the FLS, develop an EHS management plan for its safe and environmentally sound operation. The plan should include all measure to:</p> <ul style="list-style-type: none"> • Ensure compliance to Occupational Safety and Health Act Cap. 514 and its Subsidiary Legislations standards including: registering all the proposed facilities as work place (<i>poly-functional, fish banda, boat yard, fish gear mending shed, restaurant</i>), constituting a safety committee, providing first aid facilities, conducting emergency drills and annual office safety audits. • Provide personal protective equipment to operation and maintenance workers • Recording all injuries that occur on-site to workers while doing their daily duties in the incident register, corrective actions for their prevention should be initiated as appropriate.

- Equip cold stores and chill stores with strip curtains to avoid extensive drafts when doors are open
 - Sensitization and awareness creation among workers working in the fish processing plant on proper use and maintenance of cutting equipment and provision of protective equipment (metallic gloves, leather aprons and rubber soles during the operation phase of the project.
 - Demarcate the working space for different activities to minimize flow of processes from crossing.
 - Creation of awareness and training of workers on site, BMU members who are responsible for boat repairs, operation of various landing site facilities and landing site users on safety and first aid skills by KeFS and coast guards.
 - Hiring employees with proper qualifications for specialized and risky tasks during operation and maintenance of the various utility systems.
 - Adherence to Covid-19 rules as provided by the ministry of health and the bank while conducting daily duties.
 - Providing requisite PPE and training of workers on covid-19 rules and requirements.
 - The workers to be rotated to reduce exposure to allergens
 - Use of gloves particularly while working with fish species known to create allergic reactions
 - Avoid aerosol-generating activities and proper ventilation of working space.
- Maintenance works are only conducted by duly qualified and competent contractors or personnel.

Fish odor control

- Implementing a comprehensive waste management system is crucial, segregating fish waste (like offal and scales) from other waste
- Using biohazard bags can also help contain odors until the waste is disposed of or processed.
- Installing biodigesters to manage organic waste by breaking it down through anaerobic digestion.
- Regular Cleaning and Sanitation:
- Establishing a routine cleaning schedule for the landing site and associated facilities can significantly reduce odor buildup.
- Enhancing natural ventilation in fish processing areas can help dissipate odors.
- Employing odor neutralizers or masking agents can help mitigate unpleasant smells.

Public health and safety (accidents and Injuries) including hazards related to fish handling

- Further capacity building of the BMU committee at the fish landing site in charge of management of public safety, sanitation and hygiene to be conducted.
 - Liaison with the relevant county department to ensure regular monitoring of food safety by the public health officer
 - using signage during cleaning, maintenance, or repair to warn the public
- Easily accessible fire risk information to the public visiting the landing site and training on fish landing operations and associated hygiene maintenance.

Increased Solid Waste generation

- Standalone solid waste management plan will be prepared by KEMFSED to support operations.
- To determine and characterize the amount of fish waste to be generated at the landing site
- To enter into agreements with fish waste recycling institutions for animal feeds –
- Sensitization and awareness creation among the beach users, restaurant operators, office building users and stalls users on the significance of waste separation and in addition provide for waste sorting bins at the landing site with clear labeling.

	<ul style="list-style-type: none"> • Provide for a waste transfer station that encourages waste segregation at the landing site preferably a skip by the county for temporal holding of waste before final disposal. • To engage the county government environment and natural resources department mandated with waste management to collect and properly dispose of the waste. • Sensitization and awareness creation among fishers on reducing capturing non-targeted species. • Recovering of waste streams by adopting the fish processing operation appropriately • Reprocessing the fish waste to fish meals and oils <p>Recovering proteins from waste water and using for improving animal feeds</p>
Hazardous waste management	<ul style="list-style-type: none"> • Procuring and using of durable equipment requiring less replacement by reducing frequency replacement needs • Adoption of solar equipment that are easily repairable and recycling friendly components to reduce the amount of waste generated and pumped into waste management systems • Adopting solar equipment with less hazardous sub-stances by reviewing the environmental health and safety and going for preferred alternatives with less hazardous substances • Use the solar equipment suppliers and servicing logistics to collect and safe disposal of obsolete component after replacement. • Early identification of solar e-waste collection and recycling locally <p>Consider partnering with NEMA local office for safe collection and disposal of the e-waste.</p>
Noise and Vibration	<ul style="list-style-type: none"> • Consider procuring the power backup generator to ensure that the ones with least noise impacts are procured, and using silencers/muffle <p>Regular servicing of the power backup generators.</p>
Air Pollution	<ul style="list-style-type: none"> • Keep working and storage areas clean at all times • Empty and clean fat traps on regular basis • Store waste products in cold, closed and well-ventilated places and for short periods • The waste transfer systems, waste water canals, and water treatment facilities to be covered as a means of reducing the escape of foul smell • To install catalytic devices on the power backup generator to ensure complete burning of waste gases, • Use of clean petroleum that is low in sulphur, lead or other fuel additives, • Proper servicing of generator and other equipment using fuel, <p>Plant more vegetation as part of beautification and landscaping for carbon sequestration,</p>
Leakage and spillage (generator room and fuel storage areas)	<ul style="list-style-type: none"> • Incorporate secondary containment unit within the generator fuel storage • Cleaning the backup generator regularly and checking for leaking parts which if spotted should be tightened if loose or replaced immediately • Regular servicing of the generator to avoid spillage <p>Cleaning up fuel spills immediately it occurs and disposing off fuel-soaked absorbent materials. The absorbent materials will be maintained on site for emergency use.</p>
Waste water generation	<ul style="list-style-type: none"> • Ensure adequate and accessible provision of sanitation facilities and ensure they are regularly cleaned, • Regular sensitization and awareness to users to discourage releasing detergents or other chemical solutions in black water system. • Regular cleaning of the wastewater drainage system • Regular and proper maintenance of the drainage system

	<ul style="list-style-type: none"> • Prompt response to any reported blockage and leakages • Sensitization and awareness of users from discharging or emptying any oils to the sewer system particularly from the boat yard. • Treating the waste water through a bio-digester and using the water for landscaping. • Fit grids and screens or traps to remove solid waste from waste water <p>Application of sludge from waste water treatment as fertilizers by local farmers</p>
Fire Hazards	<ul style="list-style-type: none"> • Provide recessed swinging type hose reel complete with 30 meters of 20mm internal diameter rubber fire hose with nylon spray/jet shut off nozzle • Provision of a Fire assembly point in the design • Installation of fire extinguishers in the building • Provide for fire risk and appropriate response equipment as well as signages with short and clear information. • Ensure flammables are stored in fire resistant areas • Train selected staff as fire marshals who can take lead in case of fire emergency in the building • Regular fire drills for the building users • Regular awareness and sensitization on fire safety measures and response to the users of the building. • Clear fire incidents reporting and response procedures. Ensure regular provision of operational emergency reporting contacts. • Regular servicing and maintenance of the fire extinguishers on site. <p>Ensuring availability of adequate water resources at the landing site at all times for the hydrants as per the OSHA requirements.</p>
Security concerns during operational face	<ul style="list-style-type: none"> • Implement access control systems that require secure methods of entry such as key cards, biometrics, or pin codes to manage who can enter the office premises. • Install a comprehensive CCTV surveillance system covering all critical and vulnerable areas both inside and outside the office building. • Employ trained security personnel to monitor premises, conduct regular patrols, and manage entry points. • Equip the office with a state-of-the-art alarm system, including intrusion alarms and panic alarms, which can be activated in emergency situations to alert local law enforcement and security personnel immediately. • Implement robust cybersecurity measures to protect
Concerns related to social conflicts	<ul style="list-style-type: none"> • Ensure that all BMU members, including underrepresented groups, are actively involved in the planning and decision-making processes. • Establish clear and regular channels for communication between the fish landing site management and BMU members. • Implement structured feedback mechanisms to allow BMU members to express concerns. • Organize workshops and training sessions on conflict resolution and management for BMU members and leaders. • Develop and enforce transparent protocols for the allocation and use of resources and facilities at the fish landing site. • Implement programs that directly benefit the community, such as local hiring policies, community development projects, or environmental conservation efforts.
Deep water	<ul style="list-style-type: none"> • Provide comprehensive safety training for all BMU members involved in deep

safety risks	<p>sea fishing.</p> <ul style="list-style-type: none"> • Ensure that they are proficient in using safety equipment, understanding weather conditions, and executing emergency procedures. • Equip each vessel with essential safety gear, including life vests, emergency beacons, first aid kits, and radios for communication. • Develop and enforce guidelines for sustainable fishing practices to preserve marine biodiversity and maintain fish stocks. • Educate BMU members on the importance of adhering to quotas, using environmentally friendly fishing gear, and respecting fishing seasons and protected areas. • Implement a routine inspection program for fishing vessels to ensure they are seaworthy and properly maintained. • Regular checks should focus on hull integrity, engine functionality, and the presence and condition of safety and navigation equipment. • Establish clear protocols and channels for addressing disputes among BMU members or between BMUs and other stakeholders. • Set up a conflict resolution committee within the BMU to handle grievances related to fishing territories, resource allocation, and operational practices.
Deforestation concerns	<ul style="list-style-type: none"> • Implement Controlled Land Use Policies • Develop and enforce strict land use guidelines that restrict unnecessary clearing of trees around the fish landing site. • Strictly control any other land alterations. • Reforestation and Afforestation Initiatives • Initiate reforestation projects to replace trees that were cut down during the construction.
Increased Water consumption	<ul style="list-style-type: none"> • Sensitization and awareness creation among users of the structures at the site on significance of water conservation measures. • Use of water efficient appliance such as delay taps • Regular maintenance and prompt response to leakage in the water system. • Use of alternative water sources eg rain water harvesting • Prompt reporting of leakages through sensitization of the public members • Storage tanks to have floaters to reduce wastage from spills when the tanks are full • Use of cleaning detergents that do not have adverse impacts
Increased Energy consumption	<ul style="list-style-type: none"> • Sensitization and awareness creation among building users on the significance of energy conservation measures • Sensitization and awareness creation among the maintenance team to continue observing the use of energy-saving electrical appliances on the building. • Proper and regular maintenance of the green energy appliances and equipment provided for in the design of the building. • Monitor energy consumption and keep records • Adopt the alternative sources of energy such as solar (provided for in the design) • Maximize the use of natural light and ventilation (provided in the design) • Adoption of equipment with cooling efficiency for the fish banda. <p>Increase the use of energy efficient equipment for the fish banda</p>
Spread of COVID-19. During operation at	<ul style="list-style-type: none"> • The county departments of fisheries to develop Standard Operating Procedures (SOPs) for managing the spread of Covid-19 during office operation and submit them for the approval by the county department of public health before use of the building. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of

work sites	<p>Health Directives and site-specific conditions;</p> <ul style="list-style-type: none"> • Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all office users including visitors; • Install hand washing facilities with adequate running water and soap, or sanitizing facilities at building entrance including consultation venues and meetings and ensure they are used; • Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, door knobs, hand rails etc.;
Critical habitats	<ul style="list-style-type: none"> • Capacity building all potential Mwaepe landing site users on the marine reserve regulations • Partnering with KWS in monitoring landing site operations in line with marine reserve regulations. • Fisheries department and landing site users monitoring species caught to detect source; whether offshore or inshore • Erecting signage at the landing site to show the presence of a marine reserve and regulations enforced
Oil, Fuel and gaseous emissions and Spillage	<ul style="list-style-type: none"> • Proper storage of oils and fuels at the site on a concretized platform which is bunded. • Regular servicing of mechanized equipment as per manufacturer specifications. • Equipment suppliers to train proponent on proper operation procedures and handling

ESMP Implementation and Institutional Management

The implementation of the proposed measures shall be by several actors including the client State Department of Blue Economy and Fisheries (SDBE&F) through NPCU, the Joint Project Supervision Committee (JPSC), Kwale County government, sub-project supervising consultant and the contractor who is expected to have an environment, health and safety officer to implement and report on safeguard requirements. The contractor’s Environment, Health and Safety Officer through the guidance of the supervising consultant will prepare C-ESMP that shall guide the implementation of safeguards requirements. Reporting on implementation activities of the proposed construction of Mwaepe Landing site shall be done at several levels. The sub-project supervising consultant in consultation with the Joint Project Supervision Committee (JPSC) shall be in charge of the daily reporting on site on behalf of the client (SDBE&F). The supervising consultant shall in consultation with the contractor’s team prepare all the required reports including site meeting minutes and submit to the client. In addition, the sub-project supervising consultant and the contractor will be required to promptly report any major incidents on site to SDBE&F and relevant authorities as soon as possible. SDBE&F will subsequently report to the Bank, within 24 hrs of the incident occurrence.

The progress reports prepared by the supervising consultant shall be on monthly and quarterly basis. On behalf of the client (SDBE&F), the County and NPCU safeguard specialists shall review the reports and submit to the World Bank for guidance. The supervising consultant safeguards officer shall on a daily basis during project implementation supervise the implementation of the C-ESMP, ESMP and ESMoP on site. NPCU Environmental and Social safeguards specialists shall also conduct regular and impromptu monitoring to ensure that all the

requirements of the World Bank and National laws are adhered to as captured in the C-ESMP, and ESMoP. Although the estimated cost for the implementation of the ESMP and ESMoP is about 5.02M, the actual costs shall be prepared by the contractor and captured in the C-ESMP. Provisions for the construction phase ESMP will be incorporated in the work's contract and bidding documents.

Conclusion

Mwaepe landing site fall within Diani Chale Marine reserve under management of KWS. However, since its designation in 1995, the conservation of the reserve has not managed to pick up due to mistrust among the primary stakeholders. The critical habitat within the reserve include coral reefs, mangrove area and seagrass beds. The survey findings under this study indicated that the current fishing grounds by fishers from Mwaepe landing site are within the marine reserve. Past studies also showed that the key habitats within the marine reserve are degraded as evidenced by the high sea urchin presence. Yet collection of catch data has declined over time at the landing site due to the dilapidated state of the landing site and weak BMU leadership. It therefore remains unknown the extent of degradation being caused by the fishing activities to the critical habitats within the reserve. It is apparent that the implementation of the proposed project is critical in enhancing centralized collection of fish catch data that will contribute to the management of the habitats within the reserve. KEMFSED as a project also provides an opportunity for the conservation of the marine reserve through implementation of environmental conservation sub-projects. However, this will be dependent on demand by the community.

The project has generally positive impacts and for the negative impacts, readily implementable mitigation measures have been proposed. The proposed project area was noted to be a highly modified habitat through anthropogenic activities mainly from settlements. The implementation of the project therefore is not anticipated to significantly influence the physical, biological and social environment. It was further noted that the anticipated impacts shall be of low magnitude due to the size of the project and with mitigation measures having been proposed in this report.

Mandatory Requirements

The development of the proposed improvement of Mwaepe landing site is anticipated to have negative impacts socially and to the physical environment. In spite of the anticipated environmental and social impacts, with proper mitigation measures, the project is environmentally viable. The environmental assessment team proposes the implementations of the sub-project with the following recommendations which are a requirement for the implementation of the sub-project;

- The component 2 of KEMFSED to empower fishers within Diani Chale marine reserve to engage in deep sea fishing to reduce fishers focus on the marine reserve area. KeFS to

spearhead the activities of assisting the fishers under the BMUs located within the marine reserve area.

- The fishers are currently engaged in fishing within the Diani Chale marine reserve, there is need to collect catch data so as to enforce compliance and reduce further degradation of the marine reserve
- The county CPIU team to identify BMU, CBO or CIGs with interest in conservation to participate in reef restoration under environmental sub-project grants. This shall assist in restoring the spawning areas which are critical for sustainable fisheries management. The activity to be done in collaboration with KMFRI and KeFS.
- Create awareness and sensitization among the fishers within Diani chale marine reserve on the significance of the reef to their livelihoods and the need for conservation.
- The construction contract shall be between the National Project Coordination Unit of the State Department for Blue Economy and Fisheries, (SDBE&F) and the contractors
- The subcontracts of the contractor will be accepted and cleared by the supervision consultant in charge of the supervision of the works. The Supervising consultant will be responsible of ensuring that the subcontractors enforce and apply all measures included in this ESIA including the Environmental Technical clauses included in the bidding document and contracts.
- The supervising consultant to ensure full implementation by contractors and subcontractors of the ESMPs during construction/implementation stage
- The contractor's project Engineer and the Environmental, Health and Safety Manager in charge of Environmental and Health and Safety, Labor and Social safeguards officer to prepare a Construction ESMP to be implemented in construction by the contractor and all its subcontractors.
- The contractor's project Engineer and the Environmental, Health and Safety Manager in charge of Environmental and Health and Safety, Labor and Social safeguards officer to prepare an Operation and maintenance to guide the operation and maintenance of the structures by the Mwaepe BMU and Kwale County Government to do so during operation and decommissioning stages of the project as required.
- The supervising consultant and the contractor to ensure that the ministry of health and World Bank covid-19 guidelines are implemented to the latter at the project site during the construction period and that all the workers commit to observing the rules. The Department of Fisheries, Mwaepe BMU and the CPIU to ensure the covid-19 rules are adhered to during operation of the facilities. Covid-19 virus remains dynamic and unpredictable
- The project contractor and the supervising consultant to ensure that compliance with GRM and sensitization and awareness is created among construction workers, contractor, subcontractors and the general public, on project Grievance Redress Mechanism (GRM) structures in place in the event of a need to address or report any emerging issues, Gender based violence and Sexual Exploitation Abuse on site or any complains by any aggrieved part in the area.

1. INTRODUCTION

1.1. Background

Effective management of priority fisheries stocks and availability of functioning public landing-site infrastructure play a critical role in; centralizing data collection for fisheries management, enable enforcement of compliance, enabling private sector interest in the fisheries sub-sector, job creation, strengthening of coastal communities' livelihood, increase in household income, increase food security, increase the value of fish traded, minimizing post-harvest fish losses and strengthening capacity of community institutions responsible for fishery management. Yet it's an area that remains a major concern to Kenya fisheries sector management. It is in light of this that the Government of Kenya, through SDBE&F requested the World Bank to support the development of the sector through the Kenya Marine Fisheries and Socio-Economic Development (KEMFSED) project as means to exploit the potential and attain economic benefits from the coastal and marine resources. The project aim is to enhance the blue economy sector in supporting coastal livelihoods and contribute to food security. As part of the efforts under KEMFSED project to strengthen community fisheries management institutions established under the Fisheries Management and Development Act, 2016, funding has been committed for the development of landing sites infrastructure. Improvement of the landing sites is an enabler towards sustainable management of the fish stock and private sector interest and investment in fisheries management. Mwaepe landing site in Kwale County, Ukunda Diani is one of such facilities that remains dilapidated in spite of its potential to contribute to the objectives of the blue economy.

Mwaepe landing site is among the oldest landing sites in Kenya and has been in existence since 1968 as a gazetted fish landing site under the state department of fisheries. The landing site is under Mwaepe BMU since 2007 which is mandated to manage the resources at the site but due to weak leadership, the site is faced with a myriad of challenges including: dilapidated fish banda which does not assure the hygiene standards of the fish products. The design of the existing fish Banda does not provide for controlled access for fish entry, washing and selling points but has free access exposing the products to contamination. The landing site does not have fish waste management measures in place. The landing site does not have operational toilets and the existing pit latrines are dilapidated, the fishers do not have a bathing area and are forced to clean in the open. The development on the site is haphazard and free for all without proper planning which poses a danger of the public plot being encroached. Most social amenities at Mwaepe landing site like water and electricity has been disconnected due to none payment of bills and the landing site has no boat yard. The construction of a poly-functional building, a fish banda, a boat yard, 2 No. restaurant, 7 No. stalls, fish gear mending shed, an ablution block, monumental gate and a gate house, painting of historical building, 1 No. prime rated 66 KVA 3 phase, 415V, 50Hz diesel generator with a silencer, 69 No 40KW 144 Cell, 585W Mono- Crystalline Solar Modules and Civil works, (*slip way, drainage, landscaping works, road works and perimeter wall*) at

Mwaepe landing site, if implemented is anticipated to address these issues. There shall be improvement in fisheries management and enforcement of compliance.

The proposed improvement construction works for Mwaepe could have social and environmental implications if not well anticipated and enhanced or mitigated, it is therefore essential to appreciate the environmental and social significance and site conditions likely to be influenced by the sub-project activities or to influence the project through an assessment. This shall be in line with the World Bank OP/BP 4.04, OP/BP 4.11, OP/BP4.01, General EHS guidelines, fish processing EHS guidelines and section 58 of the Environmental Management and coordination Act CAP 387; which require a project proponent to prepare a comprehensive project report before being permitted to undertake any activities with potential harm to the environment or effect to social aspects. This includes observance of related national legislations guiding stakeholder consultation, work place safety, conservation, management and utilization of natural resources.

In response to the requirements of the law, the NPCU and the county government safeguards team prepared the ESIA comprehensive project report for the proposed Improvement of Mwaepe Landing site in Kwale County Ukunda Diani. Undertaking the study for the proposed sub-project has allowed for early identification of key environmental and social issues that need to be considered during implementation of construction works, operation and decommissioning activities. This will improve the overall understanding of the project's possible positive impacts and risks, hence increasing its environmental and social sustainability. It is also a requirement under the World Bank to prepare an Environmental and Social Impact Assessment for moderate risk sub-projects under KEMFSED.

1.2. The rationale for the ESIA study

The proposed Improvement of Mwaepe landing site sub-project falls under the World Bank's support to the government through investment lending towards transforming and strengthening sectors related to the blue economy, focusing on strengthening fisheries landing infrastructure. The proposed construction works will thus trigger the Bank's Safeguard Policies (*OP 4.01 Environment Assessment*) which requires undertaking environmental and social due diligence for all sub project activities and preparing environmental and social impact assessment for sub-projects.

Also, as per section 58 of the Environmental Management and Coordination Act CAP 387, it is a requirement that a proponent prepares a comprehensive project report for the authority to approve any development activities. This includes compliance with the Environment Impact Assessment and Audit Regulations of 2003 and consideration of other national legislations guiding conservation, management, and utilization of natural resources. Therefore, the assessment under this study was to identify significant potential impacts of the sub-project works to the project site's physical, biological, social, and economic aspects.

1.3. Objectives and Scope of the ESIA Project Study

1.3.1. General Objectives of the ESIA study

The main objectives of the study were to conduct environmental and social assessment for the proposed construction works in line with NEMA and World Bank requirements. The specific objectives of the assessment therefore, focused on;

- Identifying significant potential impacts of the proposed sub-project to the physical, biological, social, cultural, and economic environment during all the project phases (construction, operation and decommissioning). Propose mitigation measures to anticipated adverse environment, social and occupational health, and safety impacts throughout all phases of the project while enhancing the positive changes.
- Assess the considerations of climate change adaptation, green building and green energy in the designs of the building to ensure the proposed project is environmentally friendly, socially acceptable, and sustainable.

1.3.2. The Scope of ESIA Assignment

The scope of the assignment was to;

- Describe the national environmental legislative and regulatory framework for construction and operation of the proposed fish landing site and the associated facilities.
- Description of the proposed sub-project design and proposed works including technology, materials, by products, procedures and processes to be used during construction, operation and decommissioning. And highlight the cost benefit of the proposed facilities
- Description of the project area's current environmental and social conditions including physical, biological, social, cultural, and economic environment.
- Conduct an assessment to identify and predict environmental and social risks and impacts, including; positive and negative, direct, indirect and cumulative that shall arise from the proposed sub-project activities at construction, operation and decommission phase.
- Conduct consultations with key stakeholders
- Identify mitigation measures for negative impacts as well as enhancing measures for the positive impacts of the project.
- Develop an environmental and social management plan (ESMP), capturing aspects of gender-based violence GBV, sexual exploitation, and abuse (SEA) and child labor issues.
- Develop an Environmental and Social monitoring plan (ESMoP)
- Prepare Grievance Redress Mechanism (GRM)
- Acquire NEMA EIA license

1.4. The Study Approach and Methodology

The main approaches applied in the course of collecting environmental and social baseline data, were desktop literature review and field surveys for environmental and social baseline.

1.4.1. Desk Review

A desktop study was conducted to review available published and unpublished reports in order to compile relevant baseline biophysical and socio-economic information about the study area. The focus of the literature review was on Diani Chale marine reserve and the trend of fisheries management at Mwaepo landing site. The biophysical information was compiled on environmental aspect such as flora, fauna, climate and general environmental management. On the socio-economic aspects, the study compiled information on factors such as population, social amenities and physical infrastructure, land use and ownership, water and sanitation coverage, cultural heritage and properties, livelihood systems, gender-based violence and sexual harassment, STI/HIV/AIDS and child labour.

1.4.2. Field Survey

The study team conducted field survey within the project area on several occasions in June and November 2021, March, April, June, August and 5-13th December 2022. The main objective of the activity was to carry out on-site field assessments on the expected effects of the planned developments on the physical, biological and socio-economic environment. The field work exercise involved visiting and paying courtesy calls to key informant interviews with county officers and conducting public meeting and consultations with operators at Mwaepo. The survey team further conducted GPS data collection for the fishing grounds, conducted a site visit to familiarize and appreciate the general setting in respect to the proposed project site accessibility, social amenities, environmental setting and physical features among others. The team took the opportunity to conduct community stakeholder consultations meetings and consultations on social economic related issues.

1.4.3. Environmental Data Collection

The environmental study team carried out environmental profiling with an aim of assessing waste generation and management within the area of interest, sanitation and existing impacts to water resources, identifying potential sources of noise and vibrations as well as likely receptors, potential sources of air quality issues, vegetation type and cover, invasive species management if any, habitat types in the area, landscape and aesthetic value of the proposed project area. The main data collection methods were through observations, photo taking, expert judgment and consultations with members of the public. From screening stage, the site was determined not to have been used for any major industrial/potentially ground contaminating activities, lacked any known/documentated pre-existing environmental liabilities and soil quality tests were not considered in the study.

The County fisheries specialist collected the GPS coordinates of the fishing grounds together with Mwaepo fishers with an objective of generating a map of the fishing grounds accessed by Mwaepo fishers. The data collected was triangulated with data from secondary information sources.

1.4.4. Socio-Economic Data Collection

The socio-economic data for the report was collected from secondary data and using qualitative data collection techniques which included but was not limited to key informants interviews and public consultative meetings. The Key informant consultations targeted senior fisheries departmental officers, officers from lands and physical planning, ward administration, Department of Water, Kenya Wildlife Service, Department of Environment and Natural Resources, county ecosystem conservators, trade and tourism, Department of Social Services and the Department of Public Health among others. The process of consulting key informant was conducted over several occasions in July and December 2022. Public consultation meeting was organized on December 7th, 2022 to seek opinion of the public on the possible impacts of the project. The findings during the discussions of the consultative process were as indicated in chapter 5.

1.5. ESIA Project Report Study Team

The Environmental and Social Impact Assessment project report for the proposed Improvement of Mwaepe landing site in Kwale Ukunda-Diani, was prepared by a team of officers from KEMFSED NPCU and officers from the county government of Kwale under the CPIU. Environmental scoping and subsequent preparation of the ESIA project report were accomplished through several experts' involvement with differing inputs. The ESIA preparation team composition is as indicated in Table 1-1.

Table 1-1: ESIA preparation Team

NO	NAME OF EXPERT	POSITION	ORGANISATION
1.	Samuel Bandari	County Project Coordinator	CPIU
2.	Michael K. Kuria	County Safeguards Officer	CPIU
3.	Hassan Mwandaro	Civil/structural engineer	CPIU
4.	Raphael Tsimba	Architect	CPIU
5.	Daniel Mukare	Surveyor/Physical planner	CPIU
6.	Susan Otieno	Fisheries specialist	NPCU
7.	Godfrey Wabomba	Environmental Safeguards Specialist	NPCU
8.	Lazarus Kubasu	Social Safeguards Specialist	NPCU
9.	Stephen Ndegwa	Fisheries specialist	NPCU
10.	Gladys Okemwa	Fisheries specialist	NPCU
11.	Stephen Mwangi	Fisheries specialist	NPCU
12.	Rashid Imam	Fisheries specialist	NPCU
13.	Stephen Angwenyi	Project Engineer	NPCU

1.6. Content and Structure of the Report

1.6.1. Purpose of the report

This report is intended to meet the overall assignment objectives of carrying out environmental and Social due diligence for the construction works of the proposed construction of Mwaepo fish landing site and the associated facilities in accordance with statutory requirements by NEMA on projects under EMCA CAP 387 schedule II. The report will assist NEMA and lead agencies in decision-making process and ensure that the sub-project activities comply with sound environmental management practices. The report is also intended to assist the project proponent State Department for Blue Economy and Fisheries (SDBE&F) Kwale County Government, Mwaepo BMU, Joint Project Supervising Committee (JPSC), the supervising consultant and the contractor in their obligation of maintaining environmental integrity during the overall management of the project activities during proposed Mwaepo Landing site construction, operation and decommissioning. The report is also meant to meet the World Bank safeguards requirements on KEMFSED project to conduct environment and social assessments before undertaking any activities sub-projects.

1.6.2. Structure of the Report

The report has been structured in 10 chapters to capture requirements under project ESMF, VMGF, EMCA CAP 387 and Environmental Impact Assessment and Audit regulations 2003. The report is also consistent with the international best practices as outlined below;

- Chapter 1 introduces the sub-project activities in general, giving the background, project justification, study methodology, and rationale used to achieve the objectives of the study.
- Chapter 2 describes the proposed project design and the various alternatives considered for implementation.
- Chapter 3 highlights the environmental policy, legal and institutional framework that will govern the overall management of the works and its components at various phases of the project cycle.
- Chapter 4 briefly outlines existing environmental baseline information including physical, biological and socio-economic conditions of the project area. The content in the chapter also highlights how the project will influence or be influenced by the baseline conditions,
- Chapter 5 summarizes public and key stakeholder consultative process and the outcomes,
- Chapter 6 give the project impacts both positive and negative impacts associated with proposed project activities at the three phases (construction, operation and decommissioning),
- Chapter 7 presents the project Environmental and Social Management Plan (ESMP) at project constructions, operation and decommissioning,
- Chapter 8 presents Environmental and Social Monitoring Plan (ESMoP),
- Chapter 9 captures the grievance redress mechanism on the sub-project,
- Chapter 10 presents the ESMP assessment team's conclusions and recommendations.

2. PROJECT DESCRIPTION

2.1. Chapter Overview

This chapter highlights the project location, sub-project objectives, proposed project design, project activities, project resources and by-products, project alternatives and the estimated financial cost for the proposed augmentation of Mwaepe fish landing site in Kwale County Ukunda Diani.

2.2. Project Location

The proposed Mwaepe fisheries Landing site is located on a piece of land measuring about 0.75 acre (0.3035 hectares) owned by the fisheries department, the land ownership documents are attached in Annex II. The proposed project is located in Kwale County, Msambweni Sub-County, Kinondo ward, Kinondo location and in Kinondo Sub-location. The Landing site is located at Mwaepe as shown Figure 2-1 from a Google image. The area has an elevation that ranges from 7-12m depending on the distance from the shoreline with GPS coordinates of the project site being Latitude 4°20'35.10"S and Longitude 39°33'58.61"E.



Figure 2-1: A Google Image of Mwaepe Landing site

2.3. Sub-Project Development Objectives

The support for improvement of Mwaepe landing site under KEMFSED is aimed at improving fisheries management in Kwale County by improving centralized fisheries data collection and enforcement of compliance. The improvement of Mwaepe landing site is therefore anticipated to contribute towards enhancing fisheries management in Kwale County and the nation in general.

2.4. Justification of the Project

Properly managed landing sites play a critical role in attracting fish landings, visitors and traders which plays a critical role in improving fisheries data collection, reduced sexual exploitation and enforcement of compliance. Though Mwaepe landing site is a key fish depot in Kwale county, the landing site is faced with many challenges including; dilapidated fish banda, lack of controlled access to the fish entry, washing and selling point, lack of fish waste management, dilapidated pit latrines lack of bathing area for fishers, haphazard and free development without proper site planning, lack of social amenities such as water and electricity due to none payment of bills and lack of a boat yard. The dilapidated state of Mwaepe landing site is detrimental to fisheries management and enforcement since there has been a reduction in landings, number of visitors visiting the site and fish traders over the years. KEMFSED project however, provides an opportunity to improve Mwaepe landing site through constructing of a 4-Storey Poly-functional building with a roof top and inclusive of a boat yard facility, a 2-Storey Modern Fish Banda with a roof top, 2 No. single-story restaurant buildings, a single-story ablution block building, 2No. single-story stall buildings with a total of 7 stalls, a single-story fish gear shed, Boundary wall, 2 No. Single-story gate houses, a monumental gate, painting of existing historical Ngozi therapy hub and USAID donated building. There will also be landscaping works, civil works (*slipway, road, parking and drainage construction*), buying of 1 No. prime rated 66 KVA 3 phase, 415V, 50Hz diesel generator with a silencer and purchasing of 69 No. 40KW 144 Cell, 585W Mono-Crystalline Solar Modules.

The proposed development if implemented will be handy in addressing the current challenges by centralizing data collection for fisheries management, enable enforcement of compliance, unleash private sector interest in the fisheries sub-sector, job creation, strengthening of coastal communities' livelihood, increase in household income, increase food security, increase the value of fish traded, minimizing post-harvest fish losses and strengthening capacity of community institutions responsible for fishery management. In addition, Mwaepe landing site falls within a critical habitat, Diani chale marine reserve which was noted to be highly degraded as evidenced by the presence of high number of sea urchins. And KEMFSED project under component 2 provides an opportunity for conservation efforts under the BMUs and the CIGs operating along the marine reserve. Past studies indicate that the coral reef is significant as a fish spawning area and restoration of the coral will be a key contribution by the project toward managing the natural resources in the Marine reserve even as the project improve the landing site.

2.5. Existing Fisheries Resources Access and Management

2.5.1. Fishing Grounds

Fishery resources in the Diani-Chale area provide livelihoods for approximately 97 fishers based on the most recent frame survey (Government of Kenya, unpublished data, 2022). Fishing and fish trading related activities along the Diani-Chale area constitute between one fifth and one quarter of all household activities (CORDIO, 2003). Fishing is mainly small-scale, composed of

artisanal and subsistence fishers. Major fishing grounds that serve the Diani-Chale area include: Mwakamba, Tradewinds, Mvuleni, Mwaepe, Mwanyaza and Chale (Figure 2-2).

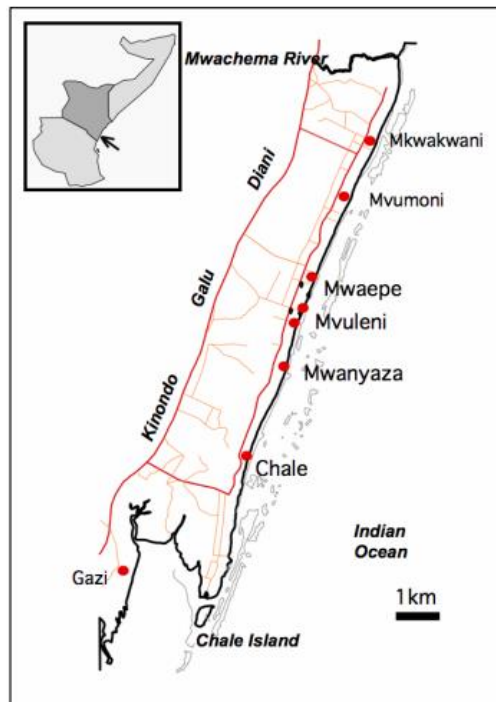


Figure 2-2: Map of Diani-Chale area showing fish landing sites (source Maina et al., 2008)

The fisheries officer who was part of the assessment team together with the fishers from Mwaepe went out to the sea to map the fishing grounds and the findings mapped on Figure 2-3 indicated that most of the current fishing activities by the community is within the marine reserve. Yet collection of catch data has declined over time at the landing site, indication that it remains unknown the extent of degradation being caused by the fishing activities to the habitats captured under section 4.4. It is apparent that the implementation of the proposed project is critical to enhance centralized collection of fish catch data that will contribute to the management of the habitats within the reserve

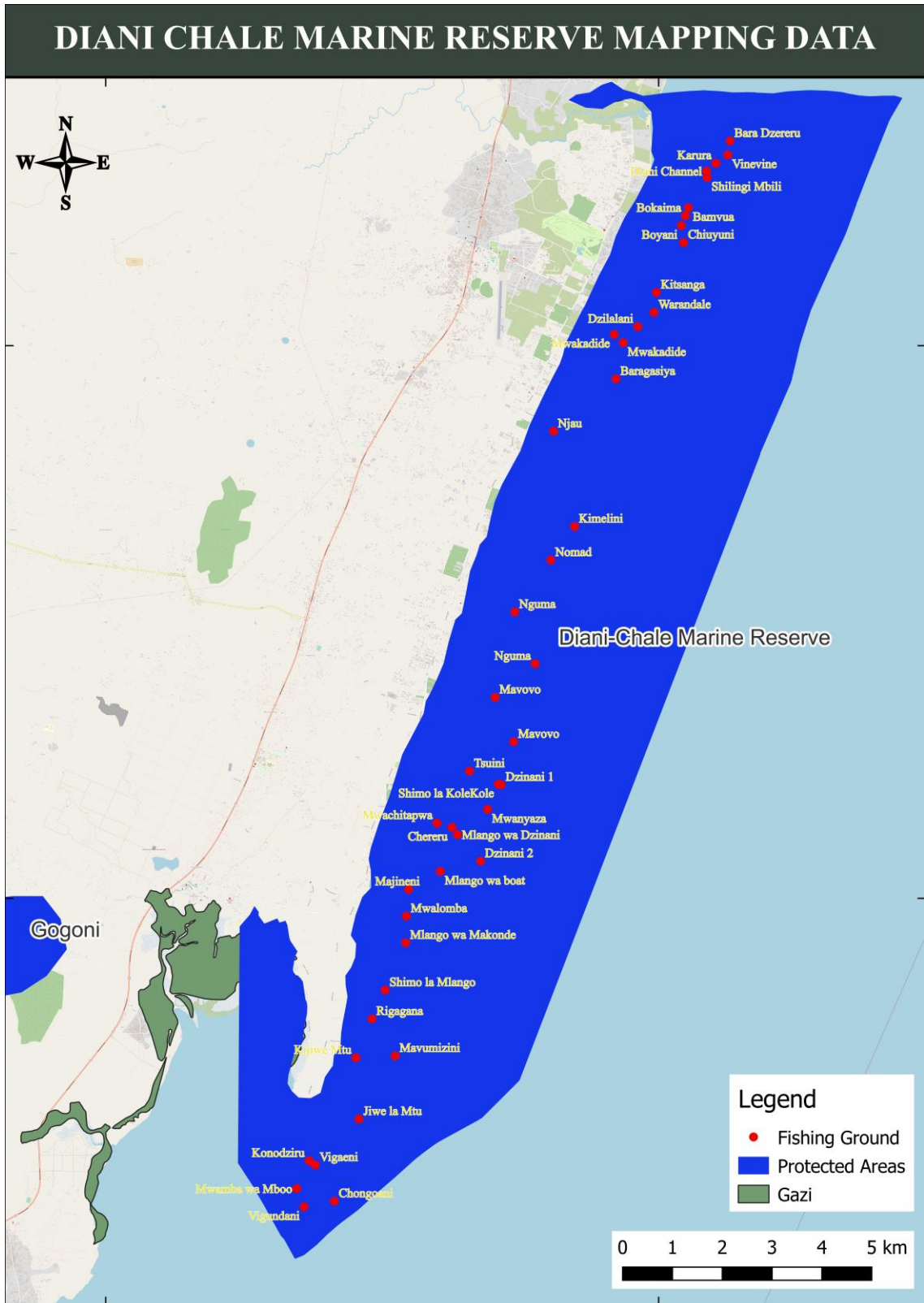


Figure 2-3: Fishing grounds for fishers at Mwaepi Landing site

2.5.2. Vessel and gear use

The artisanal fishery of Diani-Chale area is multispecies and multi-gear. The fishers use three types of traditional vessels: dugout canoe (19), ngalawa (12), dau (6); two types of modern vessels: rafts (1) and surf boards (6); and four gear types: spearguns (53, 55%), gillnets (11, 8%), handlines (25, 26%) and basket traps (8, 8%). A total of 11 vessel-gear combinations were reported during the frame survey as shown in Figure 2-4, dominated by foot fishers using spearguns.

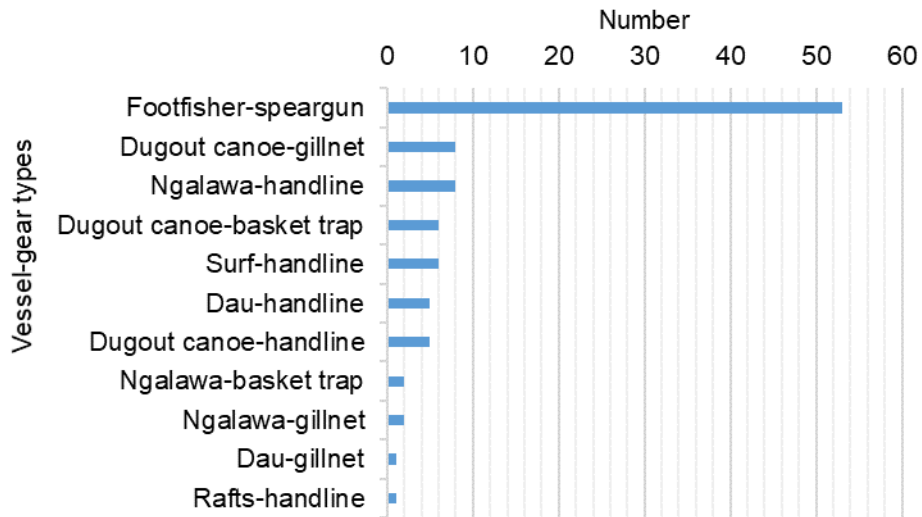


Figure 2-4: The composition of Vessel types at landing site 2022

The composition of vessel types at Mwaepe landing sites within Diani-Chale area based on the most recent frame survey conducted in 2022 was used to estimate the number of vessel-Type at the landing site. Improvement of Mwaepe landing site is anticipated to attract landings from other nearby landing site that have no facilities such as Munje, Bado, Funzi and Mkunguni. The anticipated number of vessels are as indicated in Table 2-1.

Table 2-1: Anticipated number of vessels landing at Mwape Landing site after improvement

MWAEPE	Count of Craft Type
Dau	76
Dugout (Mtumbwi)	51
Footfisher	117
Hori	8
Mashua	1
Ngalawa	63
Other	5
Rafts	1

Surf	11
Grand Total	333

2.5.3. Fishery Production Estimates

Annual fishery production estimates for the Diani-Chale area for the last ten years (2011– 2021) indicate fluctuating annual trends ranging from 132 to 293 metric tonnes (Figure 2-5). The contribution of the four gear types to the landings is evenly spread across, but the highest catches come from gillnets and handlines followed by traps and spear guns respectively. The mean catches per unit effort ranges from about 5kg to 12 kg per vessel day⁻¹ and varies seasonally, being significantly higher during the northeast monsoon (NEM) months from November to March, particularly for basket traps (Table 2-2). The average catch per fisher per day varies between 2 and 6 kg depending on the season.

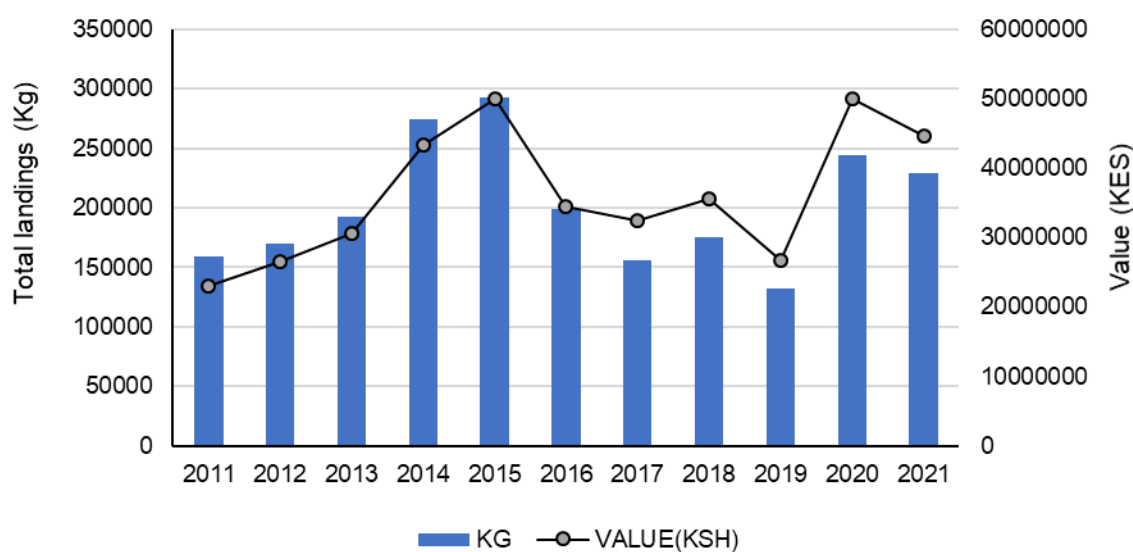


Figure 2-5: Annual Fisheries production estimate for the Diani-chale area from 2011 to 2021

Table 2-2: Mean Daily Catch per unit effort (Kg.vessel⁻¹ . day⁻¹)± standard Error (SE), and the number of sampled trips)

Vessel type	Gear type	Mean	Number of trips sampled
Dugout canoe	Basket trap	4.8 ± 0.12	1277
Dugout canoe	Gill net	9.3 ± 0.69	254
Dugout canoe	Handline	9.2 ± 1.73	17
Dugout canoe	Jarife	9.8 ± 1.79	33
Dugout canoe	Spear gun	8.0 ±	1
Ngalawa	Basket trap	4.6 ± 1.38	5
Ngalawa	Gillnet	5.4 ± 1.3	15

Ngalawa	Handline	12.3 ± 1.01	119
All Groups		6.1 ± 0.16	1721

Table 2-3 Mean Catch per unit effort (Kg.vessel⁻¹ . day⁻¹) during the northeast (NEM) and southeast (SEM) monsoon seasons

Table 2-3: Mean Catch Per unit effort

Mwaepe				
Gear	NEM	SEM	Z	p
Lema traps	5.1±0.12	3.9±0.29	6.580	<0.05
Gill net	10.7±1.57	8.5±0.68	0.818	0.412
Handline	10.7±1.03	13.8±1.65	0.919	0.412

2.5.4. Species Composition of Catches

Demersal reef fish species, pelagics (including tunas, kingfish, barracuda, mullets and sardines), squid and octopus dominate landings by weight (Figure 2-6). By abundance, octopus, parrotfish and rabbitfish dominate landings constituting 11.3%, 8.6% and 7.1% of the total landings respectively (Figure 2-7).

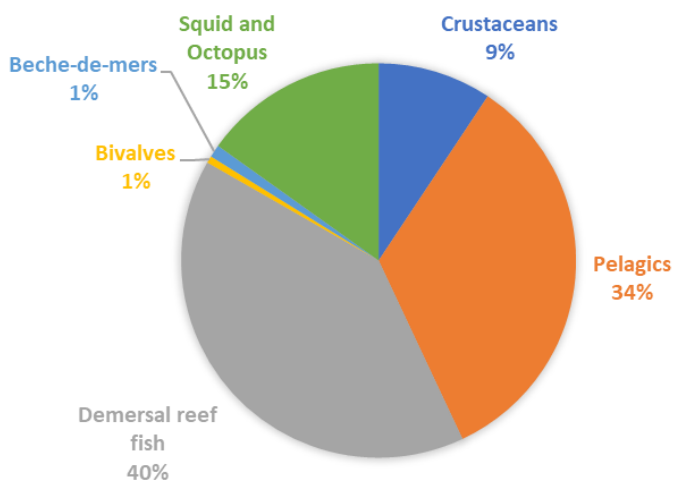


Figure 2-6: The composition of Landed catches in Diani-Chalearea during 2020-2021(source Kwale County)

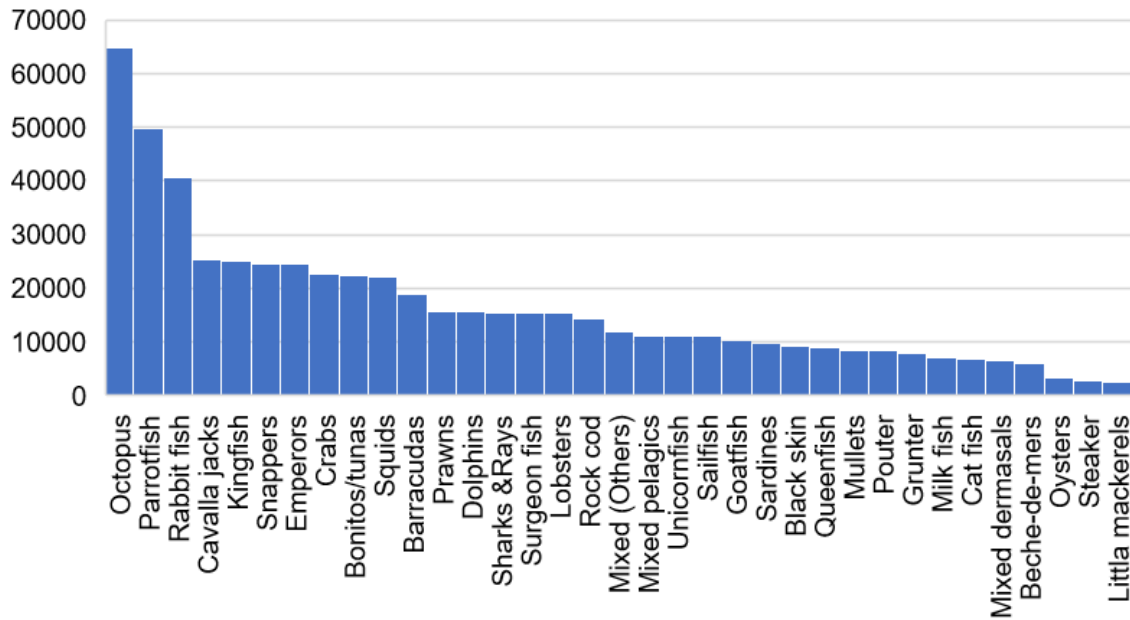


Figure 2-7: Relative abundance of landed catches in Diani-Chale area by species groups during 2020-2021 (source Kwale County)

2.5.5. Measures to Enhance Fisheries Sustainability and Increased Fish Production

Improving the facilities at Mwaepe fish landing site is anticipated to improve fishing efforts by fishers as a means of enhancing household income. Mwaepe area has been experiencing reduction in fish production over time associated with habitat degradation and increased fishing pressure. However, to contribute towards the project development objective of enhancing fisheries management, there is needed to undertake deliberate measures of enhancing sustainability of fish production. The project activities under sub-component 1.2 contribute to increased fish production through identifying area specific management measures and developing a Joint Co-Management Area (JCMA) plan. Under JCMA plans, the communities have identified management measures to be implemented through the BMUs focused on enhancing fish production and habitat management. The management efforts under JCMAs focuses on management of fishing gears, gear exchange to reduce illegal fishing gears, identifying and demarcating no take zones “TENGEFU⁶”, seasonal closures and conducting multi-agency patrols for monitoring and surveillance controls.

In addition to the measures undertaken under component 1.2, the project under component 2 is empowering the communities to engage in deep sea fishing by providing modern boats to reduce near shore fishing pressure. Enhancing deep sea fishing skill and tracking the boats to ensure that the fishing activities are in deep waters will enhance fish production in the near shore. The project under component 2 is also providing the communities with complimentary livelihoods to

⁶ Over the past two decades Kenyan fishing communities have been setting up no-fishing zones called tengefus, Swahili for “set aside.”

reduce overreliance on fishing activities, a move hoped to reduce pressure on fisheries resources. However, due to the presence of the Diani-Chale Marine reserve, Mwaepe BMU is not under any JCMA but instead in a CMA at the time of this study.

2.6. Project Design for Augmentation of Mwaepe Landing Site

The proposed improvement of Mwaepe fish landing site will consist of the following structures;

- i. poly-functional building,
- ii. a fish banda,
- iii. a boat yard,
- iv. 2 No. restaurant,
- v. 7 No. stalls,
- vi. fish gear mending shed,
- vii. An ablution block,
- viii. Monumental gate and a gate house
- ix. Painting of historical building
 - x. 1 No. prime rated 66 KVA 3 phase, 415V, 50Hz diesel generator with a silencer
 - xi. 69 No 40KW 144 Cell, 585W Mono- Crystalline Solar Modules
- xii. Civil works, (*Moving Bed Biofilm Reactor (MBBR), Bio- Reactor DAF- Dissolved Air Floatation- system, Biodigester, slip way, drainage, landscaping works, road works and perimeter wall*)

2.6.1. Design Guidelines

The design of the various structures has been fully aligned with the Kenya Building Code and the World Bank Environment, Health, and Safety Guidelines (WB EHSG) – General Guidelines. This final design integrates Kenya’s regulatory standards for structural safety, environmental sustainability, and public health, as well as international EHS best practices outlined in the WB EHSG, with a focus on mitigating environmental, health, and safety risks during both construction and operational phases. A draft design was used during ESIA studies and subjected to stakeholders’ feedback. The design underwent extensive review and consultation with key stakeholders, including county Government, local beach management units (BMU) and environmental & social specialists, ensuring compliance with Kenya’s National Construction Authority (NCA) standards and the Environmental Management and Coordination Act (EMCA) Further, in line with NCA, only qualified contractors for the various structural, electrical and plumbing works, will be engaged to undertake the works.

2.6.2. Proposed Poly-functional Building

The Poly-functional building shall be a four-storey building with a height of 16.8 meters from the ground level. The area in space of the polyfunctional building is proposed to be 909.7m² with ground floor taking up taking up 314m², first floor taking up taking up 314m², roof floor slab taking up taking up 140.85m² and watchtower Space 140.85m² of the total space area. The

proposed space accommodation of the building is as captured in the design drawings attached in Annex I. Table 2-4 below is a summary of proposals of how the spaces of the poly-functional building shall be utilized and the type of finishing envisioned for each space as captured from the design report.

Table 2-4: Proposed Space Accommodation for the Poly-functional building

SPACE	SUB-SPACES
Ground Floor	Entrance, Parking, Underground water tank, Staircase, Lift, Generator/Power room, Boat Yard Area and Boat Yard Store Area
First Floor	Conference room, Boardroom, BMU Office 01, BMU Office 02, Kitchenette, Gents washroom with 1 No. Gents toilet and 1 No. PWD toilet, Ladies washroom with 1 No. Ladies toilet and 1 No. PWD toilet, Fisheries office, Walkway, Lobby, Staircase, Lift
Roof Slab	Staircase, Lobby, Lift, Water tanks area, Future solar batteries room
Watch Tower	Watch tower room, Roof slab

Proposed Finishes

The finishes are proposed to entail paving slabs for paving finishes while the external wall to have rendered finish, marine grade bituminous and marine grade emulsion paints to rendered surfaces. The internal wall finishes will also be plastered and painted with emulsion paint and with glazed ceramic wall tiles. The floor will have, polished terrazzo paving and ceramic floor tiles. The timber doors will be painted with clear varnish, window grilles are proposed to have corrosion resistant marine metal paint and the ceiling will also be plastered and painted with emulsion paint. The roof terrace floor will be finished with concrete interlocking tiles, on bituminous member on water proofing floor screed and a precast concrete coping on parapet walls.

2.6.3. Proposed Fish Banda Building

The Fish banda building shall be a two storey with a height of 8.1 meters from the ground level. The area in space of the Fish banda building is proposed to be 334.95m² with ground floor space taking up taking up 255.5m² and first floor enclosed Spaces 78.95 m² of the total space area. The proposed space accommodation of the building is as captured in the design drawings attached in Annex I. Table 2-5 below is a summary of proposals of how the spaces of the fish banda shall be utilized and the type of finishing envisioned for each space as captured from the design report.

Table 2-5: Proposed Space Accommodation for the Fish Banda Building

SPACE	SUB-SPACES
Ground Floor	Verandah, Fish entry and weighing hall, Washing and preparation area, Ice collection room, Waste yard, Future cold room, Fish selling point, 1 PWD gents' washroom, Gents washroom with a changing room, 1 No toilet and 1 No Shower, 1 PWD ladies' washroom, Ladies washroom with a changing room, 1 No toilet and 1 No Shower and Circulation core with a staircase
Roof floor	R.C Flat roof, Ice Machine Room, Storage, Water tanks space and Staircase

Proposed Finishes

The finishes are proposed to entail paving slabs for paving finishes while the external wall to have rendered finish, marine grade bituminous and marine grade emulsion paints to rendered surfaces. The internal wall finishes will also be plastered and painted with emulsion paint and with glazed ceramic wall tiles. The floor will have, polished terrazzo paving and ceramic floor tiles. The timber doors will be painted with clear varnish, window grilles are proposed to have corrosion resistant marine metal paint and the ceiling will also be plastered and painted with emulsion paint. The roof terrace floor will be finished with concrete interlocking tiles, on bituminous member on water proofing floor screed and a precast concrete coping on parapet walls.

2.6.4. Proposed Ablution Block Building

The Ablution block building shall be a single-storey with a height of 3.6 meters from the ground level. The area in space of the ablution block building is proposed to be 150 m² with internal space taking up taking up (86%) and external Spaces (14%) of the total space area. The proposed space accommodation of the building is as captured in the design drawings attached in Annex I. Table 2-6 below is a summary of proposals of how the spaces of the ablution block building shall be utilized and the type of finishing envisioned for each space as captured from the design report.

Table 2-6: Proposed Space Accommodation for the Ablution Block Building

SPACE	SUB-SPACES
Ground Floor	Dining area, Store Space, Cleaning area, cooking area, Gents washroom with 2No. Urinals 1 No. PWD toilet, 2 No. Toilets and 1 No. Shower, Ladies washroom with 2No. Urinals 1 No. PWD toilet, 2 No. Toiles and 1 No. Shower, External hand Washing area
Roof floor	Roof slab terrace

Proposed Finishes

The finishes are proposed to entail paving slabs for paving finishes while the external wall to have rendered finish, marine grade bituminous and marine grade emulsion paints to rendered

surfaces. The internal wall finishes will also be plastered and painted with emulsion paint and with glazed ceramic wall tiles. The floor will have, polished terrazzo paving and ceramic floor tiles. The timber doors will be painted with clear varnish, window grilles are proposed to have corrosion resistant marine metal paint and the ceiling will also be plastered and painted with emulsion paint. The roof terrace floor will be finished with concrete interlocking tiles, on bituminous member on water proofing floor screed and a precast concrete coping on parapet walls.

2.6.5. Proposed Restaurants Building

The Restaurants building shall be a single-storey with a height of 4.5 meters from the ground level. The area in space of the Restaurants building is proposed to be 550 m² with internal space taking up taking up (86%) and external Spaces (14%) of the total space area. The proposed space accommodation of the building is as captured in the design drawings attached in Annex I. Table 2-7 below is a summary of proposals of how the spaces of the restaurants building shall be utilized and the type of finishing envisioned for each space as captured from the design report.

Table 2-7: Proposed Space Accommodation for the Restaurants building

SPACE	SUB-SPACES
Ground Floor	Dining area, Store Space, Cleaning area, cooking area, Gents washroom with 2No. Urinals 1 No. PWD toilet, 2 No. Toiles and 1 No. Shower, Ladies washroom with 2No. Urinals 1 No. PWD toilet, 2 No. Toiles and 1 No. Shower, External hand Washing area
Roof floor	Roof slab terrace

Proposed Finishes

The finishes are proposed to entail paving slabs for paving finishes while the external wall to have rendered finish, marine grade bituminous and marine grade emulsion paints to rendered surfaces. The internal wall finishes will also be plastered and painted with emulsion paint and with glazed ceramic wall tiles. The floor will have, polished terrazzo paving and ceramic floor tiles. The timber doors will be painted with clear varnish, window grilles are proposed to have corrosion resistant marine metal paint and the ceiling will also be plastered and painted with emulsion paint. The roof terrace floor will be finished with concrete interlocking tiles, on bituminous member on water proofing floor screed and a precast concrete coping on parapet walls.

2.6.6. Proposed Fish Gear Mending Shed Building

The fish gear mending shed building is an existing single-storey with a height of 3 meters from the ground level. The area in space of the fish gear mending shed building is 44m² in which a chipboard ceiling will be fixed and the entire structure will be repainted. The proposed space

accommodation of the building is as captured in the design drawings attached in Annex I. Table 2-8, below is a summary of proposals of how the spaces of the fish gear mending shed shall be utilized and the type of finishing envisioned for each space as captured from the design report.

Table 2-8: Proposed space Accommodation for the fish gear mending shed Building

SPACE	SUB-SPACES
Ground Floor	Fish gear mending hall
Roof	Gal sheets roof covering on timber trusses

Proposed Finishes

The finishes are proposed to entail paving slabs for paving finishes while the external wall and concrete surfaces to have skimmed and painted marine grade bituminous and marine grade emulsion paints. The internal wall finishes will also be skimmed and painted with emulsion paint. The fascia board will be painted with marine grade gloss paint and chipboard ceiling will be painted with emulsion paint.

2.6.7. Proposed 6 No. Stalls Buildings

The 6 No. stalls buildings shall be single-storey buildings with a height of 4.5 meters from the ground level. The area in space of the 6 No. stalls buildings are proposed to be 320 m² with internal space taking up taking up (86%) and external Spaces (14%) of the total space area. The proposed space accommodation of the building is as captured in the design drawings attached in Annex I. Table 2-9 below is a summary of proposals of how the spaces of the 6. No stalls buildings shall be utilized and the type of finishing envisioned for each space as captured from the design report.

Table 2-9: Proposed Space Accommodation for the 6 No. Stalls building

SPACE	SUB-SPACES
Ground Floor	Verandah, Stall space and washroom with shower and toilet
Roof floor	Roof slab terrace

Proposed Finishes

The finishes are proposed to entail paving slabs for paving finishes while the external wall to have rendered finish, marine grade bituminous and marine grade emulsion paints to rendered surfaces. The internal wall finishes will also be plastered and painted with emulsion paint and with glazed ceramic wall tiles. The floor will have, polished terrazzo paving and ceramic floor tiles. The timber doors will be painted with clear varnish, window grilles are proposed to have corrosion resistant marine metal paint and the ceiling will also be plastered and painted with

emulsion paint. The roof terrace floor will be finished with concrete interlocking tiles, on bituminous member on water proofing floor screed and a precast concrete coping on parapet walls.

2.6.8. Proposed Preserved Buildings

The landing site will have existing building preserved for historical and cultural purposes, which will be repainted as part of minor restoration. The preserved buildings are single-storey buildings with a height of 3 meters from the ground level. Table 2-10 and below is a summary of proposals of the constitution of the preserved buildings and the type of finishing envisioned for each space as captured from the design report.

Table 2-10: Proposed Space Accommodation for the preserved Building

SPACE	SUB-SPACES	PROPOSED FINISHES
Preserved buildings	-Ngozi african therapy hub	<u>EXTERNAL FINISHES</u>
	-Usaid Donated Building	<p><u>Walls</u></p> <ul style="list-style-type: none"> -Rubbing down existing finish with a wirebrush; fill holes and dents: skimming with external wall filler; rubbing down to smooth finish to surfaces of walls, columns and beams -One undercoat and two finishing coats marine grade weather guard (silicone based) exterior paint as approved to Fair faced surfaces of walls, columns and beams -One coat of wood primer; apply three coats of marine grade gloss paint to fascia boards 200-300mm girth -3 coats of first quality bituminous paint or equal and approved to plinth surfaces <p><u>INTERNAL FINISHES</u></p> <p><u>Wall Finishes</u></p> <ul style="list-style-type: none"> Rubbing down existing finish with a wire brush; fill holes and dents: skimming with approved gypsum-based filler; rubbing down to smooth finish -One undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to

plastered surfaces

Ceiling Finishes

One undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to ceiling finishes

2.6.9. Proposed Gate House A Building

The Gate House A building shall be a single-storey with a height of 3.6 meters from the ground level and a gate entrance with a vehicular gate and pedestrian gate. The area in space of the gate house building is proposed to be 20m² with internal space taking up taking up (86%) and external Spaces (14%) of the total space area. The proposed space accommodation of the gate house A is as captured in the design drawings attached in Annex I.

Table 2-11 below is a summary of proposals of how the spaces of the Gate House A building shall be utilized and the type of finishing envisioned for each space as captured from the design report.

Table 2-11: Proposed Space accommodation for the gate house A building

SPACE	SUB-SPACES
Ground Floor	Guard House, Gents Washroom and Ladies Washroom
Roofing	Preprinted box profile Aluminum roofing sheets to timber trusses and roof terrace

Proposed Finishes

The finishes are proposed to entail paving slabs for paving finishes while the external wall to have stone cladding finish, rendered finish, natural stone cladding, marine grade bituminous and marine grade emulsion paints to rendered surfaces. The internal wall finishes will also be plastered and painted with emulsion paint and with glazed ceramic wall tiles. The floor will have ceramic floor tiles. The timber doors will be painted with clear varnish, window grilles are proposed to have corrosion resistant marine metal paint and the ceiling will be chipboard ceiling which will also be painted with emulsion paint.

2.6.10. Proposed Gate House B Building and gate entrance

The Gate House B building shall be a single-storey with a height of 5.25 meters from the ground level and a gate entrance with a vehicular gate and pedestrian gate. The area in space of the gate house B building is proposed to be 18m² with internal space taking up taking up (86%) and external Spaces (14%) of the total space area. The proposed space accommodation of the building and gate entrance is as captured in the design drawings attached in Annex I. Table 2-12

below is a summary of proposals of how the spaces of the Gate House building shall be utilized and the type of finishing envisioned for each space as captured from the design report.

Table 2-12: Proposed space accommodation for the gate house B building

SPACE	SUB-SPACES
Ground Floor	Guard House, Pedestrian gate and Vehicular gates
Roof floor	Roof slab terrace

Proposed Finishes

The finishes are proposed to entail paving slabs for paving finishes while the external wall to have rendered finish, natural stone cladding, marine grade bituminous and marine grade emulsion paints to rendered surfaces. The internal wall finishes will also be plastered and painted with emulsion paint. The floor will have ceramic floor tiles. The metal gates will be painted with marine gloss paint and the ceiling will be chipboard ceiling which will also be painted with emulsion paint. The roof terrace floor will be finished with concrete interlocking tiles, on bituminous member on water proofing floor screed and a precast concrete coping.

2.6.11. Proposed civil works

The proposed space accommodation of the Civil and External Works is as captured in the design drawings attached in Annex I. Table 2-13 below is a summary of proposals of how the spaces of the building shall be utilized and the type of finishing envisioned as captured from the design report.

Table 2-13: Proposed Space accommodation for the proposed civil works

SPACE	SUB-SPACES	PROPOSED FINISHES
Slip Way; 12m long, 4m wide	-Retaining Wall -450mm thick ramp	25mm thick cement and sand (1:3) Rendering to ramp walls
External Drainage; 200m	-Soak Pits -Biodigesters -Manholes	32mm thick cement sand screed 1:3 to surfaces of soak pit, manholes and biodigester cover slabs
Landscaping Works	-Grassed areas -Shrubs -Ornamental trees -Litter bins	3 coats of corrosion resistant marine metal paint or other equal and approved to galvanized litter bins
Road Works; 1225m²	-Subbases -Concrete Paved Blocks	Three coats of approved road marking thermoplastic paint on asphalt to surfaces not

	-Stormwater drainage	exceeding 100mm girth (Yellow in colour)
Perimeter Wall; 17m	-Reinforced concrete Columns and Beams -200mm thick coral block Walling	-25mm Thick cement sand (1:3) rendering to columns to receive stone cladding; -25mm Thick cement sand (1:3) rendering to beams -30mm Thick cement sand (1:3) rendering to existing boundary wall. <u>Stone Cladding</u> 25mm thick polished mazeras stone cladding or other equal and approved to columns in cement and sand (1:3) mortar (m/s) with and including galvanised wire reinforcement; pattern to architect's approval <u>Key Pointing</u> Extra overdressed stone walling for neat recessed horizontal key pointing in 10mm thick rod in cement mortar (1:3) both internal and external sides of walling: one coat of bituminous paint.

2.6.12. Proposed landscaping works

The project will also include landscaping work which will including planting 500SM of grass, 300SM of ground covers, 300SM of shrubs, 40 No. Assorted species of palm trees, 30 No. assorted species of indigenous trees and 40No. Standard swivel 68L stainless steel liter bins.

2.6.13. Electrical Design for the Proposed MWAEPE Central Fish Landing Site

Electrical Supply and Distribution System is essential as a vital means for the operation of the MWAEPE Fish Landing Site during normal utility power, utility power failure, and emergency operation periods. System Supply will be a 3-phase power supply of 11kV step down to 415/240Volts. The proposed electrical works that shall be provided to the proposed building will include:

- Main Power Distribution.
- Standby Power Generating System.
- Solar supply system.
- General Lighting will be provided for all buildings.
- Interior and external, Landscape and Façade Lighting by Specialist Lighting Consultant
- General Emergency Lighting and Exit Signs will be provided.
- Lightning Protection System.
- Earthing and Equip-potential Bonding System.
- Telecommunication and Data System.

- Fire Detection and Alarm System
- Security and surveillance system

2.6.13.1. Electrical MV Intake, Generator Plant Power House and Solar System

The total Demand Load for the entire development has been calculated to be around 40KW which equals 66KVA at 0.8 Power factor. There is a potential for an increase in load, which will be associated with the reception of more definitive load from mechanical requirements in addition to the latest architectural plan and adoption of recommended minimum electrical density done by architects. The following Table 2-14 shows the peak electricity demand for each facility in Kilifi Central fish landing site;

Table 2-14: Mwaepe Power supply demand

Item	Building	Power Demand (KW)
1.	Meeting Hall	16.6
2.	Restaurant	5
3.	Fish Banda	5
4.	Stalls 1-6	6
5.	Fish Gear Mending Shed	0.6
6.	Ablution Block	5.6
7.	Gate House A	0.6
8.	Gate House B	0.6
	Total	40

- The power supply to the landing site shall be primary be provided by Kenya Power & Lighting Company Ltd which will be 40KW during peak demands.
- To ensure power supply reliability, 100% generator backup with 9hrs fuel supply capacity has been provided for. There will be one no. of 66KVA 3 phase, 415V, 50Hz diesel generating set with a continuous power factor of 0.8 lagging as directed by the Engineer's specifications.
- There will also be a 40KW (3 Phase) Grid-Tied solar system with 69 No. 144 Cell, 585W Mono- Crystalline Solar Modules with durability against extreme environmental conditions like high salt mist and ammonia resistance, Efficiency 80%, Cell Specific Safety - Class II, Application Class A, Life time - 30Years, Guarantee - 10Years. The solar panels shall be installed at the rooftop.
- The total power supply to the landing site being 40KW and the landing site's peak electricity being 40KW means that the power supply designed is sufficient to continuously run the landing site as required.

2.6.13.2. Medium Voltage Distribution System

Kenya Power & Lighting Company will provide 11 kV electricity supply to the site from Existing Utility 11kV Substations. The proposed LV rooms will be located on the Ground Floor of each facility. The 11kV cables will run from the nearest utility infrastructure manhole just outside the plot boundary to the Utility Company MV room. The exact location of the 11kV supply point or nearest infrastructure manhole shall be consulted to Kenya Power and Lighting Company.

2.6.13.3. Power Supply

Low Voltage distribution for major mechanical and services plants will be provided using a respective Sub-Main Distribution Board/s, Motor Control centre/s, Local Motor Control Panel/s, Distribution Board/s, and feeder/s emanating from respective Low Voltage Switchboard. All major plants will be sub-metered via an electronic digital meter connected to Building Management System for history, event recording, and monitoring. The Electrical Board supplying power will be located near the equipment or within the nearest electrical room. The entire building as a whole will be metered in bulk at the secondary of the dedicated transformer. Utility Company electricity consumption bulk meter is expected to be at the **11kV** voltage. The bulk meter will be located in the main LV room.

2.6.13.4. Main Switchboard

A dedicated set of LV switchboards (MDB) will be provided for the building. The LV switchboard will be located in the main LV rooms. The Low Voltage switchboard (MDB) will be Form 4, Type 6, free-standing, type-tested, fully certified with a minimum fault capacity of 50kA for 1 sec, and fully rated to operate at 50°C. The Low Voltage Switch Board will comprise but not limited to: The main incoming ACB from utility power and the main incoming ACB from the emergency supply will be electrically and mechanically interlocked and will serve as the Automatic Transfer Switch (ATS) to avoid parallel supply coming from utility and emergency supply at the same time. Where spare capacity permits, a minimum of 20% spare switchgear space will be provided for all low voltage switch boards.

2.6.13.5. Power Factor Correction

Every installation shall have a power factor within the range of 0.9 lagging to unity. The installation of suitable correction equipment may improve a lagging power factor of less than 0.9. Where a capacitor is installed for power factor correction, it must be provided with a means for its automatic prompt discharge immediately after the supply is disconnected. Power factor correction will be provided at each LV Main Switchboard.

2.6.13.6. Automatic Voltage Regulator (AVR)

A-line Automatic Voltage Regulator (AVR) to compensate voltage variance and ensure safe operation of the electrical system has been provided. AVR shall be an industrial type with a rectifier/ filter circuit to ensure a clean power supply to the electrical system. The AVR will be

provided adjacent to each Main LV switchboard to automatically mitigate and improved any voltage variation before entering the building electrical system

2.6.13.7. Final Circuit Distribution Board (DB)

Each Floor will have a number of final circuit distribution boards. All distribution boards will be at least three (3) sections. Each section will be provided with appropriate Earth Leakage Circuit Breaker protection in accordance with Local Authority requirements. It will also include the main isolation switch, with outgoing circuits protected by miniature circuit breakers. Distribution boards will be metal-clad type, complete with a lockable hinged front cover. Distribution boards within the front of house areas will be located within dedicated lockable enclosures or flush into the wall. Distribution boards in plant spaces, back of the house, and service areas will be surface mounted within plant room or dedicated electrical rooms.

2.6.13.8. Lighting

General lighting for public areas such as staircases, corridors, plant rooms, car parks, and staff circulation areas will be provided with LED luminaries for energy-saving purposes and supplied with solar PV. All luminaries in all potentially wet areas and exterior installation shall be IP55 minimum. Lighting for the land site building will take into consideration both functional and aesthetic aspects. Lighting System for spaces and other Front of Building Areas will be designed in collaboration with the specialist and interior designer. Lighting control, in general, will be a Centralized Automatic Lighting Control System using workstation computers, control module, dimmer modules, gateways, user interface, motion and occupancy detectors, etc.

2.6.13.9. Lightning Protection System

The Lightning Protection System will utilize the steel reinforcement in concrete structures as down conductors. Exposed horizontal copper tapes will be provided at roof levels around all roof parapets, and earth electrodes at ground level will be designed. Lightning protection system shall be designed in accordance with the BS EN 62035.

2.6.13.10. Fire Detection and voice evacuation System

The buildings will be provided with a complete fire alarm system designed and installed in accordance with the NFPA-72 and local Authority Having Jurisdiction (Kwale County). The whole building will have about Fire alarm and detection system points, including the smoke detectors, the break glasses, the washers, and the sounders. These devices will be placed at strategic locations such as corridors, entrances, and exit areas where they can be easily accessed in the event of a fire. Each alternate floor of every building in the landing sites will have a Fire Alarm Repeater Panel (FARP).

2.6.14. Domestic Water Supply

Water supply will be by gravity from holding tank at roof level. Water will be stored in the UpVC water tank at ground level, including both rain water and municipal water. Distribution

will be via a transfer pump to the UpVC roof water tanks located on the Roof Floors of buildings. There will be no hot water provision for toilets, office spaces.

2.6.14.1. Domestic Water Demand

The design approach for determining the domestic demand closely follows the guidelines of Practice Manual for Water Supply Services in Kenya (2005). The manual stipulates determining factors of classifying a study area as low, medium or high development potential. The service types that are used depend on the development potential, and the water consumption rates depend on the development potential and service type. Service type describes whether a household is Individually Connected to the waterline (IC) or the household depends on communal water point like a water kiosk, or No Connected (NC)

2.6.14.2. Water Consumption Rates

Water Consumption rates depend on development potential and the service type. The Practice Manual has given a guide on the consumption rates that takes into account the development potential and the service type. Table 2-15 below shows the figures given as a guide in the practice manual and Table 2-16 shows the adaptation of Table 2-15 for the project water consumption rates. It should be noted that the development potential and house type changes as the economy grows so that more people become individually connected.

Table 2-15: Consumption Rates

CONSUMER	UNIT	RURAL AREAS			URBAN AREAS		
		High potential	Medium potential	Low potential	High Class Housing	Medium Class Housing	Low Class Housing
People with individual connections	1/head/day	60	50	40	250	150	75
People without connections	1/head/day	20	15	10	-	-	20
Livestock unit	1/head/day	50			-		
Boarding schools	1/head/day	50					
Day schools with WC without WC	1/head/day	25 5					
Hospitals Regional District other	1/bed/day				400 200 100	+ 20 l per outpatient per day (minimum 5000 l/day)	

Dispensary and Health Centre	1/day	5000
Hotels High Class Medium Class Low Class	1/bed/ day	600 300 50
Administrative offices	1/head/ day	25
Bars	1/day	500
Shops	1/day	100
Unspecified industry	1/ha/day	20,000
Coffee pulping factories	1/kg coffee	25 (when re-circulation of water is used).

Table 2-16: Water Consumption Rates

	Current Year (l/p/d)	Initial Year (l/p/d)	Future Year (l/p/d)	Ultimate Year (l/p/d)
NC	0	0	0	0
IC	40	40	40	40

2.6.14.3. Population Projection

In 2022 population census Kwale County had an estimated population of 899,759 people living in 173,176 households. At an average growth rate of 3.8% by close analysis of inter-censal growth rates as contained in the COUNTY INTEGRATED DEVELOPMENT PLAN 2023 – 2027 (CIDP 2023). Utilizing a 20-year period design horizon and allowing a 4-year design and development period so that the initial year starts at 2026, the population will rise as shown below. The table below shows the population projection to current year, initial year, future year and ultimate year for Mwaepi Fish Landing site; as shown in the Table 2-17 below.

Table 2-17: Projected population of people and catch in Mwaepi Fish Landing site

Facility	BMU & Design Users (approx. per day)	& Design Year 2022	Initial Year 2026	Future Year 2036	Ultimate Year 2046
Ablution Block	100	100	119	138	157

Fish Banda	10	10	10	10	10
Restaurant	80	80	95	110	129
Polyfunctional Building	50	50	50	50	50
Market Stalls	18	18	18	18	18
Total	258	258	292	326	364
Fish Processing (Tonnes)	0.50 tonnes	0.50 tonnes	0.55 tonnes	0.60 tonnes	0.70 tonnes

2.6.14.4. Water Demand

The calculated water demand for the Mwaepe Fish Landing Site, which will begin operations in 2026 includes an ablution block, fish Banda, restaurant, polyfunctional building, market stalls, and a fish processing block. This analysis accounts for initial water requirements and projected increases through the design horizon of 2046, with the municipal water supply limited to twice weekly as indicated in Table 2-18. The following facilities have varying water demands based on their daily user or processing volumes;

Table 2-18: Water Demand Calculations

<u>Facility</u>	<u>Daily/Usage</u>	<u>Water Demand (liters/person or kg/day)</u>	<u>Total Demand (liters/day)</u>
Ablution Block	100 people	50	5000
Fish Banda	10 people	30	300
Restaurant	80 people	50	4000
Polyfunctional Building	50 people	40	2000
Market Stalls	18 people	40	720
Fish Processing	500kg of fish	11	5500
TOTAL			17,520

The projections consider a 3% annual increase in water demand due to anticipated growth in activity and population as shown in Table 2-19.

Table 2-19: Water demand Projections in m³/d

Population users' projection m³/d					
S/ No	Structure	Design Year 2022	Initial year 2026	Future year 2036	Ultimate year 2046
1	Ablution Block	5.00	5.95	6.9	7.85
2	Fish Banda	0.30	0.30	0.3	0.30
3	Restaurant	4.00	4.75	5.50	6.45
4	Polyfunctional building	2.00	2.00	2.00	2.00
5	Stalls	0.72	0.72	0.72	0.72
	Sub Total	12.02	13.72	15.42	17.32
6	Fish Processing Plant (15 L/Kg)	5.50	6.05	6.60	7.70
	Total water Required/day	17.52	19.77	22.02	25.02

2.6.14.5. Water Supply Schedule and Storage Requirements

The municipal water supply is currently limited to thrice a week due to water rationing; therefore, storage is necessary for the remaining four days which is calculated below

- Weekly Water Demand: 17,520 liters/day × 7 = 122,640 liters/week

- Non-Supply Days Demand: 17,520 liters/day × 4 = 70,080 liters

Thus, the storage tank must have a minimum capacity of 70,080 liters to cover periods without municipal supply. The designer has provided water storage for the water required in the fish landing in the current year as shown in Table 2-20 below.

Table 2-20: Estimated water storage capacity requirements

S/ No	Structure	Design Year 2022 M³/d	Storage M³
1	Ablution Block	5.00	15.00
2	Fish Banda	0.30	5.00
3	Restaurant	4.00	10.00

4	Polyfunctional building	2.00	10.00
5	Stalls	0.72	10.00
Sub Total		12.02	50.00
6	Fish Processing Plant (15 L/Kg)	5.50	20.00
Total		17.52	70.00

The landing site's daily water demand being 17.52M³/17,520 liters in the design year and the water storage being 70M³/70,000litres means that water in storage is sufficient to run the fish processing plant for a buffer of 4 non-supply days subject to replenishment. However, with the daily water demand being projected to increase to 25.02M³/25,020litres liters by 2046, it may necessitate an expansion of the water storage capacity to approximately 220.568M³/220,568litres by 2046. In conclusion the water designed in the initial year is sufficient to run the fish landing site as required.

2.6.15. Rain/Storm Water Drainage

All building roof drainage will be collected and piped to the storm water drainage system and collected in a tank for onsite use for washing and landscaping. This will be so because the quality of the water may not be good. Surface running storm water will be collected and directed to storm water utilities of road drainage and channels. In view of flooding effects on the plot the drainage system has been designed as indicated in the civil engineer's design detail to manage surface water flows.

2.6.16. Plumbing and drainage fittings

- i. **PP-R Pipes:** Due to the light-weight nature, chemical inert, corrosion, scaling and erosion resistant nature of PP-R pipe, they are easy to install, durable and will not react with water or dissolved chemicals in water. Therefore, these pipes will be used instead of copper and many plastic pipes which will not leach harmful chemicals to the water supply in buildings for human consumption.
- ii. **Pipes (uPVC Pipes):** Due to the resistance of uPVC pipes to acids and sulphates, this material will be used instead of concrete pipes for ND not exceeding 250 mm in the sewer network. uPVC pipes will also be used for diameters exceeding 200 mm for locations where jointed concrete pipes are unsuitable, such as embankments which are likely to settle, or where very steep gradients result in high velocity and possible pipe erosion, or where water logged areas have to be traversed and concrete pipes become unsuitable because of their porosity.
- iii. **Manholes:** Precast concrete manhole rings, which are manufactured locally will be used for construction of manholes or in-situ construction of manholes. The minimum size of the manhole for efficient operation and safety will be 1050 mm. Precast manhole rings will be surrounded with a minimum thickness of 150 mm concrete to improve

- water tightness and stability. For access purposes galvanized mild steel cast iron step irons will be built into the manhole rings. The nominal vertical interval between all the step irons within a given manhole is 300 mm and should be staggered. Due to the high rate of vandalism in connection with cast iron manhole covers, heavy duty triangular mild steel manhole covers filled with concrete will be used.
- iv. Gulley traps:** There shall be 15 No 730 x 730 x 500mm deep gulley traps complete with 400 x 400 x 10mm thick mild steel grating welded to 10mm thick mild steel frame at 30mm centers, hot galvanized and Sand blasting, with 2 pack epoxy zinc phosphate primer and painted with three coats of marine grade gloss oil paint to approval, 150mm thick plastered masonry walls, class 25/20 concrete base, concrete cover too receive grating and all surface finishes.
 - v. Grease Trap:** There shall be grease traps complete with 100mm thick concrete class 25/20 to external and internal walling; 150mm thick concrete floor slab Class 25/20, concrete blinding and benching Class 15/20, complete with and including heavy duty double air seal cast iron cover and frame, all to Engineer's details. All steel surfaces shall be Sand blasted; primed with 2 pack epoxy zinc phosphate primer; and painted with three coats of marine grade gloss oil paint.
 - vi.** There shall be 3 No. reinforced concrete biodigester of accommodating 1,000 users to treat toilet waste/sewage through an anaerobic process where microorganisms break down the organic matter in the sewage into a nutrient-rich digestate which can be used as fertilizer for agricultural purposes and effluent treated water. The treated water is proposed to soak away in between 3-4.5m deep soak pits of 1.2m internal diameter with 150mm thick perforated stone walling and 100mm thick concrete base class 25/20 and 150mm thick RC slab class 25/20; including 600 x 450mm heavy duty manhole cover and frame and 200mm diameter crushed stone chips filling. The biodigester has a great advantage over the conventional septic tank as it covers a smaller land footprint, and it using an anaerobic process to treat waste, it emits less odor, provides a cleaner effluent and a more nutrient rich digestate. The proposed bio-digester tank has combined capacity of about 179m³, considered to be more sufficient to treat the water adequately. And therefore, the effluent from the biodigester is anticipated to meet the environmental effluent standards
 - vii.** There shall be a waste yard in the fish band building with 3 NO. four wheel waste bin with snap fit lid with a locking handle to hold solid waste before being transferred to NAMARET for fish feed formulation.

2.6.17. Waste water treatment Process

The landing site will combine Moving Bed Biofilm Reactor (MBBR) plant and a DAF- Dissolved Air Floatation Bio- Reactor waste water treatment plants to form a complete waste water treatment system. Given that the initial daily water demand is estimated at 17.52 m³/day, a

conservative estimate for wastewater generated typically assumes that approximately 75-90% of water used becomes, with the exception of specific processing activities that require additional water for cleaning.

i. Estimated Annual Wastewater Generation

The annual wastewater generation is calculated by multiplying the daily wastewater generation by 365 days as indicated Table 2-21.

Table 2-21: Estimate waste water quantities per facility

Facility	Daily Wastewater (liters/day)	Annual Wastewater (liters/year)
Ablution Block	5,000	1,825,000
Fish Banda	300	109,500
Restaurant	4,000	1,460,000
Polyfunctional Building	2,000	730,000
Market Stalls	720	262,800
Fish Processing	5,500	2,007,500

ii. Projected Wastewater Generation

Wastewater generation projections for future years (2026, 2036, and 2046) are based on estimated increases in water demand due to the anticipated growth of the facility as shown in Table 2-22.

Table 2-22: Project waste Water Generation for the Mwaepe Landing site facilities

Year	Total Wastewater (liters/day)	Total Wastewater (liters/year)
2026	19,770	7,216,050
2036	22,020	8,037,300
2046	25,020	9,132,300

iii. Sludge Generation

Sludge from Ablution Block (Biodigester)

The sludge generated from the landing site washrooms is directed to a biodigester for treatment and the volumes were as captured in Table 2-23. The daily sludge generated is 1% of the daily wastewater volume.

Table 2-23: Estimated sludge generation

Facility	Daily Sludge (liters/day)	Annual Sludge (liters/year)
Ablution Block	50	18,250
Fish Banda	0	0
Restaurant	0	0
Polyfunctional Building	0	0
Market Stalls	0	0

Fish Processing	110	40,150
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iv. Sludge Projection

Sludge generation projections as highlighted in Table 2-24 are based on the same assumptions, with sludge from the ablation block being processed in the biodigester. The annual sludge volume was factored in the design calculations of the biodigester tank and thus a volume of 179m³ derived. This consideration ensures longer desludging intervals.

Table 2-24: Projected sludge generation

Year	Total Sludge (liters/day)	Total Sludge (liters/year)
2026	50	18,250
2036	50	18,250
2046	50	18,250

The Moving Bed Biofilm Reactor (MBBR) is a wastewater treatment system designed to treat water from approximately 100 people daily, handling about 15,000 liters. This system effectively reduces organic pollutants and ammonia, managing 6 kilograms of biological oxygen demand (BOD) and 4 kilograms of ammonia nitrogen each day. The treated water quality meets stringent EMCA environmental standards, ensuring levels of BOD and Total Suspended Solids (TSS) are below 30 mg/L, and ammonia nitrogen is under 20 mg/L, with more parameters captured under Table 2-25.

Table 2-25: Waste water Pollutant Loading and Discharge permissible levels

Parameter	Pre- treated effluent	Treated effluent ⁷	EMCA ⁸ thresholds for the environment.
pH	6.2 - 7.5	6.8 - 7.2	6.5-8.5
Biological Oxygen Demand (5 days at 20 oC)	400 - 600 mg/L	20 - 30 mg/L	30 (mg/L) max
Chemical Oxygen Demand	600 - 800 mg/L	40 - 50 mg/L	50 (mg/L) max
Suspended solids	200 - 300 mg/L	25 - 30 mg/L	30 (mg/L) max
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	80 - 120 mg/L	15 - 20 mg/L	100 (mg/L) max
Total Dissolved Solids	1000 - 1500 mg/L	1000 - 1200 mg/L	1200 (mg/L) max
E. coli	Present	Nil/100 ml	Nil/100 ml

⁷ Ministry of Water and Irrigation Final Practice Manual for Sewerage and Sanitation Services in Kenya December 2008

⁸ *Environmental Management and Co-Ordination (Water Quality) Regulations, 2006. Sixth schedule*

Total coliform	>1000/100 ml	<1000/100 ml	1000/100 ml
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The system includes various components like media, screens, pumps, aeration blowers and diffusers, manifolds, level sensors, valves, and piping to achieve these outcomes. Additionally, the Bio-Reactor Dissolved Air Flotation (DAF) system is another method used for purifying wastewater, capable of treating 5000 liters per hour. It utilizes a process where dissolved air is released at high pressure, and then when the pressure is reduced, small bubbles form and attach to the particles in the water. This causes the particles to float to the surface, where they can be removed, resulting in effluent with solid suspended matter content less than 20 mg/L. This system boasts an over 95% efficiency rate in gas dissolution, making it an effective option for reducing water contaminants and safeguarding water quality post-treatment.

Technically, :

- i. Moving Bed Biofilm Reactor (MBBR) Waste Water Treatment System, with a capacity of treating 100PE with an average flow rate of 15,000 lts per day. With a BOD load of 6Kgs per day, Ammonia Nitrogen load of 4Kgs per day. With minimum treated discharge requirement of BOD <30mg/lit, TSS <30mg/lit, Ammonia Nitrogen <20mg/lit as highlighted in Table 2-25. Complete with all Media, Screens, Pumps, Aeration Blowers, Aeration Diffusers, Manifolds, Level sensors, Valves, Piping, Fittings and Accessories to fully conform to the specified discharge requirements.
- ii. There shall also be a 5000lts/ hr Bio- Reactor DAF- Dissolved Air Flotation- system with a bubble size of less than 10um, Dissolved gas efficiency is over 95%, the solid suspended matter content in effluent to be less than 20 mg/L

The Moving Bed Biofilm Reactor (MBBR) plant will pretreat wastewater using bacteria/biofilm that facilitate B.O.D and C.O.D removal as well as nitrification and denitrification. The bioreactor will not have moving parts that require maintenance, instead, it will have specially designed submerged media providing an abundant surface area for the bacteria to attach themselves and thrive in multiple layers, thus allowing the MBBR to be very robust and self-regulating in case of accidents like huge P.H fluctuations. The plastic media will be kept in motion within the reactor and avoid being clogged by mechanical agitation from root blower pumps blowing air in the reactor through manifolds evenly distributed at the floor of the reactor. This will ensure the biofilm-covered media remain in contact with the waste water and aerates the waste water to allow not only for growth of the bacteria, but also for the biofilm to effectively digest soluble organic pollutants into biomass, water and carbon dioxide during the reactor's retention time. The treated water with biomass and suspended solids will be fed to the Dissolved Air Flotation (DAF) plant where dissolved air in form of micro bubbles will be pumped through it to suspend the biomass and solid particles which will be mechanically skimmed and heavier particles settled at bottom of the plant desludged. The treated solid waste will be collected and dewatered in a sludge collection chamber for disposal to approved dumping sites. The treated clarified effluent water will then be drained from the plant and used for non-potable activities such as landscaping and cleaning.

This waste water treatment system requires less space, cost effective, provides good effluent water quality, has less energy consumption, easy to operate, has high resistance to corrosion, influent heat, P.H and grease leaks compared to other waste water treatment systems.

2.6.18. Fish Processing Solid Waste (Scales and By-products)

The fish processing generates solid waste primarily in the form of fish scales and other by-products such as fish bones, fins, and remnants of flesh. The daily solid waste generation is estimated at 10% of the total weight of the fish processed, which amounts to approximately 50 kg of solid waste per day based on the processing of 500 kg of fish daily.

Fishery waste components vary depending on the fish species, general components of fishery waste from fish processing industry are: muscle-trimmings (15–20%), viscera (10–18%), bones (9–15%), heads (9–12%), scales (5%), skins and fins (1–3%) (live weight) (Martínez-Alvarez et al., 2015). *Fish waste* was calculated using a *ratio of* 10–30 percent of raw *fish*.

Table 2-26: Solid Waste from Fish Processing Plant

Facility	Daily Solid Waste (kg/day)	Annual Solid Waste (kg/year)
Fish Processing	50	18,250

2.6.19. Fish Waste Disposal Methods

To manage fish waste on site, the proposed design provides for a waste yard in the fish banda building with 3 NO. four wheel waste bin with snap fit lid with a locking handle to hold solid waste before being transferred to NAMARET for fish feed formulation. Fish wastes degrade rapidly in warm temperatures. If not appropriately stored or managed, fish wastes create aesthetic problems and strong odors as a result of bacterial decomposition. The solid waste generated from the fish processing, which consists of fish scales and other by-products, will be disposed off using the following methods:

1. **Composting:** Fish waste will be composted with other organic material to create organic fertilizer.
2. **Rendering:** Fish waste will be rendered into fish meal or fish oil for use in animal feed or other industries.
3. **Landfilling:** If other options are not feasible, fish waste will be sent to a sanitary landfill.
4. **Anaerobic Digestion:** The waste will be treated in private anaerobic digesters, producing biogas.
5. **Fish Waste-to-Energy:** Fish waste will be converted into energy through biogas plants.

2.6.20. Municipal solid waste

With an estimated population of 200 people, the total municipal solid waste generated daily is approximately **100 kg** (assuming each person generates 0.5 kg of waste daily). Municipal solid waste includes everyday items like food scraps, packaging, and other non-hazardous materials.

Effective waste disposal methods are essential to maintain sanitation and environmental quality at the site. Possible methods for managing this waste would include **composting**, which can convert organic waste into useful fertilizer; **recycling**, to recover and reuse materials like plastics, metals, and glass; and **landfilling**, a controlled disposal method suitable for non-recyclable and non-compostable waste. Alternatively, **incineration** could be considered for waste volume reduction, although it may require additional controls to manage emissions. Each method will be evaluated for its feasibility and environmental impact to select the most sustainable approach for the Mwaepe Fish Landing Site.

2.6.21. Ice Flake Machine, Room Insulation and Accessories

The landing site will have a Modular Ice Flake Machine (Production Capacity 3T/24h, Refrigerating capacity 18Kw, Evaporating temperature -220C, Power consumption 17.5kW, Approx dimensions 2000 X 1600 X 1490mm) comprising of an air cooled condenser, gear motor, water pump, salt mix pump control box and control panel with PLC , Low water sensor protection, Ice level thermostat, Ice knife and construction made from stainless steel, base frame made from galvanized steel, ice drum/cylinder with stainless steel inner and outer wall fitted with semi-hermetic compressors, stainless steel ball bearings including all other accessories for proper functioning of the unit. The unit shall be as approved and to approved catalogue

2.6.22. Elevator

The poly-functional building will have a 1050kg/13 passenger capacity elevator to serve 5 floors of 1.5 m/s speed for operation on 415 V, 3 Phase, 50 Hz AC supply, having AC variable voltage and variable frequency type traction control, electromagnetic brake system, simple operation, operating panel with luminous buttons, over load warning indicator, battery operated alarm bell, CFL type emergency light, infrared rays sensing door protection for suitable height, reverse phase relay on controller, fireman's switch at ground floor, digital car position indicator in car and at all positions indicator in car at all floors with UP/DOWN directions, light fixtures, ventilation fan etc. complete with all accessories including automatic rescue device an

having following other features

Travel Height: 8.4m

No. of Stops: 2

2.7. Project Resources and By Products

The following are the main resource input in the proposed project but not limited to:

- i. **Land:** Land is critical for the location of the proposed Mwaepe fish landing site facilities and has been provided by the state department of fisheries. The landing site is gazetted as public land under treasury according to the land documentation records. The landing site shall be in an area that was initially earmarked for development of a fish landing site. The documentations area as attached in annexes II.

- ii. **Water:** Water supply from KWAWASCO will be used for construction of the proposed structures and shall be used during operation. The design has also catered for rain water harvesting and grey water treatment by a bio-digester which is proposed for landscaping.
- iii. **Labour:** Different forms of labour, both skilled and unskilled, will be utilized. It is a requirement under KEMFSED project that the contractor provides long term contracts to the workers and that child labour in any form shall not be allowed on site or activities associated with the project. This shall apply to the sub-contractors who will be engaged on proposed sub-project activities. At peak periods, The Mwaepe Fish Landing Site construction requires 30 workers per day, working 8 hours per day, 6 days a week for one year. This workforce comprises skilled, semi-skilled, and unskilled labor, with labor demand peaking during critical activities such as concrete pouring, roofing, and finishing work. No on-site housing is needed as workers will commute from their local residents or from rented houses (for non-local who will be less than 10) in Diani/Ukunda, eliminating the need for temporary accommodation and minimizing environmental and social impacts.
- iv. **Construction Materials:** Cement, Sand, Ballast, murrum, reinforcement bars, Coral Blocks, Aluminum Windows and Doors, Steel Doors, Emulsion Paint, Textured Paint, Granitto Floor Tiles, wood, Acoustic and Gypsum Ceiling, PPR and PVC pipes, Ceramic Sanitary Fittings, Gravel, Water, Soil, Electrical wires, gadgets and equipment, Steel (reinforcement, casement, wiring, and standard fittings), Glass, PVS Material: (tiles, PVC pipes, conduits, and fittings), Concrete and paving, Paints and vanishes, Plant materials – grass and trees seedlings.
- v. **Electrical Works:** Electrical work during construction of the premises will include installation of electrical gadgets and appliances including conduit cables, solar panels, generator, lighting apparatus, bulb, sockets, etc. In addition, there will be other activities involving the use of electricity, such as welding and metal cutting, to attain the desired results. All the electrical works will be carried out by a certified professional.
- vi. **Plumbing:** Installation of pipe-work for water supply will use PvC pipes and distribution will be carried out within the sub-project site and associated facilities. In addition, pipe work will be done to connect grey water from the office building to the bio-digester system and to drain storm water from the rooftop into rain water harvesting facilities. Plumbing activities will include metal and plastic cutting, the use of adhesive, metal grinding, and wall drilling, among others.

2.8. Project Activities, Material and Waste during Construction

2.8.1. Activities, materials and equipment to be used on site

Table 2-27 highlights anticipated project activities, materials and source as well as anticipate waste that shall be generated during the implementation of project activities.

Table 2-27: Proposed Materials and Waste

Element	Proposed Activities	Materials	Equipment	Expected waste	Sources of materials
Foundation	<ul style="list-style-type: none"> Excavation of trenches and column bases. Foundation walling Hardcore filling Murram blinding Anti-termite treatment Damp proofing course Concrete works (Blinding, footing, column bases and columns, ground beam, floor slab) 	<ul style="list-style-type: none"> Coral stone walling Reinforcement bars BRC Hardcore Antitermite Murram Hardcore DPC and DPM Cement Ballast Formwork water 	<ul style="list-style-type: none"> Excavators Tippers Jembes Mattock Fork jembe Spades Concrete mixer Poker vibrator PPEs Drum vibrator Pneumatic hammer (25kg) 	Debris, Dust, Soil	Quarry, Hardware Manufactures and general suppliers.
Reinforced Superstructure (Beams, Columns and Floor Slabs etc.)	<ul style="list-style-type: none"> Formwork placing Steel fixing Concreting Curing of concrete 	<ul style="list-style-type: none"> Cement Ballast Formwork Reinforcement bars DPM 	<ul style="list-style-type: none"> Spades Concrete mixer Concrete pump Poker vibrator Wheelbarrows PPEs Scaffolding Hoists 60m³/hr Concrete Pump 	Dust, Concrete wastes and steel debris.	Quarry, Hardware Manufactures and general suppliers.
Walling and partitions	<ul style="list-style-type: none"> Coral Block Walling 	<ul style="list-style-type: none"> Coral stones Sand Cement Hoop Iron Aluminum frame sections 	<ul style="list-style-type: none"> Levers. Drills Grinder Pickups 3 tons Tippers 10 tons Water pump 1000lts/hr 	Dust, Concrete wastes and steel debris.	Quarry, Hardwares, Manufactures and Suppliers
Windows	<ul style="list-style-type: none"> Windows fitting Burglar proofing Painting Window Blinds 	<ul style="list-style-type: none"> Aluminum windows 6mm Glazing Steel Burglarproof Window 	<ul style="list-style-type: none"> Drills Grinder Paint brush Portable Electrical welding 	Dust, Metal debris, Paint.	Hardware Manufactures and general suppliers.

Blinds					
Doors	<ul style="list-style-type: none"> • Door fittings • Painting • Ironmongery 	<ul style="list-style-type: none"> • Aluminum doors • Steel casement and grills doors • Ironmongery 	<ul style="list-style-type: none"> • Drills • Grinder • Paint brush • Portable Electrical welding 	Dust, Metal debris, Paint.	Hardware Manufactures and general suppliers.
Finishes	<ul style="list-style-type: none"> • Ceiling finishes 	<ul style="list-style-type: none"> • Sand • Cement • Lime • Paint • Timber • PVC Ceiling 	<ul style="list-style-type: none"> • Drills • Grinder • Paint brush • Trowel • Spades • Scaffold 	Dust, Metal, timber and PVC debris, Paint.	Hardware Manufactures and general suppliers.
	<ul style="list-style-type: none"> • Wall finishes 	<ul style="list-style-type: none"> • Sand • Cement • Lime • White glazed Ceramic Wall tiles 	<ul style="list-style-type: none"> • Drills • Grinder • Paint brush • Trowel • Scaffold • Tile cutter 	Dust, Metal debris, Paint.	Hardware Manufactures and general suppliers.
	<ul style="list-style-type: none"> • Floor finishes 	<ul style="list-style-type: none"> • Sand • Cement • Terrazzo Chips • Plastic strips • Non-Slip ceramic tiles 	<ul style="list-style-type: none"> • Drills • Grinder • Trowel • Scaffold • Tile cutter 	Dust, Metal, Plastic debris, Paint.	Hardware Manufactures and general suppliers.
Roofing	<ul style="list-style-type: none"> • Slab casting • Aluminum roof on steel trusses 	<ul style="list-style-type: none"> • Highyield steel bars to Bs 4461 • Aluminium sheets • Hot rolled steel sections 	<ul style="list-style-type: none"> • Human labour, • Concrete mixing machine, • Spades, • Poker Vibrator 	Dust, metal debris	<ul style="list-style-type: none"> • Quarry incase of stones, • Sand and Ballast, • Hardware in cases of steel and Cement
Mechanical Installations	<ul style="list-style-type: none"> • Sanitary Fittings Installations • Internal Plumbing works • Rainwater harvesting facilities • Drainage works • Firefighting • Air-conditioning 	<ul style="list-style-type: none"> • Sanitary Fittings (Water Closet, Wash Hand Basins, Kitchen Sinks, Mirrors, Urinals, Soap Dispensers etc.) • PPR and 	<ul style="list-style-type: none"> • Drills • Grinder • etc. 	Dust, Metal and Plastic debris, Soil debris.	Hardware Manufactures and general suppliers.

		<p>UPVC plumbing and drainage pipes and extra over.</p> <ul style="list-style-type: none"> • Firefighting systems (Hose reel system, fire extinguishers) • Water pumps, water tanks • Air-conditioning units • passenger lift 			
Electrical Installations	<ul style="list-style-type: none"> • Lighting points, fitting and fixtures • Power points fittings and fixture • Power Supply and Distribution • Solar Installation • Generator installation 	<ul style="list-style-type: none"> • UPVC conduits • Copper Cables • Lighting and Power Fittings and Fixtures (Sockets, Switches, LED lights) • Distribution Board • Solar panels & Batteries. 	<ul style="list-style-type: none"> • Drills • Grinder • Snake wire • etc. 	Dust, Metal and Plastic debris, Soil debris.	Hardware Manufactures and general suppliers.
Access Road, Drainage and Parking	<ul style="list-style-type: none"> • Site clearance and excavation • Hardcore filling • Murrum blinding • Cabro paving and sanding • Installation of storm water drainage channels 	<ul style="list-style-type: none"> • Anti-termite • Murrum dust • Hardcore • Cabro Blocks • Kerbs • Cement • Sand • Invert block drains • Box culverts • Headwalls • “U” Open drains • Mild steel grating 	<ul style="list-style-type: none"> • Compactor • Drills • Grinder • etc 	<ul style="list-style-type: none"> • Excavated materials, • Steel and Cabro Debris. 	Quarry, Hardware Manufactures and general suppliers.

2.8.2. Estimate of materials of construction materials

Sand, Masonry stones, Cement, Ballast, Gravel, Water, murrum and hardcore (the materials shall be sourced from approved quarries by NEMA. The following Table 2-28 indicates an estimate of such materials, their sources and distance of their sources from the site;

Table 2-28: Estimate of construction materials

Item	Material	Unit	Approximate Quantities	Source	Approximate Distance from Site
1.	Hardcore	Ton	1,280	Msambweni Quarries	37km
2.	Murrum	Ton	1,368	Msambweni Quarries	37km
3.	Cement (to be mixed in an onsite batch plant)	Bags	18,856	Bamburi Cement Factory	50km
4.	Sand	Ton	1,825	Msambweni Sand Quarries	40km
5.	Ballast	Ton	2,203	Mazeras ballast Quarries	70km
6.	Coral Blocks	No.	58,202	Mwembeni Stone Quarries	30km
7.	Water	Litres	754,230	Municipal Water Connection	Onsite

2.8.3. Estimate of Construction Waste

The volume of all excavated material which is projected to be created by the construction is estimated to be 3,275m³ and the volume of concrete waste is to be generated is estimated to be 80cm³. However, most of the waste will be reused for backfilling while the expected volume for disposal - surplus excavated material is 1,342m³. Deposition for the surplus excavated material will be contracted to approved NEMA commercial waste handlers to deposit the materials on behalf of the contractor and client, in approved county and NEMA grounds. This has been captured in the project bill of quantities.

2.8.4 Climate Resilient Measures in Design

The climate-resilient measures in the design prioritizes sustainability and adaptability to address challenges posed by climate change.

The buildings and infrastructure incorporate resource-efficient and green building concepts to withstand risks such as flooding, rising temperatures, and storms. Key features include flood-resistant designs, reinforced wind-resistant structures, and appropriate seismic considerations. The site also integrates stormwater management systems, permeable paving, raised foundations, and a seawall to prevent erosion and flooding, ensuring durability and safety against extreme weather conditions.

Sustainable water management is a central focus, with rainwater harvesting systems designed to capture and store water for non-potable uses like irrigation and toilets. Water-efficient fixtures

further minimize consumption, particularly in areas prone to water scarcity due to droughts. These measures reduce reliance on external water sources, enhancing resilience during climate-induced water shortages.

Energy efficiency and carbon footprint reduction are also emphasized. Solar panels and energy-efficient systems, such as high-efficiency air conditioning, LED lighting, and daylight harvesting mechanisms, reduce energy consumption and dependence on conventional power sources. Thoughtful building orientation maximizes natural light and ventilation while minimizing energy demands for heating and cooling, supported by high-performance insulation and thermal adaptability measures to ensure indoor comfort and energy savings.

Material efficiency and sustainability are integral to the design. The use of renewable, locally sourced, and durable materials such as coral blocks and recycled steel minimizes the environmental footprint and promotes longevity. By integrating these comprehensive climate-resilient strategies, the landing site infrastructure not only addresses present risks but is also well-prepared to adapt to future climate uncertainties, ensuring safety, sustainability, and operational efficiency.

2.9. Sub-Project Activities during Operation

There are several activities that shall be implemented during the operation of the proposed structures that will include but not limited to; Cleaning of the buildings, repair and maintenance of the building components and facilities, repair of boats, mending of fishing gears, operating eatery place, operating stalls, flow of tourists, handling and processing of fish; biodegradable fish scales, waste water and intestines, maintaining the lawn, watering the lawn and vegetation within the compound, operating a generator, ventilation and air conditioning, human waste management, Fish waste and solid waste management as indicated in section 4.3.2, serving fishers, showering, cooking and use of fire for different purposes, power consumption, using of electronic gadgets, water consumption and interaction among the users of the structures among many other activities. The activities shall have different impacts during the operation of the landing site. Mwaeppe BMU together with the county government of Kwale through the Fisheries department will be in charge of maintenance and repair of the facilities throughout their lifespan unless there is change of use or user in the future.

2.10. Sub-Project Alternatives

2.10.1. No Action Option

The “**No project**” alternative represents the potential scenario if the construction of the proposed sub-project works is not implemented in the project area. Under this alternative, no improvement of Mwaeppe landing site of a poly-functional building, a fish banda, a boat yard, 2 No. restaurant, 7 No. stalls, fish gear mending shed, an ablution block, monumental gate and a gate house, painting of historical building, 1 No. prime rated 66 KVA 3 phase, 415V, 50Hz diesel generator with a silencer, 69 No 40KW 144 Cell, 585W Mono- Crystalline Solar Modules and Civil works, (*slip way, drainage, landscaping works, road works and perimeter wall*) shall be implemented in

order to influence the local physical environment, biological, socio-economic, land use patterns and no investment in enhancing fisheries management and enforcement of compliance shall be done. This option is suitable from an environmental and social management perspective with no negative impacts or changes to the status quo but not good for social-economic purposes within the project area. The opportunity cost incurred will imply that the challenges affecting fisher at Mwaepe landing site will continue. Of major concern is the dilapidated fish banda, lack of controlled access to the fish entry, washing and selling point, lack of fish waste management, dilapidated pit latrines lack of bathing area for fishers, haphazard and free development without proper planning lack of social amenities such as water and electricity due to none payment of bills and lack of a boat yard. However, if the proposed improvement of Mwaepe landing site is implemented, it is anticipated to address the challenges by centralizing data collection for fisheries management, enable enforcement of compliance, unleash private sector interest in the fisheries sub-sector, job creation, strengthening of coastal communities' livelihood, increase in household income, increase food security, increase the value of fish traded, minimizing post-harvest fish losses and strengthening capacity of community institutions responsible for fishery management.

2.10.2. Project Development Option

The proposed improvement of Mwaepe landing site is part of the contributions towards enhancing county fisheries infrastructure development which aimed at improving fisheries management. The sub-project is significant in achieving coordinated and improved management of priority fisheries and enhancing the coastal communities' livelihood. Implementation of the proposed sub-project is in addition anticipated to contribute to improved fish product quantity and quality, creating employment opportunities, creating business opportunities, improved hygiene standards and environmental conditions at the site, reduced risk and incidences of fish food contaminations, contribute towards the Diani Chale Marine reserve conservation efforts, enhance local capacity in fishing handling and processing among the fishers, empowering Mwaepe BMU institutionally and financially to manage the landing site.

2.10.3. Alternative Site Selection Option

Relocating the proposed construction of a fish depot from Mwaepe site to a different location is another option available for consideration, but currently, the proponent does not have an alternative site with land at the project disposal. The site is adjacent to the sea and is appropriate for the proposed development proposals. The physical plan for Kwale Diani area showed that zoning of the land has been done and the site is allotted for government fish depot under the state department of fisheries. Considering the above concerns and assessment of the current proposed site, relocation of the project is not a viable option. Besides, it is not easy to find a similarly suitable site to accommodate the proposed development. This is because the site is already developed and has connection to most social amenities, which could not be a guarantee if an

alternative plot is sought. Most of the plots around the area are private plots and the process of acquiring land could take time and has a cost.

2.10.4. Alternative Technologies

The application of the best technology is important in reducing the impacts of the project to the environment or the impact of the environment on the project. Therefore, the project design team took cognizance of appropriate technology existing on the market in the proposed project facilities and activities. Adopting modern designs of a fish banda, use of large sizes window, energy saving appliances, use of renewable energy, use of recyclable construction material for instance metallic doors instead of wood, use of water saving appliances and treating of grey water through a bio-digester are some of the technologies that have been incorporated in the design of the project to improve green building concepts and climate change adaptations.

2.11. Sub-project Cost-Benefit Analysis

The initial capital for the proposed Mwaepe fish landing site shall be borne by the government as part of social development within the proposed project area. However, the operation of the proposed sub-project is anticipated to be by the BMU , Table 2-29 highlight revenue and operational costs for the proposed Mwaepe fish Landing site. According to the findings in the table, the net revenue is about 14.64% during the first year and 14.69% during the second year. The main source of revenue shall be from the icemaking business and the leasing fees at the site. The positive revenue figure is an indication of the sustainability of operating the proposed fish landing site. The assumption is that the BMUs will not be required to pay the investment cost.

Table 2-29: Revenue and Operational Costs for the proposed Mwaepe Fish landing site

		Y1		Y2	
Revenues	Type of fish	Volumes	Unit costs	KSH	KSH
Fish landings (Levies)	All Species Landed	288,746	2	346,495	381,145
Sub –Total				346,495	381,145
Ice production (kg)/sales		834,000	8	6,672,000	7,141,555
other landing site services					
	Storage (Kitting equipment)	12	1250	15,000	15,000
	Anchorage fees/offloading charges	8	3000	24,000	31,200
	Stalls Rental & leasing	12	40000	480,000	480,000
	Parking	12	25000	300,000	300,000
	Memberships (Renewal)	598	100	59,800	59,800
Sub-Total				878,800	886,000
Total Revenues				7,897,295	8,408,700
Operational costs					
Water				256,872	269,716
Electricity				1,422,460	1,422,460
Salaries & Wages				3,000,000	3,000,000
Repairs & Maintenance				295,000	295,000
Shoreline environment management				350,000	360,000
Materials & Supplies				350,000	380,000
Miscellaneous Overheads				66,000	96,000
Advertising				96,000	108,000
Transport /officials’ meetings				120,000	180,000
Surveillance /shoreline regulation enforcement (Fuel)				360,000	382,000
Insurance				149,500	149,500
Depreciation				350,000	350,000

Licensing	25,000	25,000
Taxes	-	264,012
Administration Costs	36,000.00	37,800.00
Stationery	12,000.00	12,000.00
Total costs	6,888,832	7,331,488
Net Revenues	1,008,463	1,077,212
Capital Investments		
Infrastructure development	235,859,950	
Boats/equipment Purchases	8,500,000	
Generator	4,900,000	
Ice Plant Procurement/installation	5,980,000	
Total	255,239,950.00	

2.12. Project Cost

The estimated cost for improving and augmentation of the proposed Mwaepe fisheries landing site in Kwale County Ukunda-Diani is about KShs. 255,840,250.00⁹. This cost include civil works, structural works, mechanical works, services, labour, environmental management and social monitoring costs, taxes and a factor on inflation for the proposed structures. The breakdown of the project cost is as shown in Table 2-30. The proposed sub-project shall be implemented within a period of 12 month with an additional 6 month for defect liability period.

Table 2-30: Project Cost and Budget

ITEM	DESCRIPTION	AMOUNT
NO.		Kshs.
1.	General Preliminaries	5,000,000.00
2.	Particular Preliminaries	4,000,000.00
3.	ESMP	5,020,000.00
4.	Building Works	110,494,360.00
5.	Civil Works	27,501,140.00
6.	Mechanical Works	38,710,000.00
7.	Electrical Works	45,362,600.00
8.	Boundary Wall	911,550.00
9.	Day Works	840,600.00
10.	Provisional Sums	500,000.00
11.	Provision for Fluctuation	5,000,000.00
12.	Contingencies	12,500,000.00
	Grand Total	255,239,950.00

⁹ The estimate cost is according to the figures provided in the bill of quantities as provided by the project engineer

3. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

3.1. Chapter Overview

The chapter highlights significant policy, legal framework, international best practice and project implementation and operation institutional framework.

3.2. Project Policy Framework

The proposed improvement of Mwaepe Landing site activities will need to comply with various policies and regulations currently existing to safeguard the environment and the local communities. Different stakeholders' input shall be required from different institutions, nationally and at county government level as different policies and institutional interventions will be triggered at different phases of the proposed project. The main policies and institutional framework triggered are highlighted in the subsections below. The major laws and regulations include the Constitution of Kenya 2010, the Fisheries Management and Development Act No. 35 of 2016, the Environment Management and Coordination Act (Cap 387), Environmental Impact Assessment and Audit (Amendment) Regulations (2019), The Public Health Act Cap 242, Revised Edition 2012 [1986], The Physical and Land Use Planning Act 2019, The Occupational Safety and Health Act Revised Edition 2020 [2007], The County Governments Act (2012), The National Construction Authority Act, The National Environment Policy Session paper No. 10 of 2014, and the Environment and Land Court Act, among others. The proposed sub-project activities shall also be implemented in accordance with requirements under the project documents

3.3. Policy Framework

Table 3-1 highlights the policies that shall be triggered during the proposed project's implementation and operation. There will be a need to ensure the proposed project activities are in tandem with the policies' requirements as noted in the table below.

Table 3-1: Relevant National Plans and Policies:

NO.	POLICY INSTRUMENT	KEY PROVISIONS	RELEVANCE OF POLICY TO THE PROJECT
1.	Kenya Vision 2030	<p>The vision is a government development strategy to steer Kenya to a middle-income country by the year 2030. It is based on the three pillars of political, social, and economic advancement, and it aims to transform the economy and achieve sustainable growth.</p> <p>The vision recognizes the significance</p>	<p>The implementation of the proposed improvement of Mwaepe landing site shall enhance the objectives of the policy paper of reforming the fisheries, aquaculture, and blue economy sector to play its key role in the country's socio-economic development. The sub-project shall offer the people of Kwale County a</p>

		of public sector reform as a key enabler. The sector was to be transformed by building and implementing service delivery systems that ensure efficiency, quality, speed, convenience, and dignity in service delivery as well as being globally competitive	chance to access service delivery by ensuring efficiency, quality, speed, convenience, and dignity in service delivery with a global competitiveness. The facility will also enable Kenya fisheries to ensure fisheries management and enforcement of compliance.
2.	Kwale County Integrated Development Plan 2018-2022	The CIDP recognizes the significance of fisheries to local community livelihood and the focus of the county is to develop marine fisheries, enhance support services and strengthening partnerships with strategic stakeholder	The county is committed to invest more resources in the following areas: Mariculture development (sea weed farming and culturing of milk fish), up scaling of capture fisheries through procurement of modern fishing vessel (provision of modern and right fishing gears to fisher folks with appropriate technology) for offshore fishing, enhance fishers livelihood through provision of value addition and post-harvest handling equipment (eg cold storage facilities, cooler boxes, fish handling crates); construction of modern fish depot at all landing sites to ensure Fish and Fish products are handled in hygienic conditions. The proposed sub-project is in line with county objectives of construction modern fish depots.
3.	National Climate Change Action Plan 2018-2022	The action plan aims to reduce the impact of climate change to the environment, livelihood and property, food and nutritional security, accessibility to natural resources, health, sanitation and human settlement	KEMFSED project takes deliberate measures to incorporate climate change adaptation measures into the sub-project design. The design of the project has incorporated concepts of promoting water efficiency, use of recycled construction materials and increased use of renewable energy. The plan has been used to guide the design by providing for green

			building concepts, efficient waste water and solid waste management.
4.	The National Environment Policy Sessional paper No. 10 of 2014	The policy provides comprehensive strategies for government action regarding the quality of the environment and development.	The project has complied with the policy by integration of environmental sustainability principles at implementation, operation, and decommission phases for the proposed Mwaepe fisheries landing site. The proposed sustainability concepts are as captured in the ESMP of this report and in the design.
5.	National Gender and Development Policy (2000)	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. The construction sector plays a key role in socio-economic development.	Deliberate and affirmative action have been proposed under this report to encourage all genders to contribute to the proposed sub-project activities as inculcated in the ESMP. The construction of Mwaepe landing site development in Kinondo ward provides an opportunity for the engendering of the construction sector as a means towards poverty reduction and inclusive socio-economic development.
6.	National Policy for Prevention and Response to Gender Based Violence 2014.	The main objective of the policy is to accelerate the elimination of all forms of gender-based violence in Kenya.	The proposed project shall comply with the policy through the contractor workers signing a code of conduct committing not to engage in any form of GBV whether at the work place or in the community. The project shall also ensure workers sensitization and awareness on GBV and on Sexual exploitations and abuse (SEA).
7.	National Land Policy, Sessional Paper No. 3 of 2009.	To provide an overall framework required to address the critical issues of land administration, land access, land use planning, restitution of historical injustices, environmental degradation, conflicts, unplanned proliferation of informal urban settlements, outdated legal	The project shall ensure sustainable utilization of land, particularly public land which has been set aside for construction of the proposed project facilities within the project area. The land in Mwaepe is owned by the state department of fisheries as indicated

		framework, institutional framework and information management	in the land documentations.
8.	Kenya National Youth Policy 2019; Empowered Youth for Sustainable Development	The policy recognizes the significance of the role of youth in social-economic and political development of the nation and therefore, the policy takes deliberate measures to promote youth empowerment and participation to harness their potential for productive engagement at local, county and national level.	The current development process took into consideration the objective of the policy. The youth were involved in community consultation process and making decisions on the project. The contractor will undertake to consider employment of local youth during the construction phase. Mwaepi BMU and county department of fisheries and blue economy will give priority to local youth for employment during the operation phase when vacancies arise.
9.	Sessional Paper No.1 Of 2020 On Wildlife Policy	This policy seeks to conserve wildlife resources in national parks, national reserves and national sanctuaries in an effective and equitable manner, ensure maintenance and enhancement of ecological integrity of wildlife and their habitats through the integration of private and community lands into protected area systems and to harness the contribution of wildlife resources into the national economy and enhance the benefits to all.	The policy will be of help during project implementation and afterwards in ensuring that protected areas and wildlife habitats are secure
10.	The Forest Policy, 2014	The policy provides a framework for sustainable conservation and equitable utilization of forest resources among different people of Kenya	The policy will come in handy to assist in management of the critical environmental goods and services such as watershed protection provided by the forests in the project area.
11.	The National Occupational Health and Safety Policy Of 2012	This is a framework for safe working environments? it provides basic principles for assessing work related risks and hazards and ways to prevent and mitigate such risks.	The design of the project has factored in the provisions of this policy, however it will also be of great value during project implementation to provide a framework for compensating work

related accidents and diseases. The proponent will need to seek compliance with the provision of the policy in ensuring that workers operate in a safe and healthy environment and that their welfare is safeguarded.

3.4. Legal Framework and Statutory Documents

3.4.1. Legal Framework

During the design of the proposed improvement of Mwaepe landing site, the ESIA team took cognizance of the legislations that will govern the proposed project's activities during implementation, operation and decommissioning phases. Table 3-2 highlights the general legal framework for the coordination of project activities at all phases of the sub-project.

Table 3-2: Legal Framework

NO.	LEGAL INSTRUMENT	PROVISIONS	APPLICATION OF REGULATIONS TO THE PROJECT
1.	Constitution of Kenya, 2010	The constitution outlines principles of environmental and social sustainability. The constitution in Article 42 emphasizes the need for a clean and healthy environment by managing substances that may pollute the environment or cause harm to human health. The right to a clean environment is further enforced by article 70. The constitution in article 54(c) requires ensuring people with disabilities have reasonable access to all places, public transport, and information.	The construction, operation and decommissioning of Mwaepe landing site infrastructure shall uphold environmental and social considerations through the implementation of the ESMP and ESMoP. The focus shall be on ensuring a clean and healthy environment for all as well as taking into consideration the requirements for people with special needs. The requirement for people with special needs has been considered in the design of the building. As well as ensuring natural resources management.
2.	The Fisheries Management and Development Act No. 35 of 2016	The main aim of the Act is to promote conservation, management and development of fisheries and other aquatic resources to enhance the livelihood of the communities dependent on fishing. This is	KEMFSED project is as an effort of the National government to mobilize resources partly to develop fish landing infrastructures and the

		<p>to be achieved through establishment of Kenya Fisheries Service.</p> <p>The act also highlights the functions of the two levels of governance, of significance to this project is the function of SDFA&BE to develop fisheries related infrastructure and resource mobilization for conservation management of the fisheries development. And the function of the county government of managing of fisheries related infrastructure.</p>	<p>county government is expected through the Mwaeppe BMU to manage the infrastructure as indicated in the institutional framework of the proposed sub-project. The improvement of Mwaeppe landing site is anticipated to enhance the management and governance of fisheries resources. Through centralized fisheries data collection and enforcement of compliance</p>
Building and Construction			
3.	<p>The National Construction Authority Act No. 41 Revised Edition 2012 [2011]</p>	<p>The Act establishes the National Construction Authority (NCA) which is mandated among other functions to; Oversee the construction industry and coordinate its development; Promote and stimulate the development; improvement and expansion of the construction industry; Prescribe the qualification or other attributes required for registration of contractors; promote and ensure quality assurance in the construction industry; encourage the standardization and improvement of construction techniques and materials; Accredite and certify skilled construction workers and construction sites supervisors and development and publish a code of conduct for the construction industry.</p>	<p>The Act shall be applied in the management of the construction site of the proposed sub-project by ensuring qualified and accredited construction personnel, site safety and construction quality standards are adhered. The site shall also be registered as a construction site by the authority.</p>
4.	<p>The National Construction Authority regulation 2014</p>	<p>The Regulations requires that any contractor or construction workers working on any construction site in Kenya be registered and accredited by the National Construction Authority. Such persons or firms shall annually renew the certificate of registration according to the provisions of the Act. Other than registration of construction workers and contractors, the Act requires that all</p>	<p>The regulations requirements shall guide on the qualification of contractors and construction workers that shall be allowed to work on site for the proposed Improvement of Mwaeppe land site infrastructure. NCA shall issue approvals regarding site activities.</p>

construction works, contracts or projects either in the public or private sector be registered with the authority. The owner of such construction sites or contracts shall designate a contact person to liaise with the Authority. And that all construction workers and supervisors be accredited and certified by the Authority.

5.	The Draft National Building Code 2020	<p>The main objective of the National Building Code is to promote order and safety in construction works and the health and safety of persons in or about construction works.</p> <p>The code provides for the design, construction, operation, inspection, and maintenance of buildings.</p> <p>Sets standards for building materials, products, elements, systems, and services.</p> <p>Provides standards for infrastructure services</p> <p>sets standards for the operations and works at construction sites</p> <p>provides for disaster management at construction sites and</p> <p>Provides for the safety and security of building users and occupants.</p>	<p>The building codes shall guide the contractor, project engineer, and Kwale County CPIU on the expectations of NCA on quality standards regarding construction, operation, and decommissioning activities of the proposed office construction sub-project.</p>
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Environment and Natural Resources Management

6.	Environmental Management and Coordination Act, EMCA CAP 387	<p>It sets the legal and institutional framework for the management of environmental issues in the country.</p>	<p>The project triggers the Act to assist in managing and coordinating potential environmental issues likely to emanate from proposed project activities during implementation, operation, and decommissioning. The Act shall guide the relationship between SDBE&F-NPCU, Kwale County CPIU, Contractor and NEMA on matters regarding the environment and public concern. This ESIA comprehensive project report is required by the Act and must be</p>
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			approved before works can commence
7.	The Environment (Impact Assessment and Audit) Regulations, 2003	The Environmental Regulations (2003) are ingrained under section 147 of the EMCA (Cap 387). The regulations provide for the framework for carrying out EIAs and EAs in Kenya. This EIA project report has been conducted in conformity with these regulations and EMCA, Cap 387	The Act guided the development of the ESIA report and shall also come in handy to ensure preparation of annual environmental audit reporting during operation as well as decommissioning of the project
8.	EMCA Waste Management Regulations 2006	The regulations provide for management of different forms of waste streams in the country, given that the project activities during implementation, operation, and decommissioning will result in waste generation.	An increase in waste generation is anticipated during project implementation and operation phase, and the regulations will come in hand to guide its proper management and disposal. Relevant regulation requirements have been captured in the ESMP under chapter 7
9.	EMCA Air quality regulations of 2014	The regulation prohibits emissions of air pollutants exceeding permissible levels from controlled areas, stationery sources, mobile sources, occupational exposure, material handling, demolition areas, and waste incineration, open burning of hazardous waste, or from cross-border. The regulation also requires that all emissions be licensed.	The proposed sub-project is anticipated to compromise air quality within the proposed project area during construction, operation and decommissioning and therefore the regulations shall come in hand to guide air quality management standards particularly while working on site.
10.	EMCA Noise and Excessive Vibration Pollution Control Regulations, 2009	The regulations prohibit loud, unreasonable, unnecessary, or unusual noise which annoys, disturbs, injures, or endangers the comfort, repose, health, or safety of others and the environment. Occupational noise and vibration need to be controlled during the project implementation process. The main sources of noise shall be due to vehicle movement that will be involved in the construction of the project, particularly during the transportation of materials to the site. The other sources shall be general construction	The proposed sub-project is anticipated to have an impact on ambient noise levels within the proposed project area during construction and decommissioning and therefore the regulations shall come in hand to guide noise level management standards. The relevant requirements of the regulations have been incorporated in the project ESMP

		activities and conversation on site.	
11.	EMCA Water Quality Regulations, 2006	Water quality regulations lay down the standards of domestic water and waste water discharge into the environment. The regulations are meant for pollution control and prevention and provide for the protection of water sources.	The regulations shall come in hand to ensure that water supplied to the proposed structures (<i>fish Banda, Restaurant, Stall, Poly-functional building</i>) meet domestic water supply standards. The regulations shall also ensure that waste water produced from the building is treated and recycled for use. The quality of the water reused shall ensure that is free of pathogens.
12.	The Environment and Land Court Act, 2011	This is an Act of Parliament formulated to give effect to Article 162(2) (b) of the Constitution; to establish a superior court to hear and determine disputes relating to the environment and the use and occupation of, and title to, land, and to make provision for its jurisdiction functions and powers, and for connected purposes. In this regard, those affected by various development ventures that are considered harmful to the environment have structures in place to seek justice, and in so doing, the environment will be safeguarded at all times.	In the event of any environmental-related dispute between NEMA and project contractor, Mwaepo BMU, Kwale County CPIU or SDBE&F on issues related to the Mwaepo landing site infrastructure construction or operation activities, the Act will be triggered in resolving the issues for any aggrieved party.
13.	Forest Conservation and Management Act, 2016 No. 34 of 2016	The Act to provide for the development and sustainable management, conservation and rational utilization of all forest resources for the socio-economic development of the country and for connected purposes. The Act recognizes mangrove forest as indigenous forests to be managed on a sustainable basis for purposes of conserving fisheries habitat.	One of the critical habitats within the Chale Diani marine reserve is mangrove forests. Under KEMFSED project provides an opportunity for the management of the habitats to conserve fisheries resources and KFS shall play a critical role in restoration of degraded mangrove areas
14.	Wildlife Conservation and Management Act, 2013	The Act provide for the protection, conservation, sustainable use and management of wildlife in Kenya. The Act defines “wildlife” to mean any wild and	The fishing grounds for the proposed Mwaepo fishers are mainly within a marine reserve (Chale-Diani). However, the

			<p>indigenous animal, plant or microorganism or parts thereof within its constituent habitat or ecosystem on land or in water, as well as species that have been introduced into or established in Kenya. All species of fish are therefore recognized as wildlife and fall within the ambit of the Act. The Act has a schedule which declares certain species of fish to be critically endangered, vulnerable, nearly threatened, and protected species and prohibits any person from carrying out any activity involving the listed a species. It also provides for Marine Park /reserve to be a protected area where no fishing, construction work or any disturbance is allowed unless with written permission of the Director-General KWS. The Act also establishes the Kenya Wildlife Service (KWS) whose mandate includes conservation of all wildlife areas including protected areas. This mandate also makes the KWS another major stakeholder in the fisheries industry in Kenya.</p>	<p>conservation has never picked up due to mistrust among the key stakeholder. But the proposed project provides an opportunity to engage the fishers to participate in conservation efforts. The landing site also provides an opportunity for the collection of critical fisheries data that will play a critical role in management of fisheries within the reserve. The conservation efforts within the reserve are for the benefits of the community to usual sustainable fisheries</p>
15.	The Kenya Coastal Guard Act, 2018	Kenya Guard	<p>Establishes the Kenya Coast Guard Service (KCGS) to be deployed in the territorial waters for purposes of among, others, enforcing maritime security and safety, pollution control, and sanitation measures; prosecuting maritime offenders, port and coastal security and the protection of maritime resources including fisheries.</p>	<p>The Service will play a critical role in enforcement compliance to fisheries resources management within the fishing grounds for Mwaepe landing site.</p>
16.	Maritime Zones Act (CAP 371)	Zones	<p>The Act consolidates the law relating to the territorial waters and the continental shelf of Kenya. It provides for the establishment and delimitation of the exclusive economic zone (EEZ) of Kenya and for the exploration, exploitation, conservation, and management of the resources of the maritime zones. The Act domesticates international law on the law of the sea as codified under UNCLOS as it relates to the delimitation of maritime zones for coastal states.</p>	<p>Under the proposed sub-project, exploitation of near shore resources is under immense pressure and there is plan to empower the fishers to exploit deep sea fishing. The Act is relevant to the proposed sub-project in ensuring that fisheries within the deep seas adhere to regulations</p>

The Act establishes and delimits the exclusive economic zone and grants Kenya sovereign rights with respect to the exploration and exploitation and conservation and management of the natural resources (living and non-living) of the zone. The establishment and delimitation of Kenya's EEZ is in accordance with the 1982 United Nations Convention on the Law of the Sea (UNCLOS).

Devolved Governance

17.	County Government, Act 2012	The County Government Act provides local governance principles, guides the planning and development process, and community participation in the development process.	The Act will come in handy to reduce conflicts between project and county government physical planning priorities. The Act should be read together with the physical and land use planning Act, 2019 to guide on institutional management framework, land use planning being a devolved function. The statutory approvals for the proposed Mwaepe landing site improvement infrastructure will be acquired from Kwale County Government.
18.	The Physical and Land Use Planning Act, 2019	The Act provides for planning and controlling for physical development in the country in general. The Act read together with the county government Act 2012 will assist in synchronizing the national, local, and project physical planning, controlling for any possible land use conflicts.	The Act shall also assist Kwale County CPIU in planning for connection to social amenities such as sewerage services, power, or water services, based on the existing physical planning of the proposed project area. The sub-projects should also meet planning requirements of the area. The project shall be approved by the relevant County departments after meeting the requirements of the Act.
19.	Kwale County Public Participation Act,	An act of the Kwale County Assembly to provide for the establishment of legal framework for facilitating public	The Act will ensure that stakeholder consultation is a continuous process and

2014.		participation in county government policy processes and service delivery and for connected purposes.	concerns incorporated in the designs of the sub-project and also during the operation phase.
Labour Relations and Occupational Safety			
20.	Occupational Safety and Health Act, 2007	The Acts aim to ensure the safety, health, and welfare of persons at work and non-workers as well as cushion workers against loss of income or livelihood due to occupational accidents or diseases.	The Act shall be applied for the safety of workers and the general public to be ensured during project implementation, operation, and decommissioning phases. The site shall be registered under the Act as a work place at all phases of the sub-project before commencement of any activities. Relevant safety requirements of the Act have been incorporated in the ESMP
21.	Employment Act 2007	The main Objectives of the Act is to improve the working condition of employees and protecting their welfare as well as that of the employer	The Act shall be applied to protect workers against; discriminations, sexual harassment, forced labour, protection of wages, employment relations, settlement of disputes and protection of rights and duties in employment. There shall be equal employment opportunities to all and workers through GRM will be able to freely express themselves over the working conditions and terms of engagement.
22.	Work Injury Benefits Act, (2007)	This provides compensation to employees for work-related injuries and diseases contracted in the course of employment.	Requirements of the Act will be applied to ensure that income for workers on the project is assured even where they are not able to work for some injuries or diseases related to working conditions while still under contract. The appointed contractor shall obtain and maintain WIBA compliant insurance cover throughout the project implementation period.
23.	Labour Relations Act 2012	The Act promotes sound labour relations through the protection and promotion of freedom of association, the encouragement of effective collective bargaining, and the	The Act shall apply to ensure that workers welfare is entrenched into the activities of the proposed sub-projects particularly at construction and decommissioning phases. The

		<p>promotion of orderly and expeditious dispute settlement, conducive to social justice and economic development and connected purposes. The Act in Section II Part 6 provides for employees' freedom to associate; section 7 provides for the protection of rights of employees; Part 9 provides for adjudication of disputes, and Part 10 provides for the employees' protection to hold strikes lockouts.</p>	<p>workers to be allowed to form associations to air out their grievances. Relevant requirements have been captured in the ESMP and under annex VI. The contractor as required under the project will institute grievance redress mechanism where all grievances from workers or the general public access the site will be promptly addressed as means to improve the Mwaepo landing site improvement sub-project implementation and operation.</p>
Public Health			
24.	Tobacco Control Act No 4 of 2007	Promote and protect the rights of non-smokers to live in a smoke-free environment.	Contractor to provide and label the designated smoking area. Same shall be done during operation by Mwaepo BMU in consultation with Kwale CPIU/Health department
25.	Public Health Act, 1986 (Cap 242 Revised edition 2012)	The Act addresses matters of sanitation, hygiene, pollution, and general environmental health and safety, which are directly related to cases of pollution and contamination of water sources, be it ground or surface. The management of waste water that shall be generated should be managed in a way that shall not cause any public nuisance.	The Act shall be applied to ensure that all sanitation systems for the proposed fisheries office construction and operation activities meet the requirements of the Act. Any food vendors at the site to the workers during construction will also be expected to meet the requirements of the act.
Cross Cutting Issues			
26.	The National Gender and Equality Commission Act 2011	The Act seeks to promote gender equality and prohibit any form of discrimination against any; women, men, persons with disabilities, the youth, children, the elderly, minorities, and marginalized communities.	That Act shall be triggered particularly during the project construction and operation phase to ensure equal opportunities for all gender. Some of the requirements of the Act have been captured in the ESMP and under annex VI. The design has incorporated requirements for people with disability.

27. Persons with disability Act No. 14 of 2003	The Act requires conducive environment to operate for persons with disability to enable such persons to have ease of access and mobility in all public spaces. The Act in section 21 stipulates that persons with disabilities are entitled to a barrier-free and disability-friendly environment to enable such persons to have access to buildings, roads, and other social amenities, and assistive devices and other equipment to promote their mobility.	The design of the proposed improvement of Mwaepe landing site infrastructure is compliant to the requirements of the law by ensuring ease of accessibility and mobility within the structures for such persons with disabilities.
28. Public Participation Act 2016	The Act provides a general framework for effective public consultations. It gives effect to the constitutional principles of democracy and the participation of the people. The Act, therefore, gives effect to the principles of public participation as provided for in the constitution. Participation is anticipated to promote transparency and accountability in decision making, promote community ownership of public decisions and promote public participation and collaboration in project governance processes. Public participation under this act values fair and equitable participation for VMGs within the community.	The Activities of the proposed sub-project shall require participation of different stakeholders in order to ensure compliance with the principles of the Act. Stakeholder engagement shall be a continuous process throughout the project cycle in addition to the consultations that has been done so far. As indicated in annexes III and VI. Public participation conducted included VMG communities present in the Kinondo Ward such as the Makonde and Wakifundi communities.
29. Sexual Offences Act, 2006	This Act protects people and employees from any unwanted sexual attention or advances by staff members. This act ensures the safety of women, children, and men from any sexual offences, including rape, defilement, and indecent acts. This law will govern the code of conduct of the Contractor's staff and provide repercussions of any wrongdoing. The sexual offense act, 2006 supports the Kenya Employment Act of 2007 that a worker should not be harassed sexually to receive preferential treatment at the	Any form of GBV and sexual harassment shall not be tolerated on the project site. The Act will come in hand to ensure that all matters related to GBV at workplace are managed appropriately. GRM has been incorporated under this report to ensure that such cases are reported and handled appropriately. All the contractor workers shall be required to sign a code of conduct not to engage in any form of sexual offences while working on the construction of Mwaepe Landing site infrastructure. Sensitization and

		workplace or detrimental treatment on present or future employment	awareness shall be created among workers
30.	HIV and AIDS Prevention and Control Act, 2006	This is an Act of Parliament providing measures for the prevention, management, and control of HIV and AIDS, to provide for the protection and promotion of public health, and for the appropriate treatment, counseling, support, and care of persons infected or at risk of HIV and AIDS infection, and for connected purposes.	Requirements of the Act will ensure that the contractor together with Kwale County public health department provide for VCT services for employees and locals where appropriate and promote public awareness. This will go a long way in ensuring stigmatization of HIV and AIDS is reduced as well as managed during the construction period. The project ESMP budget has provided for sensitization and awareness to contractor workers on STI, HIV and AIDS related issues.
31.	The Children Act, 2001	<p>The Act protects the welfare of children within the Country. The Act identifies Children as a person below the age of 18 years old and protects them from exploitation. Of particular importance to this project is section 10, which protects the child from:</p> <ul style="list-style-type: none"> • Economic exploitation. <p>Any work that interferes with his/ her education or is harmful to the child's health or physical, mental, spiritual, moral, or social development.</p>	The Act shall be applied to regulate any form of engaging underage to the project activities on site. Child labour in any form shall not be tolerated on the project site and the contractor shall be required under the contract not to engage in any form of child labour on site as provided for under annex VI in this report.

3.4.2. Statutory Documents

The findings from review of the legal frame identifies several statutory documents that are required to implement the construction activities as well as the operation of the proposed fish landing site. The proposed sub-project will require several permits and licenses during the construction and operation phases. The Table 3-3 provides a summary of the statutory documents that will be required during construction, operation and decommissioning of the proposed Mwaepo landing site.

Table 3-3: Statutory Documents required during project cycle

No.	The document	Agency
1.	EIA license	NEMA
2.	NCA compliance Certificate	NCA

3.	County construction approvals	County government
4.	Work Place registration certificate	DOSH
5.	Work Injury and Benefit Act Insurance Policy	Insurance policy provider
6.	Contractors all Risk Insurance policy	Insurance policy provider
7.	Public Liability Policy	Insurance policy provider
8.	Work Place registration certificate	DISH
9.	Permit to release effluent to the environment	NEMA
10.	Food handling certificate	KeFS/Public health
11.	Trading license	County government
12.	Decommissioning License	NEMA

3.5. International Conventions and Treaties

The United Nations and other international institutions have developed several international treaties and conventions aimed at enhancing social economic development, environmental sustainability and promoting fundamental human rights. The proposed project has incorporated some of the principles from international conventions into mitigation measures under the ESMP as indicated in Table 3-4

Table 3-4: International Conventions and Treaties Ratified by Kenya Triggered under the Sub-Project

NO	TREATY/CONVENTION	OBJECTIVE	APPLICABILITY TO THE PROJECT
1.	Convention on the right of the child	The objective of the convention is to protect the rights of a child against abuse and exploitation	The project has considered the convention by not allowing any underage persons to be employed to work at the fish landing construction site or during operation.
2.	Convention on the law of the sea	The objective of the convention is the provision of a framework to assist parties to set marine territorial limits, navigation activities, determine transit regimes and archipelagic status, set exclusive economic zones, continental shelf jurisdiction, deep seabed mining, marine resource exploitation regime, protection of the marine environment, scientific research and settlement of disputes.	The sub-project has considered the convention by recommending the participation of the BMUs and CIGs along the Diani Chale conservation area to participate in restoration of the degraded coral reef as part of conservation efforts. The preparation of this report and application of safeguards requirements is also an effort towards compliance to protection of the marine environment. .
3.	Convention on the rights of people with disabilities	The intention of the convention is to protect the rights and dignity of persons with disability	Mwaepe landing site improvement infrastructure design has considered the rights of people with disability by providing for ease of access and mobility

			within the fisheries office premise.
4.	Constitution of the International Labour Organization and the eight fundamental Conventions	To advance social and economic justice through setting international labour standards.	The project has applied the requirements of ILO in the management of the workers working on site. The contractor and the workers shall be required to sign the code of conduct to adhere to fundamental safety requirements at the workplace. Project ESMP in addition has proposed mitigation measures to protect the rights and safety of all workers.
5.	Kyoto protocol and Paris agreement	To mitigate against climate change impacts through climate change adaptation measures.	Climate change adaptation measures such as green energy and building concepts among others have been considered in the design of the project to mitigate against the impacts.

3.6. World Bank Safeguards Policies and EHS guidelines

The proposed sub-project falls under the World Bank's support to the government through investment lending towards transforming and strengthening sectors related to the blue economy as part of KEMFSED project, improving of marine fisheries governance. The proposed improvement of Mwaepe landing site infrastructure will thus trigger the Bank's Safeguard Policies and EHS guideline requirements as depicted in Table 3-5, that requires undertaking environmental and social due diligence through sub-project screening and preparation of ESIA document.

Table 3-5: Applicable World Bank Safeguards Policies and EHS guidelines for the Proposed Construction of Mwaepe landing site Improvement Infrastructure.

CODE	NAME OF THE POLICY	OBJECTIVES	APPLICATION TO PROJECT
OP 4.01	Environmental Assessment	To ensure that environmental and social considerations are integrated into KEMFSED and construction of county office infrastructure sub-project's decision-making process. The aim is to enhance positive impacts and mitigate negative impacts of the project	The policy is triggered under KEMFSED and the construction of county infrastructure sub-projects. The policy informed ESIA preparation for the proposed Mwaepe landing site improvement infrastructure, guiding on enhancing positive impacts of the project and mitigating negative ones.

OP 4.04	Natural Habitats	World Bank's Natural habitat operational procedure seeks to ensure that World Bank-supported infrastructure and other development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products which natural habitats provide to human society. The policy strictly limits the circumstances under which any Bank-supported project can damage natural habitats. Specifically, the policy prohibits Bank support for projects which would lead to the significant loss or degradation of any Critical Natural Habitats, whose definition includes those natural habitats which are legally protected, officially proposed for protection, or unprotected but of known high conservation value.	Relevant requirements of the guideline informed the consultative works with KWS over the gazetted Diani-Chale marine reserve that falls within the Mwaepe landing site area of influence. KWS regulations governing the existence of the marine reserve informed the project design and implementation aspects outlined in the ESMP.
OP 4.11	Physical cultural resources	This policy addresses physical cultural resources which are defined as movable or immovable objects with cultural significance. Their cultural interest may be at the local, provincial or national level, or within the international community. 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.	Mwaepe landing site there are two culturally valued resources; a large baobab tree and an old building structure. The building structure and baobab tree are sited in the landing site's historical profile as the first development to earmark the landing site. In line with the OP 4.11 the project design reserves their value.
OP 4.12	Involuntary resettlement	The Bank's resettlement policy includes for safeguards to address and mitigate for all potential economic, social and environmental risks that may arise from involuntary resettlement of PAPs. The aim is to ensure that PAPs participate in the designing of the proposed project components to determine the necessary measures in designing an effective	The policy is triggered under KEMFSED project during designing of the Mwaepe landing site development due to the presence of already operational businesses within the targeted land space for development. This necessitated the

	resettlement policy and objectives.	development of a livelihood restoration plan from designing to implementation.
World Bank General Environment, Health and Safety Guidelines	The proposed sub-project under KEMFSED triggers: environment, health and safety issues, and considerations of the guidelines shall come in hand to guide on the best course of action, For the different project activities, especially during project implementation, operation decommissioning, regarding air quality issues, waste water management, construction waste management, health and safety and noise from the construction activities on site	Relevant requirements of the guidelines informed the mitigation measures in the ESMP of this report.
WBG EHS Guidelines for fish processing	The guidelines are industry specific measures that provide Good International Industry Practices associated with fish processing impacts. The guidelines provide mitigation measures to impacts associated with fish processing facility's solid and waste water management, water consumption and management measures as well as managing air emissions and energy consumptions.	The proposed project design provides for liquid and solid waste management measures, energy conservation and supplementing grid consumption with renewable energy.
World Bank policy on access to information, 2010	The World Bank policy on access to information sets out the principles on public access to information in its possession. The Policy is based on five principles which include: Maximizing access to information, Setting out a clear list of exceptions, Safeguarding the deliberative process, Providing clear procedures for making information available and Recognizing requesters' right to an appeals process.	The ESIA document prepared under the sub-project shall be disclosed to the public ones approved by the bank.

3.7. Project Institutional Framework

3.7.1. Regulatory Institutional Framework

Table 3-6 highlights the key regulatory institutions/agencies that shall be involved in overseeing the project activities during the implementation and operation phases to ensure that they meet regulatory standards. Therefore, coordination and consultations shall be required at different levels depending on the activities at hand.

Table 3-6: Regulatory Supervision of Improvement of Mwaepe landing site during Construction and Operation Phases.

NO.	INSTITUTION	RESPONSIBILITY
1.	<i>National Construction Authority (NCA)</i>	Monitor compliance to design, construction, operation, and maintenance standards of the proposed improvement infrastructure and the associated facilities. The authority ensures that all construction workers and the contractor are accredited and licensed to carry out the construction activities. The Authority shall also monitor the safety of workers and the general public during project implementation and decommissioning. The Authority will in addition register the site during construction.
2.	<i>Kwale County Government</i>	The County Government Act 2012 sets the development agenda in the counties by indicating the functions of the devolved system. Land use planning, waste management, fire and disaster management services, water and sanitation services provision are devolved functions. The County government shall approve the structural and architectural design; approve construction; provide water and sanitation services; ensure fire safety; issue the occupational safety certificate before operation and use of the building. The county in addition through the fisheries department and Mwaepo BMU will oversee daily operation and maintenance of the proposed landing site structures at the operation phase.
3.	<i>Mwaepo BMU</i>	The BMU shall be the custodian of the proposed infrastructures at the landing site with the key role being operation and maintenance, collecting of fisheries data reported and the landing, ensuring hygiene and sanitation at the site, paying utility bills and ensuring the sustainability of the fisheries management within the area of jurisdiction. The BMU will also be in charge of the facilities maintaining orders for the visitors to the site
4.	<i>County Environment Committee</i>	Ensuring the project adheres to physical planning and environmental standards set by NEMA under various legislations and regulatory standards.
5.	<i>Kwale Water and Sanitation Company (KWAWASCO).</i>	Provision of water services to the proposed landing site.
6.	<i>National Environmental Management Authority</i>	Shall be in charge of overall management and coordination of all matters relating to the environment in the proposed development area through Kwale County Director of Environment (NEMA). Issue the ESIA license authorizing commencement of the project following review and approval of the ESIA project report. Conduct periodic inspection of the project site to monitor adherence with the ESMP developed during the ESIA process
7.	<i>National Environment</i>	Resolves conflicts between NEMA and any of their clients (KEMFSED, Kwale County CPIU or SDBE &FA) regarding any environment issues

	<i>Tribunal</i>	arising during project implementation or operation.
8.	<i>Environment and Land Court</i>	Any matter that cannot be resolved amicably between NPCU, Kwale County CPIU, Mwaape MBU and NEMA pertaining to environmental issues arising from the project shall be addressed by the court
9.	<i>Directorate of Occupational Health and Safety Services (DOSHS)</i>	The directorate shall ensure compliance with the OSH Act 2007 and promote workers' safety and health, particularly during the construction and operation of the proposed landing site structures. The work site during construction and operation of the structures shall be registered as a workplace by the department for occupational health and safety. Arbitrate any compensation claims for workers in the project occasioned by incidents of occupational diseases or accidents
10.	<i>Kwale County Commissioner</i>	Resolve any security issues, disputes on site and maintaining public order.
11.	<i>Kenya Power and Lighting Company (KPLC)</i>	Supply electricity to the proposed building and ensure that all electrical connections comply with safety standards.

3.7.2. Project Implementation and Operation Institutional Framework

Table 3-7 highlights the key project institutional framework that shall be involved in implementation and supervision of safeguards triggered by the project activities during the implementation and operation phases to ensure that they meet regulatory standards and World Bank requirements. Therefore, coordination and consultations shall be required at different levels depending on the activity at hand.

Table 3-7: Project Institutional Framework for Construction of Mwaape landing site Improvement Infrastructures

NO.	INSTITUTION/PERSONS	RESPONSIBILITY
1.	SDBE&F	The state department shall oversee the implementation and supervision of project related activities in consultation with the County Government, including all safeguards requirements, during construction phase of the project.
2.	National Project Coordinator KEMFSED	Provide the linkage, supervision guidance between the NPCU and CPIU.
3.	Sub-project Supervising Engineer	The client procured a supervising consultant who shall act as the supervising engineer on site. The consultant will link the construction team and KEMFSED National project coordination unit (NPCU). The consultant shall represent the client on site, supervise the contractor in consultation with Joint Project Supervision Committee (JPSC), Works

		Engineers and general contract management. The consultant's safeguards officer will guide the contractor in preparation of the C-ESMP.
4.	NPCU- Safeguards Specialists (ESS & SSS)	<p>Ensure the environmental and social requirements are prescribed in contractors bidding documents</p> <p>Take overall responsibility of ensuring that the mitigation measures proposed in the ESIA/ ESMP and C-ESMP are implemented.</p> <p>Ensure construction activities are carried out in line with national laws, World Bank safeguards operational policies and safeguards instruments prepared under the project (ESIA). Undertake environmental and social audits, EHS audits, capacity building of the contractor's team on safeguards issues and Joint Project Supervision Committee (JPSC)</p> <p>Periodic monitoring and surveillance of all project's investment to ensure compliance with the mitigation measures as set out in the ESMMP and other contractual requirements,</p> <p>Ensure a functioning grievance redress mechanism and follow-up all environment and social issues raised,</p> <p>Share the monthly and quarterly monitoring reports with the Bank.</p> <p>Report immediately to the World Bank upon occurrence of any significant environmental, social, or health and safety incidents</p> <p>Develop and fully implement including the necessary resources, all operational phase EHS plans</p>
5.	Joint Project Supervision Committee (JPSC)	<p>Joint Project Supervision Committee will be composed of the NPCU Project Engineer, BMU representative, County Civil Engineer, County safeguards officers and NPCU Safeguards team. The JPSC will ensure supervision of works for the proposed infrastructure and safeguards compliance. They will also sign works certificate for contractor's payment.</p>
6.	CPIU's safeguards expert	<p>Assist the contractor in preparation of safeguards Contractor Environmental Social Management Plan required and reporting responsibility. Monitoring contractor implementation of sub-project safeguards requirements. Preparation of monthly and quarterly safeguards monitoring reports.</p>
7.	Contractor	<p>Implement the proposed sub-project according to contractual obligations and observe all safeguards requirement</p> <p>Contractor will have an EHS officer on day to day guidance on project matters on environment, social, health and safety issues</p> <p>Prepare contractor specific ESMP including OHS plans, waste management plans among other plans</p> <p>Obtain the required licenses and permits such as the work place registration</p> <p>Provide information to KEMSFED NPCU related to HSE (Health, Safety and Environment) performance, and immediately report any significant environmental incident or worker accident</p>

8. Contractor ESHS expert/ Site Agent	<p>Ensure implementation of environmental and social safeguards and occupational health and safety requirements during project implementation</p> <p>Maintain log on grievances, accidents and incidents on site.</p> <p>Report on E&S issues in the project progress reports.</p>
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3.8. Monitoring and Reporting Requirement

3.8.1. Construction Supervision, Monitoring and Reporting

The technical clauses attached in here under Annex VI and the C-ESMP to be prepared by the contractor shall serve to ensure that the contractor observes his obligations of implementing the requirements of the ESMoP and ESMP as per National laws and World Bank requirements. Reporting on Mwaepo landing site construction implementation activities shall be done by the contractor in consultation with the sub-project supervising consultant. The contractor shall be in charge of the monthly reporting on site to supervision engineer from the County Government and National Government under Joint Works Supervision Committee.

The sub-project implementation progress reports prepared by the supervising consultant shall be on monthly and quarterly basis. The reports shall be submitted to the client (SDBE&F) and Kwale County Government shall review the reports and submit to the World Bank for comments and approvals through NPC. The Joint Project Supervision Committee (JPSC) shall meet at site on a monthly basis. NPCU team shall also conduct quarterly monitoring visits to advise on the progress of the project. The World Bank team on the other hand shall be conducting semi-annual monitoring mission to advise on the implementation progress. The supervising consultant's site agent together with EHS officer shall on a daily basis supervises the implementation of the C-ESMP, ESMP and EMoP. The NPCU safeguards team shall also conduct regular and impromptu monitoring to ensure that all the safeguards' requirements of the World Bank and National laws are adhered to as captured in the ESMP and ESMoP and are fully implemented. The safeguards team shall also, through KEMFSED M&E, develop GEMS tool for data collection, remote supervision and monitoring of safeguards compliance requirement implementation activities.

3.8.2. Operation and Maintenance Phase Supervision, Monitoring and Reporting

The supervising consultant together with the contractor shall prepare as built drawings and O&M manual which shall include safeguards related issues to guide the project operation team on what is required at operation phase. Impacts under chapter 7 & 8 of this report shall be reviewed and improved after the sub-project completion and handed over to the county fisheries department for implementation during project operation. The fisheries department and the BMU together with other government agencies among them NEMA, KWAWASCO, other county government departments and the Department of Occupational health and safety shall ensure the adherence to the mitigation measures proposed in the final documents. The operational manuals for the facilities (*generator, solar system, ice making plant among others*) shall form the O&M manual

3.9. Contract Management, Administration and Conflict Resolution

The sub-project supervising consultant overseeing the works shall be in charge of managing the project contract on behalf of the client (SDBE&F) and the Kwale County Government. Before the commencement of the construction activities, there shall be clarification of supervision and monitoring procedures and responsibilities, once the contractor is procured. The requisite instruments including the monitoring indicator checklist as *attached* in annex VII shall be refined in alignment to site-specific C-ESMP that shall be prepared by the contractor. The sub-project construction supervising consultant shall also be responsible of resolving any conflicts that arises between the client (SDBE&F) and the contractor. The consultant shall advice the client on the necessary actions that shall be required. Disputes shall be settled amicably through a mutual engagement process that shall be specified in the contract. However, if any dispute arises related to the contract which cannot be resolved amicably among the aggrieved parties, the matter maybe referred to a competent adjudication/arbitration person or institutions in accordance to national laws related to contract management. The identification of an institution or person or procedure agreed upon by the aggrieved party shall be guided by dispute settlement clauses in the contract.

3.10. National and World Bank Maximum Permissible Parameter guidelines

3.10.1. Maximum Permissible Noise Level

Section 4.3.3 of this report highlights the existing as well as anticipated sources of noise and vibration within the proposed project area. Table 3-8 and Table 3-9 highlights the allowable limits for environmental and occupational noise exposure levels respectively. The occupational noise level has also been noted during the operation phase of the sub-project.

Table 3-8: Environmental Noise Exposure Limit Guidelines for construction sites

Facility		Maximum Noise Level Permitted (Leq) in dB(A)			
		Day		Night	
		National	WEHS ¹⁰ Guidelines	National	WEHS Guidelines
i.	Health facilities, educational institutions, homes for disabled etc.	60	55	35	45
ii.	Residential	60	55	35	45
iii.	Areas other than those prescribed in (i) and (ii)	75	70	65	70
iv.	Occupational noise levels	85 dB(A)			
v.	Individual offices (no disturbing noise)		40-45 dB(A)		
vi.	Open offices, control rooms,		45-50 dB(A)		

¹⁰ World Bank General Environmental Health and Safety Guidelines (EHS)

	service counters or similar				
vii.	Light industry (decreasing demand for oral communication)		50-65 dB(A)		

Table 3-9: Occupational permissible Noise limits

Facility		Maximum Noise Level Permitted (Leq) in dB(A)			
		Day		Night	
		National	WEHS ¹¹ Guidelines	National	WEHS Guidelines
i.	Occupational noise levels	85 dB(A)			
ii.	Individual offices (no disturbing noise)		40-45 dB(A)		
iii.	Open offices, control rooms, service counters or similar		45-50 dB(A)		
iv.	Light industry (decreasing demand for oral communication)		50-65 dB(A)		

3.10.2. Maximum Permissible Air Quality Standards

Air pollutants are anticipated during project construction and operation phases with the main sources being; construction activities, movement of construction vehicles, the fish processing activities, the generator and transportation vehicles ferrying visiting land site users during operation. The pollutants and the permissible limits are as indicated in the Table 3-10 below. The main land uses in the area are residential and commercial activities from the hospitality industry.

Table 3-10: Guidelines for Maximum Permissible air quality standards

Pollutant	Time weighted Average	Residential, Rural & Other area	
		National Standards	WHO's Guidelines
Sulphur oxides (SO _x)	Annual Average*	60 µg/m ³	
	24 hours**	80 µg/m ³	
	Annual Average	0.019 ppm/ 50µg/m ³	
	24 Hours	0.048ppm /125µg/m ³	125 (Interim target-1) 50 (Interim target-2) 20 (guideline)
	One Hour		
	Instant Peak	500 µg/m ³	
	Instant Peak (10 min)	0.191 ppm	500 (guideline)

¹¹ World Bank General Environmental Health and Safety Guidelines (EHS)

Nitrogen dioxide (NO ₂)	Annual Average	0.05 ppm	40 (guideline)
	Month Average	0.08 ppm	
	24 Hours	0.1 ppm	
	One Hour	0.2 ppm	200 (guideline)
	Instant Peak	0.5 ppm	
Suspended Particulate matter (SPM)	Annual Average*	140 µg/m ³	-
	24 hours**	200 µg/m ³	-
	Annual Average****	100 µg/m ³	-
	24 hours***	180 µg/m ³	-
Particulate Matter PM ₁₀	Annual Average*	50 µg/m ³	70 (Interim target-1) 50 (Interim target-2) 30 (Interim target-3) 20 (guideline)
	24 hours**	100 µg/Nm ³	150 (Interim target-1) 100 (Interim target-2) 75 (Interim target-3) 50 (guideline)
Particulate Matter PM _{2.5}	Annual Average*	-	35 (Interim target-1) 25 (Interim target-2) 15 (Interim target-3) 10 (guideline)
	24 hours**	-	75 (Interim target-1) 50 (Interim target-2) 37.5 (Interim target-3) 25 (guideline)
Carbon monoxide (CO)/ carbon dioxide (CO ₂)	8 hours**	2.0 µg/m ³	
	1 hour	4.0 µg/m ³	
Ammonia	mg/m ³		1
Amines and amides	mg/m ³		5
Hydrogen sulfide, sulfides, and mercaptans	mg/m ³		2

3.10.3. Waste Water Quality

The main sources of waste water shall be from fish processing activities and the washrooms. Table 3-11 below captures the permissible limits for the various anticipated pollutants that will guide the monitoring of effluent quality particularly during project operation. The guidelines highlights both national and WB EHS General and EHS for Fish Processing.

Table 3-11: Waste water discharge limit, Fish processing waste water pollutant loading and sewerage water pollutant loads

Pollutant	Units	Guidelines			
		National Guidelines on Discharge limits	WB EHS Guidelines on Discharge limits ¹²	Fish processing waste water pollutant loading	Sewerage water pollutant loads
PH	pH	6.6-8.5	6 – 9	6-9	6.5-9.5
BOD	mg/l	30	50	200-6000	150-350
COD	mg/l	50	250	3000-8000	250-700
Total nitrogen	mg/l	To guideline value	10	50-200	20-50
Total phosphorus	mg/l	To guideline value	2	20-50	5-15
Oil and grease	mg/l	NIL	10	200-600	10-30
Total suspended solids	mg/l	30	50	500-2000	200-450
Total coliform bacteria	MPNb / 100 ml	30	400a	varies	varies
Temperature increase	°C	± 3	<3 _b	25-40	20-30
Ammonia				10-50	20-85
Active Ingredients / Antibiotics			to be determined on a case specific basis		

3.10.4. Potable water quality Standards

The proposed project shall be supplied with water from municipal supply supplemented by rain water harvest. The permissible national and WHO water quality guidelines are as captured in Table 3-12

Table 3-12: National and WHO Water Quality Standards guidelines

Pollutant	Units	National Guidelines ¹³	WHO Guidelines ¹⁴
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¹² World Bank Fish Processing Environmental Health and Safety Guidelines (EHS)

¹³ NEMA water quality guidelines

pH	pH	6.5 – 8.5	6.5–8.5
Suspended solids	(mg/L)	30	
Nitrate-NO ₃	(mg/L)	10	50
Ammonia –NH ₃	(mg/L)	0.5	35 mg/l
Nitrite –NO ₂	(mg/L)	3	3
Total Dissolved Solids	(mg/L)	1200	1000 mg/l
Scientific name (<i>E.coli</i>)	/100 ml	Nil	Nil
Fluoride	(mg/L)	1.5	1.5
Phenols	(mg/L)	Nil	30
Arsenic	(mg/L)	0.01	0.01
Cadmium	(mg/L)	0.01	0.003
Lead	(mg/L)	0.05	0.01
Selenium	(mg/L)	0.01	0.04
Copper	(mg/L)	0.05	2
Zinc	(mg/L)	1.5	3–5
Alkyl benzyl sulphonates	(mg/L)	0.5	
Permanganate value (PV)	(mg/L)	1.0	

¹⁴ WHO 4th Edition (2011) guideline values

4. ENVIRONMENTAL AND SOCIAL BASELINE CONDITION

4.1. Chapter Overview

This chapter describes the existing environmental and social baseline conditions within the proposed project Area of Interest (AOI). The conditions described include physical environment, biological environment and socio-economic setting within the AOI.

4.2. Project Location and Area of Influence

The proposed Mwaepe fisheries Landing site is located on a piece of land measuring about 0.75 acres (0.3035 hectares) owned by the fisheries department. The land ownership documents are attached in Annex II. The proposed project is located in Kwale County, Msambweni Sub-County, Kinondo ward, Kinondo location and in Kinondo Sub-location. The Landing site is located at Mwaepe as shown Figure 4-1 from a Google image. The area has an elevation that ranges from 7-12m depending on the distance from the shoreline and where one picks the points from on the plot, with GPS coordinate of the project site being Latitude 4°20'35.10"S and Longitude 39°33'58.61"E.



Figure 4-1: Google Image showing proposed Sub-project Location Site

4.3. Physical Environmental Conditions

4.3.1. Climate and Weather Parameters

Satellite derived spatial data for the proposed project area was used for the description of climate and weather patterns of the project area. The study team acquired weather and climatic satellite spatial data at Mombasa Port Reitz weather station using the coordinates of the proposed project area. The station was found to be the nearest to Mwaepe Landing site. The data accessed were for rainfall, temperature, wind speed, relative humidity and radiation from FAO CLIMWAT data base accessed in March 2022.

4.3.1.1. Rainfall

Kwale County generally experiences semi-arid climatic conditions, with other areas receiving relief rainfalls especially in high altitude areas. However, satellite derived precipitation from Mombasa Port Reitz weather station (*FAO CLIMWAT data base*) for the past 42 years spanning between the years 1980-2022, showed that the area receives coastal rainfall which is relatively high. The project area coordinate points were used to assist in determining the general monthly average rainfall distribution and annual rainfall amount in the proposed project area. The project area usually experiences a bi-modal rainfall pattern with relatively high rainfalls under the long rains being experienced between March and June compared to the short rains received between September and December as indicated on Figure 4-2. The figure also shows that February is the driest month with less than 14mm while the month of May seems to be the wettest month of the year, within the proposed project area. The average annual rainfall within the project area was noted to be about 1162mm.

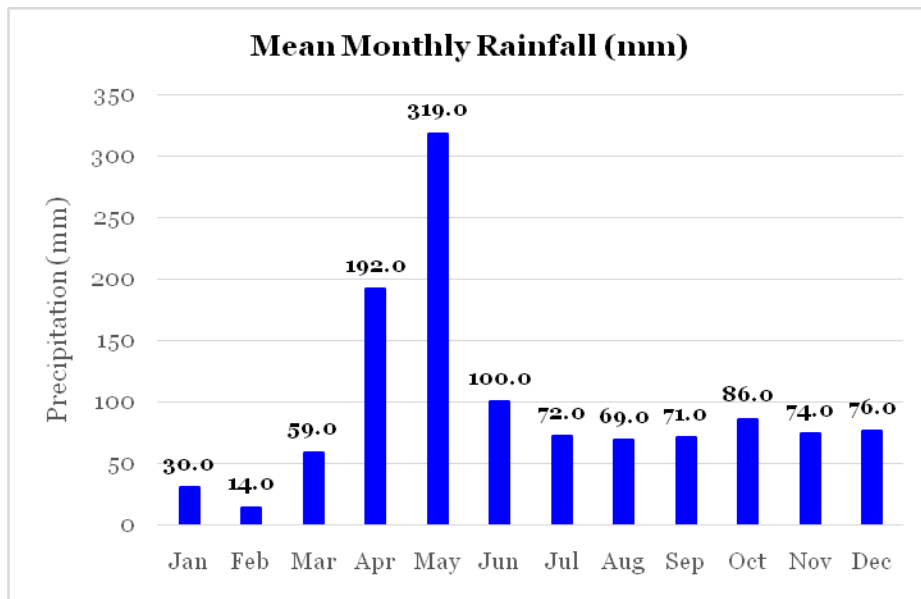


Figure 4-2: Mean Monthly Rainfalls source (*FAO CLIMWAT data base March 2022*)

4.3.1.2. Temperature

Satellite derived temperature data for the same point and over the same period as indicated in the previous section (4.3.1.1) above was used to compute the air temperature within the project site. The temperature data analysis in the area as indicated in Figure 4-3 shows that March is the warmest month with an average temperature of 28.5°C while July with an average temperature of 24°C was the coldest. However, the average annual temperature in the project area was noted to be 26.29°C.

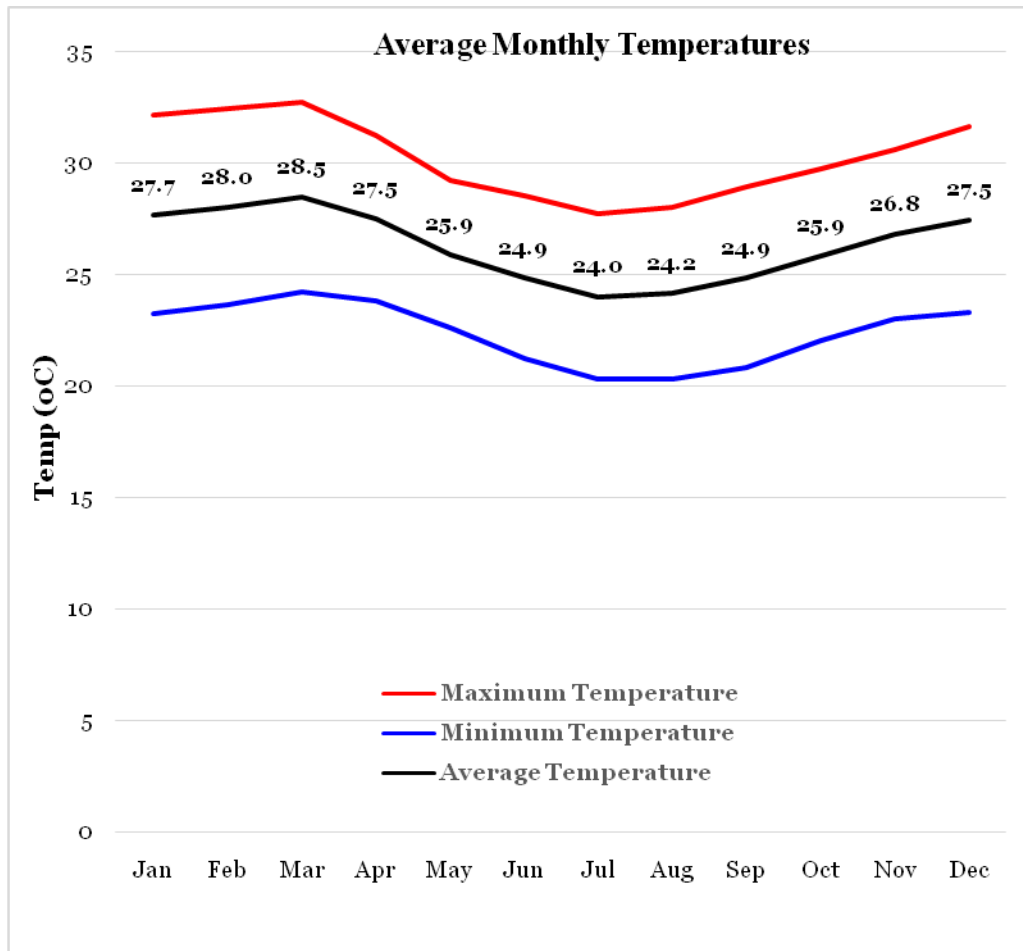


Figure 4-3: Mean Monthly Temperatures

4.3.1.3. Relative Humidity

The average monthly relative humidity within the project Area of Interest (AOI) is about 78%, which is relatively high if compared with most parts in the country. Seasonal mean monthly values fluctuate between 73% in January and February to 83% in May as shown on Figure 4-4. The highlight on relative humidity within the project area is significant given the high solar radiation within the proposed project area that shall lead to increased heat loading among the workers on site. Relative humidity (RH) directly influences the amount of moisture that is evaporated from the skin of workers to the atmosphere. The proposed project area also experiences relatively high winds that shall increase the rate of moisture being carried from the skin but at the same time due to the site being near the sea is expected to have cooling effects.

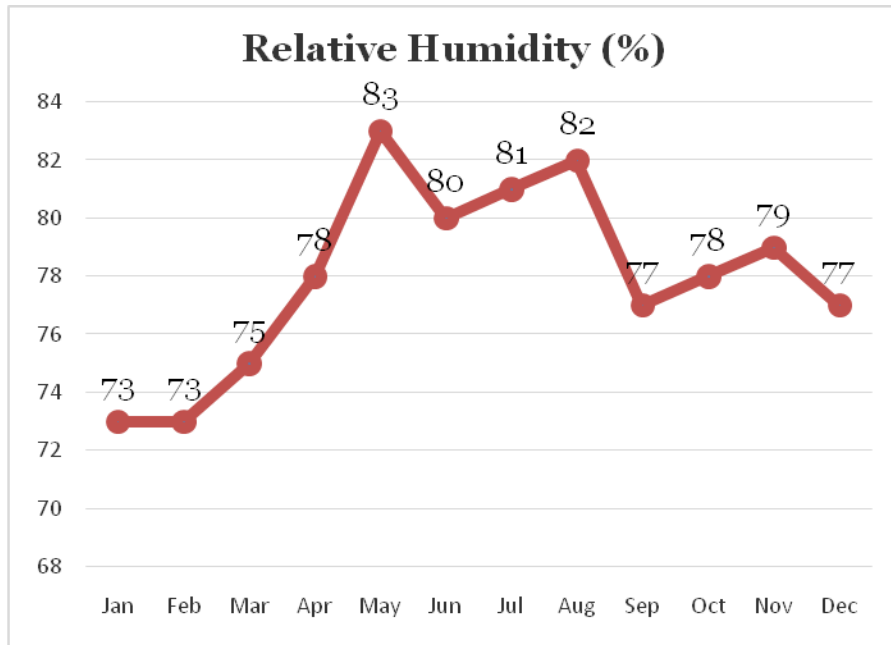


Figure 4-4: Average Monthly Relative Humidity

4.3.1.4. Wind Speed and Direction

The satellite data for wind speed indicated that average monthly wind velocity experienced in the project area is about 4.58m/s with the lowest wind speed of about 3.90m/s being experienced in November while the highest is 5.10m/s occurring in May and June as indicated in Figure 4-5. Wind speeds influence the subsequent changes in the rate of heating, evaporation and the microclimate within the working area. The wind speed in addition may cause air pollution and aid in pollutant dispersion by carrying cement, dust particles or sand particles affecting air quality status on site for the workers and the general community health. The proposed Mwaepé landing site augmentation activities are anticipated to contribute to air pollution due to the type and scope of the expected works.

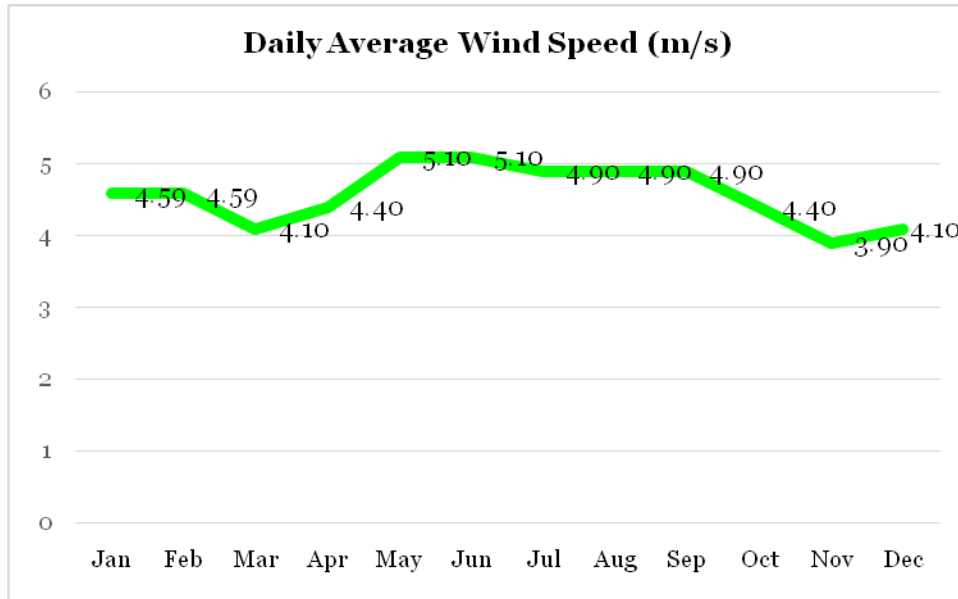


Figure 4-5: Daily Average Wind speeds

The wind direction for the Mwaepe Fish Landing Site in Ukunda, Kwale as indicated in Figure 4-6, generally follows these patterns:

- Southeast Trade Winds - these winds typically blow from the southeast, especially during the day, particularly from December to March. This is influenced by the Indian Ocean and the trade wind patterns.
- Northeast Winds - At night, particularly during the cooler months, winds may shift to the northeast.
- Seasonal Variations:
- Monsoon Season - from April to September, the region experiences the southwest monsoon, bringing winds from the southwest.
- Calm Periods - during the inter-monsoon periods (around October to November), wind speeds can vary, leading to more variable wind directions.

The average wind speeds range from 2.78 to 5.56 m/s (with an average speed of 4.58m/s), which can vary based on local weather conditions and topography.

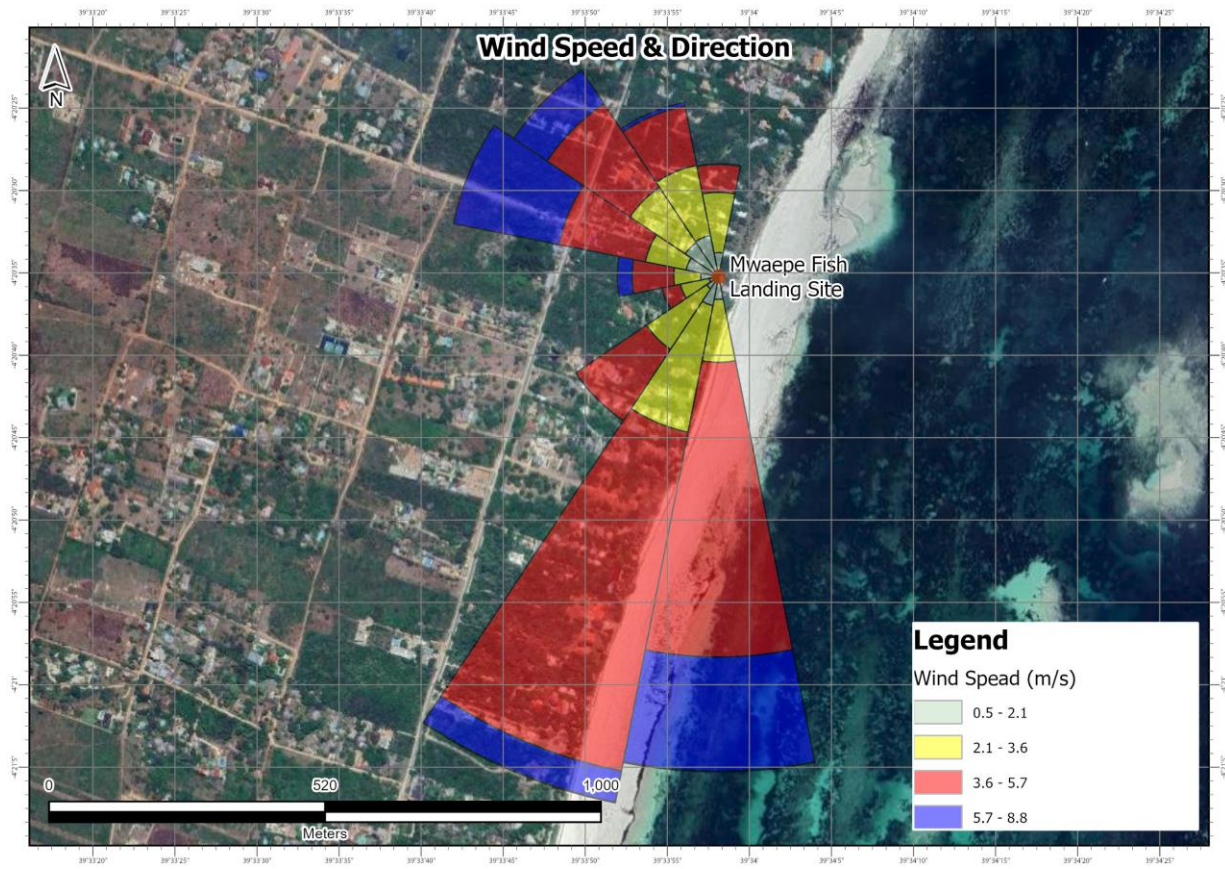


Figure 4-6: The wind rose diagram showing wind direction on site

4.3.1.5. Radiation

The proposed project area experiences an average monthly radiation of about 21.34 Rad ($\text{MJ}/\text{m}^2/\text{day}$) with the maximum radiation of 24.1 Rad ($\text{MJ}/\text{m}^2/\text{day}$) occurring in the month of February and a minimum of 17.7 Rad ($\text{MJ}/\text{m}^2/\text{day}$) being experienced in the month of May and July as indicated in Figure 4-7. The average monthly sunshine hours on the other hand was noted to be 8.2hrs. Solar radiation consists of different light frequencies that can pose a health hazard especially to workers exposed to the sun for long hours with the eyes and the skin being the most affected. However, for the case of Mwaepe fishing landing site proposed works, radiation is anticipated to be of a positive value for the proposed solarised street lights and the solar panels to supplement grid power supply to the facility. The contractor shall be required to provide for the workers clean drinking water to address possible cases of dehydration due to water loss from sweating.

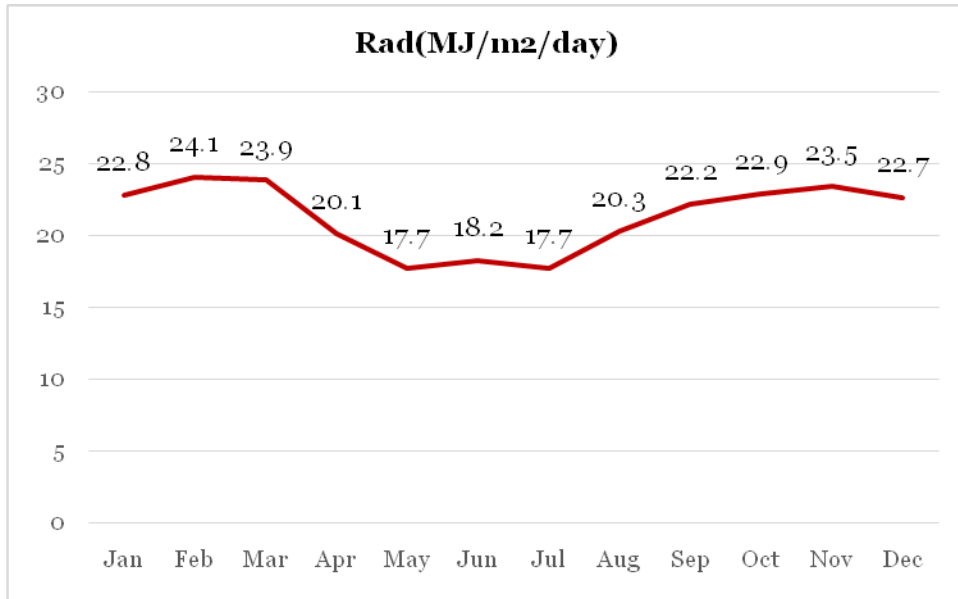


Figure 4-7: Average daily radiation

4.3.2. Waste Generation and Management

4.3.2.1. Municipal waste Management

The main source of litter noted at Mwaeppe landing site project area during field survey was solid waste from mending of fishing gears, boat debris, waste by visitors, massage parlours, shops and hotels operating within the landing site as highlighted in Plate 4-1 and Plate 4-2. Kwale County Government provide waste management services at Ukunda town through skips as indicated in Plate 4-3, the skips are strategically placed within the town but mainly along the main street on Ukunda-Lunga Lunga Road and along some beach access roads. However, most parts of the town lack such similar services and those away from the skips have contracted private waste collectors who carry the waste to designated areas where we have skips. In spite of this waste management at household level and at Mwaeppe fisheries landing site remains inadequately disposed off. During field survey it was observed that there was indiscriminate and crude dumping of solid wastes behind the shops as shown in Plate 4-4. Waste management whether liquid, solid or in gaseous form is critical in maintaining environmental integrity of an area. The main type of waste observed was organic and inorganic materials, including plastics, pieces of glass bottles, fish waste, paper, boat fibre glass, boat debris, wood wastes, food remains, soil and plant remains among others.



Plate 4-1: Boat and Fishing gear waste at Mwaepé site



Plate 4-2: Waste suspected to be due to Tourism activities at Mwaepé landing site



Plate 4-3: One of the skips at Trade wind Beach Access road



Plate 4-4: Inadequately disposed off waste behind the shops at Mwaepé

It was further noted during field survey that some of the operators at the landing site cope with inadequate waste collection through burning at the site as shown in Plate 4-5 and Plate 4-6. However, waste burning enhances pollutant dispersal to the environment and if not well handled, can be a cause of environmental degradation to the air, biological diversity, water sources and the soils. Waste is anticipated during construction activities, during demolition of existing structures, at the contractor's camp if any, operation phase of the proposed facilities particularly fish waste, from the boat yard, fish gear mending shed, waste from the economic activities associated with the stalls, hotels and littering by the tourists visiting the site as well as debris waste at decommissioning phase of the project. But despite this and given the size of the proposed works, it is not envisioned to be a menace in the project area. Due to poor waste disposal habit within the project site, the contractor shall be required to recycle most of the waste generated on site and where possible adopt safe disposal of any waste.



Plate 4-5: Burning of Waste at one of the community dumping site near Mwaepe and opposite the access road. Plate 4-6: Burning of Waste at Mwaepe Landing site

4.3.2.2. Fish Waste Management

Key informant consultations with fisheries officer and Mwaepe BMU acting officials' revealed that the main fish wastes at the site are the gills, intestines and scales. Most of the waste was reported to be recycled other than the fish scales which were reported to be buried in pits at the compound. The intestines and gills for small fish were reported to be collected by the hand line fishers who use the waste as bait during fishing in the reefs. In addition to using the intestines for bait, consultation with fishers also revealed that the intestines are processed to produce fish oil that is used for painting on dugout canoes to protect against wood borer pests. However, for the big fish such as Tuna and Sail fish, the intestine and gill waste were reported to be used as a delicacy by the local population.

Mwaepe landing site lacks records on fish waste generated at the site or any other waste for that matter. Though fish waste data could have been characterized under this study, there were hardly any fish landings or handling activities on the site during the study period. The fishers consulted observed that it was a low fish catch season and to corroborate the information, the fish banda appeared not to have been in use for quite some time. The BMU operating the fish Banda shall be required to partner with waste recycling stakeholders so as to use fish waste for feeds production. However, it is anticipated that on the KEMFSED project, once NAMARET centre is operational the fish waste from landing sites shall be collected to be used as part of fish feeds formulation.

4.3.3. Ambient Noise and Vibrations

The existing main source of noise at the proposed project area was noted to be from the flow of traffic on Diani beach road which is about 300m away from the proposed Mwaepe landing site at Canoe shopping centre. Other noise sources include existing construction activities near the site, boat repair activities and general conversation by the public operating at or visiting Mwaepe site for tourism activities. Mwaepe landing site is associated with transport economic activities with use of motorcycles and autorick Shaw as the main mode of local transport for the tourists as depicted in Plate 4-7 and Plate 4-8. However as one moves away from Diani Beach Road, the noise level reduces as the anthropogenic activities also reduces. Noise pollution possesses both auditory and non-auditory effects on the exposed population if in excess of allowable limits. The noise and vibrations levels at the proposed project site is anticipated to change slightly during the project cycle from foundation excavation, movement of construction vehicles, general construction activities and vehicles moving in and out of the proposed building site at the operation as well as from demolition activities during the decommissioning phase of the project. The main noise receptors were the local residential areas with compounds surrounding the landing site compound, visitors to the site, fishers operating at the site and the operators running different business at Mwaepe.



Plate 4-7: The Autorick Shaw Operating on Beach road



Plate 4-8: Boat Repair Activities at Mwaepe Landing site

Baseline conditions for the noise level were not conducted at the time of this assessment but instead has been proposed to be conducted by the contractor before commencement of the works and after mobilization of the construction equipment. However, the environmental and social assessment team conducted noise propagation modelling using the sound levels of the concrete mixer which is anticipated to produce the highest noise level at 85 decibels, during the construction activities. The sound propagations were as captured in Figure 4-8.

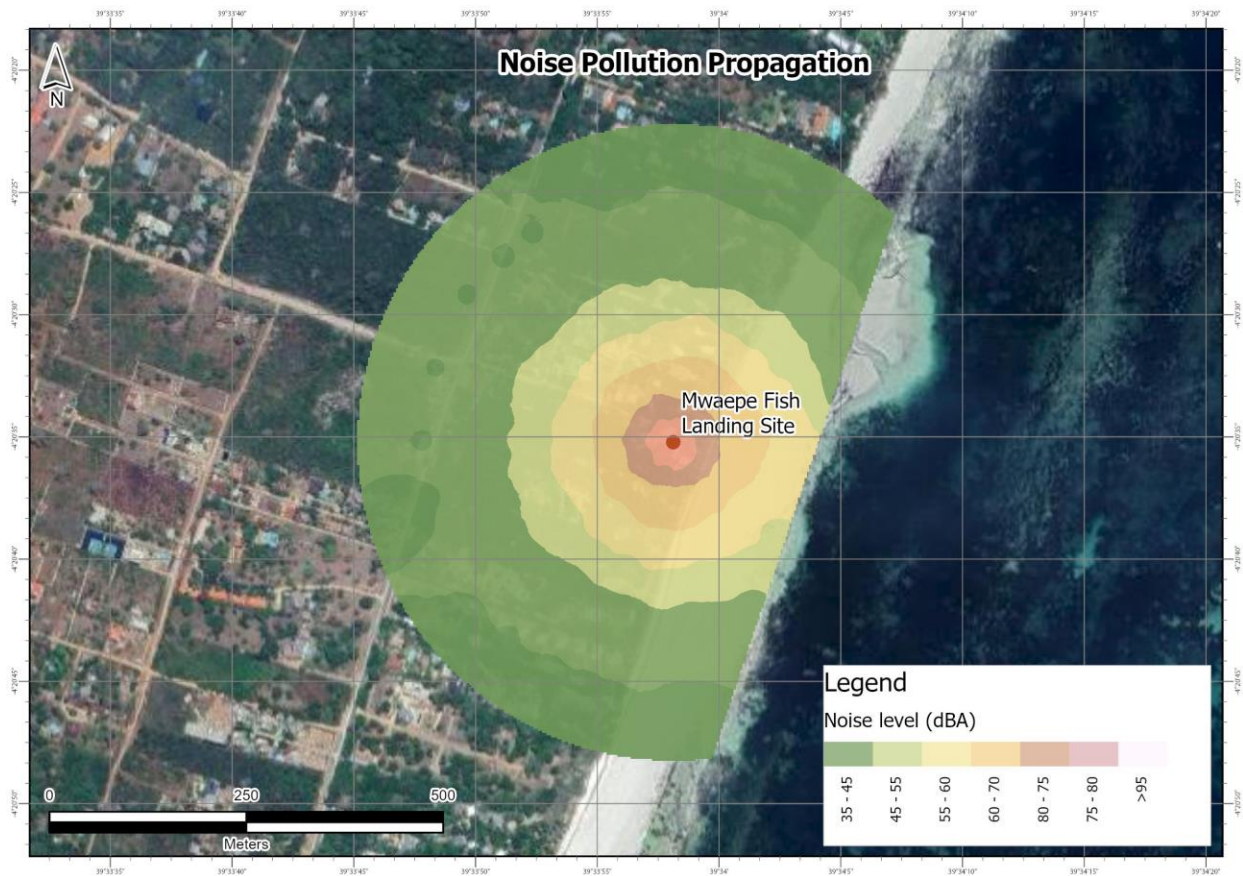


Figure 4-8: Noise propagation at the site

4.3.4. Ambient Air quality

Air pollution at Mwaepe was noted to be mainly associated with emission pollutants generated from automobile, autorick shaws, motorcycle, haphazard burning of waste at the site and particulates from wind action. The gaseous and particulate pollutants are anticipated to increase with the proposed Mwaepe landing site augmentation construction works particularly from construction activities and movement of construction vehicles. Though the main Diani beach access road is tarmacked, the access road to Mwaepe site is unimproved and the movement of construction vehicles is anticipated to generate dusts, but with proper mitigation measures the pollution effect is not anticipated to be a challenge. Using online data from tomorrow.io for Diani beach¹⁵ which is near the project area, the ESIA team sought to determine the air quality of the area as indicated in Table 4-1. The findings shows that the air quality on average was good on the particular day of extract this data.

¹⁵ https://weather.tomorrow.io/KE/Diani_Beach/2076504/health/

Table 4-1: Air Quality Pollutants Levels at Diani Beach

No,	Parameter	Pollutants level (24 hours average) ¹⁶
1.	Particulate Matter PM ₁₀	13.13 µg/m ³
2.	Particulate Matter PM _{2.5}	7.38 µg/m ³
3.	Sulphur oxides (SO _x)	0.19 ppb
4.	Nitrogen dioxide (NO ₂)	0.13 ppb
5.	Carbon monoxide (CO)/ carbon dioxide (CO ₂)	0.13 ppb
6.	Ozone (O ₃)	26 ppb

Particulate matter from the construction activities is anticipated to be the main sources of pollution to the neighbours of the site and the dispersal direction shall be as indicated in Figure 4-9

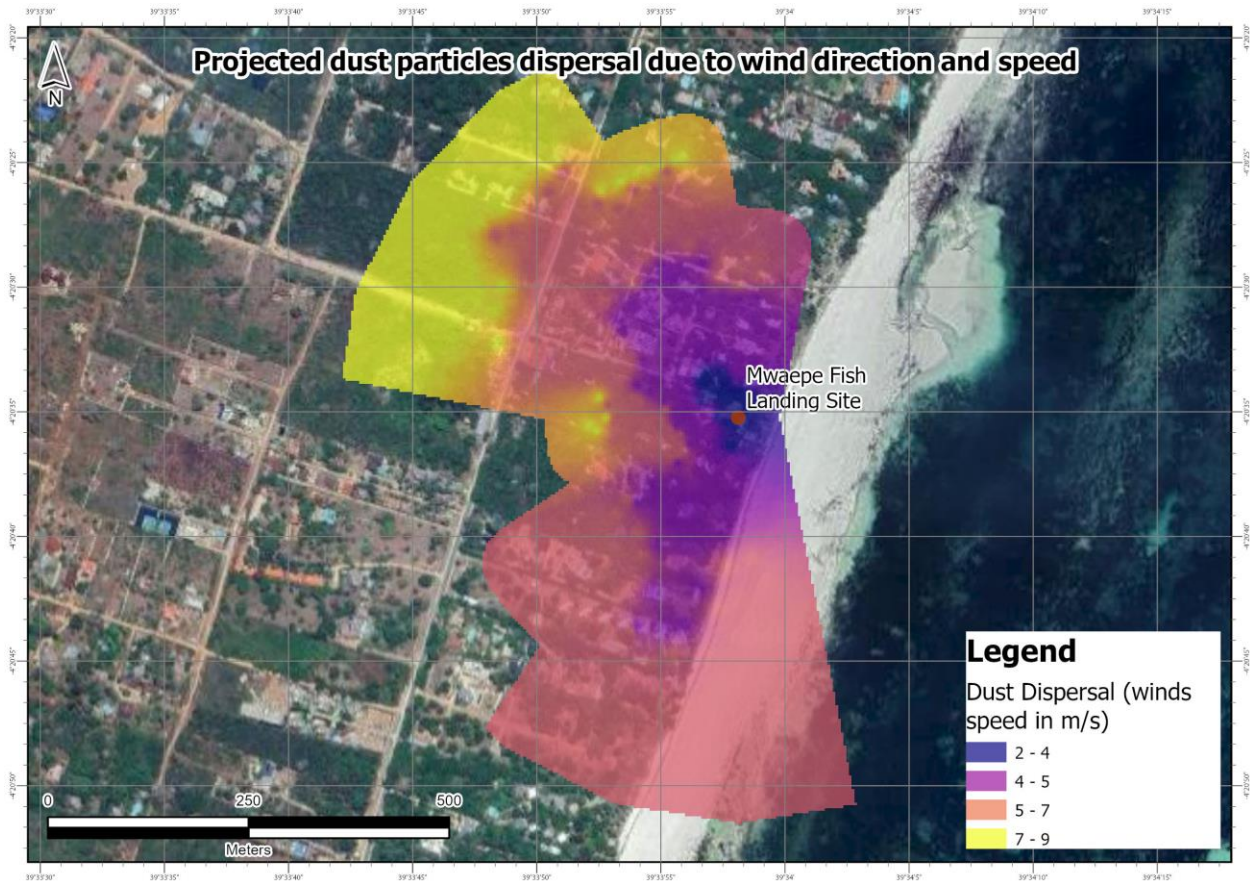


Figure 4-9: Particulate matter dispersal based on wind direction and the area of impact

¹⁶ The data was accessed on 22nd of October 2024 at 12:01hours

4.4. Biological Environmental Baseline Conditions

4.4.1. Fisheries resources

Mwapee BMU has about 300 fishermen whose daily fish catch is estimated at 150kgs per day. From the annual fisheries data compiled by Kwale county fisheries division, total landings in Mwapee between 2019 and 2021 ranged between about 47 tonnes to 55tonnes as highlighted in Table 4-2. See attached table for more details. However, it should be noted that this data is likely to increase if adequate measures to deter illegal landings done at undesignated points within Mwapee BMU are undertaken.

Table 4-2: Fisheries resources at Mwapee Landing site

Species category	2,019		2,020		2,021	
	Kgs	Ksh	Kg	Ksh.	kg	Ksh.
DERMASALS including rabbit fish, scavengers, parrot fish etc	19,419	3,476,001	25,494	4,563,426	26,215	4,692,485
PELAGICS including jacks, mackerels, barracuda, milk fish etc	13,412	2,347,100	17,139	2,999,325	15,700	2,747,500
Sharks/Rays/Sardines	2,494	314,244	4,594	578,844	2,415	304,290
CRUSTACEA including crabs, lobsters etc	3,665	1,414,690	2,665	1,028,690	3,082	1,189,652
HOLOTHURIANS including squids, octopus, bech de mer	8,271	2,183,544	4,271	1,127,544	3,289	868,296
TOTALS	47,261	9,735,579	54,163	10,297,829	50,701	9,802,223

4.4.2. Critical Habitats

Mwapee fishing landing site falls within a Marine Protected Area (MPA). The Diani Chale Marine reserve managed by Kenya Wildlife Service (KWS), and is one of the 6 such MPA in Kenya. The reserve is about 165 km² covering Chale, Mvuleni, Mwanyanza, Mvumoni and Mkwakwani other than Mwapee. Though the reserve was designated in 1995, its active conservation remains a challenge among the key stakeholders with coordination of the various stakeholders being the major concern. The classification of Diani Chale MPA as a national reserve under the law means the area is open to controlled sustainable subsistence and artisanal fishing activities and recreational activities that are compatible with artisanal fishing practices. The activities not permitted in the marine reserves include commercial fishing using bottom trawling and use of illegal fishing gears such as beach seining. The reserve is classified under category VI of the IUCN protected areas management categories system.

The reserve consists of several critical habitats including coral reef ecosystem, seagrass beds and mangrove areas. However, there is evidence of degradation of the habitats and there are ongoing concerted efforts by Kenya Wildlife Service in collaboration with other conservation stakeholders to conserve the resources. In regard to this, a community participatory resource mapping activity was undertaken in the area to identify the location and distribution of the various resources within the reserve area as indicated in Figure 4-10.

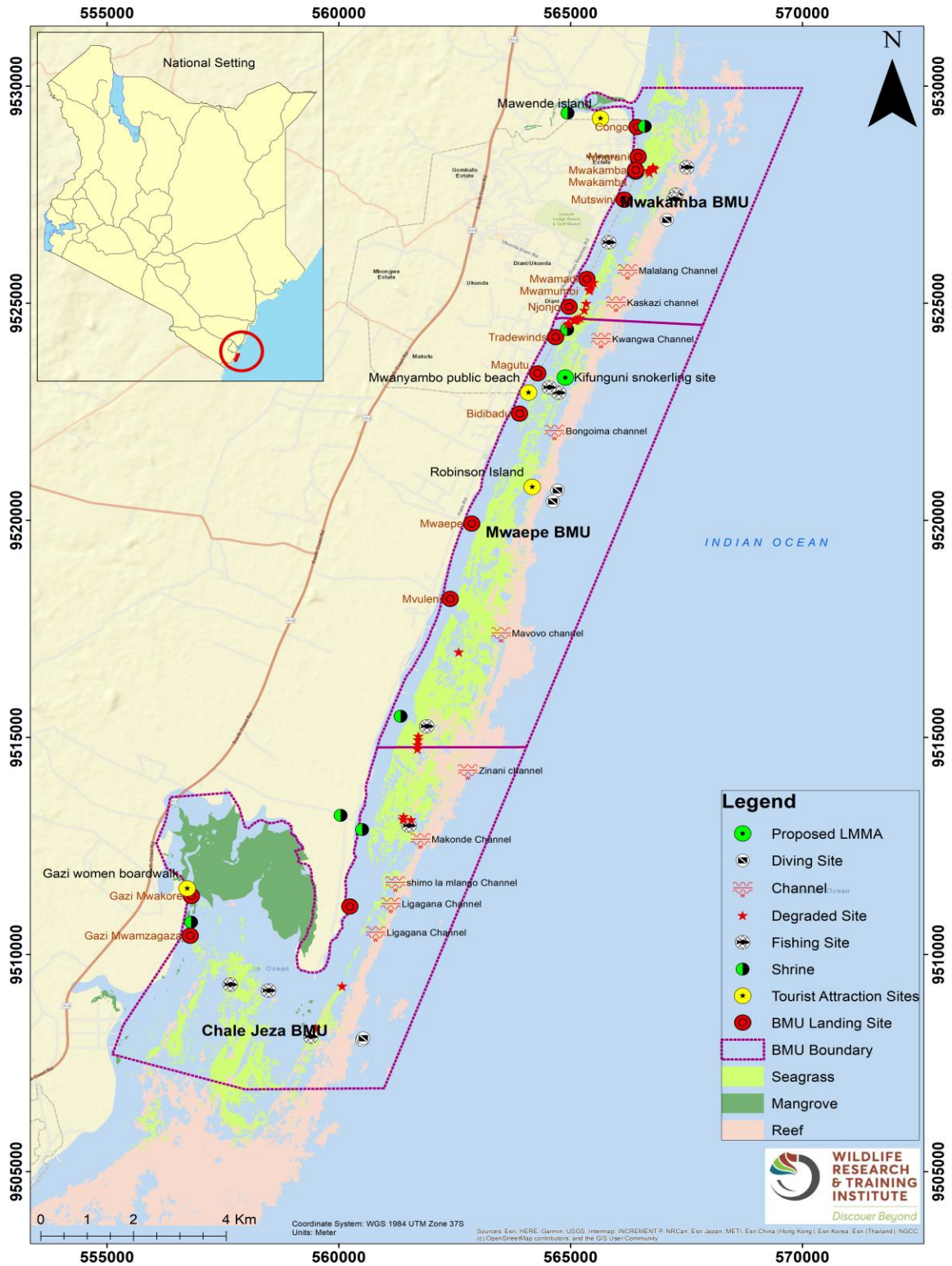


Figure 4-10: A map showing the location of critical habitats within Diani Chale Marine reserve, image Courtesy of WR&TI

4.4.2.1. Benthic Habitats

The Diani-Chale area consists of shallow coral reef lagoon, seagrass beds sheltered by an extensive fringing reef and a reef flat which becomes exposed during low tide. The area is lined by a fringing reef which lies 0.5-1.5 km offshore, extending from River Mwachema to Chale Island as indicated in Figure 4-10. The outer reef slopes down to about 30 m depth. The coral reef also plays a crucial role in coastal tourism in addition to protecting the beach from erosion by waves.

4.4.2.2. Coral Cover

The coral reefs of Diani-Chale are considered to be among the most degraded, having low coral cover, low fish abundance, and a high occurrence of sea urchins attributed to overfishing. The coral cover in Diani-Chale is therefore of low productivity compared with other reefs along the coast. Past studies have shown that the cover is less than 10%, with high sea urchin biomass (5000 kg ha⁻¹). There are 22 different types (genera) of hard corals with massive and branching *Porites* dominating, contributing 30% of the total cover. Many of the corals found in the area are relatively tolerant to bleaching and other disturbances. The most common reef fish in the area are damselfishes and wrasses, which together contribute about 60% of the total coral fish biomass of 60 kg/ha. Nine species of sea urchins have been identified with some being very abundant.

Attempts towards coral reef restoration have been undertaken in Wasini within the Shimoni-Vanga seascape. This was through Wasini community through their Beach Management Unit (BMU) that successfully replanted corals. KEMFSED as a project has an opportunity through BMU and CIGs operating within the reserve area to participate in similar efforts. Past restoration efforts has addressed problem of reef degradation around Mkwiwo and Wasini due to overharvesting of marine resources and climate-induced impacts. It is proposed that in the Diani Chale area, restoration of corals to be done involving the training of BMU members in diving, survey and mapping of degraded sites, the establishment of coral nurseries, awareness creation and transplanting of corals. Awareness sessions can be conducted through village meetings, distribution of educational materials and educational events. In addition to restoration of marine life, this will have additional benefits of the new sites becoming an attraction for tourists who see it as a way of rewarding conservation efforts.

4.4.2.3. Seagrass beds Species

Seagrasses are distributed in lagoon areas of the Kenyan coast, and some patches of seagrass beds are commonly encountered in reef flats and slopes. The Kenya coast has 12 seagrass species: *Halodule uninervis*, *Halodule wrightii*, *Syringodium isoetifolium*, *Cymodocea rotundata*, *Cymodocea serrutata*, *Thalassodendron ciliatum*, *Zosteracapensis*, *Enhalus acoroides*, *Halophila minor*, *Halophila ovalis*, *Halophila stipulacea* and *Thalassia hemprichii*. The adjacent reef lagoon at Mwaepe has extensive sea grass beds composed of seven species, and dominated by two species: *Syringodium isoetifolium* and *Thalassodendron ciliatum*. Surveys carried out in the

Diani-Chale lagoon area indicated a loss of up to 50% seagrass cover and an increase in the proportion of sand within the lagoon. (Mutisia, L. N. D., 2009)

Seagrass beds support a large variety of associated fauna and flora with several ecological characteristics. They provide food, shelter and nurseries for several animals, including many commercially important fish and shellfish species and create remarkably high rates of secondary productivity. Seagrasses are a valuable habitat for marine fauna as it provides the basis of a detrital food chain, sediment stabilisation, nutrient cycling and a refuge from predation for small and juvenile fish and macroinvertebrates. Seagrass ecosystems therefore provide lots of ecosystem functions that could be lost with an increasing degradation of seagrasses which is partly due to overgrazing by sea urchins but also includes many other factors that are anthropogenic.

In Kenya, experimental seagrass restoration efforts were started in 2007 in response to seagrass habitat degradation due to sea urchin herbivory. Although the initial efforts experienced challenges, there were lessons learned which provided insights into subsequent restoration work using different techniques. It is proposed that seagrass restoration efforts be undertaken within the Diani Chale area in partnership with Beach Management Unit and using the protocols (sod, seagrass mimic or Hessian grass techniques) and lessons learnt while conducting three restoration trials conducted in Kenya between 2007 and 2015.

4.4.2.4. Species of Conservation Concern

The adjacent offshore waters support green and hawksbill turtles as captured in Table 4-3 which are relatively common and may be encountered while snorkeling or diving. Nesting turtles are however not common in the project site. Various species of dolphins, whales, whale sharks and manta rays can also be encountered transiting the area. On the terrestrial side, the area also hosts the largest population of colobus monkeys along the coast as highlighted in Plate 4-9. Monkeys are highly dependent on the terrestrial forest for food and shelter.

Table 4-3: Species of Conservation Concern within the proposed Project area

Species	Common name	IUCN Red list status	WCMA status
	Green turtle		Endangered
	Hawksbill turtle		Critically endangered



Plate 4-9: Columbus Monkey noted at proposed Mwaepe site

4.4.2.5. Gazi Mangroves within the Diani-Chale Seascape

There are about 615 hectares of mangroves found in Gazi to the southern part of the Diani Chale landscape. Nine (9) species of mangroves are found in this area namely, *Rhizophora mucronate*, *Lumitzera racemose*, *Sonneratia alba*, *Xylocarpus granatum*, *Ceriops tagal*, *Xylocarpus moluccensis*, *Avicennia marina*, *Bruguiera gymnorhiza* and *Hertiera littoralis*. The Gazi Bay mangroves habitat are healthy with high biodiversity including fish, crabs. Drivers of losses and degradation of mangroves in the project area have been identified as population pressure, poverty and inequality, and poor governance. Poor governance manifests itself through illegal harvesting, forest encroachment and weak enforcement of existing laws. To conserve the mangroves and increase acreage, mangrove restoration has been undertaken including the use of nature-based solutions through Mikoko pamoja project, a carbon project located in Gazi Bay, Kenya. The project aims at conserving mangroves through the sale of carbon credits. This a community-led mangrove conservation project aimed at providing long-term incentives for mangrove protection and restoration through community involvement and benefit. It is the world's first blue carbon project.

4.4.2.6. Diani Chale MPA Institutional Management

Reefs associated ecosystems of Kenya fall under the jurisdiction of several government departments. The Fisheries department has jurisdiction over fishing activities, the forestry department manages the mangrove resources, tourism department licenses all tourism activities while Kenya Wildlife Service (KWS) manages all marine protected areas (Muthiga N. 2003). Under the Fisheries Management and Development Act, 2016, the Kenya Fisheries Service and other state agencies formed through the act are mandated with the management of all the fisheries related activities within the territorial waters. The marine reserves allow the use of traditional fishing gears, to ensure compliance, The Wildlife Conservation and Management

(Marine Protected & Marine Conservation Areas) Regulations, 2016 gives the KWS the mandate to manage and regulate fishing activities within marine reserves.

Beach management units (BMUs) promote structured community participation in fisheries management, and consist of fishers, fish traders, boat owners and other beach stakeholders who traditionally depend on fisheries activities for their livelihood. In order to ensure compliance and participation of resource users in the management of the local fisheries and other marine resources, the Government of Kenya developed National Beach Management Unit (BMU) Guidelines 2007. BMU institutions are mandated by their regulations to develop their individual co-management plans. Mwaape BMU Joint co-management plan is being developed and facilitated under component 1 of the project. Each BMU is required to make its own rules in form of by-laws, which are in line with the Fisheries Act and its Subsidiary Legislations, to govern its internal operations. BMUs co-manage nearshore fisheries resources under provisions of the Fisheries Management and Development Act, 2016 and the Fisheries (BMU) regulations, 2007 also taking into account BMU bylaws

4.4.2.7. Modified Habitats

The general terrestrial area around the proposed project site was once a coastal rain forest but is a highly modified environment due to anthropogenic activities as depicted in Plate 4-10 and Plate 4-11. The immediate surrounding area is built with hotels, commercial building and private residential areas. The original terrestrial vegetation within the proposed project area has been interfered with and most of the existing is introduced. Most of the natural vegetation which was a tropical coastal forest has been cleared for settlement activities. The proposed project shall not have any impact on the surrounding vegetation since the proposed building structures are being introduced to an already build environment.



Plate 4-10: View of build Environment at Mwaape Landing site from the sea.



Plate 4-11: A residential House Under Construction Along Mwaape Landing site Access road

4.4.3. Visual Impacts

Mwaepe Landing site is located along the Indian Ocean shoreline with white sand beaches, at Kwale Diani area. The general area is highly modified with the built environment and the original vegetation in most parts of the area has been cleared. The proposed Mwaepe fisheries landing site is in existence with most of the existing building dilapidated to an extent of being an eye sore as shown in Plate 4-12 to Plate 4-15. The construction of the structures on the site was done without any planning in mind. However, the proposed sub-project to augment Mwaepe Landing site is anticipated to change the development trend on the site. A master plan for the plot has been prepared to regulate future development of the plot. The proposed designs for the structures is an improvement to the existing buildings and implementation of the proposed project is therefore not anticipated to have any negative visual impacts to the proposed site but enhance the aesthetic value of the area Plate 4-16 and Plate 4-17. Improvement of the access roads, construction of the ablution block and landscaping of the areas shall generally improve the scenic view of Mwaepe site. The proposed project is about construction of fish landing site on a plot designated for fisheries activities and shall therefore be in tandem with the existing physical plans of the area.



Plate 4-12: One of the sanitation facilities on site used by fishers in a bad shape



Plate 4-13: Dilapidated structures that are not pleasing to the eye on site



Plate 4-14: Inadequately managed waste at Mwaepe site



Plate 4-15: One of the areas Fishers use for showering



Plate 4-16: View of proposed Mwaepe Landing site from the western side as one enters

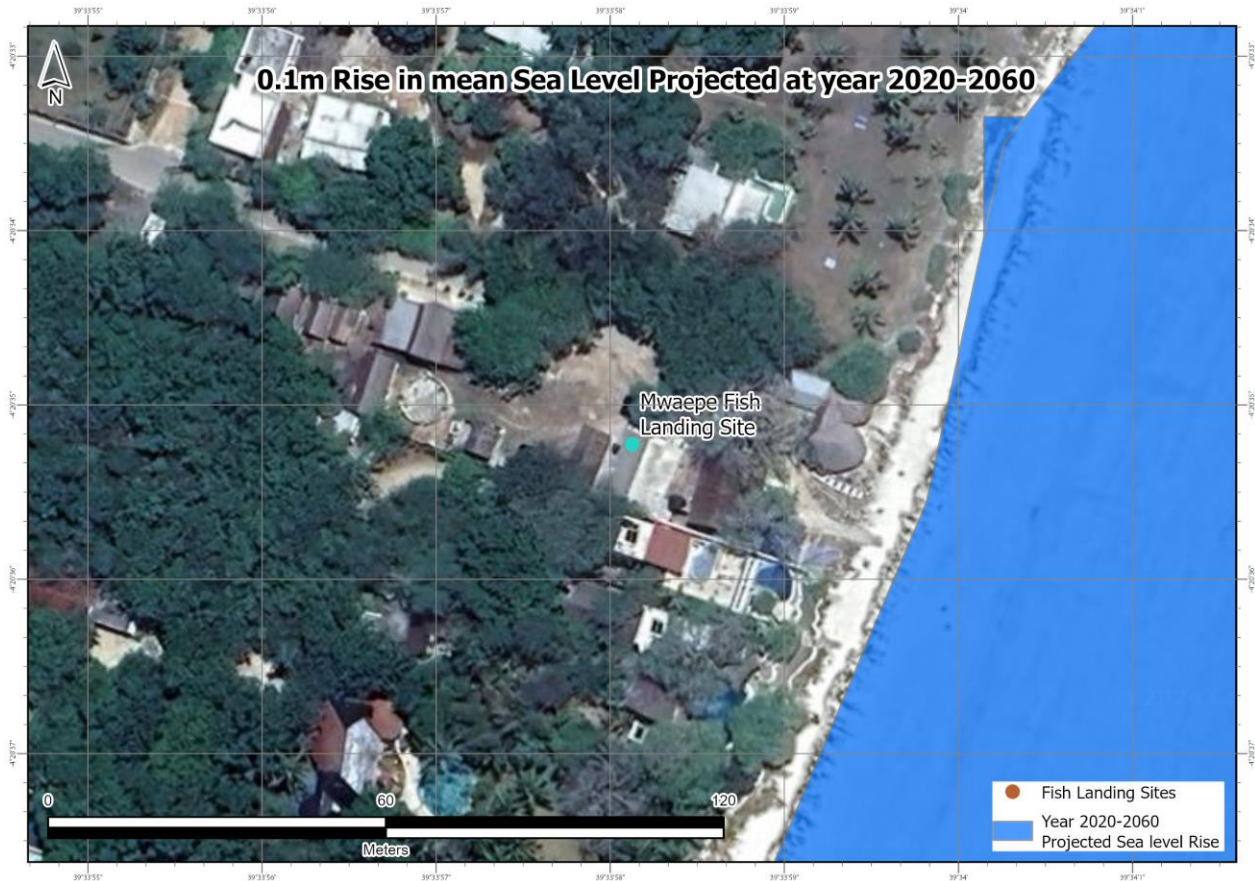


Plate 4-17: View of Mwaepe from the Northern side

4.4.4. Disaster Risks and Climate change Impacts

Sea-level rise is projected to accelerate over the next century, with research indicating that global mean sea level may rise 18–48 cm by 2050, and 50–140 cm by 2100. Decision-makers faced with the problem of adapting to sea-level rise need the appropriate information to make informed decisions. We have also accessed the risk of inundating the site from sea level rise using GIS. Similar to the inundation mapping above, we also adopted the 30 m DEM for the analysis. Note that the normal river level was assumed to be the base level within the river reach.

The sea level rise between of 0.5 and 2 m was considered and the extended of inundation subsequently determined. Results from the analysis indicate that a rise of sea water by more than 2 m will slightly touch part of the landing station. No flooding is projected for 0.5 m, 1 m, and 1.5 m indicating that the projected sea level rise may not affecting the proposed site. This implies that the rise may be not affect the site based on the projected rise for 2050 and 2100.



4.4.5. Existing Environmental Liabilities

There were no major existing environmental liabilities at Mwaepi fish landing sites. From screening stage, the site was determined not to have been used for any major industrial/potentially ground contaminating activities, lacked any pre-existing environmental liabilities. However, the site was observed to have dilapidated latrines which were connected to septic tanks and one of the pits shall be removed to pave way for the construction of the proposed restaurants. Key informant consultations indicated existence of a sludge treatment facility at Mabokoni as highlighted in section 4.5.3.4 of this report, that will be utilized to treat the waste water from the site. In addition to septic pit, indiscriminate burning of waste on site was also noted. The project shall improve on waste management at the site by providing for waste collection bins and linking with county waste management structures other than fish waste that shall be used for mariculture activities as feeds within the area.

4.5. Socio-Economic Baseline Conditions

4.5.1. Administrative units

The proposed Mwaepi landing site project is located in Kwale County, Msambweni Sub-County, Kinondo ward, Kinondo location and in Kinondo Sub-location. The proposed landing site facilities are located at Mwaepi. The area has an elevation of 8m with GPS coordinate of the project site being estimated at Latitude 4°20'35.10"S and Longitude 39°33'58.61"E.

4.5.2. Demographic Characteristic of the Project site

4.5.2.1. Population Levels

According to housing and population census of 2019, the population for Kinondo location indicated that the male population is slightly higher at 51.46% (16,749) than female population which was 48.54%¹⁷ (15,797) consistent with Kinondo sub-locations with 51.44% (13,279) and 48.66% (12,534) respectively. The population and housing census further indicated that Kinondo sub-location has a total of 5,452 households with an average household size of 4.7 persons per household.

4.5.2.2. Literacy Levels

Literacy levels within the general Msambweni Sub-County is higher compared to the rest of Kwale County followed by Matuga sub-county and LungaLunga and Kinango respectively. The national average was 82.8% based on the 2019 census, Kwale County was 67.58% and Msambweni Sub- County account for at least 23.22% of the population having attained a form of formal education in the county. The high poverty levels coupled by high population density per household owe to high dropout rate among students in the sub-county. According to Otieno (2016), schools going aged youth are forced to leave school to engage in income generating activities such as hawking goods to assist their families earn basic needs. At the same time some households with a high number of schools going children cannot afford education for all of them. This forces them to drop out some and leave only the smart ones in school. It was noted that males in the sub-county had a slightly higher literacy levels than females at 51.48% and 48.08% respectively. About 23.16% of the population does not have any form of formal education in Msambweni Sub- County, with majority observed to be women at 50.94% compared to men at 49.06%. The majority of those with formal education have a form of primary education at 54.13%, secondary levels at 24.28%, 7.15% for tertiary, 2.38% university and 0.7% had other form of literacy either adult basic literacy or madras. There was high gender disparity among those who have attained university level of education with males consisting 59.42% compared to 40.58% who were women. The literacy level figures at national, Kwale County and Msambweni Sub- County were as shown on Table 4-4¹⁸.

Table 4-4: Literacy Level Attained in Msambweni Sub-County

	Level of Literacy	Male	Female
National	82.8%	50.06%	49.96%
Kwale County	67.58%	51.92%	48.08%
Msambweni Sub-County	76.84%	51.48 %	48.52%
Pre-Primary level attained in Msambweni Sub-county	11.36%	50.22%	49.77%

¹⁷ Kenya Population and Housing Census 2019: Volume II: Population by County and Sub-County

¹⁸ The data shown on the table was extracted from 2019 Kenya population and housing census Volume IV specifically table 2.4

Primary level attained in Msambweni Sub-county	54.13%	50.33%	49.66%
Secondary level attained in Msambweni Sub-county	24.28%	54.57%	45.43%
Tertiary College level attained in Msambweni Sub-county	7.15%	48.50%	51.49%
University College level attained in Msambweni Sub-county	2.38%	59.42%	40.58%
Other form of literacy level attained in Msambweni Sub-county	0.7%	50.42%	49.58%

The existence of such a relatively high literate population (including females) implies the potential availability of human capital (labour force), for effective participation in rehabilitation activities.

4.5.3. Social Amenities and physical infrastructure

4.5.3.1. Project Area Accessibility

There are several options regarding the modes of transport to access the proposed project area. Generally, Ukunda area is connected to other areas through road network, air and sea access. The main roads are the main tarmac road from Mombasa-Ukunda to Lungalunga, then branching off at Ukunda towards Diani through beach road and moving along Diani beach road parallel to the sea as indicated in Figure 4-11 and Figure 4-12. The area was also noted to be accessed through water (*Indian Ocean*) bordering the landing site.

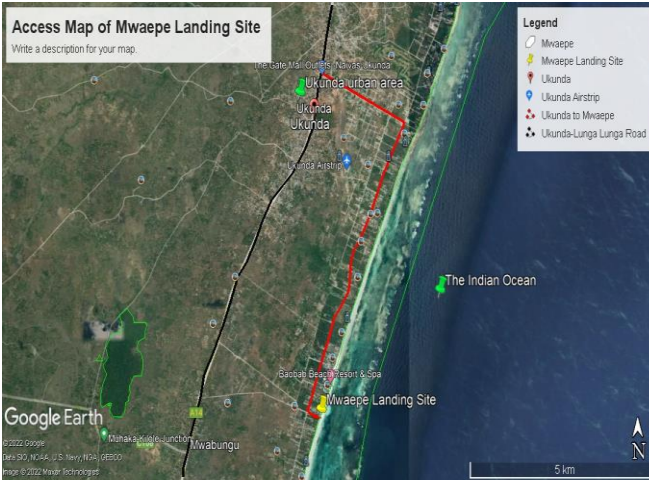


Figure 4-11: Access to Mwape Landing Site

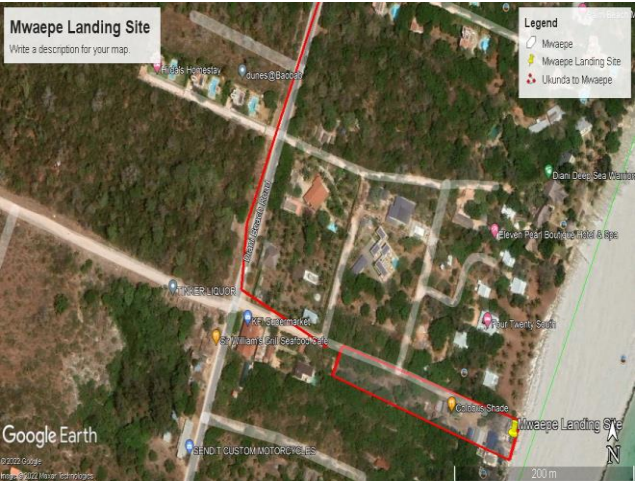


Figure 4-12: Mwape Landing site

4.5.3.2. Communication Network

Ukunda Township and its immediate environs were generally noted to have adequate communication network relative to other areas particularly as one move away from the town to rural areas. Development in communication network in an area has an influence on the level of awareness among the local population. Findings from observations, key informant interview and

stakeholder consultation meeting indicated wireless communication as the main mode of communication in the proposed project area as highlighted in Plate 4-18. The major mobile network coverage for three communication companies Safaricom, Airtel and telecom were reported to receive signals within the project area, but due to the strong Safaricom signal reception, it was reported to be the most popular among the locals. Pay television decoders for Go-TV, DSTV and startimes were noted to be the main signal receivers in the area as indicated in Plate 4-19. The audio media reported were Kaya FM, Bahari FM in addition to the national radio stations such as KBC, Kiss, Nation, Citizen, Radio maisha and Pwani FM among others. The 2019 population and housing census data indicate that about 50.4% of the population in Msambweni sub-county uses mobile phones, and it appears like more men own phones compared to women at 53.6% to 47.2%. Access to communication services particularly to mobile phones is critical for communication, access to mobile internet and also money transfer during project implementation and operation. The findings further showed that 25.5% of the population use internet with men accessing at 28.9% and women 22.1% but interesting is that only 10.1% of the population own a computer or a laptop. This indicates that of the 25.5% who use internet majority could be accessing the internet using the mobile devices which further shows the significance of communication through mobile phones. Internet connectivity within the general project area was noted to be high from the number of internet receivers observed in some of the homesteads as shown in Plate 4-20 and Plate 4-21. The available communication channels can be used in the event of need for community awareness and sensitizations is required.



Plate 4-18: Some of the Communication masts Along Diani Beach road



Plate 4-19: Some of the Pay TV Receivers Observed within Project area



Plate 4-20: Internet Connectivity in the area



Plate 4-21: Internet Connection on one of the Homesteads in the area

4.5.3.3. The Main Water Sources and Reliability

Ukunda Township in general relies on piped water which is supplied by Kwale Water and Sanitation Company (KWAWASCO). According to the non-revenue water assistant officer, KWAWASCO receive supply for 2 days alternating with Mombasa County. The officer observed that KWAWASCO is supplied in bulk with water by Coast Water Works Development Agency from Marere springs though is supplied intermittently. The residents of Ukunda area experience water supply challenges and cope with the shortage through water storage and supplementing the supply from borehole water particularly for those running guest house accommodations who consider buying through water browser to be expensive. The proposed Mwaepe landing site facilities is connected to both a borehole water supply from one of the neighbouring plot and municipal water supply by KWAWASCO as noted in Plate 4-22 and Plate 4-23. However, water from KWAWASCO was disconnected due to defaulting on paying water bills. The borehole water on site was part of a corporate social responsibility by a neighbour to the community at Mwaepe but will not be part of water sources to the site. The water was reported not to be metered hence a challenge to estimate current water resources use. The proposed facilities to be constructed shall be supplied with water from KWAWASCO and a water storage capacity of 70m³ has been proposed in order to cope with the challenges of unreliable water supply. The storage is considered sufficient given a total water demand of 17.52m³ and ultimate (years 2046) as 25.06 m³ per day for the proposed operation of the facilities at Mwaepe fish landing site. According to the design, there are further proposals to harvest rainwater to supplement the existing supply given the availability of rainfalls throughout the year. According to Water Services Regulatory Board which is tasked with the mandate of ensuring quality water services provision to consumers by the Water Services Providers (WSP) within the country, KWASCO is among the several WSPs who have been supplying water in the last 5years that meet the required water quality performance rating¹⁹

¹⁹ <https://wasreb.go.ke/impact-reports/>



Plate 4-22: Part of the Water Piping System at the Landing site



Plate 4-23: Part of the existing water storage facilities at the site

4.5.3.4. Sanitation Coverage

Human waste management is critical for the office users and the workers who shall be working at construction site. Pit latrine and septic tank are generally the main means of human waste management noted within the proposed project area as shown in Plate 4-24 and Plate 4-25. It was apparent on site that fishers do not have a decent toilet and a bathroom for showering and were noted to shower from the open as indicated in Plate 4-26 and Plate 4-27. However, the private businesses were observed to have water closet type of toilets connected to septic tanks. According to KWAASCO key informant consulted, the entire of Kwale County does not have a sewer system and relies on pit latrines and septic tanks. However, the water service provider operates a sludge treatment plant at Mabokoni about 13km from the proposed site. The sludge treatment plant serves the pit latrines and septic's requiring exhauster services particularly from the nearby hotels. The exhauster services are provided by Kwale county government who have 2 exhauster trucks and private service providers who own trucks and are registered with KWASCO. The service costs about Kshs 20,000 per truck for those using KWAASCO trucks while the private service providers dispose of the sludge at the site for a fee of Kshs 5,000 per truck. After treatment and value addition, the treated wastewater is released to the environment to a nearby Mwajamba stream. The proposed Mwaepe landing site design was informed by the existing information and the site has been designed with a bio-digester connected to the ablution block to assist treat the water and recycle for landscaping purpose. The proposed design has an ablution block with toilets and bathrooms for fishers and all visitors who access the site. The wastewater from the fish processing plant shall be treated through bio-reactor before being used or released into the environment.



Plate 4-24: One of the toilets connected to a septic tank at Mwaepe Landing site belonging to one of the business owners on site



Plate 4-25: Dilapidated pit latrine used by fishers at Mwaepe site



Plate 4-26: One of the Showering point near the existing Toilets



Plate 4-27: Second Shower located near the Fish gear mending shed

4.5.3.5. Main Power supply

Most of the premises and households within Ukunda Township and the general area are connected to the national power grid through the Kenya Power and Lighting Company (KPLC). The existing Mwaepe landing site facilities are connected to national power grid and at the time of this study, the power for the existing fish banda had been disconnected due to arrears of power bills. An assessment from the existing other power users on site indicated that an average of about 443Kw of power is used on a monthly basis. The major users reported are the restaurants, private fish buyers using freezers and for operation by massage therapists. The improved facility will also be connected to the same electricity grid system existing on the compound as highlighted in Plate 4-28 and Plate 4-29. In addition to electricity, solar power and a generator

has been provided for in the design of the sub-project. The measures have been put in place to act as a back-up for regular power failures that could interrupt the operation of the proposed ice plant. The proposed design for the site has considered power saving measures by capitalizing on natural lighting, use of renewable energy-solar and use of energy saving bulbs LED.



Plate 4-28: Power grid within the project site



Plate 4-29: The existing Fish Banda Connected to Electricity

4.5.4. Land Use and Ownership

4.5.4.1. Land Use Patterns

Land use information is significant in providing a view of the general activities within the proposed project area. Mwaepe landing sites is among the old site used by fishermen to land their catch and discuss issues affecting their activities. The banda on site was developed by the fisheries department in 1990 under the government funding and has gone through various renovations. The general Mwaepe landing site neighborhood was observed to be dominated by hospitality industry with hotels and cottages serving tourists being the main activities around the landing site. In the immediate neighborhood, the land uses include cottages to the west, south and North. The eastern side of the landing site is covered by the ocean. However, along Diani road there were several small commercial centres that are yet to be fully developed.

The proposed project site includes a single structure with an incomplete foundation, which is planned for demolition. Additionally, two other structures on the site are slated for rehabilitation. It is important to note that the demolition of the incomplete structure will not impact any livelihoods, and therefore no livelihood restoration measures are required.

4.5.4.2. Land Tenure Status

The proposed construction of Mwaepe shall be located on public land owned by the state department of fisheries with the use identified as a fish landing site as indicated in Annex II. The proposed landing site shall be constructed on a land measuring about 0.75 acres (0.3035ha) as indicated in Annex II. The general area around Mwaepe landing site has been surveyed and

the proposed land for the sub-project is also surveyed and issued with a lease certificate of 85 years. Land will be a major factor in the implementation of the proposed project and resolution of any emerging conflicts related to land will require consultations among various stakeholders. Land in Kenya is generally classified as public, private or community land. Public land is held by the National Land Commission.

4.5.5. Livelihood and Economic Activities

Livelihood comprises of the capabilities, assets and activities required for people to earn money and secure a means of living²⁰. Through observations, key informant interviews and community stakeholders meeting discussions, it was apparent that households in the proposed project area depend on a diverse range of sources of livelihood. These were basically categorized into; formal employment, trade and commerce, tourism, livestock production and crop farming. The section below highlights about the general employment status in the area with the other livelihood activities being captured in the livelihood restoration plan prepared together with this ESIA report.

4.5.5.1. Household Employment Levels

There are many sources of either formal or informal employment within the project area where the local people derive their livelihood. Private enterprises particular from general supplies, transport and the hospitality industry are the major sources of household employment. Casual labour is found in the following categories, shops, at hotel and guest houses, farms, construction sites, as motorbike riders, riders of auto-rick shaws and working as curio hawkers. The main public institution providing employment is in the education sector. Augmentation of Mwape Landing site is anticipated to add to temporal employment of the locals at the construction phase of the sub-project. The 2019 population and housing census data for Kwale County population indicated that about 44.85% of the population in Msambweni Sub-County was employed while 9.20% were unemployed and seeking for employment.

The data further shows that of the employed, 53.34% were men whereas 46.66% were women. The findings further showed that about 61.36% of the unemployed in the sub-county were men and 38.64% were women. This is the population that can potentially supply the labour market. The economically inactive population was about 45.92% which was noted to be higher than employed population and of whom men were 44.66% and women were about 55.34%. The economically inactive population indicates that most women in Msambweni sub-county were economically inactive hence dependent on someone in away compared to men. This indicates that most women could be home makers in the area. The proposed project is anticipated to provide temporal employment to various groups of people during the rehabilitation phase. The

²⁰ UNISDR Guidance note on Recovery: Livelihood.
https://www.unisdr.org/files/16771_16771guidancenoteonrecoverylivelih.pdf

sub-county is the smallest unit that can provide this data and it's assumed that the rates at the sub-county are a true representation of the facts on the ground.

4.5.6. Occupational Health and Safety Conditions in Kwale County

Occupational health and safety related incidences remain a key challenge in Kenya. Over 390 Kenyans died in the workplace as part of 7,731 occupational accidents recorded. (*July 2023-May 2024*) Labour Day speech. Construction sites lead in workplace injuries reported in the country with incidences such as falls, equipment/ machinery injuries, falling objects and electrocutions forming the bulk of the cases. Lack of training for the new workers, inadequate provision of safety equipment, contractor requiring workers to come with own PPE as a condition for accessing work, poor safety culture, working under influences of sub-stances, exposure of the workers to harmful substances, working under extreme weather conditions, inadequate enforcement of construction industry regulations and laws, inadequate and poor communication of safety protocols and emergency procedures, inappropriate use of PPE by the workers where provided, low literacy level, poverty impeding the courage to stand up for ones rights and negligence are among the major concerns contributing to reported work places incidences. Key informant and stakeholder consultations reported similar concerns within the proposed project area. The sub-project being in a coastal a coastal area, temperatures and humidity are usually high making it uncomfortable for most workers to appropriately use the PPEs. In spite of this concerns, KEMFSED project has put in place measures to ensure that the contractor adheres to occupational health and safety measures. The project under safeguards compliance requires capacity building for all the constructor and supervising consultant's teams on project OHS requirements, the contractor is mandated to train all the workers on site on various aspects. The project has provided for a bill in the contract budgeting for the purchasing of PPEs, the OHS requirements forming part of contractual obligations for the contractor. The project in addition shall conduct monthly site meetings by the CPIU and NPCU safeguard teams being part of the joint project management committees.

4.5.7. Child Labour Prevalence in the area

Child labor cases are difficult to detect in Kwale County, according to county director state department of labour. The cases usually occur in households where teenagers are employed as herdsmen, and it's not easy to tell whether they are still young, belong to the family or are employed. The other area where teenagers are hired and involved in, is hawking of curio items at the beach or in fishing activities during high fishing seasons. Due to the high poverty levels among the locals, some offer their children for house help work to relatives who live in urban areas (Ukunda) and it's often not easy to track these cases. In spite of the observations, the cases are rarely reported and there are hardly any data on such incidences as it is considered part of family life and set up.

4.5.8. Prevalence of HIV and AIDS

HIV prevalence for Kwale County is at 3.0% while Msambweni Sub-County is estimated to be at 4.7 with an estimated population of 177,690 people. The high HIV prevalence in Msambweni sub county owes to the fact that it harbors diani and Ukunda towns which are the largest economic centers in Kwale County. The centers are well developed in tourism, transport, retail and wholesale trade, and social entertainment activities among others. These attract people from different communities both from within and without the county. According to HIV Estimates 2020 data, it seems the prevalence is higher among women at 6.5% compared to men at 2.8%. In spite of the figures, the proposed Augmentation works for Mwaepi fisheries landing site is not anticipated to significantly contribute to increase incidences of HIV. The scope of the works is relatively low, similar construction activities were noted to be ongoing at the neighbouring plots, most of those who shall be engaged shall be locals and the number of workers involved shall be few, based on the phased nature of the project. The contractor shall be encouraged to source for local skills.

4.5.9. Gender Based Violence (GBV) Prevalence

According to Kwale county director state department for gender, cases of GBV within Msambweni Sub County are slightly higher than those reported. Total of 106 cases were reported in the last reporting year 2020/2021. The most reported cases were domestic violence followed by teenage pregnancies, early marriage, defilement and rape respectively. The officer observed that most local people prefer resolving GBV issues at community level. Cases involving defilement by family members are rarely reported. She also noted that it's challenging to collect GBV data which is reported at multiple points including at school, police, at hospital and at the chief's office yet the data collection process is hitherto not streamlined. Double accounting in some cases is reported where reporting is done at the hospital and the police station. And in some cases, it's not reported at all. Culturally issues of GBV such as sexual harassment cannot be disclosed and discussed in the open and women are never present in such forums. The contractor worker will be required to sign a code of conduct with zero tolerance to GBV and sexual harassment at the work place or in the community. The contractor shall assess all activities that may trigger cases of GBV, SEA and SH and prepare a risk management plan before the commencement of the assignment.

Cases of sex exploitation of children were reported to occur within Ukunda area as part of sex tourism (Jones, 2006). The high tourist activities act as an incentive to the young girls who are lured into sex tourism activities. The children are not only from Ukunda area but even from the neighboring areas. And due to anticipated cash flow in the area owing to project implementation, operation, and increased number of visitors accessing the site, there will be need for sensitization and awareness among the project stakeholders. This should act as an indicator of what could occur during operation of Mwaepi landing site by the tourists and the need to have a mitigation plan in place by the BMU. During project implementation, the contractor's workers will be required to sign a code of conduct with zero tolerance to GBV and sexual harassment at the work

place or in the community. The workers shall be sensitized against any form of sexual exploitation and abuse; and Sexual harassment. The contractor shall also assess all activities that may trigger cases of GBV, SEA and SH and prepare a risk management plan before the commencement of the assignment. The community will be sensitized to form grievance redress committees in order to report and address promptly any arising cases.

4.5.10. Religion

Msambweni Sub County is largely a Muslim society. 70% of the inhabitants are Muslim, with 25% being Christian with the remaining 5% being a mixture of Hindu, pagans, and traditional believers. Mwaepe Landing site is located within Ukunda Township in Kinondo ward. Ukunda Township is a major socio-economic area with a mixture of individuals from all religions. Mwaepe BMU leadership which is managing the Mwaepe landing site is largely Muslim based and employs Muslim based faith regulations; such as prohibiting alcohol trade and consumption, at the landing site. Despite this, operators at the landing site include a balance of the two major religious believers; Christian and Muslim faith.

4.5.11. Historical and Cultural Resources

The proposed Mwaepe landing site project is located in Kwale County, Msambweni Sub-County, Kinondo ward, which is home to Kinondo Kwetu Kaya Forest reserve. The forest reserve is a habitat to various species of flora and fauna. It is a culturally preserved Kaya Forest for traditional value for the Digo community. This forest is a considerable distance from the proposed project site for any impact. However, within Mwaepe landing site there are two culturally valued resources; a large baobab tree and an old building structure. The building structure and baobab tree are sited in the landing site's historical profile as the first development to earmark the landing site. Currently the baobab tree provides shade and the building structure is currently occupied by 2 operating businesses; a fresh fish vendor and a massage parlor. In line with World Bank OP 4:11 on Physical Cultural Resources, the baobab tree and building structure are to be reserved as is within the proposed landing site development project.

5. PUBLIC PARTICIPATION AND CONSULTATIONS

5.1. Overview

In this chapter the need for stakeholder participation and the consultative process and adoption during the study and the summary results of the whole process is highlighted. In implementation of KEMFSED supported county infrastructures, there is need to satisfy multiple stakeholders affected by project. In light of this, the diversity of knowledge and values of beneficiary or impacted community has to be taken into consideration. Therefore, it's necessary to ensure that there is public participation in decision making process of project design, operations and decommissioning. Public participation is a process where individual groups, organizations and local residents choose to take an active role influencing decision making process over developments which might affect them directly or indirectly. Chapter 5 of the constitution of Kenya part 2 under land and environment provides the need for public participation in the management protection and conservation of the environment. In addition, Section 17-1 of The Environmental-Impact Assessment and Audit Regulations, 2003 requires that an EIA should “seek the views of any person who may be affected by the project”. In line with this, consultant involved key stakeholders and held public forums to capture the views and concerns of the people within the project area. It was aimed at informing decision making process during project implementation period.

5.2. The consultative process adopted

The project safeguards survey team understood the importance of seeking key informant viewpoints and community stakeholders' inputs for the successful implementation of the project. In this regard, the team actively sought views from all prospective project stakeholders, on the opportunities and concerns of the proposed Mwaepe landing site infrastructure development project. The ESIA survey team used a participative approach to find environmental and social impacts linked to the project cycle. In order to gather information on stakeholders' opinions, problems, and concerns about the planned project, a variety of strategies were employed. One on one key informant interviews were undertaken and a public stakeholder's consultation meeting was conducted.

5.3. Key Informant Interviews

The KEMFSED project national and county Project Coordination Unit safeguards team conducted a number of technical assessment consultations with relevant key stakeholders of the Mwaepe landing site infrastructure development project such as county government officials, Beach Management Units officials, national government officials and community leaders. This was done so that the proposed Mwaepe landing site infrastructure development could be adequately appraised from all the concerned and relevant stakeholders. These technical assessments were conducted between the 5th through to 10th of December in 2022.

The Kwale county project coordinator stated that the Mwaepe landing site infrastructure development would promote a great deal of economic activities across the various value chains within. The project would boost the economic growth of the community more so the fisher and fisher folk. The development of a boat repair yard, net mending shed and slip way would give fishermen and boat owners the required space and resource to conduct their works in a safe and conducive environment. It would also enable the growth of the crafts into chargeable services for income generation. The erection of a fish banda with an ice plant will be a great leap in assuring for quality assurance of fish products and post-harvest management of produce in the landing site. The poly functional building being erected would provide support for BMU management services by providing offices, storage and quality control facilities within. The building will also not only accrue incomes to the BMU by providing the opportunity of hall hiring to clients, it will also provide the service of providing a security watchtower. This watchtower is long overdue for the landing site fishermen who often get lost when night fishing. It will harbor a beacon that will guide fishermen at night. It will also provide a general security watchtower during the day for ease of monitoring and surveillance of the whole landing site. He confirmed that the site had a lease certificate for 85 years. He observed that the possible threats and risks for projects were manageable and resolvable and ESMP emergent from the consultation or ESIA would be implemented to the letter.

The County Director Fisheries division indicated that the proposed Mwaepe landing site infrastructure development would provide local fishermen with economic and social benefits. The center will foster an improvement in the community's economic development by promoting goods and services trade. He stated that the fishers and fisher folks who had abandoned the landing site due to lack of expansive trade would soon be attracted back. The modern and international stature of the development is also bound to attract the private development both within and around the landing site. This will promote and market the site to a global scale thus boosting its tourism potential and thus economic growth. With the establishment of a landing site management plan in line with the infrastructure development, financial and management accountability will be promoted at the BMU level. According to the director, this will be a great step in aligning the functionality of the BMU in the fisheries. Mwaepe BMU and community ownership of the project must be prioritized for assured sustainability of the project.

The Mwaepe landing site board chairman welcomed the project and appreciated that the project designers have taken it important to hold various stakeholder consultation forums. He stated that the Mwaepe community was largely in support of the project and were looking forward to the large economical gains it would accrue. The development would cement the ownership and belonging of the landing site to the Mwaepe community and thus largely contribute to economic growth of the community.

In general the proposed Mwaepe landing site infrastructure development was supported by cross section of stakeholders. Their view is that the production development will bring with it

economic growth and sustainability in the Mwaepe community. The BMU would also be able to function in accordance with an agreed upon landing site management plan thus assuring for financial accountability and sustainability of the project. This would be a start of other major developmental activities at the landing site from private sectors among other stakeholders. So they generally supported the project.

Table 5-1: Summary of Key Informant Consultations

No.	Key informant interviewed	Summary of Remarks
1.	Joan Nyamasio, CECM Agriculture Livestock and Fisheries	The proposed infrastructure development at Mwaepe landing site is a great opportunity for economic growth and development for the landing site users and BMU members. It provides a unique chance that will ensure the local fishers are able to expand their income generation livelihoods. The landing site will be able to tap into the major regional markets and international tourism market that Diani offers. It is vital that the stakeholders be continually consulted on their views and preferences on the development throughout the process to ensure ownership and accountability.
2.	Samuel Bandari, Kwale County KEMFSED Project Cordinator.	The success of the proposed development projects at Mwaepe landing site is anchored on two major aspects; one being the ability of the Mwaepe BMU and landing site community to take up ownership of the propose project, and the second being the erection of a working landing site management plan. All stakeholders must be consulted to participate and give their inputs on these two aspects to see the success of the project realized. The development has the potential to transform the economic status of the Mwaepe landing site community for generations to come.
3.	Mwanakombo, Msambweni Sub county Administrator	KEMFSED project is funding many project but the Mwaepe landing site infrastructure development is by far the largest amounting to over 100M. The county government of Kwale is in full support of working with the project as a stakeholder to see the realization of such economic growth to the Mwaepe community. We urge all stakeholders to come together and support the success of this project. This will mark as the first of many major landing sites developments for the Diani beach community in future.
4.	Omar Mwangai, Village Chairman Mwaepe	The proposed developments will raise the status of the Mwaepe landing site from a local landing site to an international standard landing site. What I would urge the project developers is to ensure the designs cater for security aspects within the landing sites. There should be proper lighting erected at the entrance and all along the paths to assure for security. The project should also engage other stakeholders such as the

	<p>county government to commit to assuring upholding security at the landing site once the project is complete. With these in place, the landing site has the potential to run a 24hour economy with nighttime fishing and trading.</p>
<p>5. Martin Kiogora, County director fisheries division</p>	<p>Mwaepe landing site development provides for a good opportunity for the Mwaepe BMU to stabilize and grow its economy and resource base. Fishermen will be readily catered for a market, ice to reduce post-harvest losses, a boat and a gear mending shed right within the landing site. The BMU will be in a position to collect levies from business premises and hall hires that will generate great incomes. However, there is need to establish a strong landing site management plan and agreement to safeguard the operationalization and sustainability of the project. Community ownership of the project must be at the forefront of implementation of the project.</p>
<p>6. Director Tourism</p>	<p>Diani beach is renowned as the number one beach destination. This is because of the many tourism attraction sites it holds with Mwaepe being one of them. The proposed infrastructure development fits well with the county development plan for the Diani municipality. My department is ready to work together with the project and pick up from where it will have reached for even greater growth. To ensure for sustainability we would wish that all building being done to the ground floor to be erected with a flat roof to give room for vertical development in future.</p>
<p>7. Charo Nyamawi, County Director Trade</p>	<p>The proposed development at Mwaepe will greatly boost trade development in the region. Mwaepe landing site has been operating below its trade potential for many years. The modernization of operations will enable for growth and revenue development both at the community and the county level. Revenue collected will prove vital in establishing some much needed social amenities within the Mwaepe community such as rehabilitation centers among others. The development will further raise the state of the landing site to attract more local and foreign tourist for sustained economic growth. As we proceed let us also give special consideration to women led enterprise developments within the landing site for women empowerment.</p>
<p>8. Rigga Ali, Chief Kinondo Location</p>	<p>It is vital for the project designers to ensure the inclusion of all stakeholders in the design and implementation of this project. Every stakeholder; either from private, county government or national government, has an important role to play in ensuring the project is a success. So let us have every stakeholder brought together in good time to give a supporting role. My office is ready to work with relevant stakeholders on ensuring matters security are well catered for in the development. The proposed project has the capacity to transform the lives</p>

	of the Mwaepe community for the better.
<p>9. Dr. Saggafu Masito, County Chief Officer Agriculture Livestock and Fisheries Department</p>	<p>With a proposed over 100 M funds to be channeled to the development of Mwaepe landing site, this stands the largest one off development of all public landing sites in the county. The economic growth and revenues to be developed at the landing site will greatly raise the economic standards of the fisher folk within the larger Mwaepe community. The quality and prices of goods and services being traded at the landing site will get a big boost thus ensuring for a sustained livelihood for the community. The county government has been involved and has been working together with the KEMFSED project in every step since inception.</p>
<p>10. Jeffrey Nyongesa, Kinondo Ward Fisheries Officer, Kwale County Government.</p>	<p>Over the years the management and running of Mwaepe BMU has drastically diminished due to lack of standard management plans. This has seen many fishermen and fisher folks moving their operations away from Mwaepe. I am glad and confident of the propose developments at the landing site as they will cascade it to a modern internationally recognized landing site. This will see it attract back not only the fishermen and fisher folks that had moved their operations but also other major private investors to further grow the landing site economically. The development of a management plan to assist the BMU in managing the landing site will also ensure for financial accountability, peace and sustainable development at the landing site.</p>
<p>11. Shadrack Zia, Corporal KWS, Kisite Mpungut Marine National Park</p>	<p>The Diani-Chale marine reserve has been gazetted but has not yet been operationalized. There are no activities, personnel nor did formal demarcations put in place of the marine reserve. The proposed landing site development at Mwaepe though KEMFSED should ensure investments done focus fully on offshore fisheries that will not impact on the marine reserve. The fisher folk should also be capacity built on the regulations governing the marine reserve and those governing offshore fisheries, particularly on protection of key offshore species such as the dolphin among others. It is vital that the proposed Mwaepe landing site development project implementers work hand in hand with KWS among other stakeholders. The consultation minutes can be found under Annex III (c).</p>

5.4. Mwaepe Landing Site Infrastructure Development Community Consultations

The project safeguards team from the national and county coordinating units organized community consultation on 7th December 2022 (Minutes attached in Annex III). The purpose of the community consultation was to gather the opinions of community members regarding the idea of infrastructure development at the Mwaepe landing site. The consultation was also an opportunity to give the Mwaepe communities a voice to get to know how they felt about the

proposed project and to garner their support, as an essential process for any big project as a landing site infrastructure development in their locality. The county safeguards officer and fisheries officer were the ones tasked to plan and organize the consultation meetings. The NPCU safeguards teams, KMFRI and the KEMFSED project engineer were in charge of facilitating the meeting. During the consultation, community members were given the opportunity to voice their opinions and perspectives regarding the proposed project, and the verbatim transcripts of these discussions can be found in Table 5-2. The attendance list of those who were present at the meeting can be found in Annex III as well. In attendance at the meetings were men and women of all ages, as well as persons with a wide range of knowledge in landing site operations.

The concerns and views from meeting have been considered in this ESIA project report, during implementation and operation of the office facility. From the findings of the discussions in the meeting, it was evident that the project was highly welcome in the community. The idea of the Mwaepe landing site infrastructure development to the communities and other stakeholders was much appreciated. Photos for the meeting are detailed in Plate 5-5 to Plate 5-6.



Plate 5-1: A section of participants during Public Consultations at Mwaepe Landing Site



Plate 5-2: One of the Participants Contributing to the discussions.

- The stakeholders present expressed their gratitude for the selection and consideration of Mwaepe landing site for such a huge infrastructural development.
- Participants expressed their gratitude for being given many instances to present and discuss their ideas and concerns about the project through such stakeholder consultation forums.
- The proposed infrastructure development at Mwaepe is a good project and the community is in support of it.

- There is need to ensure that the community is involved at the beginning of the design of the project so that they can develop ownership of the project.
- As the project is undergoing implementation, there should be established a landing site management plan that will assist the BMU with operational and financial management operation and transparency once it is handed over to them.
- The stakeholders suggested and agreed that the two restaurants and 6 kiosks that were operational before the cutoff date; 30th September 2021 should be considered for livelihood restoration.
- The livelihood restoration plan should be operationalized in a manner that the affected do not at any point lose their livelihood. The project should construct the new restaurants and stalls for them to move into then to pave way for development at their current kiosks.
- The 2 restaurants and 6 kiosks operational before the cutoff date should be given priority of occupation of the new restaurants and stalls over others.
- Since the landing site is public land, the infrastructure developed shall be public infrastructure given to the BMU to manage on behalf of the Mwaep community.
- Once the project is complete and handed to the BMU for management, all those wishing to operate within the stalls will have to get into an agreement with the BMU that will stipulate rates and terms of occupancy. In case the BMU is not present; such as during BMU transition elections, the agreements shall be signed with the county director fisheries office.
- Generally, the Mwaep community welcomed the project to the area and are in support of it.

5.5. Summary of Issues Raised during public participation meeting and the responses

There were several issues that were raised by the community during public participation meeting and the NPCU and CPIU teams gracing the community meeting discussions gave responses to the concerns of the community as captured in Table 5-2

Table 5-2: Summary of Stakeholder Issues Raised and the Response

Names	Issues	Responses
Mr. Lazarua Kubasu	Have you agreed that the two restaurants present in the landing site will relocate to the new positions allocated within the development site plan?	The two restaurant owners are here and we wish that they tell us themselves if they agree.
Salim Mwakasi (One of the restaurant)	I have heard that the location of the restaurant will be moved, but what does that mean to us, where will we be working from while construction	Mwaep landing site lies on a public land so all developments done here will be on public land managed by the BMU. Those who wish to operate on the developments will have to get

owners)	is ongoing? Explain us the plan, and will the new restaurants be ours or belong to us?	<p>into agreement with the BMU where they will have to be paying the BMU rates according to their agreement. First priority for operation of the developed resources will be those that are already operating within the landing site.</p> <p>The engineers will factor the drawings of the restaurants and include them in the BOQs. When construction begins they will begin with constructing the two restaurants first so that you can move into them and continue with operations as they now move to the other areas. This will be prioritized so that you do not lose business during the period. You will however had to enter into agreement with the BMU on operation rates as it is public property on public land given to the BMU to manage.</p>
Chief Riga	<p>I recall there is a time these members came to my office to ask me what will happen to their daily livelihood when they have to close due to the proposed developments. They also asked will there be compensation because I used my resources to build the restaurant in the first place.</p>	<p>The project will not be compensating anyone but doing a livelihood restoration and that is why we are building the two new restaurants at the new site plan's location.</p> <p>So that means the restaurants will remain in operation until the new restaurants are ready, then they relocate to pave way thus not interfering with their livelihood.</p> <p>I would also like to clarify that there are two projects here that do not relate; the roads project has nothing to do with KEMFSED project. In case the project developing the roads access comes first and demolishes for you don't rush KEMFSED project as it will still be implemented at its own pace. I want you to understand and separate the access roads project and KEMFSED project as they are unrelated.</p> <p>If the access roads development comes first then it has nothing to do with KEMFSED project.</p>
Salim Mwakasi (One of the restaurant	I am just asking if you can refund me my capital so that I can opt out of the restaurant business altogether	This is a public land any anyone who built here knew it's a public land for the BMU. So let's be clear that when the access roads development project comes and you are on the access road

<p>owners)</p>	<p>you will have to pave way for it. All the years you have operated on that access road no one came to ask for a share of your revenue. Let us understand that this is public land and no one is being forced to stay here even after being given first priority for relocation by KEMFSED project. Even on the stalls, there are those given first priority to restore their livelihoods but anyone else has a right to be given by the BMU. No one will be paid at all in this public land so let's understand this so we can be psychologically prepared. In the whole of Kwale county this is the largest project being implemented under KEMFSED project so let's support it for our own economic growth.</p> <p>It is good that even from the previous meetings you have been present and asking questions and that's why you have been given priority for livelihood restoration after your case was noted.</p> <p>To clarify further let us separate KEMFSED project from the roads access project under the county tourism department.</p> <p>You have been considered for livelihood restoration and that is why the two restaurants have been factored in the designs and BQs.</p>
<p>Masha (2nd restaurant owner)</p>	<p>I have attended all meeting held here on this proposed project. There is a <i>mzungu</i> who came here once and I asked are you going to remove us from here when you start the development? She said we are going to be relocated. Even in the first meeting we were told we would be relocated not removed.</p> <p>The project design has factored the two restaurants for livelihoods restoration.</p>
<p>Isihaka Mwachala</p>	<p>This whole landing site has a total of 276 members of which 136 are fishermen. The BMU also has other landing sites not just this one; mentions landing sites. What is all of them came here and demanded</p> <p>Thank you for that.</p>

	for space since they also belong to the BMU? Let us who are here be grateful we are being given first priority as livelihood restoration.	
Masha (2 nd restaurant owner)	When I came and requested to build here long ago, the BMU gave me an agreement that as you build here this is not your land. So you cannot sell it when you are done. In case you want to leave you cannot pass it to someone else without the consent of the BMU. And in case I am to be moved I will not be given any compensation. Of which I accepted.	All those who were operating at the landing site as of the cutoff date 30 th September 2021 will sign an agreement with the BMU concerning the livelihood restoration. This will protect you to ensure you get first priority when the development is complete.
Masha (2 nd restaurant owner)	Let us be open, we have no BMU as of now until the elections are conducted in January.	<p>This means for now you will sign through the office of the county director fisheries.</p> <p>The BMU will be operating through given by the county government through the fisheries office. The agreements will be signed through the fisheries department for security purposes.</p> <p>Which brings a point of the last cutoff date 30th September 2021 we agreed there were 5 stalls for livelihood restoration but ever since new stalls are being erected everywhere? Our request is for such new developments to halt until the proposed project development is complete.</p> <p>There will still be more space for stalls for the tourism department requested KEMFSED to do flat roofed stalls so that it can also later develop upwards.</p>
Mr. Lazarus Kubasu	So are we taking the 5 stalls to be the ones originally present before the cutoff date 30 th September 2021 and to be the ones given first priority for livelihood restoration?	<p>Yes. However this does not mean others cannot come and benefit through the BMU afterwards. This is to just give priority to those present during the last cutoff meeting date.</p> <p>Yes. I wrote the minutes of that meeting and also kept a copy? (<i>massage lady</i>)</p> <p>Then those 5 stall owners plus the two restaurants are the ones we will sign the</p>

		agreements with to ensure they are prioritized for livelihood restoration. (<i>Lazarus Kubasu</i>)
Old man with stall at gate	What of my stall, will it be affected? The one right at the landing site's entrance.	The whole landing site area will be affected.
Old man with stall at gate	But I am one of the original first developers at this landing site many years back.	If that is the case then we will also get into the livelihood restoration agreement with you.
IsihakaMwac hala	The first ever development at this landing site is this building behind us hosting massage services. It is the main reason this landing site was able to avoid land grabbing in the past. The second development was that man's food stall right at the landing site entrance.	The proposed developments wont tough that building hosting massage services. In the site plan it has been marked as a historic building that is also protected under safeguards policies.
Omar Mwamgai	I am the area chairman of this area and even responsible for repeatedly applying for the development of that access road until it succeeded. My question is, at the entrance we need security lighting, can that be considered?	This has been factored in the site plan. We have street lights from the entrance up to down here at the beach.
Massage lady	As the operators of the massage stalls where will we be as the restaurants are operating? Will we also be relocated straight from our stalls to the new stalls?	Like we said everyone will be affected in one way or another and not everyone will be relocated. The new stalls will be built at the far end near the perimeter wall, those who are there will have to pave way for 60 days for the construction to be complete. Those that are far from the wall can continue operation as construction is undergoing and relocate after. The restaurants and the stalls are the first priority proposed developments at the site for livelihood restoration.
Omar Mwamgai	Can she bring her concerns later to us we deal with it?	Thank you but no. We want to handle everything here in an open and transparent

		manner. I will not be affected since my stall is currently far from the perimeter wall space you plan to begin construction. (<i>massage lady</i>)
Massage lady	I heard of the mention of a religious activities space in the site plan that is near the stalls. I am concerned because religious activities and the activities we run at the stalls will interfere with one another. We have to respect the religious elders and our work also needs privacy and comfort.	In the site plan, the ablution block has been placed between the religious activities space and the stalls. This has already been considered to avoid such interferences. And as we said the livelihood restoration will give priority the now 6 stalls present at the site before the cutoff date meeting (30 th September 2021
Salim Mwakasi	We had also requested for a watchtower with a light for the security of the fishermen at night	Yes. This has been catered for at the top of the staircase of the poly functional building since it will be the tallest building at the landing site after the proposed development.
Mr. Samuel Bandari – CPC	So have we agreed with the proposed development plan we have so far discussed?	Yes (<i>chorus answer</i>)

5.6. Access to Information, Disclosure and Future Consultations.

Ensuring access to information about the Mwaepo Fish Landing Site project is be central to promoting transparency and fostering public engagement. Stakeholders and community members will be able to obtain project-related information during both the construction and operational phases by engaging directly with representatives from the contractor and Project Management Committee (PMC) representing the community at the site. Additionally, the Environmental and Social Impact Assessment (ESIA) report, which outlines the project’s scope, anticipated impacts, and mitigation measures, has been made widely available for public review. This report is accessible at the Mwaepo Fish Landing Site, on the official County Government website, the KEMFSED platform, and the World Bank’s project page. By utilizing multiple channels for information disclosure, the project ensures that all interested parties can readily access critical documentation, facilitating informed participation and oversight.

5.7 Consultations during construction

The contractor will conduct periodic consultations with the Beach Management Unit (BMU), ensuring their insights and concerns are incorporated into project decisions as construction progresses. These consultations will serve to address operational impacts on fisherfolk and

ensure alignment with the site’s intended use and community expectations. On a daily basis, the contractor will work closely with the Project Management Committee (PMC), facilitating hands-on collaboration to oversee project delivery and promptly resolve any arising challenges. To maintain consistent oversight and address broader technical issues, the National Project Coordination Unit (NPCU) and the County Project Implementation Unit will convene monthly site meetings. These meetings will provide a platform for discussing emerging technical issues, aligning implementation strategies, and ensuring compliance with national and county-level regulations.

To address concerns and disputes, the contractor will implement a dual grievance management mechanism—one tailored for staff to handle workplace issues and another designed for public stakeholders. The public grievance mechanism will prioritize transparency, accessibility, and cultural sensitivity to ensure that community concerns are effectively managed. By fostering open communication and proactive problem-solving, this approach will support the successful delivery of the project while maintaining trust and accountability among all stakeholders.

Stakeholder	Means of Consultation or Information Sharing	Goal of Stakeholder Engagement
Beach Management Unit	- Community Barazas	Address construction impacts, collect feedback on fish landing site usage.
	- In-person meetings	
	- Posters and leaflets in local language	
Project Management Committee (PMC)	- Structured consultation	Address PMC concerns during construction – issues related to access
	- Monthly progress review meetings	
Staff Grievance Committee	-In person meeting to address staff concerns	To address staff grievances
Community Site Grievance Channel	In person meeting to address community concerns	To address community grievances
NPCU /CPIU	Monthly site meetings and technical site inspections and reports	Periodic supervisions and inspection of the site.

5.8 Consultation Analysis in Mwaepo Post-Design

NPCU has undertaken a total of 7 meetings with Mwaepo stakeholders. In the pre-design phase (refer minutes in **Annex I**), we undertook 3 meetings with previous BMU member leadership

and members. All these engagements are documented in this ESIA report and are here shared under **Annex I**.

Location	Date	Key Participants (Stakeholders) and No.
Mwaepe Beach Site	7 th March 2022	County, BMU, Community (24 attendants)
Mwaepe Beach Site	7 th December 2022	NPCU, County, BMU, Community (35 attendants)
Mwaepe Beach Site	28 th February 2023	County, KWS, BMU (30 attendants)

In the post-design phase, we have undertaken four (4) meetings with the BMU officials and members and minutes are shared in **Annex III** and **IV**.

Location	Date	Key Participants (Stakeholders) and No.
Coast Dishes Restaurant	6 th August 2024	BMU Executive, Area MP, KEMFSED NPCU, (11 attendants)
Mwaepe Beach Site	13 th August 2024	BMU members and leaders, Kwale County CECM, KEMFSED NPCU, Area MP, Area MCA (70 attendants – public baraza)
Mwaepe Beach Site/Coco P	29 th August 2024	BMU Executive leadership, KEMFSED NPCU, Area MP, Area MCA (30 attendants)
Mwaepe Beach Site/Coco P	6 th September 2024	BMU Executive and members, Kwale County CECM, National Administrators – DCC, Area MP, KEMFSED NPCU (21 attendants)

5.9 Post- Construction Stakeholder Consultations

Post-construction consultations will focus on implementing a culturally sensitive grievance mechanism and facilitating consultations tailored to Mwaepe fisherfolk, traders, and other stakeholders operating at the Fish Landing site. These consultations will prioritize localized and inclusive communication methods, ensuring active engagement with groups directly impacted by the site's operation. A robust grievance management system will be established with the Beach Management Unit to address disputes efficiently and equitably, with periodic reviews to ensure its effectiveness and responsiveness to community needs. Additionally, all efforts will align with Fish landing operations and adhere to Kenya Fisheries Services (KeFs) regulatory requirements, including the NEMA's waste management requirement, ensuring the project contributes to county-level economic goals while respecting sustainable practices. This approach seeks to balance stakeholder concerns, enhance project sustainability

, and foster trust and inclusivity in the management of the landing site.

Stakeholder	Means of Consultation or Information Sharing	Goal of Consultation
Local Fisherfolk in Mwaepe	- Community Barazas	Address operational issues, collect feedback on fish landing site usage.
	- In-person meetings	
	- Posters and leaflets in local language	
Beach Management Unit (BMU)	- Structured stakeholder workshops	Review BMU responsibilities at the landing site operations and sustainability practices particularly as regards waste management.
	- Monthly progress review meetings	
Women Fish Traders	- Focus group discussions	Identify operational challenges and opportunities for market access of Mwaepe Fish landing site
	- Market-level interactions	
	- Pamphlets with visuals	
County Government Representatives	- Official correspondence (letters/emails)	Ensure compliance with county regulations as regards fish processing operations.
	- Stakeholder forums	
Contractor Representatives	- Technical review meetings	Finalize handover of completed site and review maintenance and operation schedules particularly as
	- On-site evaluations	

	- Project documentation	regards waste management.
Environmental Groups	- Workshops	Monitor the implementation of project environmental management plans particularly as regards waste management.
	- Site tours	
	- Online surveys	
Youth Groups	- Skill-building sessions	Assess and discuss job opportunities linked to the new infrastructure.
	- Social media outreach	
	- Engagement fairs	
Civil Society Organizations (CSOs)	- Advocacy meetings	Collaborate on transparency and addressing community concerns.
	- Progress reporting sessions	
NEMA / Kenya Fisheries Services	- Periodic monitoring and evaluation visits	Ensure adherence to NEMA regulatory policies for waste management and Kenya Fisheries Services SOP and fish quality standards
	- Review of submitted reports	
General Public	- Public notice boards	Provide updates on site access and operational timelines.
	- Radio announcements	
	- Public meetings	

These sessions aim to foster collaboration, address community concerns, and ensure that the voices of all stakeholders are heard in the ongoing management and operation of the fish landing site.

6. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

6.1. Overview

This chapter covers the following sections; positive and negative environmental and social impacts of the proposed sub-project and mitigation measures (at implementation/construction, operation and decommissioning phases).

6.2. Definition and Classification of Environmental and Social Impacts

Environmental or social impact refers to a change to the existing social or environmental condition caused by proposed project activity or an external influence affecting the project. Impacts could be positive (beneficial) or negative (adverse). The nature of the impact could be direct or indirect, long-term or short-term, permanent or temporal, could be local or over a wide area. The impacts could also be termed as cumulative when they add incrementally to existing impacts or reinforce the effect of each other where such could not be the case if the impacts were independent of each other in effect. In the case of the project, potential environmental and social effects are anticipated to arise during construction, operations and decommissioning phases of the project and at the stages, positive and negative impacts are anticipated.

6.3. Impact Significance

The significance of impacts could be defined based on;

- Being subject to legislative requirements,
- Sensitivity of the project environment,
- Nature of the project activity
- Resilience of the receiving environment in recovering
- Public concern and importance
- Are determined as such by technically competent specialists;
- Trigger subsequent secondary impacts, and
- Elevate the risk to life threatening circumstances.

6.4. Impact Rating

The rating of impacts is important in determining the significance of the same and the need to prioritise z monitoring of the effects. Under this report, the impacts have been rated ranging from A to D for each phase of the project as indicated in table Table 6-1 the rating does not in any way consider the magnitude of the impact but rather focuses on the likelihood of occurrence. The phases considered include:

- Construction Phase (Co);
- Operation/Post Construction Phase (Op); and
- Decommissioning Phase (De).

Table 6-1: Impact Rating

No.	Impact	Significance
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	Rating	
1	A+/-	Significant positive/negative impact is expected
2	B+/-	Positive/negative impact is expected to some extent
3*	C+/-	Extent of positive/negative light or unknown. (A further examination is needed; impact is not definite and the impact could be clarified as the study progresses)
4	D	No impact is expected

*C - rating was only applicable at scoping stage Table 6-2, Table 6-3 and Table 6-4 show the anticipated impacts from the proposed Mwaepé fisheries landing site sub-project.

6.5. The Positive Impacts of the Proposed Project

The improvement of proposed Mwaepé fisheries landing site at Kwale Ukunda Diani is anticipated to have an overall positive impact as captured in Table 6-2, particularly in enhancing the county fisheries infrastructure development, socio-economic development of local communities and contribution of the blue economy in the county and improving of staff working conditions which influence service delivery.

Table 6-2: The Positive Impacts of the project

NO.	IMPACT	Co	Op	DESCRIPTION
1	Contribute to improved management of priority fisheries and enhanced coastal livelihood	D	A+	<p>Co: The construction phase is not anticipated to contribute to the management of priority fisheries and enhanced coastal livelihood.</p> <p>Op: The proposed augmentation of Mwaepé fish landing site at Kwale County Ukunda Diani is part of the contributions towards enhancing county fisheries infrastructure development, aimed at improving fisheries management, which is significant in achieving coordinated community participatory and improved management of priority fisheries and enhanced coastal livelihood. Catch data will be an indicator of the impact on the fisheries within the conservation area and will guide on appropriate mitigation measures.</p>
2	Enhanced data collection for fisheries management	D	A+	<p>Co: The construction phase is not anticipated to contribute to data collection for fisheries management.</p> <p>Op: Improvement of the landing site is anticipated to motivate more fishers to land their catch at the site an act which provides an opportunity for a centralized data collection for fisheries management and getting the trend of the impact depending on the size of the fish caught within the reserve area and this will inform mitigation</p>

NO.	IMPACT	Co	Op	DESCRIPTION
				measures
3	Enforcement compliance	D	A+	<p>Co: The construction phase is not anticipated to contribute to enhanced enforcement of fisheries management activities</p> <p>Op: The proposed landing will provide an opportunity for the compliance officers to enforce compliance to the vessels that would have docked hence improving fisheries management.</p>
4	Enabling private sector interest in the fisheries sub-sector	D	A+	<p>Co: The construction phase is not anticipated to contribute towards enabling private sector interest in the fisheries sub-sector but after the structures are put up and there is organization then the interest will pick from operation.</p> <p>Op: The private investors are attracted to invest money where there is security for investment and the improvement of Mwaepe landing site is critical in enhancing the organization of the site hence the ability to attract such players. The private sector is key in stimulating the growth of the fisheries sub-sector.</p>
5	Enhance general economic development	B+	A+	<p>Co: Business and employment opportunities at the construction phase of the project may contribute to enhanced general economic growth.</p> <p>Op: The blue economy is being targeted under government policy to contribute towards the GDP of the country. Improvement of Mwaepe shall be a contributing factor towards harnessing the effort of realizing this objective through improved fisheries management for economic development not only for the county but also for the national government. The site is also anticipated to contribute through tourism activities.</p>
6	Reduction in post-harvest losses	D	A+	<p>Co: The construction phase is not anticipated to contribute to reduction in post-harvest losses</p> <p>Op: The proposed design of the project proposes the installation of an ice plant that will assist the fishers to have ice for chilling of fish while out in the sea. The proposed fish Banda will also have cold room storage areas for fish unlike the current situation where fishers at Mwaepe do not have the proposed facilities. The</p>

NO.	IMPACT	Co	Op	DESCRIPTION
				improvement in fish preservation at the sea and at the banda is anticipated to reduce post-harvest loses.
7	Empowering Mwaepe BMU institutionally and financially to manage the landing site	B+	A+	<p>Co: The BMU members will be part of the JSPC and the participating members may gain skills on the operation of some of the facilities that will be provided at the site eg Ice making plant, operating the cold room, operation of bio-digester among others</p> <p>Op: Mwaepe landing site does not have proper functioning BMU at the site and there were plans to conduct an election mid December 2022. Mwaepe landing site do not have any physical office for the BMUs and under the proposed project, an office shall be provided. The landing site was also noted to struggle financially with water and power bills remaining unpaid for long. The facilities on the site are dilapidated yet the MBU does not have cash flows to pay for the bills. With the implementation of the project, the landing site is anticipated to increase revenue collection from the services offered at the site due to augmentation activities.</p>
8	Improved fish product quantity and quality traded by fishers	D	A+	<p>Co: The status quo is anticipated to remain the same at the construction phase, which is not anticipated to contribute to improved fish product quantity and quality traded by fishers. But until the ice plant and the cold room are operation to reduce on wastage from post-harvest loss.</p> <p>Op: The use of ice to chill the fish and cold room storage for preservation at the fish band and for fishers out at the sea is anticipated to increase the quality of the fish as well as the quantity by reducing losses. Under the project KEMFSED, the fishers are being empowered to access offshore fishing and this is anticipated to contribute towards the quality and quantity of fish at the landing site.</p>
9	Creating employment opportunities	A+	A+	<p>Co: There shall be employment opportunities at construction and operation phase of the sub-project. The contractor shall employ several locals during project implementation providing temporal source of income.</p> <p>Op: Several facilities have also been proposed at Mwaepe fisheries landing site which includes the fish</p>

NO.	IMPACT	Co	Op	DESCRIPTION
				banda, restaurants and the stalls which are anticipated that the owners shall hire helpers at operation phase of the project.
1	Creating business opportunities	A+	A+	<p>Co: Business opportunities are anticipated at the site during project construction to suppliers of construction materials, equipment and food from vendors.</p> <p>Op: Completion of the proposed facilities at the landing site is also anticipated to increase business opportunities from the increased flow of the visitors at the site, the proposed stalls, restaurants and from tourism activities on site.</p>
1	Improved hygiene standards and environmental conditions at Mwaepe Landing site	D	A+	<p>Co: Mwaepe landing site do not have a bathroom for fishers to shower from as well as having dilapidated pit latrines used by fishers. The status quo is anticipated to persist during the construction phase until improved hygienic facilities are implemented. Inadequate handling of fish is also anticipated to persist until an improved fish banda that controls for contamination is installed.</p> <p>Op: Under the proposed project design, the site shall have an ablution block to serve operators at the site as well as visitors. The current fish banda does not have toilets and bathrooms for those working in the banda. However, the proposed fish banda will have these facilities for personal hygiene as well as cleaning the fish which is currently lacking.</p>
1	Reduces risk and incidences of fish food contaminations	D	A+	<p>Co: The status quo is anticipated to remain the same at the construction phase, which is not anticipated to contribute to improved fish product handling and improved hygiene to prevent contaminations. But until the modern fish banda is operational to reduce on contamination the same is anticipated to continue.</p> <p>Op: The current fish Banda does not have restriction of access between the fish entry point, fish collection, fish cleaning area, fish selling point, personnel cleaning area, changing area and toilets to avoid coming out once someone has entered the fish processing area. This provides conducive environment for contamination of the fish. However, with the proposed project, there shall be separation of the various sections and once a worker</p>

NO.	IMPACT	Co	Op	DESCRIPTION
				enters the processing plant, they will have no reason of coming out for any reason unless leaving the Banda.
1	Enhancing the local capacity in fishing, landing, handling and processing among the fishers at Mwaepe	D	A+	<p>Co: At construction there is no impact expected on capacity building to enhance fishing, landing, handling and processing among the fishers. An activity that can only occur after implementation of the facilities.</p> <p>Op: Implementation of the proposed sub-project is anticipated to build capacity among the local fishers in skills to handle and process fish for the high value markets. Due to the rudimentary methods currently being applied, the fishers are not able to attract high value market but instead rely on middlemen and local markets. However, implementation of the proposed facilities is anticipated to change the current situation.</p>
1	Improved physical workplace for the Mwaepe BMU	D	A+	<p>Co: Construction phase is not anticipated to have any impacts as far as provision of office space to the BMU is concerned</p> <p>Op: The improvement of the landing site will provide opportunity to improve the working conditions of the Mwaepe BMU. The proposals provide adequate space both for the office and meeting place. The current office is small about (2x3)m and usually acts as file storage space other than working space for the executive.</p>
1	Enhancing traders and visitors flow in the area		A+	<p>Op: The conditions at Mwaepe landing site are not appealing to most visitors as well as traders who would like to buy the fish. The key challenge is the conditions of handling the fish and the general hygiene conditions. The fishers do not have bathrooms and proper toilets comparison to Bidibadu and trade wind beaches which attracts a high number of visitors compared to Mwaepe. The improvement of the landing site is anticipated to improve the traffic as well as well the quality of fish from the site</p>

NO.	IMPACT	Co	Op	DESCRIPTION
1	Improved access to the landing site by traders and visitors		A+	Op: The existing access to the landing site is unimproved and the design proposes to pave it using cabros, improving its aesthetics.
1	Improved Household income, food security and living standards	A+	A+	<p>Co: The opportunities from job creation at the construction site, food vendor businesses, construction equipment and materials on site are anticipated to trickle down to household, improving the household income.</p> <p>Op: There is an anticipated improvement of income for fishers, workers at the boatyard, traders on site and the BMU due to improved quality and quantity of fish as well as traffic flow to Mwaepe landing site. The proposed facilities aim to improve the quality of fish through reducing post-harvest quality deterioration hence fetching a higher price and attract high value markets. The BMU shall also be generating leasing fees from the restaurant and stalls which will assist in operation and maintenance of the facility.</p>
1	Contribute towards the Diani Chale Marine reserve conservation efforts.	D	A+	Op: Mwaepe landing site is one of those which fall within the Diani Chale marine reserve conservation area. The critical habitats within the reserve were noted to be degraded as evidenced by the high sea urchins. However, there is an opportunity on the project particularly under component 1and 2 for CIG and BMUs along the reserve to engage in conservation efforts, such as eco-tourism subprojects and the development of a co-management plan. These opportunities include securing funding for environmentally supportive livelihood ventures for the community within the reserve such as ecotourism and community monitoring ventures.
1	The proposed development on the plot shall help secure the land	D	B+	<p>Co. at construction, nothing much will change but if the plot is left undeveloped it will be encroached upon</p> <p>Op: The County Department of Fisheries and Blue Economy will have positively utilized the land where the</p>

NO.	IMPACT	Co	Op	DESCRIPTION
				proposed project will be set up as currently it's not properly utilized with haphazardly developed structures on site and vulnerable to change of use or ownership.
2	Contribute towards improved livelihoods of the community	B+	B+	<p>Co: The proposed development will provide various livelihood opportunities for the construction workers and materials suppliers who will all be prioritized targets from the community.</p> <p>Op: Once operational, the landing site will provide strategic marketing for fisheries products and other tourism related ventures.</p>

6.6. The Negative Environmental and Social Impacts of the Proposed Project

The proposed project will comprise of constructing and operating; a poly-functional building, a fish banda, a boat yard, 2 No. restaurant, 7 No. stalls, fish gear mending shed, an ablution block, monumental gate and a gate house, painting of historical building, 1 No. prime rated 66 KVA 3 phase, 415V, 50Hz diesel generator with a silencer, 69 No 40KW 144 Cell, 585W Mono-Crystalline Solar Modules and Civil works, (*slip way, drainage, landscaping works, road works and perimeter wall*). Construction and operation of the structures is anticipated to have some negative impacts as indicated in Table 6-3 below:

Table 6-3: Negative Impacts of the sub-project at Construction phase

NO.	IMPACT	MAGNITUDE OF IMPACT	DESCRIPTION
1.	Occupational Health and Safety (<i>accidents and Injuries</i>)	A-	Working on a construction site comes with risks and accidents to the workers. The risk could be associated with fire, material and manual handling, dehydrations, electrical shocks, exposure to chemicals, drowning into the ocean, Slip, trips and falls, excessive noise and vibration, dust, hit by moving objects/plants, falling objects, working at heights and collapsing trenches among others. The occupation health and safety risks are mainly anticipated at all phases of the sub-project. Other public health-related risks are as a result of poor handling of food sold to construction workers by local community vendors, resulting in food contamination/poisoning
2.	Public health and safety (<i>accidents and Injuries</i>)	A-	The public and any persons who have access to the construction site (e.g. current beach traders, fishermen and their patrons) can be at risk of injury from falling objects, accident involving construction vehicles, personal falls, or sharp objects on the ground. The risk is anticipated to be

NO.	IMPACT	MAGNITUDE OF IMPACT	DESCRIPTION
			higher during the construction phase of the project. Members of the public using public roads may also be exposed to project vehicles outside the construction area. Site neighbors, mainly residential homes, may be exposed to nuisance dust, noise and excessive vibrations, with health consequences.
3.	Visual/aesthetic Impacts	A-	The excavation activities and stockpile shall be the main source of visual/aesthetic value impact at the project site. These may be unpleasant scenes to patrons of the beach and site neighbors. Similarly, fugitive dust cumulating on adjoining properties will be aesthetically unpleasant.
4.	Leakages and spills	B-	The main source of leakages and spills anticipated are from vehicles with mechanical issues at project construction phase. At construction the leakage shall be from contractor's diesel-powered equipment/vehicles
5.	Noise and vibrations	A-	The movement of construction vehicles to and from the site, general construction activities on-site, and noise from conversation on site are anticipated to be the main sources of noise.
6.	Air pollution	A-	Air quality is anticipated to be affected by exhaust fumes on site from operating of machines and moving of construction vehicles transporting materials from the site or to the site, from dust particles on-site mainly during demolition of existing structures to create space, foundation excavation activities, vehicle loading and off-loading and during mixing of cement on site.
7.	Solid Waste generation	A-	The main sources of waste shall be debris from construction activities with soil cutting, metals debris, paint containers and concrete among others. The main waste streams are presented in sections 2.7 and 2.8.
8.	Waste water generation	D-	Waste water is not anticipated at construction phase of the project
9.	Fire Hazards	B-	Fire hazards are anticipated at the project site during construction phase with the major risks emanating from electrical and gas welding or use and storage of fuel on site by the construction team. The risks can be exacerbated by careless disposal of cigarette but by workers who smoke.

NO.	IMPACT	MAGNITUDE OF IMPACT	DESCRIPTION
10.	Increased Water consumption	A-	The proposed construction activities will lead to increased requirement for water resources impacting negatively on the source.
11.	Increased Energy consumption	B-	During the construction phase, energy consumption is likely to be high due to the use of heavy machinery, tools, and equipment. Electricity will be needed to power the construction site, and this may result in increased energy consumption from the national grid or other sources. The estimated peak demand from the grid during construction is 40 KW.
12.	Risk of Spread of HIV/AIDS and other STI	B-	<p>During construction, the project will employ some youth to work at the site. This particular category is prone to taking risks as they engage in cheap liquor or drugs, they become more susceptible to unsafe sexual practices and transactional sex exposing them to the risk of HIV/AIDS as well as other sexually transmitted diseases. The contractor will be expected to sensitize the work force on STIs and HIV/AIDS and provide condom dispensers (Male and Female) on site.</p> <p>Baseline survey findings indicated that incidences of sexual activities are often exacerbated by the use of alcohol. Availability of cash to the project workers will increase sexual activities</p>
13.	Child Labour and Protection	D-	During the construction phase, there is a high likelihood of child labor occurring, especially if the project is labor-intensive and involves manual work. Children from the surrounding community may be engaged in carrying materials, digging, or any other task that does not require specialized skills. This is often due to poverty and lack of access to education, which can lead to families relying on their children for income.
14.	Gender Equity, Sexual Harassment and abuse amongst workers in the workplace	A-	During the construction phase, there may be a higher risk of gender-based violence and harassment due to the influx of male workers into the area, which may result in an imbalance of power dynamics and increase the vulnerability of women and girls. Additionally, the lack of proper sanitation facilities and accommodations for women

NO.	IMPACT	MAGNITUDE OF IMPACT	DESCRIPTION
			may further exacerbate these risks.
15.	Gender-based violence at community level	B-	During the construction phase, there may be an increase in gender-based violence in the community due to the influx of male workers leading to disruption of community held norms and values. This could result in increased harassment and violence towards women and girls in the community.
16.	GBV: Sexual exploitation and abuse (SEA)	B-	During the construction phase, the influx of a predominantly male workforce may result in an increase in GBV incidents against female workers, particularly those working in low-paid and low-skilled positions. The unequal power dynamics between male and female workers can make it difficult for women to report incidents of GBV or seek support.
17.	Spread of COVID-19 amongst community members during consultation processes	B-	During the construction phase, there is a likelihood of Covid-19 transmission due to increased movement of people, workers, and equipment to the site. This could result in a higher risk of community transmission, especially if proper protocols such as social distancing, regular testing, and personal protective equipment (PPE) are not put in place.
18.	Spread of COVID-19. During construction at work sites	B-	During the construction phase, the likelihood of Covid-19 at the construction site is high due to the high number of workers involved, the close proximity of workers to each other, and the frequent movement of workers from various locations. The workers may come from different areas with varying levels of Covid-19 prevalence, and there may be inadequate measures in place to enforce Covid-19 prevention guidelines such as social distancing, wearing of masks, and regular hand washing.
19.	Temporal impact on current livelihood activities at the landing site	B-	During the construction activities, current existing livelihood activities will be impacted through lowered business activities and reorganization of the landing site plan. However, the landing site plan has put in place a livelihood preservation and restoration plan that will include developments being done in staggered manner to

NO.	IMPACT	MAGNITUDE OF IMPACT	DESCRIPTION
			allow continued livelihoods operations during construction and also apportion stalls in the new buildings for relocation purposes. Current traders 11 No.) will continue their operations during the construction phase, and only move to the completed building to allow works in the areas they currently use.

Table 6-4: Negative Impacts of the Project during Operation and Maintenance Phase

NO.	IMPACT	Op:	DESCRIPTION
1.	Occupational Health and Safety (<i>accidents and Injuries</i>)	A-	Occupation health and safety risks at operation phase are anticipated from the workers conducting routine maintenance, repair and cleaning on the facilities at site (e.g. electrocution, burns, frost bites, falls, confined spaces etc.), exposure to cold working conditions for the ice making machine attendants and cold room attendants, biological hazards associated with allergic reactions to workers gutting the fish, physical hazards associated with use of equipment and slippery floor, poor ergonomic conditions due to working postures e.g. working while standing over a long period gutting fish. Some of these conditions can be worsened by poor hygiene at the fish landing site.
2.	Public health and safety (<i>accidents and Injuries</i>)	B-	Though we shall have public safety issues during the operation of the building, it is anticipated to be low due to the size of the proposed structures and the level of public traffic flow accessing the project site. Public health and safety issues are also anticipated during the transportation of operation materials to and of fish from the site. There is likelihood of unhygienic handling of fish at the facility that may pose a risk to public health concerns which will require sensitization of the workers on need to work under hygienic conditions to avert any contaminations, outbreak of diseases and air pollution from odour.
3.	Leakages and spills	B-	During operation, it could be from vehicles using the proposed parking on site. However, the design has taken into consideration of such during operation through paving of parking area. Spillage and leakage of fuel from at the boat yard and running of the generator is also anticipated at

			operation phase of the project. Such leakage will mainly lead to point contamination of soils, and at worst, can be washed into the ocean
4.	Noise and vibrations	A-	Noise is anticipated to be generated during the project operation phase when repairing and maintaining, from the boat yard, general conversation from the high anticipated human traffic or from activities by users or vehicle movement in and out of the landing site. Intermittent noise will also be generated when the power backup generator is running in periods of grid power outage. Noise is mainly anticipated to affect patrons of the landing site and to a smaller extent, the residential in the immediate neighborhood.
5.	Air pollution	A-	At operation phase of the landing site, it is anticipated that activities within the boat yard will contribute to air quality degradation particularly from works on fiberglass boats. Other potential sources of air pollution may include air pollution from gaseous emissions from the power backup generator, operation of restaurants, wastewater treatment system and from poor solid waste storage and management. The proposed design has envisioned operating of a power backup generator which is also anticipated to contribute to emissions.
6.	Solid Waste generation	A-	Fish waste from processing of fish and operation of the fish Banda, organic matter from proposed restaurants, waste from boat yard, waste from fish gear mending shed as well as waste generated from general consumption of materials by visitors accessing the site for tourism purpose as highlighted in section 4.3.2, shall be the main source of waste during the operation phase of the project. Based on the type of fishing gears at use, by-catch is not anticipated to be an issue at the site.
7.	Waste water generation	A-	The main source of wastewater shall be during the operation phase of the project, with grey and black water being anticipated from the ablution blocks and cleaning of the fish banda as indicated in section 2.6.17. Although the black water could be used for landscaping purposes on site after treatment in the biodigester, it was noted that cultural perception towards black water could be an impediment. However, with proper functioning of the proposed biodigester through adequate maintenance and operation, the

			perceptions shall be changed over time. The other expected source shall be waste water from the fish banda which will be used for cleaning purposes. The oil trapped from the waste water using a grease scrapper shall be used by canoe fishers in maintaining their vessels.
8.	Fire Hazards	A-	Fire hazard is anticipated mainly at the operation phase of the project, from electrical faults and arson being the main anticipated sources. The design of the proposed structure at the landing site has provided for fire management measures in the design such as providing for water hydrants, fire extinguishers and fire assembly point. And additional measures have also been proposed in the ESMP.
9.	Increased Water consumption	A-	the water will be used in washrooms, for landscaping, cleaning and frequent personal cleaning by fishers and due to the covid-19 impacts, estimated at 17.52m ³ per day. The design has provided for the treatment of waste water through a bio-digester system that shall be used for landscaping purpose. Despite this, additional measures in the project's design have been proposed to ensure efficient utilization of the resources on site such as push delay taps in washrooms, rain water harvesting and reduced indoor potable water use. This shall reduce pressures on the resources to ensure sustainability.
10.	Increased Energy consumption	A-	Energy shall be critical particularly for the one ton/day ice making plant and for the users of the proposed social hall events at the landing site either to run machines and equipment or for lighting purposes. The demand for energy resources will increase, and several measures have been provided for in the project's design to ensure efficient utilization of the resource including having a solar system, using large windows where applicable for lighting, using energy saving bulbs LED, using solarized street lights and allowing adequate air circulation. Additional measures have also been proposed in the mitigation measures.
11.	Risk of Spread of HIV/AIDS and other STI	B-	During operation phase, Mwaepo site will be open for the tourists and traders who will be operating at the site. Cases of sex tourism were reported and ay increase at the site with improved facilities
12.	Child Labour and Protection	C-	During the operational phase, there may be a reduced likelihood of child labor as the work is likely to be more

			specialized and requires technical skills that children may not possess. However, the risk of child labor may still exist in the form of subcontracting, where contractors and even fishermen/boat owners may engage children as part of their workforce.
13.	Gender Equity, Sexual Harassment and abuse amongst workers in the workplace	A-	During the operational phase, there may be potential risks of sexual exploitation, abuse and harassment, particularly for women who work in or around the fish landing site. This may be due to the informal nature of the work and the lack of clear workplace policies and procedures for addressing and preventing such behavior.
14.	Gender-based violence at community level	A-	During the operational phase, gender-based violence could occur due to the increased economic opportunities that the fish landing site may provide. Women may be vulnerable to exploitation and abuse by those who control access to the landing site and the fish trade.
15.	GBV: Sexual exploitation and abuse (SEA)	A-	During the operation phase, the presence of a large workforce and surrounding communities may increase the likelihood of GBV incidents, particularly against women and girls who may be more vulnerable due to poverty and cultural practices. The county's operations may also result in the displacement of communities, which can lead to an increase in GBV incidents as people are forced to leave their homes and livelihoods.
16.	Spread of COVID-19 amongst community members during consultation processes	B-	During the operational phase of the infrastructure, there is also a risk of Covid-19 transmission due to the continuous flow of people and goods in and out of the facility. This risk can be mitigated by establishing and enforcing measures such as mandatory mask-wearing, regular testing, and vaccination for workers, visitors, and customers.
17.	Spread of COVID-19. During construction at work sites	B-	During the operational phase, the likelihood of Covid-19 at the fish landing site is also high as workers and visitors may come from different areas and interact with each other. The risk can be increased if there is a high volume of visitors and inadequate measures are in place to enforce Covid-19 prevention guidelines.

6.7. Potential Indirect and Cumulative Environmental and Social Impacts and Risks

The proposed improvement of Mwaepe fish landing site activities are generally not anticipated to have significant negative cumulative impacts. The findings from key informant stakeholder consultations and review of the Kwale County Integrated Development Plan (2018-2022) indicated that the major development in the area will be the development of Shimoni fish port which is about 48KM south west of the proposed Mwaepe fish landing site. Improvement of Mwaepe fish landing site together with Shimoni fish port is anticipated to contribute to increased pressure on fish stock. The demand for the high-quality fish and improvement in income may lead to increased fishing efforts by the fishers due to availability of the ready market. KEMFSED project on the other hand, under component 2, is empowering local fishers with modern boats to access deep sea fishing, which if not well managed may lead to more pressure to the fish stocks especially at the nearshore. Further findings from stakeholder consultation indicated that the National and county government of Kwale under various projects are providing modern fishing boats to the local fishers with the capacity to access deep sea fishing. The supply of boats to the locals shall further increase the pressure on the fish stocks. However, KEMFSED as a project has a holistic approach to sustainable management of the fisheries resources. The project target improving governance through various instruments including development of Joint Co-management Area (JCMA)Plans, and development of Marine Spatial Plan (MSP) to guide the management of Marine resources within the project area. In addition, monitored operations at Mwaepe fish landing site is expected to collect reliable fisheries data to inform subsequent JCMA plans. These are anticipated to offset any impacts on the fish stock by the proposed improvement of the proposed Mwaepe landing site. In addition to enhancing marine fisheries governance, KEMFSED project activities aim at improving the fisheries habitats by restoring degraded mangrove areas, seagrass or coral reefs.

7. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

7.1. Chapter Overview

The chapter highlights the environmental and social management measures for the anticipated negative impacts. The ESMP captures the impacts, receptor, proposed mitigation measures, institution responsible for the mitigation, frequency, and budget.

7.2. Proposed Environment and Social Management Measures

The objectives of the proposed environmental and social management plan are to ensure smooth implementation of environmental protection measures, mitigate adverse impacts and ensure environmental protection activities are conducted efficiently at the project site.

The specific objectives include but are not limited to:

- Ensuring environmental health and safety within the surrounding environment and *minimizing environmental risk* during the design, construction, and operation phases.
- Incorporating environmental principles into development planning, design, construction, and operation to enhance environmental management and protection as well as promote sustainable development.
- To specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to the project
- To provide mitigation measures against all identified and potential negative impacts resulting from the activities of the proposed development
- Reduce contamination
- Apply climate change adaptation measures
- Apply green building construction measures
- Apply measures required by Kenyan regulations
- Apply measures required by the World Bank Safeguard Policies triggered under the KEMFSED project
- To assign duties to various actors in the management plan for purposes of enhancing accountability in this project.
- To provide a logical framework for environmental and social management and monitoring.
- To provide a baseline for future environmental and social audits of the proposed development.

Various potential adverse environmental and social impacts associated with the proposed sub-project have been identified, and an ESMP developed to guide in mitigating the negative impacts. The project implementing agency (*SDBE&F*) & *together with the county government through Joint Project Supervising Committee*, the project supervising consultant and the contractor are required to identify the actions and coordinate the various stakeholders appropriately. The decommissioning ESMP is just a guide however, there shall be need for review and development of decommissioning plan at the appropriate time and submission of the Draft decommission plan to NEMA for approval as require under EMCA.

Table 7-1 to Table 7-3 below shows the anticipated impacts, proposed mitigation measures, the institutions responsible and the estimated possible cost of the action. Although the cost of ESMP implementation has been provided, future dynamics during project operation and decommissioning were a limiting factor and could not be well envisioned at this point in time. The contractor will be required to update the ESMP for operation phase of the proposed landing site facilities by providing operation and maintenance guidelines through the as-built documents to be submitted to the client at the end of construction period. The documents prepared shall include the operation and maintenance manuals.

Table 7-1: Environmental and Social Management Plan During Construction

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
1.	Occupational Health and Safety <i>(accidents and Injuries)</i>	Injuries and accidents	Workers on site	<ul style="list-style-type: none"> ▪ Contractor to complete hazard identification and risk assessment develop a site occupational health and safety action plan detailing safety measures/procedure, equipment to be used, emergency procedures, restriction on site and personnel responsible for safety inspections and controls. This shall be ready and approved by the joint supervising committee before commencing of the proposed works. As a minimum, the plan shall cover hazards associated with deep excavations, confined spaces, equipment handling, falls from height, electrical safety, working near/over water, manual handling, noise and vibration, dust and chemicals. ▪ The occupational health and safety action plan shall include training and supervision/monitoring and reporting aligning to OSHA 2007 and WB EHS General OHS risks and requirements. ▪ Contractor shall hire and retain a duly qualified construction environment, safety and health officer throughout the construction period, to ensure implementation of the safety plan. ▪ Train workers on safety and first aid skills before commencing works. 	To ensure the safety of workers	contractor and supervision consultant	800,000

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<p>Encourage daily tool box talks on potential OSH hazards and mitigation measures.</p> <ul style="list-style-type: none"> ▪ Ensure safety of the construction workers by putting a fully equipped first aid facility, and having trained first aiders among the workers and injury reporting mechanism. The ration of first aiders to works shall be in line with the OSHA First Aid Rules. ▪ Provide appropriate personal protective equipment (PPE) to workers and training on appropriate use. (Reflective jackets, helmets, face masks, ear plugs gloves, safety boots, fall arrestors, welding masks etc.). The safety plan shall identify the mandatory PPEs by the tasks performed. And workers trained on the appropriate use of the PPEs. ▪ Adequate provision of requisite sanitation facilities segregated by gender for human waste disposal for workers on site ▪ Ensure adequate potable water supply for construction workers throughout the construction period. ▪ Ensure the work place is registered by Directorate of Occupational Health and Safety (DOHS) and maintain the log of all injuries that occur on site in the incident register, corrective actions for their prevention as 			

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<p>appropriate.</p> <ul style="list-style-type: none"> ▪ The site should have a functional grievance redress mechanism to allow workers to raise safety issues and propose improvements on site ▪ The contractor is required to have WIBA insurance policy to compensate workers in the event of injuries. ▪ Provide adequate clean drinking water for the workers to mitigate against dehydration. ▪ Have an understanding with a nearby health facility for emergency cases on-site before decisions are made. ▪ Adherence to Covid-19 rules/guidelines as provided from time to time by the ministry of health and the bank with provision of easily accessible and adequate covid-19 PPE to all persons on site. The specific action to be captured in the contractor ESMP. ▪ Training of workers on covid-19 rules and requirements. ▪ As applicable, only qualified personnel shall be allowed to operate construction equipment on site that may require specialized skills. ▪ The contractor to ensure adequate water supply for construction through applying for connection from KWAWASCO 			
2.	OHS risks	Risk of	workers	<ul style="list-style-type: none"> ▪ The OHS risks from working above 	To ensure the	contractor and	950,000

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
	from working above and falling into deep waters	drowning		<p>and falling into deep waters shall be adopted into contractor site occupational health and safety action plan.</p> <ul style="list-style-type: none"> ▪ To the extent possible, consider working during low tide periods or use pilling for the foundations ▪ The workers to be provided with appropriate footwear to reduce the risk of slipping. ▪ Ensure workers are provided with life jackets and enforce use at all times when exposed to sites or working under deep waters ▪ Ensure workers working on such sites are experienced swimmers ▪ Train workers in safety measures when working above deep waters ▪ Avoid working at night to reduce cases of drowning ▪ Having rescue team on site in the event of an accidents ▪ Provide necessary information on rescue during emergencies. 	safety of workers	supervision consultant	
3.	Public health and safety (<i>accidents and Injuries</i>)	injuries and accidents such as traffic related	Mwape landing site visitors, fishermen, restaurant users, and other persons operating at the site	<ul style="list-style-type: none"> ▪ The contractor shall assess traffic risks while accessing the site based upon specific planned supply of materials to and from site and identify necessary measures. ▪ Consider having a road marshal, at the Diani beach junction, particularly during delivery of construction materials or waste disposal to avoid any incidents when construction 	To ensure public safety at site area	contractor and supervision consultant	250,000

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<p>vehicles leave the construction site or deliver materials.</p> <ul style="list-style-type: none"> ▪ Ensure the safety of visitors and operators at the landing site by providing safety signs at strategic places around the access roads. ▪ Hoarding off working sites to protect the public or unauthorized persons from entry. ▪ Use of signs and warnings on sites on areas with high risks. ▪ Reduce unnecessary speeding to 30KPH by the construction vehicles to control for accidents from the movement of pedestrians in the area and particularly Mwaepe landing site access road. ▪ Prior creation of awareness and sensitization of the public and the operators at the site of any activities that is likely to have an impact in adequate time (<i>2 weeks</i>) before commencement. ▪ Implement Grievance mechanism and use feedback to improve any management measures as may be necessary. ▪ Vendors selling food to construction workers should have valid public health permits to mitigate risks related to food contamination 			
4.	Visual/ aesthetic Impacts	Psychological nuisance	Mwaepe landing site visitors,	<ul style="list-style-type: none"> • Cleaning of the site and organized siting different construction materials. 	To reduce psychological impacts to	contractor and supervision consultant	part of construction cost

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
			fishermen, restaurant users, and other persons operating at the site	<ul style="list-style-type: none"> • Backfilling of soil cuttings • Landscaping of the project site • hoarding of the construction site using appropriate screening materials 	persons visiting or operating at the site and workers on site		
5.	Leakages and spills	contamination and pollution	soil, water, plants, and air	<ul style="list-style-type: none"> ▪ All areas where fuel and hazardous chemicals are stored must be concretized and bunded ▪ In the event of hazardous waste leakage or spills, engage authorized waste handlers to dispose of contaminated soils. ▪ Disposing of contaminated soils in cutting pit if volumes are low. ▪ Use of NEMA licensed hazardous waste handlers to dispose off in licensed disposal areas. ▪ Development of site-specific incident management or response plan. ▪ Use of an authorized garage or fuel station in the project area by the contractor. ▪ No servicing of construction equipment shall be undertaken on site. For emergency works, fuel and oil trays shall be used. 	to avoid any contamination and pollution on-site or at the contractor's camp	contractor and supervision consultant	part of construction cost
6.	Excessive Noise	auditory injuries	Site workers, Mwaape landing site visitors, residents,	<ul style="list-style-type: none"> • The contractor to use equipment with low noise levels or fitted with silencers where appropriate. • Regular servicing of the equipment to reduce the possibility of noise from 	to ensure Workers and public safety	contractor and supervision consultant	300,000

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
			fishermen, restaurant users, and other persons operating at the site	<p>worn-out parts.</p> <ul style="list-style-type: none"> • Informing the public about the possibility of unusual noise levels, particularly to residents and those operating at the site, whenever working on such activities. • Ensure adherence to PPE by workers²¹ working on excessive noise and vibration activities • Minimize unnecessary hooting and speeding by construction vehicles. • Restricting noisy activities to be during the day and no noisy activities should be conducted on site at night. • Regular measurement of noise levels and devising control measures. The contractor, during baseline survey, shall and planning for regular monitoring shall indicate the frequency, human receptors, sensitive receptors and location of monitoring, control measures and which is to be captured in the C-ESMP for approval. 			
7.	Air pollution	air pollution	workers, area residents, persons operating at the site and	<ul style="list-style-type: none"> • Vehicles to be used on-site to meet NEMA emission standards as required under NEMA air quality regulations. 	to ensure workers and public safety	contractor and supervision consultant	300,000

²¹ The measure should be according to the law (Occupation safety and health Act 2007, National Construction Act

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
			the general public	<ul style="list-style-type: none"> • Reduce unnecessary speeding or idling of construction vehicles • Use of non-lead paints during construction. • Use of clean fuels e.g. low Sulphur diesel fuels. • Adherence to proper uses of PPE by the workers, especially those working on activities requiring mixing of cement. • Inform the public and residents about activities with possibility of unusual air pollutants • Use of silt and dust screens to reduce dust from site. • The contractor shall minimize time of exposed soils during excavations, wetting of exposed areas during dry and windy periods, conduct regular measurement of particulate matter. • The contractor shall conduct baseline survey with clear plan for frequency and location of monitoring, put dust control measures in place which shall be presented in the C-ESMP for approval. • Consider wetting all the sand or soil materials being transported to or from the construction site. Where 			

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				appropriate, cover the materials being transported to avoid being blown by the wind during transportation.			
8.	Increased Solid Waste generation	Increased waste generation at project site and contractors camp if any	The environment in general (public nuisance, soil, water and air)	<ul style="list-style-type: none"> • The contractor shall formulate a site-specific waste management plan informed by waste characterization²² and consistent with NEMA and WB EHS General. • The site-specific waste management plan to contain measures to promote and adopt the principles of waste avoidance, reduction, reuse and recycle. Through avoiding unnecessary generation of waste, use of debris for backfilling where possible, use of waste materials on-site for other purposes where appropriate, or selling to recycling merchants. • Designate proper waste transfer station onsite with adequate waste receptacles that encourage segregation and controlled access. • Sensitize workers on appropriate solid waste management. • Seek appropriate approvals from NEMA and County Government on 	to ensure waste is managed properly	contractor and supervision consultant	100,000

²² Waste characterization should consider waste from construction site and the contractors' camp if any.

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<p>management and Disposal of the waste²³.(this may include using authorized disposal sites, use of NEMA authorized waste pickers/transporters, acquiring dumping certificates, and keeping proper records or use of authorized vehicles to ferry waste from site)</p> <ul style="list-style-type: none"> • Observing waste management standards proposed under NEMA waste management regulations 2006. (with a particular focus on waste separation and management before disposal) 			
9.	Increased wastewater generation	increased waste generation at project site	The environment in general (public nuisance, soil and water)	<ul style="list-style-type: none"> • Provision of adequate mobile sanitation facilities for adequate human waste management²⁴ during the construction phase for workers and persons on site. • Contractor shall follow guidelines on toilet provision as outlined in OSHA Act 2007 and the Public Health Act. • Ensure daily cleaning and routine removal and disposal of sanitary wastes with authorized wastewater disposal operator. 	management of waste water	Contractor and the supervising consultant	Part of construction

²³ Waste management and disposal procedures need to be in accordance to waste management standards proposed under NEMA waste management regulations of 2006 (legal notice 121).

²⁴ According to the Public Health Act Cap 242, 2012 and Occupation safety and Health Act 2007 requirements

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<ul style="list-style-type: none"> Contractor shall define plan for collection, treatment and disposal of all construction wastewater (e.g., from cement operations, equipment washing, contaminated water, etc.) 			
10.	Increased Water consumption for construction	pressure on existing water resources	Kwale water and sewerage company and other water users	<ul style="list-style-type: none"> Contractor shall evaluate and implement appropriate methods for supplying water to meet construction needs. Sensitization and awareness creation among construction workers on significance of water conservation measures. Curing the concrete structures during evening and early morning to reduce evaporation. Covering the concrete structures to be cured with sand or any water retaining material to shield from direct sunlight Regular maintenance and prompt response to leakage in the water system during construction phase. Use of alternative water sources if available, particularly rainwater if any during construction phase 	to ensure efficient and sustainable consumption of water resources	KWAWASCO, contractor and supervision consultant	part of construction and cost
11.	Extraction of construction materials	Damage to biophysical environment at the material	Materials extraction sites	<ul style="list-style-type: none"> Procure sand and quarry materials for duly licensed commercial suppliers. Contractor to undertake due diligence on suppliers and maintain records on 			

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
		sourcing location		<p>site.</p> <ul style="list-style-type: none"> Materials from the natural environment to be sourced from NEMA licensed quarries Ensure proper planning of materials requisition and storage to minimize wastage from poor handling and storage 			
12.	Risk of Spread of HIV/AIDS and other STIs	Increased cases of STI and HIV/AIDS in view of worker on site	Surrounding community	<ul style="list-style-type: none"> Promote STI and HIV/AIDS Prevention messaging through outreaches and presentations Access to safe sex (Condoms-Male and female) Install HIV testing services at the construction site or a MoU with an existing government health facility in the area. Support infected workers with access to ARVs from local public health facilities especially those open about their status. Assist workers access counseling services at the nearest health centre to the site 	STI and HIV/AIDS free site	contractor and supervision consultant	150,000
13.	Grievances	Conflict between affected parties	All project stakeholders	<ul style="list-style-type: none"> Establish grievance redress committees at the site. Ensure that there is a trained focal person to facilitate the receipt and management of the grievance resolution process 	Prompt addressing of grievances and issues of	contractor and supervision consultant	250,000

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<ul style="list-style-type: none"> • Ensure contractor staff grievance structures exist • Sensitization and awareness creation among workers and the public on grievance redress mechanisms in place 	concern		
14.	Effects of Immigrant workers	increase in grievance	workers and the local communities	<ul style="list-style-type: none"> ▪ Contractor should use the local workforce as much as possible (preference to local community members on skills locally available). ▪ Effective community engagement and strong grievance redress mechanisms on matters related to labour ▪ All workers to sign an employment contract including a Code of Conduct governing appropriate behaviour ▪ The workforce should be sensitized to local social and cultural practices and be educated on the expected behaviour and conduct ▪ Contractor should prepare and enforce a No Sexual Harassment and Non-Discrimination Policy ▪ Contractor should prepare and implement a gender action plan ▪ The contractor as part of the C-ESMP will Prepare labor Management Plan (LMP) that included mandatory requirement to procure all unskilled, and as much as possible, semi-skilled labour locally. ▪ Consider use of quality locally available materials from the local 	Maximize benefit to local people and conflict with immigrant	contractor and supervision consultant	Part of construction cost

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				community while ensuring equal pay for equal work for men, women and people with disability			
15.	Child Labour and Protection	Abuse and exploitation of children	children	<ul style="list-style-type: none"> ▪ Ensure no children are employed on site in accordance with national labour laws. This can be done through incorporating prohibitive provisions in the code of conduct and also having the recruitment policies that prohibits child labour. ▪ Ensure that any defilement cases among contractors' workers are promptly reported to the police. ▪ Ensure that the CoC and the employment contract has clear measures in dealing with such contraventions 	zero tolerance to child labour	contractor and supervision consultant	Part of construction cost
16.	Gender Equity, Sexual Harassment and abuse amongst workers in the workplace	Injury and Psychological	Vulnerable persons at the work place.	<ul style="list-style-type: none"> ▪ The contractor will strive to ensure equitable distribution of employment opportunities between men and women. ▪ The contractor should prepare and enforce a No Sexual Harassment and Non-Discrimination Policy ▪ Provision of gender disaggregated bathing, changing, sanitation facilities ▪ Whenever harassment is recorded on site, the contractor should ensure prompt and effective remedial action ▪ The employees should be trained and sensitized on appropriate behavior ▪ All workers should sign a code of conduct 	Gender equity at work place and free of SEA	contractor and supervision consultant	200,000

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<ul style="list-style-type: none"> ▪ Ensure an attendant whistle blower policy which will protect those who raise issues that may be uncomfortable to management ▪ Sensitization and awareness creation ▪ Measures that will allow for the uptake of complaints without the fear of retaliation (whistle blower policy) 			
17.	Gender-based violence at community level	Injury	Vulnerable persons in the community.	<ul style="list-style-type: none"> ▪ The contractor will implement provisions that ensure that gender-based violence at the community level is not triggered by the Project, including: ▪ Effective and on-going community engagement and consultation, particularly with women and girls; ▪ Review of specific project components that are known to heighten GBV risk at the community level, ▪ Specific plan for mitigating these known risks, e.g. sensitization around gender-equitable approaches to employment, representation, management, school pupils etc ▪ The contractor will enhance capacity of already existing referral mechanisms- if a case of GBV at the community level is reported related to project implementation. 	prevent cases of GBV in the community due to project activities	contractor and supervision consultant	250,000
18.	Sexual exploitation and abuse	Injury	Vulnerable persons in the community.	<ul style="list-style-type: none"> ▪ Develop and implement a SEA/SH prevention and response Action plan with an Accountability and Response Framework as part of the ESMP. The 	zero tolerance to SEA	contractor and supervision consultant	150,000

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
	(SEA)			<p>SEA action plan will follow guidance on the World Bank’s Good Practice Note for Addressing Gender-based Violence in Investment Project Financing.</p> <ul style="list-style-type: none"> ▪ The SEA action plan will include how the project will ensure necessary steps are in place for: ▪ 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-centred 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; 			

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<ul style="list-style-type: none"> ▪ 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. 			
19.	Spread of COVID-19 amongst community members during consultation processes	Infection or loss of life	Community members	<ul style="list-style-type: none"> • Electronic means of consulting stakeholders and holding meetings shall be encouraged, whenever feasible. One-on-one engagements with stakeholders while observing social distance and adhering to PPE wearing shall be enforced; • The team carrying out engagements within the public on one-on-one basis will be provided with appropriate PPE for the number of people and stakeholders they intend to meet. • Use traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements and mail) when stakeholders do not have access to online channels or do not use them frequently. Ensure to allow participants 	avoidance of infection	contractor and supervision consultant	250,000

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<p>to provide feedback and suggestions.</p> <ul style="list-style-type: none"> • Hold meetings in small groups, mainly in form of FGDs if permitted depending on restrictions in place and subject to strict observance of physical distancing and limited duration. • In situations where online interaction is challenging, disseminate information through digital platform (where available) like Facebook and WhatsApp & Chat groups. • Ensure online registration of participants, distribution of consultation materials and share feedback electronically with participants. 			
20.	Spread of COVID-19. During construction at work sites	Infection or loss of life	workers and members of the public accessing the site for some reason	<ul style="list-style-type: none"> • The Contractors will develop standard operating procedures (SOPs) for managing the spread of Covid-19 during project execution and submit them for the approval of the Joint Supervision committee and the client, before mobilizing to site. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific project conditions; • Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel including workers and visitors; • Install hand washing facilities with adequate running water and soap, or 	avoidance of infection	contractor and supervision consultant	200,000

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				<p>sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used;</p> <ul style="list-style-type: none"> • Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, door knobs, hand rails etc.; 			
21.	Physical cultural resources	Destruction or loss of physical cultural resources	Historical and cultural resources	<ul style="list-style-type: none"> • Preserve historical and cultural resources as is. • Design the scope of work around the existent historical and cultural resources. • Provide reinforcement support to the existing historical and cultural resources where need be, 	Preserve historical and cultural resource	contractor and supervision consultant	Part of construction cost
22.	Critical habitats	Interference with the marine reserve ecosystem	The marine reserve	<ul style="list-style-type: none"> • Ensuring all construction does not go beyond the high-water mark • Restricting all construction operational activities away from then beach areas. • Capacity building all workers on the marine reserve regulations 	Preserve the marine reserve	contractor and supervision consultant	Part of construction cost
23.	Excavation and soil management	spoils	Air and water sources	<ul style="list-style-type: none"> • Having an understanding by a nearby quarry for tipping of the spoils as part of rehabilitation. • Regular back filling and compact of any loose soils on site. • Immediate disposal of soil cuts to avoid sedimentation and siltation 	minimize sedimentation of the marine environment	contractor and supervision consultant	Part of construction cost
24.	Labour Related disputes	poor workmanship, delays and oppression of	workers	<ul style="list-style-type: none"> • Prioritize to the extent possible recruitment of local labor • Adherence to labor laws and practices such as the working hours, 	reduction in protracted conflict	contractor and supervision consultant	Part of construction cost

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	Goal	Responsibility	Cost (KES)
				payment, and no child/forced labor in their workforce <ul style="list-style-type: none"> • No child labour is allowed on site, children below 18 years shall not be employed in dangerous work. • Ensure the workers have contracts with terms and conditions consistent with national labour laws and policies • The Contractor shall keep complete and accurate records of the employment of labor at the Site to include the names, ages, genders, hours worked, wages paid to all workers 	resolution		

The estimated total cost for the implementation of the construction phase ESMP is approximately Kenya Shillings 5.02 million. However, the actual cost shall be prepared by the contractor and captured in the C-ESMP. The project's Bid Documents will incorporate the Environment, Social Health and Safety Provisions discussed under this ESMP.

Table 7-2: Environmental and Social Management Plan (ESMP) during Sub-project Operation

NO.	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	GOAL	RESPONSIBILITY	COST (KES)
1.	Occupational Health and Safety <i>(accidents and Injuries)</i>	Injuries and accidents	workers conducting maintenance and repair, working at the boat yard, fish gear mending shed, fish banda, restaurant and those working at the ablution	<p>Before commissioning the FLS, develop an EHS management plan for its safe and environmentally sound operation. The plan should include all measure to:</p> <ul style="list-style-type: none"> • Ensure compliance to Occupational Safety and Health Act Cap. 514 and its Subsidiary Legislations standards including: registering all the proposed facilities as work place (<i>poly-functional, fish banda, boat yard, fish gear mending shed, restaurant</i>), constituting a safety committee, providing first aid facilities, conducting emergency drills and annual office safety audits. • Provide personal protective equipment to operation and maintenance workers • Recording all injuries that occur on-site to workers while doing their daily duties in the incident register, corrective 	Ensure the safety of workers at all proposed structures on site.	BMU management, KeFS and the county government fisheries department	To be determined under operation and maintenance costs

actions for their prevention should be initiated as appropriate.

- Equip cold stores and chill stores with strip curtains to avoid extensive drafts when doors are open
- Sensitization and awareness creation among workers on proper use and maintenance of cutting equipment and provision of protective equipment (metallic gloves, leather aprons and rubber soles.
- Demarcate the working space for different activities to minimize flow of processes from crossing.
- Creation of awareness and training of workers on site, BMU members who are responsible for boat repairs, operation of various landing site facilities and landing site users on safety and first aid skills by KeFS and coast guards.
- Hiring employees with proper qualifications for specialized and risky tasks during

			operation and maintenance of the various utility systems.				
			<ul style="list-style-type: none"> • Adherence to Covid-19 rules as provided by the ministry of health and the bank while conducting daily duties. • Providing requisite PPE and training of workers on covid-19 rules and requirements. • The workers to be rotated to reduce exposure to allergens • Use of gloves particularly while working with fish species known to create allergic reactions • Avoid aerosol-generating activities and proper ventilation of working space. • Maintenance works are only conducted by duly qualified and competent contractors or personnel. 				
2.	Vector control	Manage rodents at site	Workers at Fish processing plant	<ul style="list-style-type: none"> • Implementing a strict waste management system to ensure that food waste and fish scraps are disposed of promptly in sealed containers. • Constructing with rodent-proof materials and sealing entry points (like gaps and holes) to prevent rodent 	Rodent free site	BMU	TBD

				access.			
				<ul style="list-style-type: none"> • Establishing a routine cleaning schedule to keep the site free of debris, spilled food, and waste that can attract rodents. • Setting up regular monitoring systems to identify rodent activity and using traps to control populations effectively. • Encouraging the presence of natural rodent predators, such as cats or birds of prey, to help keep rodent populations in check. 			
3.	Fish odor control	Foul smell	Workers at fish processing plant	<ul style="list-style-type: none"> • Implementing a comprehensive waste management system is crucial, segregating fish waste (like offal and scales) from other waste • Using biohazard bags can also help contain odors until the waste is disposed of or processed. • Installing biodigesters to manage organic waste by breaking it down through anaerobic digestion. • Regular Cleaning and Sanitation: 	Ensure control odor at the site	BMU	TBD

				<ul style="list-style-type: none"> • Establishing a routine cleaning schedule for the landing site and associated facilities can significantly reduce odor buildup. • Enhancing natural ventilation in fish processing areas can help dissipate odors. • Employing odor neutralizers or masking agents can help mitigate unpleasant smells. 			
4.	Public health and safety (<i>accidents and Injuries</i>) including hazards related to fish handling	Injury and accidents	visitors to Mwaepe landing site	<ul style="list-style-type: none"> • BMU committee at the fish landing site in charge of management, public safety, sanitation and hygiene shall be capacity build to discharge their mandate properly • Liaison with the relevant county department to ensure regular monitoring of food safety by the public health officer • using signage during cleaning, maintenance, or repair to warn the public • Easily accessible fire risk information to the public visiting the landing site and training on fish banda operations and associated hygiene maintenance. 	Ensure protection and safety of the public who visit the landing site	BMU and County government fisheries department.	To be determined under operation and maintenance costs

5.	Increased Solid Waste generation	contamination and littering	public nuisance, soil, water and air	<ul style="list-style-type: none"> • Standalone solid waste management plan will be prepared by KEMFSED to support operations. • To determine and characterize the amount of fish waste to be generated at the banda • To enter into agreements with fish waste recycling institutions for animal feeds • Sensitization and awareness creation among the beach users, restaurant operators, office building users and stalls users on the significance of waste separation and in addition provide for waste sorting bins at the landing site with clear labeling. • Provide for a waste transfer station that encourages waste segregation at the landing site preferably a skip by the county for temporal holding of waste before final disposal. • To engage the county government environment and natural resources department 	To ensure waste is managed properly	BMU and county government environment and natural resources and fisheries departments	To be determined under operation and maintenance costs
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6.	Hazardous waste management	contamination and littering	public nuisance, soil, water and air	<p>mandated with waste management to collect and properly dispose of the waste.</p> <ul style="list-style-type: none"> • Sensitization and awareness creation among fishers on reducing capturing non-targeted species. • Recovering of waste streams by adopting the fish processing operation appropriately • Reprocessing the fish waste to fish meals and oils • Recovering proteins from waste water and using for improving animal feeds • Procuring and using of durable equipment requiring less replacement by reducing frequency replacement needs • Adoption of solar equipment that are easily repairable and recycling friendly components to reduce the amount of waste generated and pumped into waste management systems • Adopting solar equipment with less hazardous substances by reviewing the 	to ensure waste is managed properly	BMU and county government environment and natural resources and fisheries departments	To be determined under operation and maintenance costs
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				environmental health and safety and going for preferred alternatives with less hazardous substances			
				<ul style="list-style-type: none"> • Use the solar equipment suppliers and servicing logistics to collect and safe disposal of obsolete component after replacement. • Early identification of solar e-waste collection and recycling locally • Consider partnering with NEMA local office for safe collection and disposal of the e-waste. 			
7.	Noise and Vibration	auditory injuries	Site workers, fishermen and other persons operating at the site	<ul style="list-style-type: none"> • Consider procuring the power backup generator to ensure that the ones with least noise impacts are procured, and using silencers/muffle • Regular servicing of the power backup generators. 	to ensure Workers and public safety	BMU and county government environment and natural resources and fisheries departments	To be determined under operation and maintenance costs
8.	Air Pollution	climate change and air quality degradation	maintenance workers, visitors, and neighbouring businesses	<ul style="list-style-type: none"> • Keep working and storage areas clean at all times • Empty and clean fat traps on regular basis • Store waste products in cold, closed and well-ventilated places and for short periods 	to ensure Workers and public safety	BMU and county government environment and natural resources and fisheries departments	To be determined under operation and maintenance costs

9.	Leakage and spillage (generator room and fuel storage areas)	fire incidence and pollution	storm drainage, soils and water sources	<ul style="list-style-type: none"> • The waste transfer systems, waste water canals, and water treatment facilities to be covered as a means of reducing the escape of foul smell • To install catalytic devices on the power backup generator to ensure complete burning of waste gases, • Use of clean petroleum that is low in sulphur, lead or other fuel additives, • Proper servicing of generator and other equipment using fuel, • Plant more vegetation as part of beautification and landscaping for carbon sequestration, • Incorporate secondary containment unit within the generator fuel storage • Storage areas should be covered and in compliance with the EPRA standards • Cleaning the backup generator regularly and checking for leaking parts which if spotted should be tightened if loose or replaced 	to deter oil and fuel spillage	BMU and county government environment and natural resources and fisheries departments	To be determined under operation and maintenance costs
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				<p>immediately</p> <ul style="list-style-type: none"> • Regular servicing of the generator to avoid spillage • Cleaning up fuel spills immediately it occurs and disposing off fuel-soaked absorbent materials. The absorbent materials will be maintained on site for emergency use. 			
10.	Waste water generation	increased waste water generation during operation	public nuisance, soil and water pollution	<ul style="list-style-type: none"> • Ensure adequate and accessible provision of sanitation facilities and ensure they are regularly cleaned, • Regular sensitization and awareness to users to discourage releasing detergents or other chemical solutions in black water system. • Regular cleaning of the wastewater drainage system • Regular and proper maintenance of the drainage system • Prompt response to any reported blockage and leakages • Sensitization and awareness of users from discharging or 	To ensure adequate treatment and management of waste water	BMU and county government fisheries department	To be determined under operation and maintenance costs

emptying any oils to the sewer system particularly from the boat yard.

- Treating the waste water through a bio-digester and using the water for landscaping.
- Fit grids and screens or traps to remove solid waste from waste water
- Application of sludge from waste water treatment as fertilizers by local farmers

11.	Fire Hazards	destruction of the proposed structures at site	Landing site visitors and persons operating at the landing site	<ul style="list-style-type: none"> • Provide recessed swinging type hose reel complete with 30 meters of 20mm internal diameter rubber fire hose with nylon spray/jet shut off nozzle • Provision of a Fire assembly point in the design • Installation of fire extinguishers in the building • Provide for fire risk and appropriate response equipment as well as signages with short and clear information. • Ensure flammables are stored 	To ensure the buildings are protected from fire hazards	BMU, county government Fire and fisheries departments	To be determined under operation and maintenance costs
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12.	Security concerns during operational face	Security risks during operations	Landing site and visitors	<ul style="list-style-type: none"> • in fire resistant areas • Train selected staff as fire marshals who can take lead in case of fire emergency in the building • Regular fire drills for the building users • Regular awareness and sensitization on fire safety measures and response to the users of the building. • Clear fire incidents reporting and response procedures. Ensure regular provision of operational emergency reporting contacts. • Regular servicing and maintenance of the fire extinguishers on site. • Ensuring availability of adequate water resources at the landing site at all times for the hydrants as per the OSHA requirements. • Implement access control systems that require secure methods of entry such as key cards, biometrics, or pin codes to manage who can enter the office 	To protect the building from vandalism, theft and attacks	BMU and County Government of Kwale	To be determined during operation
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				<ul style="list-style-type: none"> premises. • Install a comprehensive CCTV surveillance system covering all critical and vulnerable areas both inside and outside the office building. • Employ trained security personnel to monitor premises, conduct regular patrols, and manage entry points. • Equip the office with a state-of-the-art alarm system, including intrusion alarms and panic alarms, which can be activated in emergency situations to alert local law enforcement and security personnel immediately. • Implement robust cybersecurity measures to protect 			
13.	Concerns related to social conflicts	Social conflict from BMU on operations	BMU	<ul style="list-style-type: none"> • Ensure that all BMU members, including underrepresented groups, are actively 	The fish landing site can proceed with	BMU and County Government of Kwale	To be determined during operation

involved in the planning and decision-making processes.

- Establish clear and regular channels for communication between the fish landing site management and BMU members.
- Implement structured feedback mechanisms to allow BMU members to express concerns.
- Organize workshops and training sessions on conflict resolution and management for BMU members and leaders.
- Develop and enforce transparent protocols for the allocation and use of resources and facilities at the fish landing site.
- Implement programs that directly benefit the community, such as local hiring policies, community development projects, or environmental conservation efforts.

minimized social conflicts, fostering a cooperative and productive relationship with the local BMU.

14.	Deep water safety risks	To minimize life lost through deep water	BMU and County Government	<ul style="list-style-type: none"> • Provide comprehensive safety training for all BMU members involved in deep sea fishing. • Ensure that they are proficient in using safety equipment, understanding weather conditions, and executing emergency procedures. • Equip each vessel with essential safety gear, including life vests, emergency beacons, first aid kits, and radios for communication. • Develop and enforce guidelines for sustainable fishing practices to preserve marine biodiversity and maintain fish stocks. • Educate BMU members on the importance of adhering to quotas, using environmentally friendly fishing gear, and respecting fishing seasons and protected 	To ensure that fishermen are protected from risk of deep sea fishing	BMU, County Government of Kwale, Kenya Coast Guard Services	To be determined during operations
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				<ul style="list-style-type: none"> • areas. • Implement a routine inspection program for fishing vessels to ensure they are seaworthy and properly maintained. • Regular checks should focus on hull integrity, engine functionality, and the presence and condition of safety and navigation equipment. • Establish clear protocols and channels for addressing disputes among BMU members or between BMUs and other stakeholders. • Set up a conflict resolution committee within the BMU to handle grievances related to fishing territories, resource allocation, and operational practices. • 			
13	Deforestation concerns	To minimize dangers of deforestation at the	BMU at Fish landing site	<ul style="list-style-type: none"> • Implement Controlled Land Use Policies • Develop and enforce strict land use 	To limit environmental degradation at the site	BMU and County Government of Kwale	To be determined during operations

				<p>guidelines that restrict unnecessary clearing of trees around the fish landing site.</p> <ul style="list-style-type: none"> • Strictly control any other land alterations. • Reforestation and Afforestation Initiatives • Initiate reforestation projects to replace trees that were cut down during the construction. 			
15.	Increased Water consumption	pressure on existing water resources	Kwale water and sewerage company (KWAWASCO) and other water users	<ul style="list-style-type: none"> • Sensitization and awareness creation among users of the structures at the site on significance of water conservation measures. • Use of water efficient appliance such as delay taps • Regular maintenance and prompt response to leakage in the water system. • Use of alternative water sources eg rain water harvesting • Prompt reporting of leakages through sensitization of the public members • Storage tanks to have floaters to reduce wastage from spills when the tanks are full 	to ensure efficient and sustainable consumption of water resources	BMU, KWAWASCO and county government fisheries department	To be determined under operation and maintenance costs

16.	Increased Energy consumption	contribution to carbon generation and pressure on energy resources	energy resources and climate change	<ul style="list-style-type: none"> • Use of cleaning detergents that do not have adverse impacts • Sensitization and awareness creation among building users on the significance of energy conservation measures • Sensitization and awareness creation among the maintenance team to continue observing the use of energy-saving electrical appliances on the building. • Proper and regular maintenance of the green energy appliances and equipment provided for in the design of the building. • Monitor energy consumption and keep records • Adopt the alternative sources of energy such as solar (provided for in the design) • Maximize the use of natural light and ventilation (provided in the design) • Adoption of equipment with cooling efficiency for the fish banda. 	To ensure efficient and sustainable consumption of energy resources	BMU and county government fisheries department	To be determined under operation and maintenance costs
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				<ul style="list-style-type: none"> • Increase the use of energy efficient equipment for the fish banda 			
17.	Spread of COVID-19. During operation at work sites	Infection or loss of life	Office Users	<ul style="list-style-type: none"> • The county departments of fisheries to develop Standard Operating Procedures (SOPs) for managing the spread of Covid-19 during office operation and submit them for the approval by the county department of public health before use of the building. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific conditions; • Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all office users including visitors; • Install hand washing facilities with adequate running water and soap, or sanitizing facilities at building entrance including consultation venues and meetings and ensure they are used; • Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, door knobs, hand rails etc.; 	avoidance of infection	BMU, Public Health and fisheries County Government departments	To be determined under operation and maintenance costs

18.	Critical habitats	Interference with the marine reserve ecosystem	The marine reserve	<ul style="list-style-type: none"> • Capacity building all potential Mwaepe landing site users on the marine reserve regulations • Partnering with KWS in monitoring landing site operations in line with marine reserve regulations. • Fisheries department and landing site users monitoring species caught to detect source; whether offshore or inshore • Erecting signage at the landing site to show the presence of a marine reserve and regulations enforced 	Preserve the marine reserve	BMU, Public Health and fisheries County Government departments	To be determined under operation and maintenance costs
19.	Oil, Fuel and gaseous emissions and Spillage	increased oil, fuel and gaseous emissions and spillage during operation	public nuisance, air, soil and water	<ul style="list-style-type: none"> • Proper storage of oils and fuels at the site on a concretized platform which is bunded. • Regular servicing of mechanized equipment as per manufacturer specifications. • Equipment suppliers to train proponent on proper operation procedures and handling 	To ensure adequate management of machinery equipment and reduce oil, fuel and gaseous emissions and spillage.	BMU and county government fisheries department	To be determined under operation and maintenance costs

Table 7-3: Environmental and Social Management Plan (ESMP) during Decommissioning.

NO	ASPECT	IMPACT	RECEPTOR	MITIGATION MEASURES	GOAL	RESPONSIBILITY	COST (KES)
1.	Occupational Health and Safety <i>(accidents and Injuries)</i>	Injury and accidents	Workers	<ul style="list-style-type: none"> • Preparation of project decommissioning plan. • Ensure the safety of the decommissioning workers by putting first aid area and injury reporting mechanism • The contractor should consider having a WIBA insurance policy to compensate workers in an event of an accident on site. • Provide personal protective equipment to workers. • Recording all injuries that occur on site in the incident register, corrective actions for their prevention. • Cordoning off demolition sites to protect the public or unauthorized persons • use of signs and warnings on sites with high risks • Creation of awareness and training of workers on-site on safety and first aid skills. • Hiring employees with proper qualifications for specialized and risky tasks. • Ensure compliance to Occupational Safety and Health Act Cap. 514 and it's Subsidiary Legislations. 	to ensure workers safety	BMU, County Department of fisheries and decommissioning contractor	To be determined under the decommissioning plan
2.	Leakages and spills	contamination and	soil, water,	<ul style="list-style-type: none"> • In the event of hazardous waste leakage or spills, engage authorized waste handlers to 	to reduce contamination	contractor	To be determined

		pollution	plants, and air	dispose of contaminated soils.	on on site		under the decommissioning plan
				<ul style="list-style-type: none"> • Disposing of contaminated soils in cutting pit if volumes are low. • Use of NEMA licensed waste handlers to dispose of in licensed disposal sites. • Development of site-specific incident management or response plan. • Use of an authorized garage or fuel station in the project area by the contractor or specific concrete and oil traps should be constructed at the contractor's yard. 			
3.	Excessive Noise	Auditory injuries and psychological nuisance	workers, operators at the site neighbouring residents and visitors to the site	<ul style="list-style-type: none"> • Adequate use of PPE by the workers e.g. earplugs • Working on and restricting noisy activities during the day • Reducing the duration of exposure of workers to high occupational noise levels during demolition. • Acquisition of permits/Licenses for any activity with high noise levels eg drilling of walls or slabs for demolition. • Using models of machines and equipment with low noise levels. • workers using drilling or handheld pneumatic equipment to be provided with specialized anti-vibrating gloves, • Switching off vehicles and machines when not in use, • Avoiding unnecessary hooting, • Warnings to be issued to the locals in case of any unusual noise levels, 	to ensure workers and public safety	BMU, County department of fisheries and decommissioning contractor	To be determined under the decommissioning plan

				<ul style="list-style-type: none"> • Ensure that NEMA noise and Vibration standards are observed in all project activities. 			
4.	Air pollution	contamination of air	air, Operators at the site, Visitors to the site and workers	<ul style="list-style-type: none"> • Workers to use masks when working in dusty conditions during the decommissioning process. • Use all means possible to suppress dust if considered to be a menace during demolishing of obsolete walls or structures on-site 	to ensure workers and public safety	BMU, County department of fisheries and contractor	To be determined under the decommissioning plan
5.	Solid Waste generation	littering environment and contamination	water, air, soils, environment, and operators or visitors at the site	<ul style="list-style-type: none"> • Proper disposal of any hazards waste from the decommissioned site. • Preparation of waste management plan to guide waste management and disposal activities of all debris from demolition activities. • Disposal of debris to NEMA authorized dumping sites • Use of certified vehicles or NEMA licensed waste disposal firms for waste management and disposal 	to ensure waste is managed properly	county department of environment and natural resources, department of fisheries and decommissioning contractor	To be determined under the decommissioning plan
6.	Spread of COVID-19. During construction at work sites	Infection or loss of life	workers and members of the public accessing the site for some reason	<ul style="list-style-type: none"> • The Contractors will develop standard operating procedures (SOPs) for managing the spread of Covid-19 during project decommissioning and submit for approval to the county department of public, before mobilizing to site. The SOPs shall be in line with Ministry of Health Directives and site-specific project conditions; • Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall 	avoidance of infection	contractor and the joint supervision committee	To be determined under the decommissioning plan

				<ul style="list-style-type: none"> be required for all project personnel • Install hand washing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used; • Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, door knobs, hand rails etc.; 			
7.	Socio-economic	Loss of livelihood	Workers	<ul style="list-style-type: none"> • Providing training to build local skills tailored to project decommissioning and post-decommissioning activities. • Providing training to transfer project-learned skills to alternative and secondary industries tailored to respond to market economy • Work closely with communities to reduce negative impacts associated with termination of employment at the end of the operational phases • Provide counselling and capacity building in preparation for decommissioning 	Avoid loss of livelihoods	BMU, County department of fisheries and decommissioning contractor	To be determined under the decommissioning plan
8.	Physical cultural resources	Destruction or loss of physical cultural resources	Historical and cultural resources	<ul style="list-style-type: none"> • Preserve historical and cultural resources as is. • Design the scope of work around the existent historical and cultural resources. • Provide reinforcement support to the existing historical and cultural resources where need be, 	Preserve historical and cultural resource	BMU, County department of fisheries and decommissioning contractor	To be determined under the decommissioning plan
9.	Critical habitats	Interference with the marine reserve ecosystem	The marine reserve	<ul style="list-style-type: none"> • Ensuring all decommissioning work does not go beyond the high-water mark • Restricting all construction operational activities away from then beach areas. • Capacity building all workers on the marine reserve regulations 	Preserve the marine reserve	BMU, County department of fisheries and decommissioning contractor	To be determined under the decommissioning plan

10.	Loss of employment	Reduce impacts related to loss of livelihood	<ul style="list-style-type: none"> • Implement programs that offer retraining and skill development for workers affected by the decommissioning. • Providing guidance and support for transitioning into new roles is essential for helping workers adapt to changing job markets. • Inform employees well in advance about the decommissioning schedule and the potential impact on their employment. • Offer support services such as career counseling, job placement assistance, and financial planning workshops to prepare them for the transition. 	Livelihood transitioning during decommissioning	BMU, County department of fisheries and decommissioning contractor	To be determined during the decommissioning phase
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8. ENVIRONMENTAL AND SOCIAL MONITORING PLAN (ESMOP)

8.1. Chapter Overview

The chapter highlights the environmental and social monitoring indicators for the anticipated negative and positive impacts during construction phase are as captured in Table 8-1 and Table 8-2 for the operation phase. The institutional responsibilities for implementation and supervision are presented in Section 3.8 of this report. The progress reports prepared, incorporating ESMP implementation progress status, shall be on a monthly and quarterly basis. The contractor in consultation with the supervising consultant and the client safeguards team shall develop a monitoring plan that will form part of the C-ESMP and capture all the parameters under Table 8-1

The client (SDBE&F) including the project joint supervising committee and the safeguards consultants shall review the reports and submit to the World Bank. The contractor in liaison with the supervising consultant shall prepare the as-built drawing together with the operation and maintenance manuals for all the facilities on site, and in it shall incorporate the requirements under Table 8-2. In addition to regular reporting, 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 in line with the requirement of the World Bank EHS guidelines, Occupational Health and Safety Act (OSHA) 2007 and EMCA CAP 387. Investigation shall be conducted, and a corrective action plan developed for every reportable incident to prevent recurrence.

Table 8-1: Environmental And Social Monitoring Plan (ESMoP) during construction phase of the project

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
Occupational Health and Safety	construction site	<p>Maintain a digital log or a physical record book where each scheduled and completed inspection is recorded and signed off by the responsible safety officer. Regular audits can be conducted to verify entries against actual inspections.</p> <p>Implement an automated incident reporting system where injuries can be logged in real-time. Use software that timestamps submissions and tracks the review process, ensuring that each report is assessed within 24 hours.</p> <p>Regularly review and validate the insurance policy documents and coverage details with the</p>	<ul style="list-style-type: none"> ▪ Availability of site safety action plan ▪ Proportion of trained workers on safety and first aid skills ▪ First aid facility and injury reporting mechanism ▪ Appropriate use of personal protective equipment (PPE) (<i>Reflective jackets, helmets, face masks, ear plugs gloves, safety boots, etc.</i>) ▪ Proportion. of trained workers on appropriate use of PPE. ▪ Adequacy of sanitation facilities on site ▪ Incident register ▪ Contractor WIBA insurance policy ▪ No of watering points for worker on site with clean water ▪ MoU with health centre. ▪ Covid-19 management rules/guidelines on site ▪ Covid-19 PPE and use on site. ▪ No of trained workers on covid-19 rules 	Daily	Contractor	Supervising Consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>insurance provider.</p> <p>Maintain a database that records policy expiry, renewal dates, and coverage details, and set up alerts for any upcoming renewals or lapses.</p> <p>Conduct random inspections and use checklists to assess and document PPE compliance among workers. Statistical sampling can provide an accurate measure of overall compliance.</p> <p>Keep a centralized training register that logs all training sessions, topics, dates, attendees, and feedback. This register should be regularly updated and reviewed to ensure high participation.</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>Develop a dashboard or tracking tool to monitor the completion of action items listed in the health and safety plan. Each task can be assigned a status (e.g., pending, in progress, completed) to facilitate real-time updates.</p> <p>Physically map and inspect all drinking water points to ensure compliance with the specified criteria. Regular testing of water quality at these points can also be integrated into the monitoring process.</p> <p>Use a standard checklist during monthly audits to evaluate cleanliness and order at the site and contractors' camp. Photographs and audit</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>reports can serve as documentation for compliance.</p> <p>Maintain an inventory management system that tracks the distribution and condition of safety equipment. Similarly, a digital record of all issued training certificates should be kept, allowing easy verification and access.</p> <p>Regularly scheduled inspections should be recorded in a maintenance log, verified by environmental health officers. Use a ratio of the number of facilities to the number of workers as a standard measure to ensure adequacy and compliance.</p>				
COVID-19 spread among	Construction site and	Maintain records of all Standard Operating	<ul style="list-style-type: none"> Approved SOPs in line with World Bank and ministry of health guidelines 	weekly	Contractor	Supervising consultant and

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
workers	operating office	<p>Procedures (SOPs) that have been reviewed and approved. Schedule periodic audits to ensure ongoing compliance with updates from the World Bank and the Ministry of Health.</p> <p>Keep a log of all fumigation activities, including dates, areas, and tools fumigated, and the chemicals used. Regularly review the log to ensure adherence to the fumigation schedule.</p> <p>Conduct regular inspections to ensure that all sanitizing and hand washing stations are adequately stocked and maintained. Checklist inspections can be used to verify the presence and condition of these facilities.</p>	<p>in place,</p> <ul style="list-style-type: none"> • No of routine fumigation of shared area and shared tools, • Sanitizing and hand washing area and facilities put in place • Isolation area, • proper use of covid-19 PPE, • visual inspection of social distance and <p>rapid covid-19 screening measures put in place</p>			County department of public health.

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>Regularly inspect the designated isolation areas to ensure they are properly equipped and ready for use. Inspections should check for cleanliness, ventilation, and availability of medical supplies.</p> <p>Implement spot checks and regular reviews of CCTV footage (if available) to ensure that all personnel are using PPE correctly. Use checklists during inspections to assess compliance.</p> <p>Periodically observe operations to ensure adherence to social distancing guidelines. This can be achieved through regular walkthroughs and</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>reviewing surveillance footage.</p> <p>Keep detailed records of all COVID-19 screenings conducted, including dates, number of people screened, and results. Regularly review these records to ensure compliance with health screening protocols.</p>				
COVID-19 spread among community members during consultations	at construction site	visual inspection of social distance, provided electronic channels adopted for engagement of stakeholders, monitoring the number of stakeholders per meeting, provision of appropriate PPE during meetings, use of traditional communication channels, provided feedback and suggestion platforms for participants, monitored	<ul style="list-style-type: none"> • electronic channels adopted for engagement of stakeholders • Measures to observe social distance put in place • Covid-19 PPE use on site • Use of Covid-19 PPE during community engagement • Traditional Communication channels adopted • No. of stakeholders per meeting, • No of digital platform adopted • Online services of community engagement put in place • feedback and suggestion platforms for participants, • No of people attending meetings 	regularly based on the consultation sessions	Contractor	supervising consultant and County department of public health.

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		size of groups attending meetings and digital platforms in use to disseminate information to stakeholders				
Public health and safety	Areas surrounding the construction site.	visual inspection of site for; safety signs at strategic places, cordoned off working sites to protect the public or unauthorized persons, usage of signs and warnings on sites with high risks, controlled speeding of construction vehicle and consideration of wind action. Reviewed reported injuries and accidents and No. of grievances reported.	<ul style="list-style-type: none"> ▪ Safety signs at high-risk place. ▪ Hording off working site ▪ Speed limit ▪ No of awareness and sensitization activities 	weekly	Contractor	supervising consultant
Leakages and spills of greases, oil or fuel	contractor yard and construction site	Visual inspection of hazardous waste leakage or spills to soils on site, Reviewed records of cutting pits for disposed off contaminated soils,	<ul style="list-style-type: none"> ▪ No of incidents of hazardous waste leakage or spills. ▪ availability of site-specific incident management and response plan. ▪ Oil trap measures at contractors' yard in the event of one 	weekly	Contractor	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		Reviewed developed site-specific incident management or response plan.				
Noise and vibrations	construction site	<p>Regularly schedule inspections to verify that all equipment being used meets the specified noise reduction standards.</p> <p>Inspections should include checking that mufflers and other noise-reducing modifications are properly installed and maintained.</p> <p>Document inspection results and address non-compliance immediately.</p> <p>Conduct daily walkthroughs of the construction site to visually confirm that all workers are using the appropriate PPE, such as earplugs or earmuffs in noisy areas. Use a</p>	<ul style="list-style-type: none"> • Noise regulation measures on construction equipments. • No of Equipment and Machine servicing records • No of public notices on high noise level activities • use of noise PPE • Guideline on hooting and speed limits. • Records of noise monitoring 	weekly	Contractor	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>checklist to ensure consistency in inspections and maintain records of inspection results.</p> <p>Monitor the installation and maintenance of soundproof materials through regular inspections.</p> <p>Verify that soundproof barriers or enclosures are correctly positioned and in good condition to effectively minimize noise pollution.</p> <p>Notices to Public on Noisy Construction Activities:</p> <p>Keep a record of all public notices issued regarding noisy construction activities.</p> <p>Regularly check that notices are clearly visible</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>and provide accurate information about the timing and duration of the activities.</p> <p>Feedback from the community can also be monitored to gauge the effectiveness of the communication.</p> <p>Implement a schedule tracking system to monitor the timing of noisy activities, ensuring they are restricted to designated daytime hours. Regular audits can be conducted to ensure compliance, with non-compliance incidents being recorded and addressed.</p> <p>Use sound level meters to conduct regular noise measurements at the site and surrounding areas.</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		Measurements should be recorded systematically, preferably at the same time each day or week to track trends and identify any deviations from the noise standards set in the ESMP. mobile phone gadgets.				
Air quality	Construction site and along construction vehicle movement routes	Implement a system where vehicle emission tests and maintenance records are regularly checked. Schedule periodic inspections to physically review these records and ensure all vehicles comply with emission standards. Non-compliance issues should be documented, and corrective actions should be enforced. Visual Inspection of Use of Masks While Working in Dusty Conditions: Conduct daily or frequent spot checks on	<ul style="list-style-type: none"> • No of sources of air pollution on site • Certificates of inspection on emission for vehicles • Proportion of Workers using air pollution PPEs • Presence of Speed limits enforcement measures • No of times sand and soil material are covered in transit. • No. of air quality related complaints received 	daily	Contractor	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>the site to visually verify that workers in dusty areas are wearing appropriate masks. Utilize a checklist to record compliance, and provide immediate corrections and reminders where necessary.</p> <p>Regularly inspect the installation and condition of windbreaks or other shielding methods used to mitigate wind impacts at the construction site. Ensure that these protective measures are properly positioned and maintained to be effective throughout the construction phase.</p> <p>Enforce a speed limit for all construction vehicles within the site and use speed monitoring devices such as radar guns or installed speedometers to ensure compliance.</p> <p>Regular audits can be conducted, and drivers</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>found exceeding speed limits should be addressed according to site safety protocols. Schedule regular technical inspections to check the functionality and condition of catalytic converters and other emissions-control devices installed on construction vehicles. Keep a log of inspection dates, findings, and any maintenance performed to ensure devices are operating efficiently. Monitor dust suppression techniques such as water spraying, covering of loose material, and use of dust suppressants through regular site visits.</p>				
Waste generation	Construction site	Visual inspection of; sanitation facilities for human waste management, amount of waste correctly disposed, Visual inspection of	<ul style="list-style-type: none"> • No of sanitation facilities on site for workers • Availability of Site-specific waste management plan • Measures of waste avoidance, reduction, reuse and recycle put in 	Monthly	Contractor	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		haphazard littering, practicing of waste avoidance, reduction, reuse and recycle, designated waste transfer station onsite, documented approved waste dumping site, presence and compliance to implementations of site-specific waste management plan.	<p>place.</p> <ul style="list-style-type: none"> • Designated waste transfer station on site. • Records of approvals from NEMA and County Government on waste management and disposal. 			
Grievances among project stakeholders	construction site	<p>Maintain a formal record of the formation of the grievance redress committee, including the names, roles, and contact information of all members.</p> <p>Regular meetings of the committee should be scheduled, and minutes should be recorded and reviewed to ensure the committee is active and functioning as intended.</p> <p>Perform regular audits to confirm the presence and</p>	<ul style="list-style-type: none"> • Grievance redress committees put in place • Contractor staff grievance structures put in place • No. of sensitization and awareness events • No. of grievance log 	Monthly	contractor and safeguards officer	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>accessibility of grievance redress structures. This includes checking physical locations where grievances can be filed, as well as digital platforms or hotlines if available.</p> <p>The review should assess not only the existence but also the effectiveness and visibility of these structures to stakeholders.</p> <p>Implement training sessions and informational meetings to educate all workers and stakeholders about the available grievance redress mechanisms.</p> <p>Track attendance and participation in these sessions.</p> <p>Establish a protocol for maintaining a centralized log of all grievances filed.</p>				
HIV/AIDS prevalence	Construction site	Track the number and frequency of awareness sessions conducted at the	<ul style="list-style-type: none"> No. of HIV/AIDS prevention messaging 	Monthly	contractor	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>site.</p> <p>Maintain records of attendance and topics covered during these sessions.</p> <p>Use pre- and post-campaign surveys to measure changes in workers' knowledge and attitudes towards HIV/AIDS prevention.</p> <p>Review the distribution and availability of educational materials such as brochures, posters, and flyers around the construction site.</p> <p>If on-site testing is provided, monitor the number of testing events organized.</p> <p>The follow-up actions for any workers who test positive.</p> <p>If there's an MoU with a local health facility,</p>	<ul style="list-style-type: none"> • No. of workers having access to safe sex (condoms-Male and female) • HIV testing services or a MoU with an existing government health facility. • No. of supported infected workers with ARVs • Peer counseling services put in place 			

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>regularly review the MoU compliance, tracking how many workers are referred, attend, and receive testing services.</p> <p>Document any barriers to accessing these services and address them promptly.</p> <p>Support for Infected Workers (ARVs and Peer Counseling Services)</p> <p>Track the implementation of support programs for workers who are HIV positive.</p> <p>Monitoring the distribution of antiretroviral drugs (ARVs), ensuring they are available and accessible to those who need them.</p> <p>For peer counseling services, keep records of</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>session schedules, attendance.</p> <p>Periodic evaluations of the counseling's impact on affected workers' well-being.</p>				
Gender Equity, Sexual Harassment and abuse amongst workers in the workplace	construction site	<p>Regularly distribute surveys or feedback forms to gather anonymous information on workers' perceptions of gender equity within the workplace.</p> <p>Regularly review the gender composition of the workforce at all levels of the organization to ensure equitable gender representation.</p> <p>Tracking promotions, pay grades, and hiring practices to detect any form of gender bias.</p> <p>Establish and maintain confidential reporting mechanisms, such as hotlines, suggestion</p>	<ul style="list-style-type: none"> • No of Sexual Harassment and Non-Discrimination Policy • No of women and men employed • No of sanitation facilities disaggregated along gender considerations • No of reported harassment cases • No of trained and sensitized employees on appropriate behavior • No of signed code of conduct against SH • No. of Gender action plan 	Monthly	contractor	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>boxes where workers can report instances of harassment or abuse.</p> <p>Conduct regular training sessions on sexual harassment policies and prevention strategies for all employees, including management.</p> <p>Monitor attendance and participant engagement to ensure comprehensive understanding and compliance.</p> <p>For every reported incident, track the investigation process, follow-up actions, and resolution outcomes to ensure cases are handled promptly and effectively.</p> <p>Regularly review the resolution process to ensure it is in line with the company's policies and legal requirements.</p> <p>Regularly review and</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>update workplace policies on gender equity and sexual harassment to align with the latest legal requirements and best practices.</p> <p>Ensure these policies are clearly communicated to all employees.</p> <p>Initiate regular awareness campaigns to educate workers about their rights and available support regarding gender equity and sexual harassment.</p>				
GBV at community	construction site	<p>Establish accessible and confidential reporting mechanisms for GBV cases-hotlines, online platforms, and confidential consultation rooms at local community.</p> <p>Ensure these services are staffed by trained personnel who can</p>	<ul style="list-style-type: none"> ▪ No. of community engagement and consultation with women and girls; ▪ No. of sub-project activities identified to be of high GBV risk at community level. ▪ Referral mechanisms put in place in the event of GBV at Community level 	Quarterly	safeguards officer	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>handle sensitive information and provide appropriate support or referrals.</p> <p>Keep a secure and confidential database of all GBV incidents reported through these channels.</p> <p>Regularly review and analyze the data to identify patterns or hotspots of GBV within the community, which can help in targeting interventions more effectively.</p> <p>Conduct regular surveys within the community to gauge perceptions of safety, incidences of GBV, and awareness of available support services.</p> <p>Implement a feedback mechanism that allows community members to</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>provide input on the effectiveness of existing GBV prevention and response initiatives. Collaboration with Local NGOs and Women's Groups that specialize in GBV. These partnerships can enhance community outreach, provide expertise in handling cases, and help in conducting educational and awareness programs. Organize regular training sessions for community leaders, health workers, and volunteers on how to identify, respond to, and prevent GBV.</p>				
GBV: Sexual exploitation and abuse (SEA)	Construction site	Implement safe, accessible, and confidential reporting channels such as hotlines, online reporting forms, and designated	<ul style="list-style-type: none"> ▪ SEA management action plan ▪ Signed code of conduct (CoC) by all workers and sub-contractors ▪ No. of workers trained on CoCs and responsibilities ▪ Project-level IEC materials put in place 	Quarterly	safeguards officer	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>safe spaces within the community or organization where individuals can report SEA incidents without fear of stigma or retaliation.</p> <p>Maintain a confidential database to log and track all reported incidents of SEA.</p> <p>Regularly analyze this data to identify trends, high-risk areas, or repeated offenses, which can help in taking targeted preventive measures and swift corrective actions.</p> <p>Conduct awareness campaigns and training sessions for all members of the community or organization, including specific training for managers and leaders on how to handle reports of</p>	<ul style="list-style-type: none"> ▪ Survivor-centred mechanisms put in place ▪ Multi-sectoral referral and assistance plan put in place ▪ Disciplinary procedures at the project put in place ▪ Confidential community-based complaints mechanisms in place ▪ PSEA awareness-raising done ▪ community-level IEC materials put in place ▪ No of community outreach to women and girls about social risks and their PSEA-related rights; ▪ Integration of SEA in job descriptions, employments contracts, performance appraisal systems, ▪ Whistle-blower protection and investigation and disciplinary procedures put in place ▪ No. of training of project staff on SEA conducted 			

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		<p>SEA ethically and legally.</p> <p>Monitoring the frequency, attendance, and feedback of these sessions will help gauge their effectiveness and the level of community engagement.</p> <p>Implement feedback systems that allow employees to comment anonymously on the effectiveness of SEA policies and interventions.</p> <p>Forge partnerships with NGOs, advocacy groups, and experts in GBV and SEA to benefit from their expertise in handling sensitive cases, training, and preventive measures. These organizations can also conduct third-party audits of the SEA monitoring system to</p>				

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
		ensure its effectiveness and impartiality. Arrange for periodic reviews and audits by external consultants or auditors who specialize in SEA and GBV.				
Child Labour and Protection	construction site	Workers to have national identification card, recruitment policy prohibiting child labour put in place and review of employee records	<ul style="list-style-type: none"> ▪ Records of employees including copies of identification cards ▪ Records of child sexual relations offenses reported to the police. ▪ Recruitment policy prohibiting child labour put in place ▪ No of employee records reviewed 	Monthly	safeguards officer	supervising consultant
Labour and employment-related issues	Construction site and contractors' office	Physical counts and inspection of records on;	<ul style="list-style-type: none"> ▪ No of local workforce as a proportion of all workers ▪ Community engagement plan ▪ A comprehensive CoC, signed by all workers and the contractors ▪ No of sensitization meeting on local social and cultural practices on acceptable behavior ▪ Labour Management Plan (LMP) 	Monthly	safeguards officer	supervising consultant
Physical cultural resources	Construction site	Physical inspection of cultural resources on site	<ul style="list-style-type: none"> • No. of historical and cultural resources preserved • No of sensitization meeting on historical and cultural resources • Community engagement plan including historical and cultural resources 	Monthly	safeguards officer	supervising consultant

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
Critical habitats	Construction site	Visual and physical inspection of scope of activities on site	<ul style="list-style-type: none"> No of sensitization meeting on critical habitats and the Diani-Chale Marine reserve Community engagement plan including the Diani-Chale Marine reserve No. of marine safe technologies invested at the landing site 	Monthly	safeguards officer	supervising consultant

Table 8-2: Environmental and Social Monitoring Plan (ESMoP) during operation and maintenance phase

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
Occupational Health and Safety	Fish Banda, Polyfunctional building, restaurants and the public toilet	Physical inspection of the records and the site	<ul style="list-style-type: none"> Registration of the facilities as workplace. Certificate of occupation for all the buildings Number of trained staff on appropriate use of PPEs No of incidences recorded on site strip curtains installed to cold stores and chill stores No of staff sensitized on proper use and maintenance of cutting equipment and provision of protective equipment 	Daily	The BMU and Operator of the fish Banda and other facilities	County fisheries department

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
			<p>(metallic gloves, leather aprons and rubber soles.</p> <ul style="list-style-type: none"> • Demarcated working space to minimize flow of processes from crossing. • No of employees hired with proper qualifications for specialized and risky tasks. <ul style="list-style-type: none"> ▪ No of working shifts 			
Public health and safety	The landing site	visual inspection of the site and inspection of the records on site	<ul style="list-style-type: none"> • committee in charge of public safety, sanitation and hygiene constituted • Regular monitoring reports shared by the public health officer • signage on site during cleaning, maintenance, or repair to warn the public • Clear fire management system on site. 	Quarterly	BMU	County fisheries Department
Hazardous Waste management	The landing site	visual inspection of the site and inspection of the records on site	<ul style="list-style-type: none"> • MoU with a solar equipment suppliers and servicing logistics to collect and safe disposal of obsolete component after replacement. • Early identification of solar e-waste collection and recycling locally • No of engagement meetings with NEMA local office for safe collection and disposal of the e-waste. 	Quarterly	BMU	County fisheries Department

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
			•			
Leakages and spills of greases, oil or fuel	Power backup generator room	physical and record inspections	<ul style="list-style-type: none"> ▪ No of incidents of hazardous waste leakage or spills. ▪ availability of site-specific incident management and response plan. ▪ Oil trap measures at the generator room • Certificates of inspection and servicing of the power backup generator 	Quarterly	BMU	County fisheries Department
Noise and vibrations	Power backup generator	Visual and record inspections	<ul style="list-style-type: none"> • Installing silencers/muffle on the generator • No of generator servicing records 	Quarterly	BMU	County fisheries Department
Air quality	Power backup generator	Visual and record inspections	<ul style="list-style-type: none"> • Certificates of inspection and servicing of the power backup generator • No of fat traps cleaned • Records of Stored waste products in cold, closed and well-ventilated places and for short periods • No of waste transfer systems, waste water canals, and water treatment facilities covered • catalytic device installed on power backup generator • Vegetation planted and landscaping activities 	Quarterly report	BMU	County fisheries Department

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
Waste generation	Landing site	Physical inspection of the site and inspection of records	<ul style="list-style-type: none"> • MoU with fish waste recycling institutions for feeds. • No of Sensitization and awareness meeting conducted to users of the site on proper waste management • No of waste bins provided on site per waste stream • Designated waste transfer station on site • No of monthly waste tipping • No of sensitization and awareness creation meeting on non-targeted species capturing. • Conversion of fish waste to fish meals and oils • Weight of proteins recovered from waste water 	Monthly	Contractor	supervising consultant
Grievances among project stakeholders	Landing site	Physical inspection of the site and inspection of records	<ul style="list-style-type: none"> • Grievance redress committees put in place • Landing site grievance management structures put in place • No. of sensitization and awareness events to landing site users • No. of grievance logged 	Monthly	BMU	County fisheries Department
Waste water generation	Waste water system and	Laboratory tests, Physical site and record	<ul style="list-style-type: none"> • Waste water quality monitoring report to ensure they meet 	Monthly	BMU	County fisheries Department

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
prevalence	premises on the landing site	inspection	<p>permissible limits before discharging to the environment</p> <ul style="list-style-type: none"> • No of sensitization and awareness impacts of releasing detergents or other chemical solutions in black water sys • em. • Cleaning of wastewater drainage system • Certificate of maintenance of the drainage system • Response time to reported blockage and leakages • Amount of oil in sewer water. • No of grids and screens or traps to remove solid waste from waste water • No of local farmers Applying use of sludge from waste water treatment as fertilizers 			
Fire Hazard	Landing site	Physical site and record inspection	<ul style="list-style-type: none"> • Clear Fire assembly point • Installed fire extinguishers • Fire signages with short and clear information. • No of Trained staff as fire marshals. • No of fire drills for the building users • No of users taken through awareness 	Quarterly	BMU	County fisheries Department

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
			<ul style="list-style-type: none"> and sensitization on fire safety measures and response. • Presences of fire incidents reporting and response procedures. • Displaying of operational emergency reporting contacts. • Certificates of servicing and maintenance of the fire extinguishers on site. • Sources of water resources for the fire hydrants 			
Security	Landing site premises	Physical site and record inspection	<ul style="list-style-type: none"> • Installed CCTV surveillance system covering all critical and vulnerable areas • No of trained security personnel employed to monitor premises. • State-of-the-art alarm system installed 	Quarterly	BMU	County fisheries department
Concerns related to social conflicts	Landing site	Physical site and record inspection	<ul style="list-style-type: none"> • No of inclusive planning and decision-making meetings conducted. • channels for communication for management and BMU members. • feedback mechanisms in place. • No of BMU members trained on conflict resolution, management and 	Quarterly	BMU	County fisheries department

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
			<p>leadership.</p> <ul style="list-style-type: none"> • Protocols for the allocation and use of resources and facilities at the fish landing site 			
Deep water safety risks	Landing site	record inspection	<ul style="list-style-type: none"> • No of BMU members trained on safety on deep sea fishing. • Bad weather early warning system put in place • No of deep-sea fishing boats installed with safety equipment • Guidelines for sustainable fishing practices • No of BMU members trained on sustainable fishing • Certificate of inspections for fishing vessels. • Certificate of maintenances of the boats. • protocols and channels for dispute resolution. • conflict resolution committee formed 	Quarterly	BMU	County fisheries department
Increased Water consumption	Water appliances	Physical site record inspection	<ul style="list-style-type: none"> • Regular monitoring of water resources uses and quality with an objective ensuring • Sensitization and awareness meetings for water conservation measures. 	Quarterly	BMU	County fisheries department

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
			<ul style="list-style-type: none"> No of water efficient appliance installed on site Time taken to respond to leakage in the water system. No of alternative water sources Time taken to report of leakages No of storage tanks having floaters. 			
Increased Energy consumption	Energy appliances	Physical site record inspection	<ul style="list-style-type: none"> No of building users sensitized on the significance of energy conservation measures Regular energy audit reports No of sensitization and awareness creation meetings on use of energy-saving electrical appliances on the building. Certificate of maintenance of the green energy appliances. Amount of energy consumption records No of alternative sources of energy adopted Amount of time of using natural light and ventilation No of energy efficient equipment used at the fish banda 	Quarterly	BMU	County fisheries department

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
Critical habitat	Marine Reserve	Physical site record inspection	<ul style="list-style-type: none"> No of capacity building meetings for Mwaepe landing site users on the marine reserve regulations Collaborative meetings between KWS in monitoring landing site operations in line with marine reserve regulations. Joint monitoring of species caught to detect source Signage at the landing site to show the presence of a marine reserve and regulations enforced Community engagement plan including the Diani-Chale Marine reserve 	Quarterly	BMU	County fisheries department

Table 8-3: Environmental and Social Monitoring Plan (ESMoP) for Positive Impacts

PARAMETER / ACTIVITY	LOCATION	MEANS OF MONITORING	INDICATORS	FREQUENCY	RESPONSIBLE AGENCY	
					IMPLEMENTED BY	SUPERVISED BY
Employment opportunities	Construction site	<p>Establish a system to regularly collect and analyze employment data, including the number of jobs created by the project, the types of positions filled, and the demographics of the workforce (e.g., local vs. non-local hires, gender, minority groups).</p> <p>Conduct regular audits to ensure that employment practices comply with the ESMP’s standards, local labor laws, and any commitments made to hiring local community</p> <p>Engage independent auditors to periodically review employment records and practices to ensure objectivity and to identify any potential discrepancies or areas for improvement.</p> <p>Develop mechanisms for community members and stakeholders to provide</p>	<ul style="list-style-type: none"> ▪ proportion of local workers employed at construction site relative to overall workforce ▪ No of local service providers employed on site to provide security or electrical conduits or cables. 	Monthly	Contractor	supervising consultant

feedback on employment practices. This could include community meetings, surveys, or suggestion boxes. Track the implementation and effectiveness of any training and development programs aimed at improving local hire capabilities. This includes monitoring participation rates, the completion of training sessions, and the subsequent employment of trained individuals. Monitor the alignment of the skills provided through training programs with the actual needs of the project, ensuring that training effectively prepares local community members for available positions.

Business opportunities	Construction site	<p>Create and maintain a database of local suppliers and contractors.</p> <p>Regular audits of procurement processes to ensure compliance with ESMP guidelines that prioritize local businesses.</p> <p>Hold regular meetings with local business owners and</p>	<ul style="list-style-type: none"> ▪ Number of materials Sourced locally ▪ No of local suppliers ▪ No of local women food vendors supplying the site. 	Monthly	Contractor	supervising consultant
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community leaders to discuss upcoming opportunities.

Gather feedback on the procurement process, and address any concerns related to business participation.

Implement feedback systems through surveys or suggestion boxes that allow local businesses to express their views on the fairness and accessibility of business opportunities.

Offer training programs for local businesses on how to effectively bid for contracts, meet project standards, and manage business growth.

Monitoring these programs includes tracking participation rates and subsequent success in securing contracts.

Provide workshops focused on specific skills needed to meet the requirements of the construction project, such as safety standards, quality assurance, and environmental management.

Regularly publish reports on how business opportunities

		are allocated among local and non-local businesses. Ensure that all procurement processes are transparent, with clear criteria and timelines, and are widely communicated to potential local business participants.				
Fish landing data	Construction site	Routine recording of landed catches (weight and species)	Catch records of fish landings at the site	Daily	BMU	County
		Scientific monitoring of landed catches	<ul style="list-style-type: none"> ▪ Catch records of fish landings 	Quarterly	KMFRI	County
Acquiring a structure	operation	a Poly-functional building, a boat yard facility, Fish Banda, 2 No restaurant, ablution block, 7 No. stalls, fish gear shed, Boundary wall, 2 No. gate houses, a monumental gate, painting of existing historical Ngozi therapy hub, landscaping works, civil works (slipway, road, parking and drainage construction),)	Operational structures	Monthly	Contractor	supervising consultant

9. GRIEVANCES MANAGEMENT SYSTEM AND PROCEDURE

9.1. Chapter Overview

This chapter describes the procedures and mechanism through which community members, operators at the site, BMU members, visitors visiting the site and any other sub-project aggrieved parties will be able to report, make, place/lodge or express a grievance against impacts from construction activities of proposed Mwaepe landing site improvement infrastructures or the contractor activities as part of the ESIA/ESMP implementation. The chapter generally outlines the need for a grievance redress mechanism, grievance redress structure, grievance redress procedure, institutional arrangement and awareness and sensitization on grievance redress mechanism.

9.2. Need for Grievance Mechanism

The implementation of proposed Mwaepe landing site improvement infrastructures are anticipated to generate perceived or actual grievances from sub-project interested parties who could be community members, current operators at the site, BMU members, visitor visiting the site, neighboring residents, workers, individuals, groups or county officers from other departments affected or likely to be affected by environmental and social impacts of the construction activities. In light of this, there is need to anticipate and put in place a grievance redress mechanism to outline approach to accepting, assessing, resolving and monitoring of grievances from aggrieved parties on implementation activities of the proposed Mwaepe landing site improvement infrastructures sub-project. A grievance is any dissatisfaction or sense of injustice or unfairness felt by a person – in this respect a project affected person or his/her representative in connection matters related to labour, project impacts, GBV-SEA, the work implementation process, the project developer, the contractor and other scenarios related to project implementation. The grievance is usually brought to the attention of the person(s) in charge, referred to in this ESIA report as the Grievance Officer (GO) designated by the project implementation team, in this case, we have assigned the contractor safeguards Officer as the grievance officer for this sub-project.

9.2.1. Scope of the GRM

The scope of GRM system will be to deal with grievances related to construction works – particularly issues related to recruitment of unskilled labour; ensuring fairness in recruitment to different segments of construction; following up on waste management; dealing with Environment Health & Safety (EHS) aspects to unskilled workers; addressing complaints related to Gender Based Violence (GBV) committed by site workers; Sexual Exploitation and Abuse (SEA) particularly referrals to criminal justice system; addressing aspects of child labour and following on safe waste disposal.

9.2.2. Grievance Log

Documentation of complaints and grievances is important, including those that are communicated informally and orally. The log will contain a record of the person responsible for an individual complaint, and record dates for the following events:

- i. Date the complaint was reported;
- ii. Date the grievance log was uploaded onto the project database;
- iii. Date information on proposed corrective action sent to complainant (if appropriate);
- iv. The date the complaint was resolved

A sample grievance redress form is included in Annex VIII of this report.

9.3. Grievance Redress Structure

The grievance redress structure for Mwaepi landing site improvement sub-projects shall be of a 2 tier of amicable review and settlement of disputes. The tiers shall consist of; Site –Level Grievance Redress Committee (SL-GRC) and Joint Project Supervising Committee which shall feed into KEMFSED GRM. In spite of having the different tiers, an aggrieved party is free to lodge a complaint at any level. However, it's encouraged that the complaint should be made at the lowest level possible for quick and prompt response and only escalated if the issue is complex and cannot be handled at such level.

9.3.1. First level: Site –Level Grievance Redress Committee (SL-GRC)

The first level: Site Level (Project site level) Grievance Redress Committees (SL-GRC), this will be formed at sub-project site. This ESIA prefers the first level of grievance or conflict redress on project related issues as a result of this sub-project to be handled by the contractor and SL-GRC. The committee will be drawn from the contractor, the BMU and from the county government. The BMU representative will be elected by the members. The committee will handle all forms of grievances in an amicable manner and as an alternative dispute resolution to formal process, which is normally lengthy and costly. Grievances not resolved by the site level committees (SL-GRC) will be taken to the second level. This level shall a maximum 7 days to address the grievance.

In the affected sites as described above there will be a **Site –Level Grievance Redress Committee (SL-GRC)** and the membership will include:

- The area chief who will be the chairperson of the committee,
- County Monitoring and Evaluation officer,
- Contractor safeguards specialist who will be the secretary of the committee and
- Male Community Representatives
- Female community representative
- Representative of Persons with disabilities

9.3.2. Second level: Joint Project Supervising Committee

The committee will include NPCU project engineer and CPIU representative engineering team supervising the construction and NPCU Safeguards team and county safeguards officers. It is

envisaged that the committee will be meeting on a monthly basis. Part of their role will be to review grievances emanating from Site-Level Grievance Redress committee and address them as urgently as possible. This level will take 14 days to address the conflict

9.4. Grievance Redress Procedure

9.4.1. Step 1: Receipt of Complaint/Grievance

Any aggrieved party shall present a grievance or feedback to the GRM desk at the contractors' office on site. The contractor shall ensure avenues for lodging grievances are accessible to the public for any aggrieved parties. The contractor's safeguards officer shall be designated Grievance officer (GO) to receive and appropriately record in a grievance log form attached in annex VIII. The grievance log form will indicate grievances, date opened/lodged, actions taken to address or reasons why the grievance was not acted upon (e.g. the grievance was not related to the project), information provided to complainant and date on which the grievance was closed. The complaints can be lodged by telephone, email, physically/verbally, suggestion box, through representatives/third party, letters, face book, what's up, twitter or any other digital platform. The grievance officer shall in consultation with the contractor team resolve all the complaints and refers those which cannot be resolved to **Site –Level Grievance Redress Committee (SL-GRC)**. All cases related to GBV/SEA shall be handled by the County safeguards officers through appropriate GBV/SEA service provision channels and the details shall not be recorded in the public logbook.

The GO within an appropriate time period as shall be agreed by the **Site –Level Grievance Redress Committee (SL-GRC)**, shall acknowledge receipt of complain and assure the complainant of the necessary action being taken. The grievances can also be made to the fisheries office at Amu Island either by the complainant, community leaders, community representative or by any other third party of choice. The complaints shall be referred to the contractor safeguards officer for appropriate action. Complaints will be acknowledged in a day or within any other project agreed time frame to the complainant confirming that the grievance is received and under investigation for appropriate action. The fisheries office shall be an alternative for the complainants who shall not be comfortable to report to the contractor's office directly. However regardless of the source of grievance or complain, the contractor reporting desk will record all grievances on the grievance reporting form or logbook. The complaint could be from members of the public, workers or any other aggrieved party.

9.4.2. Enquire or Investigating the Complain

The complaints received shall be screened to determine whether the matter has any relationship with the sub-project activities, and whether the contractor team can handle the grievance or refer to a more competent or relevant agency. Any grievance matter not related to the sub-project shall be recorded together with the action taken and be referred as appropriate. The complainant shall be appropriately informed and guided on the next steps. The complaints to be referred shall be those whose issues are not related to the sub-project and the issues raised does not fall within the

scope of issues to be addressed by the GRM for example cases of GBV/SEA or any other related criminal offences. The verification and screening process may consist of community site visits and meeting to determine the scale, scope and magnitude of the grievance and available options to address the matter appropriately.

9.4.3. Responding and Resolving the Conflict

All grievances will be responded to through the chairperson of the SLGRC after completing the investigation or enquiry into the matter. The communication should be done within an agreed timeframe after the completion of the investigations, discussions and identification of potential means of resolving the matter. Where the investigations and resolution of the issue is delayed, the complainant must be informed appropriately together with the cause of the delay and the new timelines provided in advance. The contractor shall endeavor to solve issues directly and promptly on site but if the matter is more complex or beyond the contractor, it should be handled by the SLGRC or JPSC. If the complainant is not satisfied with the decision made at any stage of the GR structure, the aggrieved party will be made aware of their rights to pursue the matter to the next level. The complainant however should be informed of the process and directed to a person that will offer the assistance. A copy of written documentation of the decision should be given to the complainant and another copy shared with the next level of the GR structure to bring to their attention of the complaint. The records of any grievance redress process with all the activities that were involved and decisions should be kept well and will be monitored by the county M&E officer and included in regular KEMFSED project reporting. If an aggrieved party is not satisfied with the decision of **Site –Level Grievance Redress Committee (SL-GRC)**, the grievance will be escalated to JPSC for review and final decision making. The JPSC should resolve all grievances during the monthly site meetings. If the complainant is still dissatisfied, further action will be referred to the **Sub-County - Grievance Redress Committee (SC-GRC)**

If the grievance is solved at any stage and the designated, GO and a representative of a GRC will determine a corrective action in consultation with the aggrieved person. A description of the action, the time frame within which the action is to take place, and the party charged with implementing the action will be recorded in the grievance database. Grievances will be resolved and the status reported back to complainants within 7 days. If more time is required, this will be clearly communicated and in advance to the aggrieved person. Cases that are not resolved within the stipulated time, detailed investigations will be undertaken by Joint Project Supervision Committee (JPSC) and results discussed in the monthly meetings with the affected persons. In some instances, it may be appropriate to appoint an independent third party to undertake the investigations.

9.4.4. Follow up and Closure

9.4.4.1. Meeting with the Complainant

The proposed corrective action and the time frame in which it is to be implemented will be discussed with the complainant within **7 days** of receipt of the grievance. Written agreement to

proceed with the corrective action will be sought from the complainant (e.g. by use of an appropriate consent form).

9.4.4.2. Implementation of Corrective Action

Agreed corrective actions will be undertaken by **Site –Level Grievance Redress Committee (SL-GRC)** or the contractor within the agreed time frame. The date of the completed action will be recorded in the grievance database.

9.4.4.3. Verification of Corrective Action

To verify satisfaction, the aggrieved person will be approached by the GO to verify that the corrective action has been implemented. A signature of the complainant will be obtained and recorded in the log and/or on the consent form. If the complainant is not satisfied with the outcome of the corrective action, additional steps will be undertaken to reach agreement between the parties. If additional corrective action is not possible alternative avenues may be pursued.

9.5. Institutional Arrangement at SL-GR

The committee shall consist of 5 members drawn from the community, county government and the contractor, who will be;

- County Safeguards specialist who will be the chairperson of the committee,
- County M and E,
- Contractor safeguards specialist who will be the secretary of the committee and
- Male and Female BMU Representatives

9.5.1. The role and functions of the committee

The process of lodging a complaint is outlined below:

- a) The designated GO will receive a complaint from the complainant.*
- b) The designated GO will ask the claimant questions in swahili language, write the answers in English and enter them in English onto the grievance form (refer to grievance log form in Annex VIII).*
- c) The local leader (representative of GRC) and the complainant both sign the grievance form after they have both confirmed the accuracy of the grievance.*
- d) The designated GO lodges the complaint in the grievance log.*

9.5.2. The Role and Functions of the Committee members

9.5.2.1. County safeguards specialist

- Coordination of the office construction GRM
- Documentation of proceedings, recommendations and decisions
- Facilitation and provision of information and services to resource persons required to deal with grievances
- Maintenance of grievance-related documents, reports and attendance

- Coordination of grievance uptake channels and ensuring they are operational
- Liaison with JPSC, contractor to ensure the publicizing the GRM channels, structure and other essential GRM related awareness and sensitization
- Providing feedback to affected persons and agencies or institutions that are involved grievances
- Reporting progress to JPMC and NPCU in the required format
- Planning and effecting GRM trainings in consultation with NPC safeguards team. Planning and executing grievance redress evaluation and refining the GRM process for continuous improvements.

9.5.2.2. Contractor safeguards specialist

- Operate and manage uptake point for complains and resolving complaints in consultation with the contractor project manager
- Receive and registration of grievance using appropriate forms provided
- Promptly refer grievances to JPSC that cannot be resolved at project level
- Monitor and provide feedback on environmental and social impacts and effectiveness of mitigation measures at project level.
- Provide monthly and quarterly reports on grievances to JPSC through the county safeguards specialist
- Participate in development and implementation of grievance prevention sub-plans.

9.5.2.3. BMU Representatives

The BMU representatives will be elected to represent the interests of the community and participation in decision making process during resolving of grievances. The role of the representative shall include;

- Liaison between the community and the contractor
- Receive and communicate complaints to the contractor from the community members who for some reason cannot register their complains with the contractor
- Participate in training programs
- Be involved in participatory planning with contractor to prevent grievances
- Assist in disseminating project information
- Coordinate community meetings or any other engagement
- Participate in Grievance Resolution meetings

9.5.2.4. County Monitoring &Evaluation Officer

- Generate performance indicators for the GRM
- Develop reporting and management formats to support the PGRM
- Conduct independent monitoring of GRM operations and provide any corrective measures for the project grievance redress committee PGRC.

- Conduct community and stakeholder satisfaction surveys
- Work with the contractor in developing grievance prevention plans.

9.6. Awareness Creation and Disclosure of Grievance

The Grievance Committee members will be oriented with the grievance management system suggested in the ESIA and provided with skills to handle complaints in a just and fair manner. The capacities of the Grievance Redress Committee members will also be enhanced around project mobilization, implementation, Gender Based Violation, Sexual Harassment, Labor issues, child labor and conflict management.

10. CONCLUSION AND RECOMMENDATIONS

10.1. Conclusion

The proposed improvement of Mwaepe landing site infrastructure will consist constructing of poly-functional building, a modern fish banda, a boat yard, 2 No. restaurants, 8 No. stall, a fish gear mending shed, an ablution block, and civil works, (*slip way, drainage, landscaping works, road works, waste water treatment, and perimeter wall*) at Kwale county Ukunda Diani. The landing site fall within Diani Chale Marine reserve and management of KWS however since its designation in 1995, the conservation of the reserve has not managed to pick up due to mistrust among the primary stakeholders. The critical habitat within the reserve include coral reefs, mangrove area and seagrass beds. The survey findings under this study indicated that the current fishing grounds by fishers from Mwaepe landing site are within the marine reserve. Past studies also showed that the key habitats within the marine reserve are degraded by evidenced of presence of the high sea urchin. Yet collection of catch data has declined over time at the landing site due to the dilapidated state of the landing site and weak BMU leadership. It therefore remains unknown the extent of degradation being caused by the fishing activities to the critical habitats within the reserve. It is apparent that the implementation of the proposed project is critical in enhancing centralized collection of fish catch data that will contribute to the management of the habitats within the reserve.

The project has generally positive impacts and for the negative impacts, readily implementable mitigation measures have been proposed. The proposed project area was noted to be a highly modified habitat through anthropogenic activities mainly from settlement. Several institutions as mandated by the laws guiding and governing the project activities will have differing roles on the project at varied phases of the project cycle which shall require synergy as facilitated by SDBE&F. The environmental and social assessment findings indicate that the project impacts are of low significance. The implementation of the project therefore is not anticipated to significantly influence the physical, biological and social environment. It was further noted that the anticipated impacts shall be of low magnitude due to the size of the project and with mitigation measures having been proposed in this report.

10.2. Mandatory Requirements

The development of the proposed improvement of Mwaepe landing site is anticipated to have negative impacts socially and to the physical environment. In spite of the anticipated environmental and social impacts, with proper mitigation measures, the project is environmentally viable. The environmental and social assessment team proposes the implementations of the sub-project with the following recommendations which are a requirement for the implementation of the sub-project;

- The component 2 of KEMFSED to empower fishers within Diani Chale marine reserve to engage in deep sea fishing to reduce fishers focus on the marine reserve area. KeFS to spearhead the activities of assisting the fishers under the BMUs located within the marine reserve area.

- The fishers are currently engaged in fishing within the Diani Chale marine reserve, there is need to collect catch data so as to enforce compliance and reduce further degradation of the marine reserve.
- The county CPIU team to identify BMU, CBO or CIGs with interest in conservation to participate in reef restoration under environmental sub-project grants. This shall assist in restoring the spawning areas which are critical for sustainable fisheries management. The activity to be done in collaboration with KMFRI and KeFS.
- Create awareness and sensitization among the fishers within Diani Chale marine reserve on the significance of the reef to their livelihoods and the need for conservation.
- The construction contract shall be between the National Project Coordination Unit of the State Department of Fisheries, Aquaculture and Blue Economy (SDBE&F) and the contractors
- The subcontracts of the contractor will be accepted and cleared by the JPSC in charge of the supervision of the works. The JPSC will be responsible that the subcontractors enforce and apply all measures included in this ESIA including the Environmental Social Health and Safety Technical clauses included in the bidding document and contracts.
- The Joint Project Supervision Committee to ensure full implementation by contractors and subcontractors of the ESMPs during construction/implementation stage
- The contractor's project Engineer and the Environmental, Health and Safety Manager in charge of Environmental and Health and Safety, Labor and Social safeguards officer to prepare a Construction ESMP to be implemented in construction by the contractor and all its subcontractors.
- The contractor's project Engineer and the Environmental, Health and Safety Manager in charge of Environmental and Health and Safety, Labor and Social safeguards officer to prepare an operation and Maintenance manual to guide the operation and maintenance of the structures by the Mwaepe BMU and Kwale County Government to do so during operation and decommissioning stages of the project as required.
- The Joint Project Supervision Committee and the contractor to ensure that the ministry of health and World Bank covid-19 guidelines are implemented to the latter at the project site during the construction period and that all the workers commit to observing the rules. The Department of Fisheries, Mwaepe BMU and the CPIU to ensure the covid-19 rules are adhered to during operation of the facilities. Covid-19 virus remains dynamic and unpredictable
- The project contractor and Joint Project Supervision Committee to ensure that compliance with GRM and sensitization and awareness is created among construction workers, contractor, sub-contractors and the general public, on project Grievance Redress Mechanism (GRM) structures in place in the event of a need to address or report any emerging issues, Gender based violence and Sexual Exploitation Abuse on site or any complains by any aggrieved part in the area.

REFERENCES

1. GoK (2019): Environmental and Social Management Framework for Kenya Marine Fisheries and Socio-Economic Development project (KEMSFED). Ministry of Agriculture, Livestock, Fisheries and Aquaculture, State Department of Fisheries, Aquaculture and Blue Economy (SDFA&BE), June 2019.
2. Jones, S. (2006). *The Extent and Effect of Sex Tourism and Sexual Exploitation of Children on the Kenyan Coast*. UNICAF.
3. Kenya gazette Legal Notice No. 101 Environmental Impact Assessment and Audit Regulations 2003. Government printers, Nairobi
4. Kenya gazette supplement Acts 1999, Environmental Management and Coordination Act CAP 387. *Government printer, Nairobi*
5. Kenya gazette supplement Acts Occupation Health and Safety (2007) government printer, Nairobi.
6. Kenya gazette supplement Environmental Management and Coordination (Water Quality) Regulations, 2006.
7. Kenya gazette supplement Environmental Management and Coordination (Waste Management) Regulations, 2006.
8. Kenya Population and Housing Census 2019: Volume 1: Population by County and Sub-County.
9. Kenya Population and Housing Census 2019: Volume II: Distribution of by Administrative Units.
10. Kenya Population and Housing Census 2019: Volume IV: Distribution of Population by Socio-economic Characteristics.
11. Kenyan New Constitution, 2010.
12. Kwale County Integrated Development Plan 2018-2022
13. Mutisia, L. D. N. (2009): Restoration of Kenyan Seagrass beds: a Functional Study of the associated fauna and flora (Masters thesis, Vrije Universiteit Brussel)
14. Otieno, G. Socio-Economic Factors Influencing Students' Dropout Rates in Public Secondary Schools in Msambweni Subcounty, Kwale County, Kenya. University of Nairobi, 2016.
15. The Fisheries Management and Development Act, 2016, Kenya Gazette Supplement No. 156 (Acts No. 35)
16. The Physical and Land Use Planning Act, 2019, Kenya gazette supplement No. 129 (Acts No. 13).
17. The Public participation Act 2016, Kenya gazette supplement No. 175 (senate bills No. 15) *Government printer, Nairobi*.

ANNEXES

I. PROJECT DESIGN AND DRAWINGS

Annex 1 – Mwaepe Fish Landing Site Designs

II. Land Ownership Documentations



REPUBLIC OF KENYA

THE LAND REGISTRATION ACT
(No. 3 of 2012, section 108)
THE REGISTERED LAND ACT
(Chapter 300, Repealed)

Certificate of Lease

TITLE No.

KWALE/DIANI BEACH BLOCK/921

APPROXIMATE AREA

0.3035 HA

LESSOR THE NATIONAL GOVERNMENT

RENT KSHS.72/= P.A

TERM 99 YEARS FROM 1.8.2003

III. Minutes for public Consultation and Participation Meeting



**KENYA MARINE FISHERIES SOCIOECONOMIC DEVELOPMENT (KEMFSED) PROJECT
STAKEHOLDERS CONSULTATIONS MEETING MINUTES HELD AT MWAEPE LANDING SITE, KWALE COUNTY ON WEDNESDAY, 7TH DECEMBER 2022**

Type of Meeting:	Stakeholder Consultations Meeting
Date of Meeting:	7 th December 2022
Time of Meeting:	10:15AM – 12:45PM
Venue:	MWAEPE LANDING SITE
Attendance:	* PARTICIPANTS
Agenda:	<ul style="list-style-type: none">i. <i>Introduction;</i>ii. <i>Mwaepe landing site development project;</i>iii. <i>Concerns and Response;</i>iv. <i>Close Remarks</i>

7/12/2022/01: INTRODUCTION

The meeting was called to order by the KEMFSED project Kwale CPC Mr. Samuel bandari who welcomed everybody to the deliberations. He gave a chance to Mr. Salim Tunduwa who opened the meeting with a word of prayer. The landing site chair Isihaka Swalehe took to give a round of introductions for the community members present, then the CPC gave a chance for a round of introductions for the officers present.

The CPC outlined the importance of having public stakeholder consultations in such development projects as mandated by the constitution of Kenya. He stated that it is vital to have open and honest discussions at the beginning of such projects to ensure for smooth implementation and satisfaction of all stakeholders involved. He observed that many consultations had already been done on the landing site but more discussions are important to iron out any finer details to void future complaints from any stakeholder about the project.

7/12/2022/01: Mwaepe landing site development project

The CPC Kwale Mr. Samuel Bandari proceeded to make a brief presentation on the proposed development for the Mwaepe landing site as per the site plan being developed by the design team.

He begun by stating that the proposed developments came from the landing site BMU members that outlined to the KEMFSED project team the kind of developments they envisioned for their landing site. With timeseveral consultations have been held at the landing site between the different stakeholders to further better the development plan. It is through these processes that the development process has reached where it is at.

Mr. Samuel listed that there are a total of 8 major developments proposed at the landing site. These are; a poly-functional building, a fish banda, a boat yard, 2 No. restaurant, 7 No. stalls, fish gear mending shed, an ablution block, monumental gate and a gate house, painting of historical building, 1 No. prime rated 66 KVA 3 phase, 415V, 50Hz diesel generator with a silencer, 69 No 40KW 144 Cell, 585W Mono- Crystalline Solar Modules and Civil works, (*slip way, drainage, landscaping works, road works and perimeter wall*).

The CPC then welcomed the director fisheries; Mr. Martin Kiogora to give his additions to the proposed developments. Mr.Kiogora reiterated that the proposed developments as is now are a result or many consultative meeting held between different stakeholders at the landing site. He asserted that the development has not come to discriminate against anyone in the landing site but to ensure more people are able to benefit more from the activities at the landing site. He stated his wish that the stakeholders would continue in support of the project in order to birth greater economic developments that would benefit more people at the landing site now and even for the future generations. He thanked everyone for choosing to participate in the consultations and they should be open and truthful to ensure a smooth implementation of the project.

The CPC Mr.Bandari then welcomed the World Bank safeguards consultant form the national project implementation unit; Mr. Lazarus Kubasu to make his remarks on the proposed Mwaepe development project.

Mr.Kubasu first confirmed the statements made by the previous speakers on the proposed developments at the landing site in accordance to the reports the NPCU has received so far. He stated that one of the top most agenda of the days meeting would be to hear from the BMU landing site users and stakeholders if they are for the project or against it. This will enable his office to give a correct and timely report to the World Bank on the status of the proposed project and the will of the community. Due to reports on miscommunications and misunderstandings the proposed project at Mwaepe landing site was almost being halted. Mr.Kubasu started that the day's discussions are very important in order for the community to finally agree or disagree to move on with the proposed project. The thanked everyone for their presence and wished for an honest conclusive discussion.

The CPC Mr. Bandari then welcomed the Sub county administrator of Msambweni Sub County; Mrs.Mwanakombo where Mwaepe Landing site is located in.

Mrs. Mwanakombo took the chance to welcome everyone to the meeting and thanked both the community and the project implementing teams for seeing it fit to hold such consultations as they are vital for the success of the proposed developments. She affirmed that she is aware of the proposed developments plans for Mwaepe landing site and her office is for the plan. That she has been previously involved in various aspects of KEMFSED project. Mrs. Mwanakombo stated that the county government of Kwale works in partnership with various agencies to ensure development is brought to the people of the county. That the county government may not always have the financial ability to take on such large development proposals and when projects such as KEMFSED take them on they support them fully and wish for them to succeed. According to the sub county administrator, the proposed development will in fact raise the economic status of each and every individual in the landing site. She gave examples of 2 other landing sites that have gotten minor developments in the recent past; Congo mosque beach and Bidi Badu beach. That the economic growth witnessed after such minor developments is so significant that one cannot imagine the economic growth that will result at Mwaepe from the proposed developments through KEMFSED project. She thanked everyone for choosing to participate.

The CPC Mr. Bandari then welcomed the area chief from the ministry of interior; Mr. Riga, who had just joined the meeting to give his remarks.

Mr. Riga stated that he had received the invitation for the meeting but had been delayed by a previously scheduled meeting at his office. He however said he is not aware of the proposed developments at the Mwaepe landing site nor about what KEMFSED is doing within his locality. His presence was merely a response to the invite and to assure for security at the meeting since he knows Mwaepe landing site to have had some instances of disagreements in the past.

Mrs. Mwanakombo; the Msambweni sub county administrator stood and said it is unfortunate the chief is not aware, but the ACC is aware and was even at a meeting she attended in Kikambala on the KEMFSED project and all its proposed projects. She said it is important for the CPC to make courtesy calls to all chiefs who have projects being implemented in their localities.

6/11/2022/03: COMMUNITY ISSUES/ CONCERNS AND RESPONSE

The participants raised the following issues and they were addressed as follows;

NAMES		ISSUES	RESPONSES
Mr. Kubasu	Lazarus	Have you agreed that the two restaurants present in the landing site will relocate to the new	The two restaurant owners are here and we wish that they tell us themselves if they agree.

positions allocated within the development site plan?

Salim Mwakasi
(One of the restaurant owners)

I have heard that the location of the restaurant will be moved, but what does that mean to us, where will we be working from while construction is ongoing? Explain us the plan, and will the new restaurants be ours or belong to us?

Mwaepe landing site lies on a public land so all developments done here will be on public land managed by the BMU. Those who wish to operate on the developments will have to get into agreement with the BMU where they will have to be paying the BMU rates according to their agreement. First priority for operation of the developed resources will be those that are already operating within the landing site.

The engineers will factor the drawings of the restaurants and include them in the BOQs. When construction begins they will begin with constructing the two restaurants first so that you can move into them and continue with operations as they now move to the other areas. This will be prioritized so that you do not lose business during the period. You will however had to enter into agreement with the BMU on operation rates as it is public property on public land given to the BMU to manage.

Chief Riga

I recall there is a time these members came to my office to ask me what will happen to their daily livelihood when they have to close due to the proposed developments. They also asked will there be compensation because I used my resources to build the restaurant in the first place.

The project will not be compensating anyone but doing a livelihood restoration and that is why we are building the two new restaurants at the new site plan's location.

So that means the restaurants will remain in operation until the new restaurants are ready, then they relocate to pave way thus not interfering with their livelihood.

I would also like to clarify that there are two projects here that do not relate; the roads project has nothing to do with KEMFSED project. Incase the project developing the roads access comes first and demolishes for you don't rush KEMFSED project as it will still be implemented at its own pace. I want you to

understand and separate the access roads project and KEMFSED project as they are unrelated.

If the access roads development comes first then it has nothing to do with KEMFSED project.

Salim Mwakasi (One of the restaurant owners) I am just asking if you can refund me my capital so that I can opt out of the restaurant business altogether

This is a public land any anyone who built here knew it's a public land for the BMU. So, let's be clear that when the access roads development project comes and you are on the access road you will have to pave way for it. All the years you have operated on that access road no one came to ask for a share of your revenue. Let us understand that this is public land and no one is being forced to stay here even after being given first priority for relocation by KEMFSED project. Even on the stalls, there are those given first priority to restore their livelihoods but anyone else has a right to be given by the BMU. No one will be paid at all in this public land so let's understand this so we can be psychologically prepared. In the whole of Kwale county this is the largest project being implemented under KEMFSED project so let's support it for our own economic growth.

It is good that even from the previous meetings you have been present and asking questions and that's why you have been given priority for livelihood restoration after your case was noted.

To clarify further let us separate KEMFSED project from the roads access project under the county tourism department.

You have been considered for livelihood restoration and that is why the two restaurants have been factored in the designs and BQs.

Masha (2 nd restaurant owner)	I have attended all meeting held here on this proposed project. There is <i>amzungu</i> who came here once and I asked are you going to remove us from here when you start the development? She said we are going to be relocated. Even in the first meeting we were told we would be relocated not removed.	The project design has factored the two restaurants for livelihoods restoration.
Isihaka Mwachala	This whole landing site has a total of 276 members of which 136 are fishermen. The BMU also has other landing sites not just this one; mentions landing sites. What is all of them came here and demanded for space since they also belong to the BMU? Let us who are here be grateful we are being given first priority as livelihood restoration.	Thank you for that.
Masha (2 nd restaurant owner)	When I came and requested to build here long ago, the BMU gave me an agreement that as you build here this is not your land. So you cannot sell it when you are done. In case you want to leave you cannot pass it to someone else without the consent of the BMU. And in case I am to be moved I will not be given any compensation. Of which I accepted.	All those who were operating at the landing site as of the cutoff date will sign an agreement with the BMU concerning the livelihood restoration. This will protect you to ensure you get first priority when the development is complete.
Masha (2 nd restaurant owner)	Let us be open, we have no BMU as of now until the elections are conducted in January.	This means for now you will sign through the office of the county director fisheries. The BMU will be operating through given by the county government through the fisheries

		<p>office. The agreements will be signed through the fisheries department for security purposes.</p> <p>Which brings a point of the last cutoff date we agreed there were 5 stalls for livelihood restoration but ever since new stalls are being erected everywhere. Our request is for such new developments to halt until the proposed project development is complete.</p> <p>There will still be more space for stalls for the tourism department requested KEMFSED to do flat roofed stalls so that it can also later develop upwards.</p>
Mr. Kubasu	Lazarus	<p>So are we taking the 5 stalls to be the ones originally present before the cutoff date and to be the ones given first priority for livelihood restoration?</p> <p>Yes. However this does not mean others cannot come and benefit through the BMU afterwards. This is to just give priority to those present during the last cutoff meeting date.</p> <p>Yes. I wrote the minutes of that meeting and also kept a copy? (<i>massage lady</i>)</p> <p>Then those 5 stall owners plus the two restaurants are the ones we will sign the agreements with to ensure they are prioritized for livelihood restoration. (<i>Lazarus Kubasu</i>)</p>
Old man with stall at gate		<p>What of my stall, will it be affected? The one right at the landing site's entrance.</p> <p>The whole landing site area will be affected.</p>
Old man with stall at gate		<p>But I am one of the original first developers at this landing site many years back.</p> <p>If that is the case then we will also get into the livelihood restoration agreement with you.</p>
IsihakaMwachala		<p>The first ever development at this landing site is this building behind us hosting massage services. It is the main reason this landing site was able to avoid land grabbing in the past. The second development was that</p> <p>The proposed developments wont tough that building hosting massage services.</p> <p>In the site plan it has been marked asa historic building that is also protected under safeguards policies.</p>

	man's food stall right at the landing site entrance.	
Omar Mwamgai	I am the area chairman of this area and even responsible for repeatedly applying for the development of that access road until it succeeded. My question is, at the entrance we need security lighting, can that be considered?	This has been factored in the site plan. We have street lights from the entrance upto down here at the beach.
Massage lady	As the operators of the massage stalls where will we be as the restaurants are operating? Will we also be relocated straight from our stalls to the new stalls?	<p>Like we said everyone will be affected in one way or another and not everyone will be relocated.</p> <p>The new stalls will be built at the far end near the perimeter wall, those who are there will have to pave way for 60 days for the construction to be complete. Those that are far from the wall can continue operation as construction is undergoing and relocate after.</p> <p>The restaurants and the stalls are the first priority proposed developments at the site for livelihood restoration.</p>
Omar Mwamgai	Can she bring her concerns later to us we deal with it?	<p>Thank you but no. We want to handle everything here in an open and transparent manner.</p> <p>I will not be affected since my stall is currently far from the perimeter wall space you plan to begin construction. (<i>massage lady</i>)</p>
Massage lady	I heard of the mention of a religious activities space in the site plan that is near the stalls. I am concerned because religious activities and the activities we run at the stalls will interfere with one another. We have to	<p>In the site plan, the ablution block has been placed between the religious activities space and the stalls. This has already been considered to avoid such interferences.</p> <p>And as we said the livelihood restoration will give priority the now 6 stalls present at the site</p>

	respect the religious elders and our work also need privacy and comfort.	before the cutoff date meeting.
Salim Mwakasi	We had also requested for a watchtower with a light for the security of the fishermen at night	Yes. This has been catered for at the top of the staircase of the polyfunctional building since it will be the tallest building at the landing site after the proposed development.
Mr. Samuel Bandari – CPC	So have we agreed with the proposed development plan we have so far discussed?	Yes (<i>chorus answer</i>)

6/11/2022/04: SEEKING THE COMMUNITY’S CONSENT

The question was put to the community by the CPC and all the attendees gave their consent in support of the propose project.

6/11/2022/05: CLOSURE

There being no other business, the meeting ended at 12:45pm with a word of prayer.

Regards.

Minutes prepared:

Minutes Approved:

Secretary:

Chairman of the Community

Michael Kuria
Safeguards Officer Kwale
KEMFSED Project

III (b). Minutes for public Consultation and Participation Meeting of the PAPs cutoff date

Minutes of second public participation Meeting of Mwaape Bwu on 7th of March, 2022 at 11:53 am

Members present

- i) Dr. Saggata S. Masito - Chief Officer - Fisheries
- ii) Mr. Samuel Dandari - CPC - Kwale.
- iii) Mwanasiti Mayeto - Kinondo ward Administrator
- iv) Geoffrey Nyongesa - AFO - Kinondo.
- v) Zuhura Chiyoti - Village Administrator
- vi) Mwanalawi Juma - CDO - Kinondo

The meeting was officially opened with a word of prayer from one of the Bwu Members.

Opening Remarks

The Chief Officer - Agriculture, livestock and Fisheries emphasized on the commitment of the County to bringing Community development programs. He further explained how the County is working with different development partners to capacity build the Kwale Community in different ways. He urged them to be sober and welcomed development agencies that will benefit the larger community.

AGENDA

- i) Second public participation Meeting on infrastructure development of Mwaape Bwu.

Min/01/11:53/07/22

The County Project Coordinator (CPC) - Kwale, went through the proposed Infrastructure development plan, hence displaying the architectural, maps, layout and drawing on a TV screen, to enable Members of Mwaape Bnu to see and interpret it, Moriso, visualize what they proposed in their first public participation Meeting at the same venue last year (2021), thereby giving elaborate explanations to the members present.

Kinondo ward Administrator, Myranaiti Ali Mnyeto was given a chance to Moderate the session after a series of elaborated - displayed items as stated above. They rose one by one confirming that what had been displayed, was the right agenda that they had requested for during the first public participation at Mwaape Bnu Main Landing site. Mr. Mwachala, Mr. Said Masha and Mr. Salim Bakari, was the first members of the Bnu to propose the displayed agendas among others.

The Mwaape Bnu members present at the meeting, Unanimously confirmed that what was displayed to them which included; Repurishment of Mwaape landing site, Toilets renovation, Installation of Ice plant, Upgrade of the gear repair shed, Installation of solar system, and Construction of boat repair yard, was a true and therefore, agreed and accepted the project in unison, thereby agreed to welcome any development at the landing site.

They further explained that the existing temporary structures are all own by the Bnu and they are ready to pave way for development of modern structures with availability of funding from potential development partners or donors such as Kempson. That no new structures shall be put up at the landing sites.

as of the date of this Meeting. The landing site to remain as is in preparation for the proposed development. The meeting ended with a closing prayer from Mr. Mwachata.

Minutes Confirmation

<u>Name</u>	<u>ID</u>	<u>Sign</u>
1 Salim Kundwa	9394104	Bundwa
2 Isaac Mwachala	0768451	Mwachala
3 Atumou Mwampanko	6737324	Ampwampanko
4 Muliel Hamisi	2203444	Muliel
5 Felicitas Ndeda	8427375	Ndeda



MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES
 State Department of Fisheries and the Blue Economy
 KENYA MARINE FISHERIES AND SOCIAL ECONOMIC DEVELOPMENT PROJECT
 (KEMFSED)

Attendance list

Activity Description: Public Participation Mwaape BMU

Ward: KWINDO Date: 17/03/2022

S/No	Name	Organization	P/no. /ID. No	Mobile No	Gender	Age 1 =<35 Yrs 2 => 36 Yrs	Email address	SIGN
1	Saidi S Masha		2427375	012584150	M	2	-	
2	Ali Saidi Mwakazi		1076956	077744	M	2	-	
3	ALISU JUMA				M	2	-	
4	Mohammed Elafu				M	2	-	
5	Ali Mwakazi				M	2	-	
6	KASSIM SALIM				M	2	-	
7	SALIMU JUMA				M	2	-	
8	SAID Hamisi				M	2	-	
9	TATHYA mohammed				M	2	-	
10	Hamisi S, Chidau MUYUW		079583390	1289472	M	2	1289472	



MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

State Department of Fisheries and the Blue Economy

KENYA MARINE FISHERIES AND SOCIAL ECONOMIC DEVELOPMENT PROJECT
(KEMFSED)

Attendance list

Activity Description: Concept Development of Mwaape Landing site Public Participation on
Ward: Date: 07/03/2022

S/No	Name	Organization	P/no. /ID. No	Mobile No	Gender	Age 1 = < 35 Yrs 2 = > 36 Yrs	Email address	SIGN
1	Muhammed Hamisi		2203444	07991050		2	-	
2	YASIR AHMED		3258828	070585700		1	-	
3	SALIMU MASUD		2189059	0711736781K		2	-	
4	SALIM B. TUNDUKA		939401	0713755048		2	-	
5	KASIM ABDURAHMAN KASIM ABDURAHMAN					-	-	
6	HAMADI MUHAMMED	BMA	0768299	0723562793		2	-	
7	DR. SAGGATI S. MASITO	CAK	8397431	07238157 M		2	saggatisito@gmail.com	
8	Chairman Oman	Prin Chair man fishermen	0306793	0729564 0729564524		80	-	
9	FRANCIS CHENGO		20899617	0707331552		2	-	
10	Isack S. Mwachala	fisher	0768451	0701098054		2	-	



MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

State Department of Fisheries and the Blue Economy

KENYA MARINE FISHERIES AND SOCIAL ECONOMIC DEVELOPMENT PROJECT
(KEMFSED)

Attendance list

Activity Description: Conceptual design and development of musape Landing site. Public Participation on
Ward: Date: 07/03/2022

S/No	Name	Organization	P/no. /ID. No	Mobile No	Gender	Age 1 = < 35 Yrs 2 = > 36 Yrs	Email address	SIGN
1	Ali J. Nyasha	Fishes	2195833			2		<i>Ali</i>
2	Hamad Mcheche	Fishes	-			2		<i>HE</i>
3	Master Hamis Ali	Fishes	25049319			2		<i>HA</i>
4	ASHUMARI	NOHAMARI	9770666			2		<i>AS</i>
5	Mibakari Yusief	Fishes		0732413994		2		<i>MY</i>
6	Martha Joseph		21735365			2		<i>Martha</i>
7	Samuel Bandari	CCIC	28937413	072584255	M	2	Samuelbandari@gmail.com	<i>Samuel</i>
8	ZUHURA HAMISI	CCIC/ADMIN	30894572	0702194689	F	1	Zuhuradigital@gmail.com	<i>Zuhura</i>
9	Mwambani Juma	CCIC	26769187	07243224	F	2		<i>Mwambani</i>
10								



MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

State Department of Fisheries and the Blue Economy

KENYA MARINE FISHERIES AND SOCIAL ECONOMIC DEVELOPMENT PROJECT
(KEMFSED)

Attendance list

Activity Description: *Community Development: Public Participation on*
Development of Mwaape Landing site
Ward: *Olgorosa* Date: *01/02/2022*

S/No	Name	Organization	P/no. /ID. No	Mobile No	Gender	Age 1 = / < 35 Yrs 2 = / > 36 Yrs	Email address	SIGN
1	<i>Geoffrey Nyangosa</i>	<i>CGK</i>	<i>270891141</i>	<i>0712734347</i>	<i>M</i>	<i>1</i>	<i>gnwondwond@gmail.com</i>	<i>[Signature]</i>
2	<i>ELIZABETH MUSEMBI</i>	<i>Bmu</i>	<i>14424037</i>	<i>0721925358</i>	<i>F</i>	<i>2</i>	<i>lizmusembi75@gmail.com</i>	<i>[Signature]</i>
3	<i>FAITH KASIMU</i>	<i>Bmu</i>	<i>22674285</i>	<i>0728301015</i>	<i>F</i>	<i>2</i>	<i>mwanakay23@gmail.com</i>	<i>[Signature]</i>
4								
5								
6								
7								
8								
9								
10								

III (c). Minutes for public Consultation with KWS on the Diani-Chale Marine Reserve

**STAKEHOLDERS CONSULTATIONS MEETING MINUTES HELD AT KWS, KISITE
MPUNGUTI MARINE PARK & RESERVE OFFICES, SHIMONI ON TUESDAY 28TH
FEBRUARY 2023**

Type of Meeting: Stakeholder Consultations Meeting
Date of Meeting: 28th February 2023
Time of Meeting: 2:15 PM – 4:15 PM
Venue: KWS, KISITE MPUNGUTI MARINE PARK & RESERVE OFFICES, SHIMONI.
Attendance: Mr Michael Kuria, KEMFSED Kwale Safeguards Officer.
Mr. Shadrack Zia, KWS Coplo, Operations.
Ms. Mwanaisha Ngambi, KEMFSED Kwale Environmental Officer Intern.
Ms. Mealii Mwaruwa, KEMFSED Kwale Fisheries Officer Intern.

Agenda:

- i. Introduction;*
- ii. Overview of KEMFSED sub-projects with a potential impact on KWS protocols.*
- iii. Question and answer session.*
- iv. Closing Remarks*

28/02/2023/01: INTRODUCTION

The meeting was called to order by the KEMFSED project Kwale Safeguards officer Mr. Michael Kuria at exactly 2:15pm. He welcomed everybody to the meeting, introduced himself and gave a chance to other officers in attendance to introduce themselves, where Mr. Shadrack Zia, the representative from KWS introduced himself and gave a brief orientation. The Safeguards officer then took over and gave an overview of the KEMFSED sub-projects that could also potentially require the engagement of KWS, namely;

1. Provision of offshore fishing boats of about 1ton capacity to some of the groups.
2. Provision of modern glass boats for ecotourism purposes.
3. Mwaepe landing site development.

28/02/2023/02: POTENTIAL IMPACT OF THE OFFSHORE FISHING BOATS ON THE MARINE PROTECTED AREAS.

The Safeguards Officer Mr. Michael Kuria explained that the proposed modern boats were provided mainly to enhance offshore fishing. He then requested Mr. Shadrack to give any recommendations on how the project could partner with KWS to ensure effective management thus ensuring smooth implementation of the project.

In response to the above intervention, Mr. Shadrack noted that no fishing is allowed in the marine protected areas, further elaborating for the team the restrictions pertaining to a marine park and a reserve, as follows;

- Reserve: Only traditional fishing allowed, commercial fishing prohibited.
- Park: No form of fishing or extractive activity allowed.

He also noted that the fishing has to happen in the offshore waters, where certain regulations still apply in conjunction with the relevant fisheries department and coast guard. KWS specifically deal with the enforcement regarding to key species like sea turtles and dolphins among others which are internationally recognized as protected species, therefore the laws would apply even outside the marine protected areas. His general note was that, as long as the fisher folk ensure compliance with law, they would have no problem whatsoever.

Mr. Kuria inquired about the parks and reserve demarcations and Mr. Shadrack noted that there was Diani Chale, which is gazetted but not yet operational and has not been demarked on the ground by buoys, stretches from around Kongo River to Chale, and harbors some turtles and dolphins. Kisite Mpunguti in Shimoni with boundaries well known to the locals, and that KWS had recently replaced for demarcations.

He added that there are some local marine protected areas in between Diani Chale and Kisite like Munje Octopus farming, which are managed under BMU bylaws and regulated by the fisheries department. In regard to the above insights, Mr. Shadrack sited that the boats would be allowed to navigate through as passage.

Mr. Kuria questioned if there were any extensions from the park boundaries to which Mr. Shadrack responded that there are no buffer zones whatsoever and the boats should maintain a distance of at least 50-100m from the boundaries.

28/02/2023/03: POTENTIAL IMPACT FROM THE ECOTOURISM GLASS BOATS.

Mr. Shadrack noted that the boats must operate within the park, which is away from the deep seas. He further recommends that the boats should be built by durable material as ^{Glass} most boats do not survive the strong wave action in the deep seas ^{off of Kisite MP} and thereby posing as a hazard. He recommended promotion of glass boats, among other developments to boost the ^{tourism industry,} ^{to other areas.}

Mr. Kuria inquired about the awareness of the conservation regulations by the visiting tourists and how KWS ensures they are adhered to, giving an example of a tourist extracting star fish from the sea take pictures, where Mr. Shadrack noted that KWS prohibits such activities and recommend viewing of the marine organisms in their natural habitat as the extraction would easily mess with their ecology and feeding habits in general. In addition to that, feeding of the fish is prohibited as it renders the fish dependent hence prone to illegal fishing practices.

28/02/2023/04: POTENTIAL IMPACT FROM THE MWAEPE LANDING SITE.

Mr. Kuria gave a brief overview of the sub-project and all the necessary procedures required to implement it, including stakeholder consultations with the community involving The World Bank, and that one of the concerns that was raised from the community was the fear of “bringing enforcement close to home” as often perceived in the grassroots. In light of that, the safeguards officer noted that it was crucial to have the meeting with KWS and the community to capacity build them on the reserve.

Mr. Shadrack noted that the advice had been given on the original idea of having a jetty due to its intrusion on the reserve, which has notably been replaced by a short slipway. Also, their office mainly deals with the management of Kisite Marine Park, overseeing the operations at Diani Chale but such a mega project would necessitate the intervention of the regional director, in Mombasa, who would be best placed to declare what should or not be done in Diani Chale. He however supported that such developments would bring about economic development which would much benefit from the presence of KWS among other security enforcement officers along the Diani Chale beach line.

28/02/2023/05: QUESTION AND ANSWER SESSION.

Mr. Kuria inquired from the KWS officer if any capacity building has been done with the community, where Mr. Shadrack noted that they have done several of those, one being by WCS (Wildlife Conservation Society) who had meetings with BMUs from Tiwi, in the Tiwi County social hall having sensitization talks, going all the way to Tsunza and Bonje as well. Some of the key issues addressed were;

- Importance of rejuvenating the degraded fishing grounds.
- Embracing the idea of protected areas with controlled fishing that improves the state of the fishing grounds giving an example of Kisite which has not been adversely affected by overfishing compared to the rest.

However, the fishermen from Diani are still hesitant to embrace the idea of protected areas.

In addition Mr. Kuria inquired if the acquisition of the fishing grounds as a protected area by KWS was permanent or temporary and Mr Shadrack noted that it was permanent, where Mr Kuria noted the importance or more awareness of the operations of KWS and the benefit accrued to the community in return.

Mr. Kuria also noted the importance of the institution to work with other stakeholders including the project and the BMU for harmonized development managements at the site.

Mr. Kuria recommended that KWS should champion the idea using the BMU leadership committees as the community would easier relate with them. He then asked the fellow officers if they had questions or recommendations, where Ms. Mealii asked Mr. Shadrack on his thoughts about KEMFSED project. Mr. Shadrack noted that it was a very great idea that he welcomes and we can collectively advocate for the idea of protected areas which would in turn open more doors to greater developments as well as ensuring safety of visitors. He also noted that KWS normally has boats on standby for emergency purposes. They can also offer material and technical support.

28/02/2023/06: CLOSING REMARKS.

Mr. Kuria noted that he would invite KWS the next time the project holds a stakeholder engagement meeting and also welcomes the officer to the projects office to meet the CPC.

There being no other business, the meeting was closed at 4:15pm.

ANNEX I: PHOTOS.





Minutes prepared by:
Michael Kuria
Safeguards Officer
KEMFSED PROJECT
Kwale County.
 Sign:

Stamp:

Minutes Confirmed by:

Name: *SHADRACK ZIA*

Desg: *CORPORAL*

Institution: *Kenya Wildlife Service*

Sign: *[Signature]*

Stamp: *Foy*

SENIOR WARDEN
KISITE / MPUNGUTI
MARINE NATIONAL PARK
P. O. Box 55 UKUNDA

IV. Public Participation and Consultation Attendance List



MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES
 State Department of Fisheries and the Blue Economy
 KENYA MARINE FISHERIES AND SOCIAL ECONOMIC DEVELOPMENT PROJECT
 (KEMFSED)
Attendance list

Activity Description:Mwaape Fish Landing Site public stakeholders consultation meeting.

Venue:Mwaape.....

Date: 07/1/22.....

S/No	Name	Village	ID. No	Mobile No	Gender	Age 1=<35 Yrs 2=> 36 Yrs	CIG/CBO/BMU	SIGN
1	MOHAMMED HAMUSI	MWARUNGO	2203 244	075923746	M	2	MWAPE	
2	ISAAC S. MWACHALA	MWARUNGO	07088451	070109854	Male	2	MWAPE	
3	ELIZABETH MUSEMBI	MWAMAMBI	04424037	0721923358	F	2	MWAPE	
4	Maria Mkamuri	Mwaape		0791387003	F		MWAPE	
5	CHRISTINE MLUYUA	MWAPE	10578274	0727350581	F	2	MWAPE	
6	SALIM O. MARECO	MWARUNGO	23598680	079167317	M	2	FISHMONGER	
7	RUSUMBA NDUNE	UKUNDA	11262567	0721305164	M	2	BUSINESSMAN	
8	AHMAD MURHUNDI	MWARUNGO	0768290	072366793	M	2	MWAPE B.M.O	
9	CHRISTINE GACHIRI	UKUNDA	28828589	072642810	F	2	MWAPE B.M.O	
10	SALIM TUNDANA	MWARUNGO	9394104	0713755043	M	2	MWAPE B.M.O	



MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES
State Department of Fisheries and the Blue Economy
KENYA MARINE FISHERIES AND SOCIAL ECONOMIC DEVELOPMENT PROJECT
(KEMFSED)
Attendance list

Activity Description:Mwaepe Fish Landing Site public stakeholders consultation meeting.

Venue:Mwaepe.....

Date: 07/12/20

S/No	Name	Village	ID. No	Mobile No	Gender	Age 1=<35 Yrs 2=>36 Yrs	CIG/CBO/BMU	SIGN
1	SOLLIM J MWAKASI		2742623	0713525796	M	2	BUSINESS	
2	Salim Masudi	Biga	2189059	0711736691	M	2	Fisherman	
3	AL. J. NYONG	Biga	2182233	0704629210	M	2	-	
4	Babari Hamadi	Msambweni	0764450	07442702289	M	2	-	
5	SABIRI S MASTA	MWAMUNDA	2427375	072529434	M	2	MEDICAL	
6	BIGGA ALI	KINONDO	8420610	0721249502	M	2	AREA CHIEF	
7	Martin K. Kiogisi	Kwale	10146983	072294890	M	2	County Govt.	
8	Chairman OMAR M.H	CHALU KINO	0306793	0729564524			Chairman	
9	MOHIB MWASINGUIS	KINONDO	30465328		M	2	-	
10	Mwanakombo Kilalo	Msambweni	25269914	0711817862	F	2	C.G.K	



MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

State Department of Fisheries and the Blue Economy

KENYA MARINE FISHERIES AND SOCIAL ECONOMIC DEVELOPMENT PROJECT
(KEMFSED)

Attendance list

Activity Description:Mwaepo Fish Landing Site public stakeholders consultation meeting.

Venue:Mwaepo.....

Date: 09/12/2022

S/No	Name	Village	ID. No	Mobile No	Gender	Age 1 =< 35 Yrs 2 = > 36 Yrs	CIG/CBO/BMU	SIGN
1	LAZARUS KUBABO N.	NPCU	2190862	072488380	M	2	NPCU	
2	Michael Kuria.	EGS Kericho Kudu	2711886	092836692	M	1	Kuria CAG KEMFSED	
3	Samuel Bandari	CAG	28934413	07256124	M	1	CAG	
4	Joseph Tandi	SDPW Narobi	32059378	070462185	M	1	SDPW Narobi	
5	CHRISTOPHER INGALA	CGK	24222812	072258915	M	2	ingalacr@bhuvo gmail.com	
6	LILIAN MWENDE	CGK	33157570	079990583	F	1	Lilianmwendo24 A@gmail.com	
7	DERRICK WAMBWA	CGK	33290943	0713222344	M	1	derrick.dw@gmail .com	
8	Simba R. Matziko	CUK	32683664	071317409	M	1	Simba@vodafone matziko@gmail	
9	Abdulcaiz M. Ali	CGK	33908211	0794255891	M	1	Abdulcaiz123 @gmail.com	
10	GROFFRET NTONGESA	CGK	29089141	0712734342	M	1	groffret@bhuvo gmail.com	



MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

State Department of Fisheries and the Blue Economy

KENYA MARINE FISHERIES AND SOCIAL ECONOMIC DEVELOPMENT PROJECT
(KEMFSED)

Attendance list

Activity Description:Mwaepe Fish Landing Site public stakeholders consultation meeting.

Venue:Mwaepe.....

Date: 07/12/22

S/No	Name	Village	ID. No	Mobile No	Gender	Age 1 = / < 35 Yrs 2 = / > 36 Yrs	CIG/CBO/BMU	SIGN
1	D. R. SAGGAFU J. MASITO	Kwale	8397431	0723815744	M	2	CO-AZEP	
2	Godfrey Njambwa	KEMFSED	22549710	0721712640	M	2	NPCU	
3	Stephen Nwanyi	KMFSD	5548533	0722796229	M	2	NPCU	
4								
5								
6								
7								
8								
9								
10								

V. Code of Conduct

IMPLEMENTATION OF ESHS AND OHS STANDARDS, PREVENTING GENDER BASED VIOLENCE AND VIOLENCE AGAINST CHILDREN

I acknowledge that I will adhere to the Environmental Social Health and Safety (ESHS) requirements; Occupational Health and Safety (OHS) requirements and statutes preventing Gender-Based Violence (GBV) and Violence Against Children (VAC).

I agree that while working on the project I will: -

- a) Attend and actively partake in training courses related to **ESHS, OHS, HIV/AIDS GBV, and VAC** as requested by the employer
- b) I will wear **Personal Protective Equipment (PPE)** at all times when at work site or engaged in project related activities
- c) Implement Occupational Health Safety management plan
- d) Take all practical steps to implement the contractors Environmental and Social Management Plan (C-ESMP)
- e) Adhere to zero alcohol policy during work activities and refrain from the use of narcotics or other substances which impair faculties at all times
- f) Consent to police background checks.
- g) Treat women, children (persons under the age of 18yrs) and men with respect regardless of race, colour, language, religion, political or other opinion, Nation, ethnic or social origin property, disability birth or other status
- h) Not use language or behaviour towards women, children, or men that is inappropriate, harassing, abusive, sexually provocative demeaning or culturally inappropriate;
- i) Not engage in sexual harassment for instance making unwelcome sexual advances, requests, for sexual favours and other verbal or physical conduct of sexual nature, including subtle acts of such behaviour e.g. *(Looking at somebody up and down, kissing, howling or smacking sounds, hanging around somebody, whistling and catcalls, giving personal gifts, making comments about somebody's sexual life);*
- j) Not engage in sexual favours for instance making promises or favourable treatments depending on sexual acts or other forms of humiliating, degrading or exploitive behaviour;
- k) Not participate in sexual conduct or activities with children including grooming or contact through digital media. Mistaken belief regarding the age of the child or consent from a child is not a defense or an excuse.
- l) Unless there is full consent by all parties involved, I will not have interactions with members of the surrounding communities, this includes relationships involving the withholding or promises of actual provision of benefits (e.g., monetary or non-monetary) to community members in exchange for sex. Such sexual activity is considered “non-consensual” within the scope of this code of conduct

- m) Consider reporting through the Project Site Agent, ESH officer or to my supervisors any suspected or actual GBV, and VAC by a fellow worker, whether employed this company or not, or any breaches of this code of conduct

With regard to children under 18 years

- i. Whenever possible ensure that another adult is present when working in the proximity of children
- ii. I will not invite unaccompanied children not related to my family into my house unless they are at immediate risk of danger or physical danger
- iii. I will not use any computers, mobiles phone, videos or digital cameras or any other medium to exploit or harass children or to access children phonography or use of children images for work related purposes
- iv. Refrain from physical punishment or discipline of children
- v. Refrain from hiring children for domestic or other labour related work
- vi. Comply with all relevant local legislations including labour laws in relation to child labour and world Bank Safeguards Policies on child labour

Use of children images for work related purposes

- a) When photographing or filming a child, assess and endeavour to comply with local tradition or restriction for reproducing personal images
- b) Before photographing or filming a child, must obtain informed consent from the child, parent or guardian of the child. As part of this, I must explain the use of the photograph or the film.
- c) Ensure photographs films videos and DVDs present children in a dignified and respectful manner and not in the vulnerable and submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive.
- d) Ensure file labels do not reveal identifying information about a child when sending images electronically

EHS AND OHS COMMITMENTS

- a) Environmental Stewardship - I will take
- b) take proactive measures to protect the environment, including minimizing waste, reducing pollution, and conserving natural resources throughout the project.
- c) Health and Safety Compliance - I commit to following all health and safety guidelines, including safe work practices, hazard identification, and reporting any unsafe conditions or incidents immediately.
- d) Emergency Preparedness - I will familiarize myself with emergency procedures and protocols, ensuring that I know the location of emergency exits, first aid kits, and fire extinguishers.

- e) Community Engagement - I will engage positively with local communities, respecting their rights and involving them in discussions about project impacts and benefits.
- f) Reporting and Accountability - I will report any environmental, health, or safety concerns, as well as any incidents of GBV or VAC, to the appropriate authorities, ensuring that all issues are addressed promptly.

NON-RETALIATION ON REPORTING CODE VIOLATIONS

- No one will be victimized for reporting the violation of this code of conduct.
- A reward will be offered for genuine reporting of this code violations as deemed fit by the Management.

Sanctions

I understand that if I breach this individual code of conduct, my employer will take disciplinary action which could include: -

- Informal warning
- Formal warning
- Additional training
- Loss of one week’s salary
- Suspension from employment (without payment of salary) for a period of one month
- Termination of employment (without benefits)
- Report to the police if warranted

I.....ID No do hereby acknowledge that I have read the forgoing individual code of conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS OHS GBV and VAC issues, I understand that any action inconsistent with this individual code of conduct or failure to act as mandated by this individual code of conduct may result in disciplinary action and my on-going emolument

Signature.....

Name.....

VI. Technical Clauses for Contractor Implementation

CLAUSES TO BE IMPLEMENTED BY THE CONTRACTOR AND ALL SUB-CONTRACTORS AS A REQUIREMENT UNDER THE CONTRACT.

1. **Notice of No-Objection:** The Contractor shall not commence any works or mobilization for the Mwaepe Fish Landing Site unless a notice of no-objection from the Joint Project Supervision Committee (JPSC) is submitted and approved, confirming the Contractor's proposed measures to manage environmental and social risks and impacts, along with the Code of Conduct for Contractor's Personnel as part of the Contract.
2. **Display of Code of Conduct:** The Contractor shall ensure that the Code of Conduct is visibly displayed in multiple locations on the Mwaepe Fish Landing Site and any other areas where works will be carried out. It shall also be accessible to the local community and project-affected people, provided in languages comprehensible to the Contractor's Personnel, Employer's Personnel, and the local community.
3. **Environmental Training:** KEMFSED NPCU and Kwale County Safeguards Officer (ESSO) will be responsible for organizing environmental training for all Engineers and Contractor's staff working on the Mwaepe Fish Landing Site. This training shall be coupled with safety training included in the Contractor's site management plan. The Contractor shall ensure that the KEMFSED Project Engineer is informed of all staff working on-site, their responsibilities, and their availability for briefing sessions arranged by the ESSO on environmental mitigation measures.
4. **Fair Wages:** The wages paid to staff employed by the Contractor for the Mwaepe Fish Landing Site shall be fair and reasonable, considering those commonly paid in the construction industry. The Contractor shall comply with requirements related to hours of work and labor conditions as established in Kenyan legislation.
5. **Wage Records:** The Contractor shall maintain proper wage books and time sheets reflecting the wages paid and the time worked by staff engaged in the construction of the Mwaepe Fish Landing Site. These records shall be available for inspection by any officer authorized by the Contracting Authority.
6. **Freedom of Association:** The Contractor shall recognize the right of employees to associate freely and shall display a copy of this policy on site office notice boards for the information of all employees at the Mwaepe Fish Landing Site.
7. **Health and Safety Precautions:** The Contractor shall take all necessary precautions to ensure the safety of staff and labor at the Mwaepe Fish Landing Site, in collaboration with local health authorities. This includes providing medical staff, first aid equipment, a sick bay, and suitable ambulance services as needed throughout the contract period. Measures to prevent epidemics and ensure welfare and hygiene will also be implemented.
8. **Waste Management:** Burning of waste materials on the Mwaepe Fish Landing Site will not be permitted. Waste must be disposed of in authorized dumping sites in compliance

with NEMA requirements. Hazardous materials (e.g., tires, plastic products, used oil) must be handled by licensed contractors.

9. Toilet Provision: Contractor must provide toilet facility as per guidelines provided by OSHA Act 2007
10. Noise Control: The Contractor shall comply with applicable national laws regarding noise control. High-intensity noise activities shall not be conducted during nighttime hours to minimize disturbance to the surrounding community.
11. Pollution Prevention: Construction methods shall be implemented to prevent the entry or accidental spillage of solid matter, contaminants, debris, and pollutants into local water bodies, including streams and the sea. Excavated materials or construction materials shall not be stored near watercourse perimeters to prevent runoff.
12. Air Quality Management: The Contractor shall adhere to regulations concerning air pollution prevention. Effective methods to control dust emissions during construction activities will be utilized, especially during concrete preparation, handling, and storage.
13. Cement and Lime Handling: The Contractor's methods for storing and handling cement and lime shall incorporate measures to eliminate atmospheric dust emissions. Equipment showing excessive emissions shall be repaired before operation.
14. Health Awareness: The Contractor shall implement awareness programs to prevent the spread of communicable diseases such as HIV/AIDS, TB, and STIs among workers and the community during construction activities at the Mwaepe Fish Landing Site. Condoms will be provided as part of the HIV/AIDS control program for all staff.
15. Emergency Procedures: The Contractor shall develop procedures for emergency prevention, preparedness, and response to ensure a safe working environment at the Mwaepe Fish Landing Site.
16. Training and Records: The Contractor shall conduct training for workers on first aid, safety and health practices, appropriate use of PPE, and grievance redress mechanisms. Records of the training provided shall be maintained.
17. Compliance by Sub-contractors: The Contractor shall require its sub-contractors to execute works in accordance with the Contract, including adherence to relevant environmental and social safeguards as outlined in the ESIA report, ESMP, and SEA/SH Prevention and Response Obligations.
18. Local Subcontracting Opportunities: The Contractor shall provide fair and reasonable opportunities to sub-contractors from the Kilifi County area where applicable.
19. Local Staffing: The Contractor shall prioritize sourcing staff and labor with appropriate qualifications and experience from within Kilifi County or the Coastal Counties project implementation area, where applicable.

20. Child Labor Policy: The Contractor and all associated sub-contractors shall implement a policy prohibiting any form of child labor. Appropriate sanctions or legal actions will be taken for violations, in accordance with national laws and World Bank policies.
21. COVID-19 Management: The Contractor shall implement measures to prevent, control, and manage COVID-19 infections among workers and the surrounding community during construction activities, in line with Ministry of Health and World Bank guidelines.
22. Invasive Species Prevention: The Contractor shall take all necessary measures to prevent the spread of invasive plant and animal species during the sourcing of materials or execution of works at the Mwape Fish Landing Site.
23. Safeguard Compliance: The Contractor shall commit to adhering to all safeguard requirements outlined in KEMFSED project documents, the ESIA report, and the C-ESMP, with an understanding that associated costs should be anticipated and planned for in project budgets.

VII. List of Indicators for Monitoring

NO.	ASPECT	LIST OF POTENTIAL INDICATORS TO BE MONITORED
1.	Occupational Health and Safety (<i>accidents and Injuries</i>)	<ul style="list-style-type: none"> ▪ Site safety action plan ▪ Trained workers on safety and first aid skills ▪ First aid facility and injury reporting mechanism put in place ▪ Appropriate use of personal protective equipment (PPE) (<i>Reflective jackets, helmets, face masks, ear plugs gloves, safety boots, etc.</i>) ▪ Trained workers on appropriate use of PPE. ▪ Sanitation facilities provided on site for human waste disposal ▪ Incident register and training of how to use it ▪ Updated contractor WIBA insurance policy ▪ Watering points for worker on site with clean water ▪ Memorandum of Understanding with nearby health centre. ▪ Covid-19 management rules/guidelines on site ▪ Adequate covid-19 PPE and use by all persons on site. ▪ Trained workers on covid-19 rules and requirements.
2.	Public health and safety (<i>accidents and Injuries</i>)	<ul style="list-style-type: none"> ▪ Use of safety signs at strategic places with high risks to public. ▪ Hording off working sites ▪ Speed limit measures in place ▪ Awareness creation and sensitization activities for the public
3.	Visual/ aesthetic Impacts	<ul style="list-style-type: none"> • Backfilling of soil cuttings • Landscaping of the project site
4.	Leakages and spills	<ul style="list-style-type: none"> ▪ Recorded incidents of hazardous waste leakage or spills. ▪ Site-specific incident management or response plan. ▪ Oil trap measures at contractors yard
5.	Excessive Noise	<ul style="list-style-type: none"> • Noise regulation measures on construction equipments. • Construction equipment and Machine servicing records • Records of public notices for high noise level activities • Appropriate use of noise PPE by workers • Measures in place to reduce unnecessary hooting and speeding. • Records of regular measurement of noise levels
6.	Air pollution	<ul style="list-style-type: none"> • Identified potential sources of air pollution on site • Measures put in place to control effect of wind on material being transported
7.	Solid Waste generation	<ul style="list-style-type: none"> • Site-specific waste management plan • Measures of waste avoidance, reduction, reuse and recycle put in place. • Designated waste transfer station on site. • Records of approvals from NEMA and County Government on waste management and disposal
8.	Increased Water consumption for	<ul style="list-style-type: none"> • No. of sensitization and awareness creation among construction workers

NO.	ASPECT	LIST OF POTENTIAL INDICATORS TO BE MONITORED
	construction	<ul style="list-style-type: none"> • Measures to conserve water during structure curing. • Records of response to leakage in the water system. • Alternative water sources
9.	Risk of Spread of HIV/AIDS	<ul style="list-style-type: none"> • No of outreaches held at community/work or project site focusing on HIV/AIDs and STOIs • No. of installed condom dispensing units. • No. of HIV tests done. • NO. of Installed HIV testing services or an MoU with an existing government health facility in the area. • No. of supported infected workers with ARVs • No of trained peer counselors
10.	Grievances	<ul style="list-style-type: none"> • Grievance redress committees put in place • Contractor staff grievance structures put in place • Sensitization and awareness creation • No. of grievances logged, no of grievances resolved on time, no of grievances not resolved
11.	Effects of Immigrant workers	<ul style="list-style-type: none"> ▪ Proportion of local workforce employed vis a vis all employees ▪ Community engagement plan in place ▪ Signed Code of Conduct by all workers ▪ Sensitization meeting on local social and cultural practices on acceptable behavior ▪ Sexual Harassment and Non-Discrimination Policy ▪ Labour Management Plan (LMP)
12.	Child Labour and Protection	<ul style="list-style-type: none"> ▪ Records of employees including copies identification cards ▪ Records of child sexual relations offenses reported to the police. ▪ Recruitment policy prohibiting child labour in place ▪ Review of employee records
13.	Gender Equity, Sexual Harassment and abuse amongst workers in the workplace	<ul style="list-style-type: none"> ▪ Sexual Harassment and Non-Discrimination Policy ▪ No of women and men employed and work ▪ No of sanitation facilities disaggregated along sex ▪ Records of reported harassment cases ▪ Trained and sensitized employees on appropriate behavior ▪ Signed code of conduct against SH ▪ Gender action plan
14.	Gender-based violence at community level	<ul style="list-style-type: none"> ▪ Implemented measures to prevent GBV at community level ▪ No. of community engagement and consultation with women and girls; ▪ No. of sub-project activities identified to be of high GBV risk at community level. ▪ Referral mechanisms are in place in the event of GBV at Community level
15.	Sexual exploitation and abuse (SEA)	<ul style="list-style-type: none"> ▪ SEA/SH management action plan ▪ Signed code of conduct (CoC) by all workers and sub-contractors

NO.	ASPECT	LIST OF POTENTIAL INDICATORS TO BE MONITORED
		<ul style="list-style-type: none"> ▪ Workers trained on CoCs and responsibilities ▪ Project-level IEC materials put in place ▪ Survivor-centred mechanisms put in place ▪ Multi-sectoral referral and assistance plan put in place ▪ Disciplinary procedures at the project put in place ▪ Confidential community-based complaints mechanisms in place ▪ PSEA awareness-raising done ▪ community-level IEC materials put in place ▪ No of community outreach to women and girls about social risks and their PSEA-related rights; ▪ Integration of SEA in job descriptions, employments contracts, performance appraisal systems, ▪ Whistle-blower protection and investigation and disciplinary procedures put in place ▪ No. of training of project staff on SEA conducted
16.	Spread of COVID-19 amongst community members during consultation processes	<ul style="list-style-type: none"> • electronic channels adopted for engagement of stakeholders • Measures to observe social distance put in place • Covid-19 PPE use on site • Use of Covid-19 PPE during community engagement • Traditional Communication channels adopted • No. of stakeholders per meeting, • No of digital platform adopted • Online services of community engagement put in place • feedback and suggestion platforms for participants, • size of groups attending meetings
17.	Spread of COVID-19. During construction at work sites	<ul style="list-style-type: none"> • Approved SOPs in line with World Bank and ministry of health guidelines in place, • No of routine fumigation of shared area and shared tools, • Sanitizing and hand washing area and facilities put in place • Isolation area, • proper use of covid-19 PPE, • visual inspection of social distance and • rapid covid-19 screening measures put in place
18.	Spread of invasive species	<ul style="list-style-type: none"> • Ensuring cleanliness of the project construction vehicles accessing or leaving the site to reduce spread of <i>Prosopis Juliflora</i> currently on site. • Create awareness among the workers

VIII. GRIEVANCE LOG FORMS

GRIEVANCE LOG FORM:

GRIEVANCE NO:.....

Name of Complainant	Gender:		Age:	
	Male		18 - 35 36 - 65 65 - Above	
	Female		18-35 36 -65 65 - Above	
Contact Information	Phone No:		E-mail:	
Location of the Complainant County	County	Sub-County	Ward	Village
Signature of the Complainant	Or if he chooses to be anonymous		Reason for staying anonymous	
Description of the Complaint (s)				
Resolution of the Complaint	Yes		No:	
Referral	Yes		No:	
If referred: Who was it referred and what is position or title of the referral	Contact of the referrals		E-mail of the referral	
Resolution Communicated to the Complainant	Yes		No	

IX: CHANCE FIND PROCEDURE MANAGEMENT PLAN

1. Purposes of the chance find procedure

The chance find procedure is a project-specific procedure that outlines actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation. A Chance Find Procedure, as described in IFC Performance Standard 8 and EBRD Performance Requirement 8 and law on Cultural Heritage is a process that prevents chance finds from being disturbed until an assessment by a competent specialist is made and actions consistent with the requirements are implemented.

2. Scopes of the chance find procedure

This procedure is applicable to all activities conducted by the contractor personnel, who are likely to carry out excavation and uncover a heritage item/site. The procedure details the actions to be taken if a previously unidentified and potential heritage item/site is found during construction activities. The Procedure outlines the roles and responsibilities and the response times required from both project staff, and any relevant heritage authority.

3. Induction/Training

All personnel, especially those working on earth movements and excavations, are to be inducted on the identification of potential heritage items/sites and the relevant actions for them with regards to this procedure during the Project induction and regular toolbox talks. Chance find procedure If any person discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following steps shall be taken:

1. Stop all works in the vicinity of the find, until a solution is found for the preservation of these artifacts or advice from the relevant authorities through the Resident Engineer is obtained;
2. Immediately notify a foreman. The foreman will then notify the Contractor Project Manager and the Environment Officer
3. Record details in Incident Report and take photos of the find;
4. Delineate the discovered site or area; secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities take over;
5. The Contractor Project Manager and the Environment Officer will inform the Resident Engineer who will contact and engage archaeologist. Preliminary evaluation of the findings by

archaeologists will be done and a rapid assessment of the site sought to find out or to determine its importance. Based on this assessment the appropriate strategy can be implemented. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage such as aesthetic, historic, scientific or research, social and economic values of the find;

6. Sites of minor significance (such as isolated or unclear features, and isolated finds) should be recorded immediately by the archaeologist, thus causing a minimum disruption to the work schedule of the Contractor. The results of all archaeological work must be reported to the Resident Engineer who will forward the same to the Ministry/Agency, concern once completed.

7. In case of significant find the Agency/Ministry (Agency for Protection of National Heritage or Archaeological) should be informed immediately and in writing within 7 days from the find

8. The onsite archaeologist provides the Heritage team with photos, other information as relevant for identification and assessment of the significance of heritage items.

9. The Ministry must investigate the fact within 2 weeks from the date of notification and provide response in writing.

10. Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage

11. Construction works could resume only after permission is granted from the responsible authorities through the Resident Engineer.

12. In case no response received within the 2 weeks period mentioned above, this is considered as authorization to proceed with suspended construction works. One of the main requirements of the procedure is record keeping.

All finds must be registered. Photo log, copies of communication with decision making authorities, conclusions and recommendations/guidance, implementation reports kept. Additional information Management options for archaeological site e.g. Site avoidance. If the boundaries of the site have been delineated attempt must be made to redesign the proposed development to avoid the site. The fastest and most cost-effective management option is Mitigation. If it is not feasible to avoid the site through redesign, it will be necessary to sample it using data collection program prior to its loss. This could include surface collection and/or excavation. The most expensive and time-consuming management option is Site Protection. It may be possible to protect the site through the installation of barriers during the time of the development and/or possibly for a longer term. This could include the erection of high visibility fencing around the site or covering the site area with a geotextile and then capping it with fill.

4. The mitigation hierarchy

Avoidance;

- A) Minimization of adverse impacts and implementation of restoration measures, in situ;
- B) Restoration of the functionality of the cultural heritage, in a different location;

Most cultural heritage is best protected by in situ preservation, since removal is likely to result in irreparable damage or even destruction of the cultural heritage. Nonreplicable cultural heritage must not be removed unless all of the following conditions are met:

- a) There are no technically or financially feasible alternatives to removal;
- b) The overall benefits of the project conclusively outweigh the anticipated cultural heritage loss from removal;

Any removal of cultural heritage must be conducted using the best available technique advised by relevant authority and supervised by archaeologist

Human Remains Management Options the handling of human remains believed to be archaeological in nature requires communication according to the same procedure described above. There are two possible courses of action:

1 Avoid.

The development project is redesigned to completely avoid the found remains. An assessment should be made as to whether the remains may be affected by residual or accumulative impacts associated with the development, and properly addressed by a comprehensive management plan.

ii) Exhume.

Exhumation of the remains in a manner considered appropriate by decision makers. This will involve the predetermination of a site suitable for the reburial of the remains. Certain ceremonies or procedures may need to be followed

X. EMERGENCY RESPONSE PLAN FOR ELECTRICAL AND FIRE HAZARDS

1. Overview and Objectives

This emergency response plan (ERP) aims to protect personnel, equipment, and infrastructure at the Mwaepé Fish Landing Site from fire and electrical hazards, including potential incidents involving the Ice Flake Machine and elevator systems. Through early detection and appropriate response measures, the ERP aims to minimize risk, ensure efficient evacuation, and limit asset loss.

2. Identified Hazards and Risk Assessment

The key hazards related to fire and electrical safety are as follows:

Fire Hazards: Flammable materials, electrical malfunctions, Ice Flake Machine overheating, cooking activities in on-site restaurants, and electrical faults in lighting or equipment.

Electrical Hazards: Electrical shocks from equipment (pumps, aeration blowers, level sensors), faults in power supply lines, short circuits, and emergency elevator operations during outages.

3. Emergency Response Equipment

To align with safety measures from the ESIA report, the following equipment will be installed:

Fire Extinguishers: Installed in all key areas(as shown on the drawings), including near the Ice Flake Machine, elevator, and kitchen zones. Types include CO₂ extinguishers for electrical fires and foam extinguishers for general use.

Smoke Detectors and Alarms: Positioned in strategic locations to detect smoke from any fire outbreak promptly.

Fire Hose Reels: Equipped with a 30-meter hose and nozzle, available at various accessible locations within the landing site.

Fire Assembly Points: Clearly marked outside the main building for safe gathering during an evacuation.

Emergency Power Cut-off Switches: Installed for critical equipment, including the Ice Flake Machine and elevator, to reduce electrical risk in emergencies.

Backup Power for Elevator: Ensures safe evacuation in the event of a power outage, with an emergency battery for elevator descent.

Signage and Maps: Emergency evacuation maps and fire exit signs will guide occupants to the assembly point.

4. Roles and Responsibilities

Safety Manager: Oversees emergency preparedness, including training, drills, and equipment inspections.

Designated Fire Marshal: A trained individual on each shift responsible for initiating the emergency response, conducting evacuations, and managing fire-fighting efforts until emergency services arrive.

Electrical Officer: Responsible for routine maintenance checks on all electrical installations and conducting risk assessments for new or high-powered equipment like the Ice Flake Machine and elevators.

5. Emergency Response Procedures

5.1 Electrical Emergencies

Detection: In case of electrical sparks, smoke, or unusual noises from equipment, personnel should immediately alert the Electrical Officer.

Isolation: Shut off the main power supply to affected equipment if safe to do so.

Evacuation: Evacuate the area if there is a potential for a fire outbreak.

Reporting: Notify the project manager and record the incident in the site log.

Assessment and Recovery: Once isolated, conduct a risk assessment to identify root causes and determine any repair needs before resuming operations.

5.2 Fire Emergencies

Detection and Alarm Activation: Any detected fire triggers the alarm system. On hearing the alarm, occupants must immediately follow the evacuation procedures.

Evacuation: Exit calmly through designated routes to the assembly point, guided by fire exit signs and evacuation maps.

Containment Efforts: Designated fire marshals, if safe, will use fire extinguishers to control the fire, focusing on smaller, manageable flames.

External Response: Call emergency services for additional support.

Roll Call: At the assembly point, conduct a roll call to ensure all personnel are accounted for.

6. Training and Drills

Regular fire drills, evacuation exercises, and electrical safety training will be conducted to enhance preparedness. Staff will receive training on the use of fire extinguishers, emergency shut-off procedures, and first-aid response.

7. Routine Inspections and Maintenance

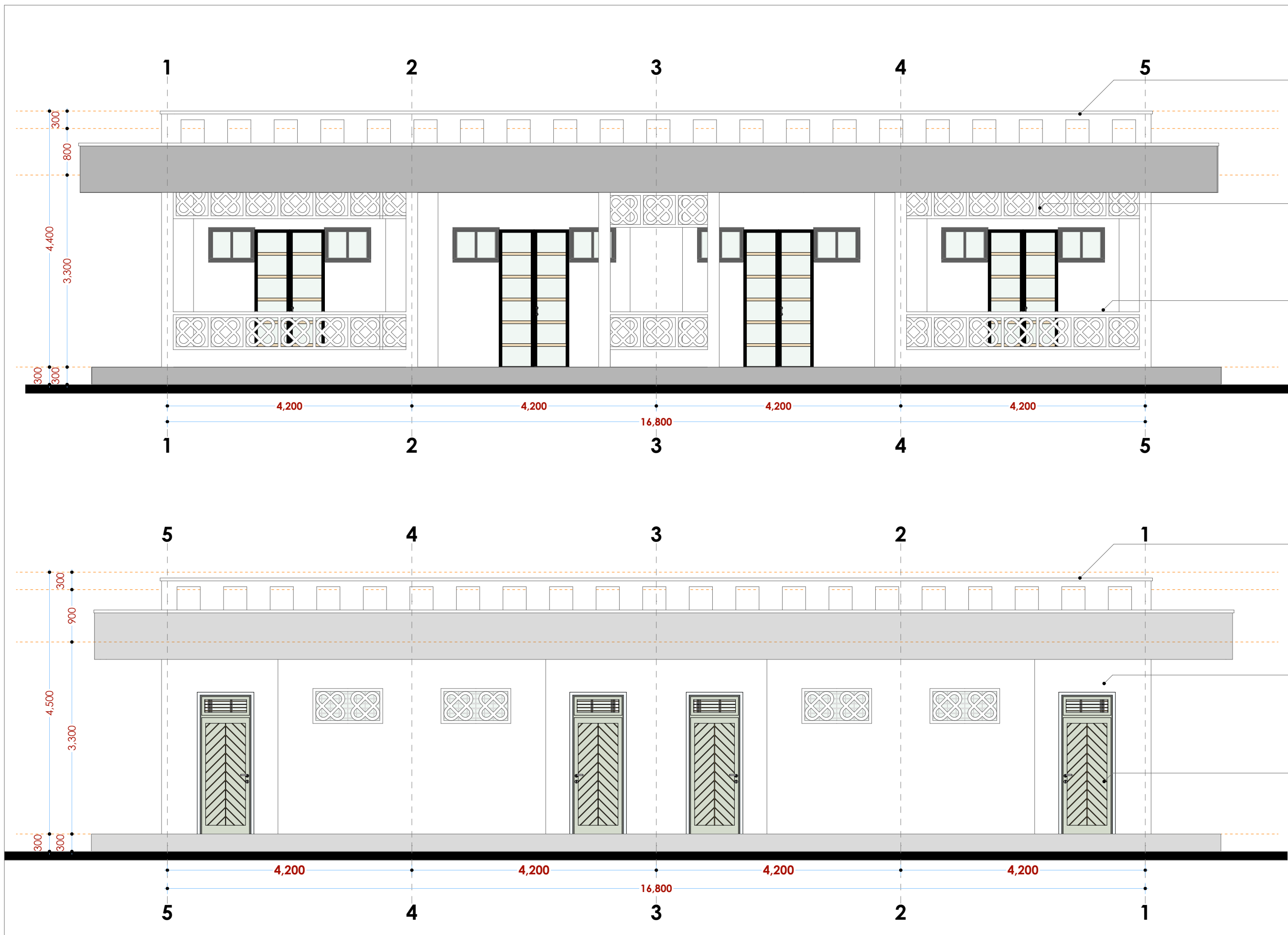
Fire Equipment Checks: Monthly inspection of fire extinguishers, alarms, and hose reels.

Electrical System Inspections: Routine checks on power lines, circuit breakers, and equipment, with specific attention to the Ice Flake Machine and elevator systems.

Documentation: All inspection and maintenance activities are recorded in a logbook for reference and accountability.

**ANNEX 1 – PROJECT DESIGNS
AND
DRAWINGS**

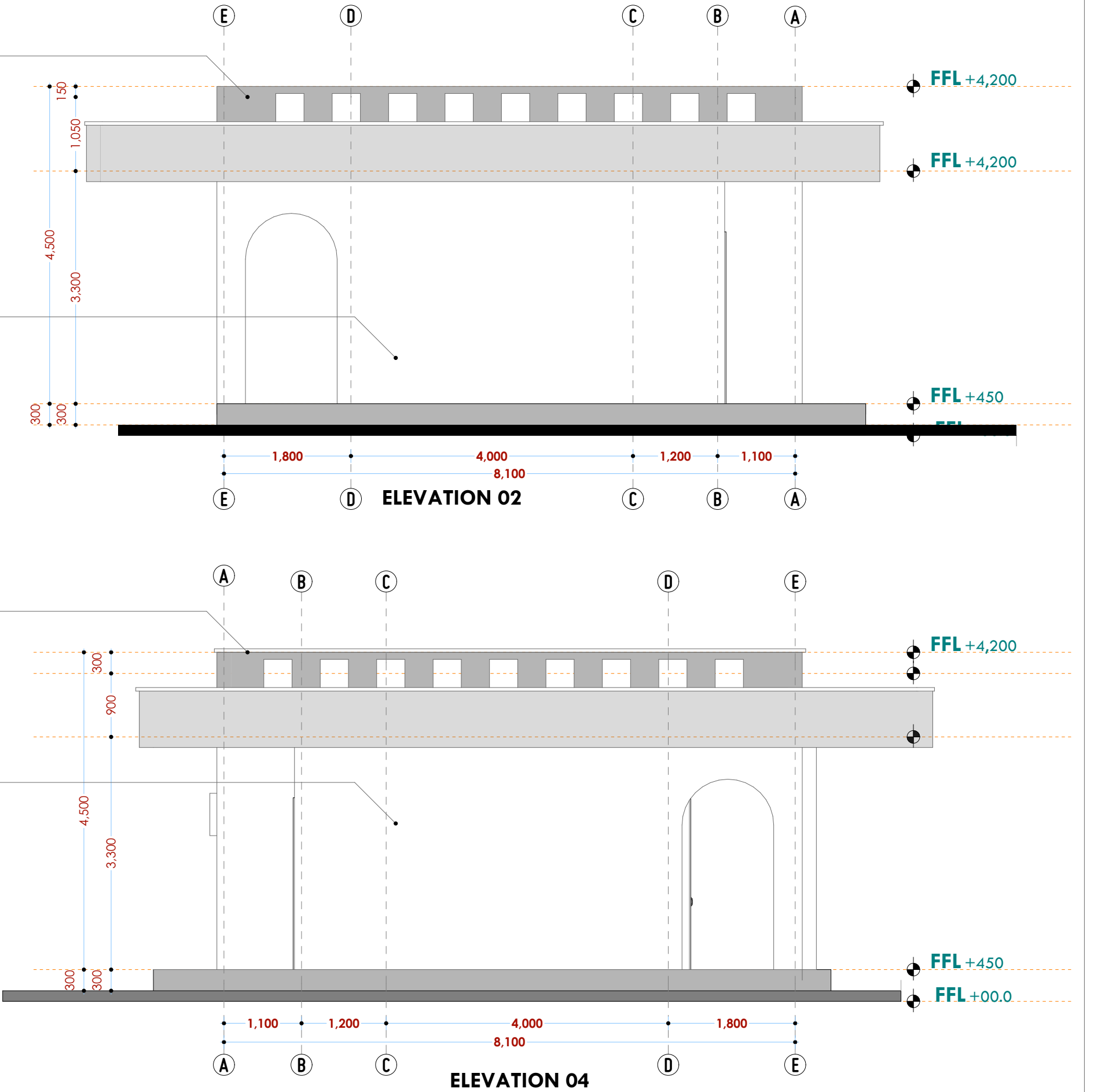
ELEVATIONS



COPING
50X250MM CONCRETE COPING ON
200MMX1200MM
HIGH MASONRY UPSTAND

VENT
150MMX600MMX600MM THICK
CONCRETE VENT WITH SWAHILI MOTIF
PATTERN

WALLING
200MM THICK MASONRY
WALL PLATERED AND PAINTED ON
THE INSIDE AND OUTSIDE

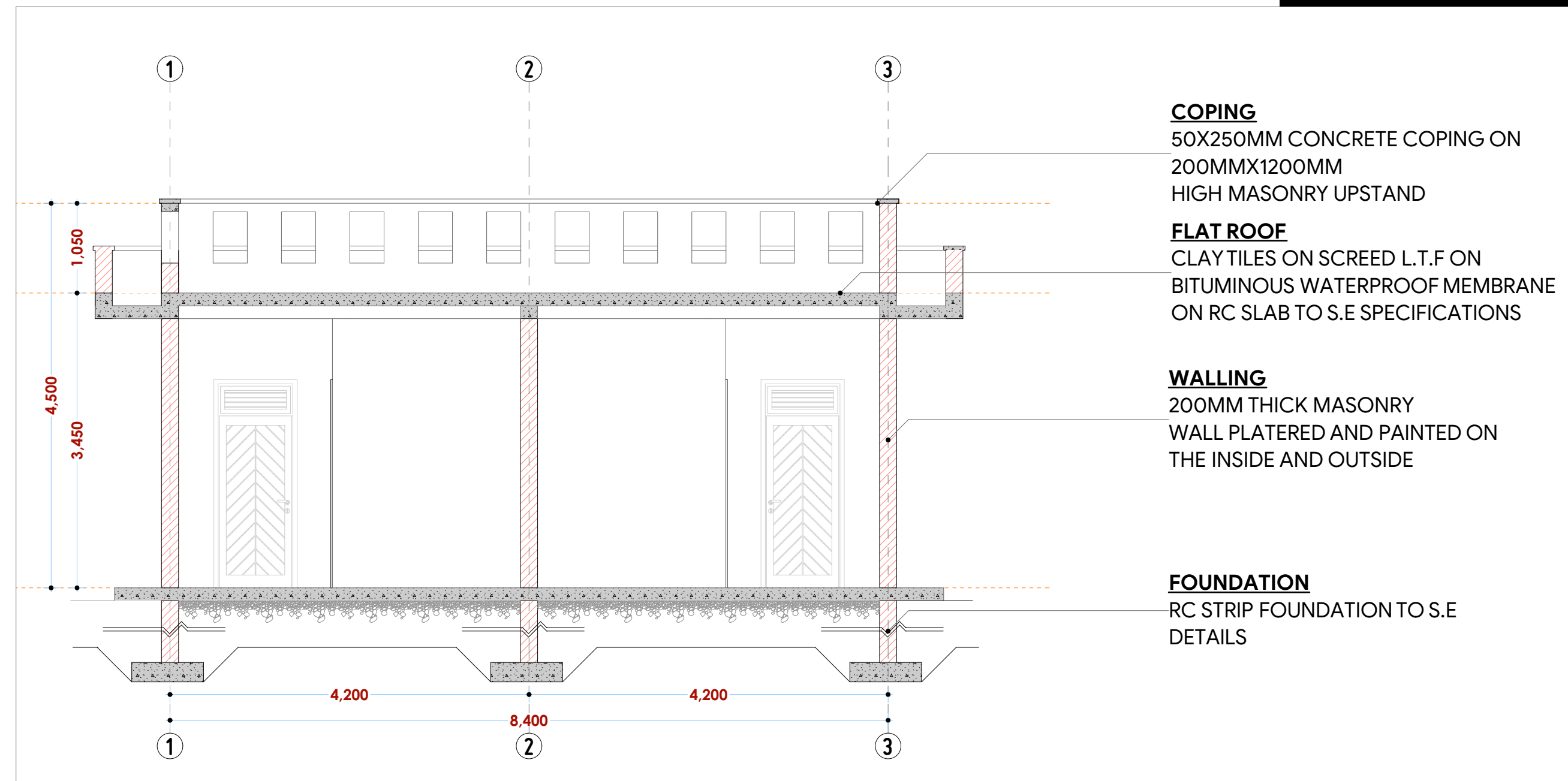


COPING
50X250MM CONCRETE COPING ON
200MMX1200MM
HIGH MASONRY UPSTAND

WALLING
200MM THICK MASONRY
WALL PLATERED AND PAINTED ON
THE INSIDE AND OUTSIDE

DOOR
DOOR TO SCHEDULE

SECTION 01

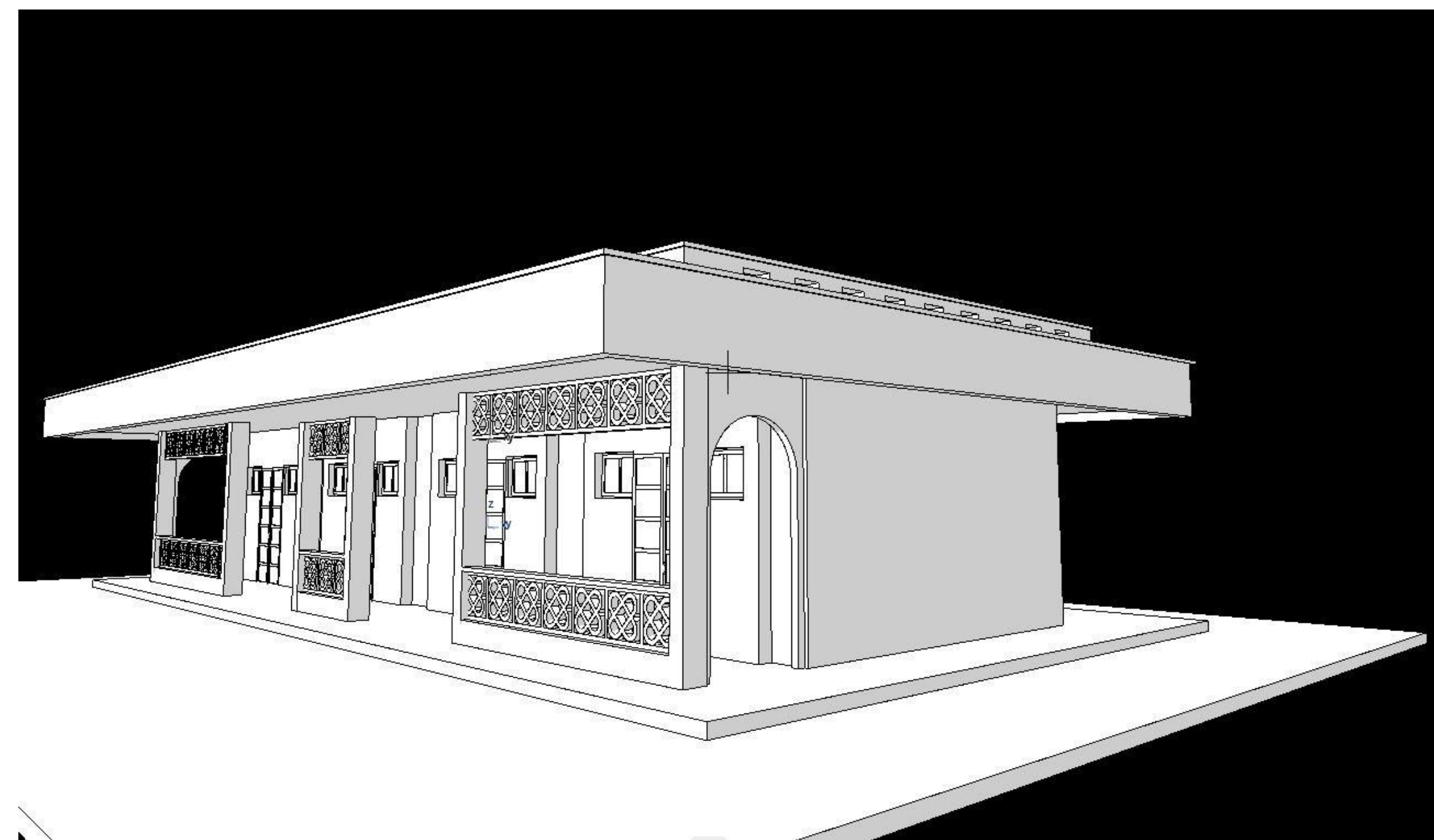


COPING
50X250MM CONCRETE COPING ON
200MMX1200MM
HIGH MASONRY UPSTAND

FLAT ROOF
CLAY TILES ON SCREED L.T.F ON
BITUMINOUS WATERPROOF MEMBRANE
ON RC SLAB TO S.E SPECIFICATIONS

WALLING
200MM THICK MASONRY
WALL PLATERED AND PAINTED ON
THE INSIDE AND OUTSIDE

FOUNDATION
RC STRIP FOUNDATION TO S.E
DETAILS



- NOTES:**
- GENERAL**
- All measurements are shown in millimeters. Measurements should not be scaled off the drawing.
 - The contractor must check and verify all dimensions before commencing any work. Any discrepancy must be notified to the architect.
 - All sections should be read as per the floor plan and all discrepancies must be notified immediately to the designer and clarified by consulting the respective consultants' drawings.
- CONSTRUCTION**
- Damp proof course must be provided under all external walls at grade. DPC to be minimum 150mm above ground level.
 - All slab at grade to be poured on 1000gauge polytheneon 50mm stone dust blinding on compacted hardcore.
 - All soils under slab and around external foundation to be treated for termite control.
 - Window cills must be finished before internal plastering.
- CIVIL**
- All soils on cut embankment to be stabilized. The slope is not to exceed the natural angle of repose of the soil.
- STRUCTURAL**
- All RC works to Structural Engineer's details.
 - Depth of foundation to be determined on site to SE approval.
 - All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
- MECHANICAL**
- All plumbing and drainage to comply with the relevant approving local authority's specifications.
 - All service ducts to be accessible from all floors.
 - Deep seal or anti-vac to all fittings connected to the SVP's or waste pipes. All bends and junctions to have inspection plates.
 - SVP to be provided at the head of the drainage.
 - Drain pipes passing beneath buildings and driveways to be encased in 150mm concrete surround.
 - All underground foul and waste drain pipes shall be UPVC and comply to BSS 4514 and 5255. cast iron to comply to BSS 497 table 6 grade C except ones in the driveway which shall comply to BSS 556.
 - All inspection chamber covers and frames shall be cast iron to comply to BSS 497 table 6 grade C except
 - Storm water drain shall comply to BSS 556.
 - Minimum slopes to drains shall be 1%.
 - No chasing will be allowed in the slabs for pipes. Sleeves will be allowed in the slabs with the written approval of the Structural Engineer.
 - All testing of pipes must be completed before plastering.
 - All mechanical works must be co-ordinated with electrical works. Any conflicts must be clarified before work begins.
- ELECTRICAL**
- All conduits must be laid before plastering.
 - All electrical work must be co-ordinated with mechanical works. Any conflicts must be clarified before work begins.
- FIRE**
- Install water ring main with fire hydrant with 2.5" instantaneous coupling adaptors
 - Provide underground water tank with automatic electric booster pump for ring main
 - provide automatic push button fire alarm system
 - provide heat and smoke detectors in each room
 - provide 9kg. dry powder fire extinguishers to ME specifications

REVISIONS

No.	Description	Date

Project :
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT

Plot L. R. No.:

Location :
MWAEPE KWALE COUNTY

Client:
STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY

Signature _____

Subject :
WORKING DRAWINGS.

Consultancy :
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Date: NOV 2023 Drawing No. 12-001-F032		
Scale N.T.S		

