

GOVERNMENT OF SIERRA LEONE –  
MINISTRY OF FINANCE

**ENVIRONMENTAL AND SOCIAL  
IMPACT ASSESSMENT (ESIA)  
AND  
ENVIRONMENTAL AND SOCIAL  
MANAGEMENT PLAN (ESMP)  
FOR THE PROPOSED  
UPGRADE OF MAKENI  
CENTRAL MARKET**



May 5, 2025

GOVERNMENT OF SIERRA LEONE – MINISTRY OF FINANCE		<b>Document Type:</b>	<b>Draft</b>
		<b>Contract Ref:</b>	<b>SL-MOFED-261825-CS-CQS</b>
<b>ESIA and Associated ESMP with RP for the Proposed Upgrade of Makeni Central Market</b>		<b>No. of Pages:</b>	<b>386</b>
<b>Draft Environmental and Social Impact Assessment and Environmental and Social Management Plan Report (ESIA/ESMP Report)</b>		<b>Version no.:</b>	<b>3</b>
Document Control			
Revision / Date	Issued by:	Reviewed by:	Approved by:
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## LIST OF ACRONYMS

ACM	Asbestos Containing Material
AD	Anerobic Digestion
AOI	Area of Influence
AQI	Air Quality Index
ASP	Aerated Static Piles
ASSL	Audit Service Sierra Leone
BGS	British Geological Survey
BOQ	Bill of Quantities
CESMP	Construction Environmental and Social Management Plan
CFR	Code of Federal Regulations
CHP	Combined Heat Power
CHS	Community Health and Safety
CNG	Compressed Natural Gas
CoC	Code of Conduct
DHS	Demographic and Health Survey
E&S	Environmental and Social
EDGAR	Emissions Database for Global Atmospheric Research
EDSA	Electricity Distribution and Supply Authority
EHS	Environmental, Health, and Safety
EIA	Environmental Impact Assessment
ELARD	Earth Link and Advanced Resources Development
EPA	Environment Protection Agency
ERP	Emergency Response Plan
ESF	Environmental, and Social Framework
ESIA	Environmental, and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMMP	Environmental, and Social Management and Monitoring Plan
ESMP	Environmental, and Social Management Plan
ESSs	Environmental and Social Standards
FAO	Food and Agriculture Organization
FDD	Fiscal Decentralization Division
FGD	Focus Group Discussion
FS	Feasibility Study
FSU	Family Support Unit
FWS	Free Water Systems
GBV	Gender-based Violence
GHG	Greenhouse Gas
GIIP	Good International Industry Practice
GM	grievance mechanism
GMS	Gender Mainstreaming Strategy
GoSL	Government of Sierra Leone
GRM	Grievance Redress Mechanism
GW	Groundwater
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome

HVAC	Heating, Ventilation, and Air Conditioning
IARC	International Agency for Research on Cancer
ICC	International Code Council
IDA	International Development Association
IEA	International Energy Agency
IFC	International Finance Corporation
IHT	Institution of Highways and Transportation
ILO	International Labor Organization
IOSH	Institution of Occupational Safety and Health
IPCC	International Panel on Climate Change
IPF	Investment Project Financing
ISC	Innovative Solutions Consultancy
ISWM	Integrated Solid Waste Management
JRC	Joint Research Centre
KPI	Key Performance Indicators
LMP	Labor Management Plan
LNG	Liquified Natural Gas
MCC	Makeni City Council
MLGRD	Ministry of Local Government and Rural Development
MLHCP	Ministry of Lands, Housing and Country Planning
MLSS	Ministry of Labor and Social Security
MOECC	Ministry of Environment and Climate Change
MoF	Ministry of Finance
MoHS	Ministry of Health and Sanitation
MoPED	Ministry of Planning and Economic Development
MOWPA	Ministry of Works and Public Assets
MSW	Municipal Solid Waste
MSWGCA	Ministry of Social Welfare, Gender and Children's Affairs
MTBE	Methyl Tertiary Butyl Ether
MTCA	Ministry of Tourism and Cultural Affairs
MTNDP	Medium-term National Development Plan
MWR	Ministry of Water Resources
NA	Not Applicable
NAP	National Adaptation Plan
NAPHS	National Action Plan for Health Security
NCCPF	National Climate Change Policy Framework
NDC	National Determined Contribution
NDP	National Development Plan
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGO	Non-Governmental Organization
NLe	New Leones
NRP	National Referral Protocol
NWRMA	National Water Resources Management Agency
ODS	Ozone Depleting Substances
OESMP	Operation Environmental and Social Management Plan
OHS	Occupational Health and Safety

OSHA	Occupational Safety and Health Administration
PAH	Poly Aromatic Hydrocarbons
PAPs	Project Affected Persons
PD	Preliminary Design
PEL	Permissible Exposure Limit
PMU	Project Management Unit
POP	Persistent Organic Pollutant
PPE	Personal Protective Equipment
PPP	Public-Private Partnership
PRS	Poverty Reduction Strategy
PSC	Project Steering Committee
RAIC	Right to Access Information Commission
RCM	Regional Climate Model
RP	Resettlement Plan
RPE	Respiratory Protective Equipment
RUSLP	Resilient Urban Sierra Leone Project
SALWACO	Sierra Leone Water Company
SDS	Social Development Specialist
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SLEPAA	Sierra Leone Environment Protection Agency Act
SLIEPA	Sierra Leone Investment and Export Promotion Agency
SLmet	Sierra Leone Meteorological Agency
SLNFF	Sierra Leone National Fire Force
SLP	Sierra Leone Police
SLRA	Sierra Leone Roads Authority
SLRTC	Sierra Leone Road Transport Corporation
STD	Sexually Transmitted Disease
SW	Surface Water
SWM	Solid Waste Management
TOR	Terms of Reference
UNCRC	United Nations Committee on the Rights of the Child
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNSCR	United Nations Security Council Resolution
USD	United State Dollar
VRF	Variable Refrigerant Flow
WB	World Bank
WDPA	World Database on Protected Areas
WHO	World Health Organization
WMP	Waste Management Plan
WWTP	Waste Water Treatment Plant

## EXECUTIVE SUMMARY

### 1.1 Introduction

The Government of Sierra Leone, with funding from the International Development Association (IDA) of the World Bank, initiated the "Resilient Urban Sierra Leone Project" (RUSLP). The Makeni Central Market upgrade is a subcomponent of RUSLP, designed to improve traders' working conditions, stimulate local economies, and enhance city councils' revenue collection, thereby supporting better urban management, local service delivery, and access to resilient infrastructure.

The aim of the ESIA and ESMP reports is to ensure compliance with Sierra Leone's Environment Protection Agency (EPA-SL) regulations and the World Bank's Environmental and Social Framework (ESF). The reports will be reviewed cleared and by the EPA-SL and the World Bank before project implementation.

The ESIA/ESMP report covers the policy, legal, and administrative framework; project description; baseline data; stakeholder engagement; project alternatives analysis; and impact assessment; and presents the Environmental and Social Management Plan (ESMP), detailing mitigation, monitoring measures and management plans required during the project implementation to avoid and control adverse environmental and social risks and impacts.

The ESIA/ESMP process was conducted in accordance with the terms of reference provided for the study, ensuring a thorough evaluation of the project's environmental and social risks and impacts and providing feasible mitigation measures throughout its lifecycle. The methodology included a literature review, primary and secondary data collection, and analyses covering air quality monitoring, noise assessments, geological and hydrological studies, biodiversity assessment, and socioeconomic baseline studies. Public consultations were held at different stages to ensure stakeholder engagement and participation in the project design.

### 1.2 Policy, Legal and Institutional Framework

The legislation, policies, strategies, institutional arrangements in Sierra Leone, international conventions, as well as the World Bank's international environmental and social framework, standards, and guidelines relevant to the project were reviewed to ensure that all such requirements are fully considered throughout the ESIA/ESMP process. The table 1 below provides a summary of the main policies, legislation, and concerned institutional players, which are discussed in detail in Section 2.

**Table 1 Summary of the main policies, legal and institutional framework**

Framework	Legislation
Policies and Plans	National Referral Protocol on Gender Based Violence, 2024
	National Adaptation Plan 2021
	Sierra Leone National Action Plan, 2018
	National Disaster Risk Management Policy, 2018
	National Policy Roadmap on Integrated Waste Management, 2015
	National Environmental Policy, 2013
	National Water and Sanitation Policy, 2011
Acts	National Policy on Gender Mainstreaming, 2000
	Gender Equality and Women Empowerment Act, 2023

Framework	Legislation
	National Development Induced Resettlement Act, 2023 Employment Act, 2023 Environment Protection Agency Act, 2022-2010-2008 Land Act, Customary Land Act, 2022 National Disaster Management Agency Act, 2020 Sierra Leone Local Content Agency Act, 2016 The Child Rights Act, 2007
Presidential Initiative	Feed Salone
Institutional players	Ministry of Finance Ministry of Local Government and Rural Development (MLGRD) Ministry of Social Welfare, Gender and Children's Affairs (MSWGCA) Ministry of Water Resources (MWR) Environment Protection Agency (EPA) Ministry of Health and Sanitation (MoHS) Ministry of Labor and Social Security (MLSS) Electricity Distribution and Supply Authority (EDSA) Sierra Leone Water Company (SALWACO) Sierra Leone Roads Authority (SLRA) Makeni City Council
International conventions	African Convention on the Conservation of Nature and Natural Resources Convention on Wetlands (Ramsar) United Nations Framework Convention on Climate Change (UNFCCC) Vienna Convention for the Protection of the Ozone Layer African Charter on the Rights and Welfare of the Child Convention on Forced or Compulsory Labor Montreal Protocol Protocol of the African Charter on Human and Peoples rights on the rights of older persons in Africa Protocol to the African Charter on Human and Peoples' rights on the rights of women in Africa Sendai Framework for disaster risk reduction 2015-2030 Stockholm Convention on Persistent Organic Pollutants (POPs) UNESCO Convention for the Protection of the World Cultural and Natural Heritage UN Convention on the Rights of the Child
World Bank Standards	World Bank Environmental and Social Framework and Standards: ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8, ESS10 World Bank Environmental, Health and Safety Guidelines: Environmental, Occupational Health and Safety and Community Health and Safety

An overview on the Sierra Leonean national legal framework compared to the WB ESSs has been developed to identify key gaps and outline strategies to bridge them. Table 2 below provides a summary of these primary gaps, which are further detailed -together with gap bridging measures – in Section 2.4.

**Table 2 Summary of main gaps identified between Sierra Leonean national legislation and WB ESSs**

<b>Environmental and Social Standard</b>	<b>Main Identified Gaps</b>
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Lacks comprehensive social risk management, continuous stakeholder engagement, grievance mechanisms, and adaptive management practices.
ESS2: Labor and Working Conditions	Gaps in grievance systems, comprehensive health and safety standards, reliable enforcement of anti-discrimination policies, guaranteed employment contracts, and worker protection against retaliation for reporting unsafe conditions.
ESS3: Resource Efficiency and Pollution Prevention and Management	Lack of rigorous resource efficiency targets across sectors, limited enforcement of pollution control standards, minimal hazardous waste management and materials frameworks, and weak monitoring and reporting mechanisms.
ESS4: Community Health and Safety	Lack of emergency preparedness and response procedures, implementation strategies, community engagement, and integrated community health and safety approaches.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Challenges in effective implementation, enforcement, and assessment, and limited data and resources for biodiversity monitoring.
ESS8: Cultural Heritage	Lack of integration of cultural heritage in sustainable development, community involvement and Benefit-sharing mechanisms, and emergency procedures for heritage protection. Limited recognition and protection of indigenous people's cultural heritage.
ESS10: Stakeholder Engagement and Information Disclosure	Gaps in structured stakeholder engagement and effective information disclosure throughout the project lifecycle.

### 1.3 PROJECT DESCRIPTION

#### 1.3.1 Makeni Central Market Situation and Upgrade

The Makeni Central Market, a crucial economic hub located in Makeni Town, Bombali district, Sierra Leone, situated about 100 meters from the Makeni Clock Tower and less than 1 kilometers from the Makeni City Council, covers an area of approximately 3,240 m<sup>2</sup> with a total of 2,745 traders (1,209 traders selling inside the central market and 1,536 traders selling outside the market building official boundaries, at different surrounding locations). The land housing market is predominantly owned by the Makeni City Council. The Makeni Central Market operates predominantly six days a week, with Sunday as a rest day. The Makeni central market lacks essential facilities and suffers from inadequate infrastructure, including insufficient sanitation, clean water, storage area, electricity, security, and paved surfaces which creates considerable inconvenience for both traders and customers.

The upgrade aims to address these deficiencies by improving working conditions, boosting local economies, and increasing city council revenues through enhanced market dues collection.

The upgraded market will feature new buildings (Block A and Block B) over two floors, including market stalls, stores, washrooms, loading bays, cold rooms, a healthcare Centre,

and an administration room. The design incorporates flood risk reduction considerations, essential services and modern infrastructure to support efficient market operations.

### *1.3.2 Makeni Relocation Site Conditions*

Initially, four sites were selected to accommodate the relocated traders during the upgrade of the Makeni central market: Campbell Street & Savage Street, Teko Market, Turn Table, and Sesay Market. However, due to space constraints and overcrowding at three of the sites, only one site was ultimately retained for relocation: Campbell and Savage Streets site features a mix of commercial and residential area, partly occupied by temporary timber tables for street trading. Overall, the relocation site lacks essential services and requires significant upgrades to meet the needs of the relocated market community.

### *1.3.3 Planning, Construction, Operation and Decommissioning*

For the Makeni central market and Makeni relocation site, the planning phase involves finalizing design elements, completing preliminary studies, completion of the ESIA, ESMP, and RP studies (including consultations with PAPs), development of tenders for contractors, and preparing for construction works.

Construction is expected to span approximately 24 months for the Makeni central market and will involve various activities, including the preparation of the relocation site, and construction works at the main market. The preparation of relocation site will mainly include the installation of market sheds. The construction activities at Makeni central market will include the demolition of obsolete structures, site preparation, earthworks such as drilling and excavation, substructure works, concrete works, block work, woodwork, metal work, floor and ceiling finishing, painting and decorating, electrical installation, mechanical and plumbing installation.

During construction, the Makeni relocation site (Campbell and Savage streets) will accommodate 1,300 traders affected by the project, while 366 traders sell goods — such as cosmetics, salon products, electronics, etc. that are difficult to accommodate at the relocation site due to their nature and the site's arrangement. These traders will be provided with additional support (or an “additional compensation package”) in addition to the disturbance allowance, to enable them to self-relocate to other markets in the city. Electricity will be supplied to the relocation site by the national utility EDSA, and water supplied by a solar powered borehole. The site will be also provided with 20 mobile toilet facilities and 26 moveable trash bins. The upgraded Makeni Central Market can house a maximum of 1,724 traders and will be powered primarily by the national grid (EDSA), supplemented by solar power and a backup generator. The Makeni central market will also feature enhanced water storage, improved sanitation, and adequate storage facilities to ensure efficient operation. Waste management will be effectively handled in collaboration with the Makeni City Council.

The decommissioning phase for the Makeni Central Market is expected to occur in the long term due to factors such as structural deterioration, land-use changes, or planning shifts. It will involve demolishing market structures, removing utilities, managing hazardous and non-hazardous waste, restoring the site, and transporting materials off-site. Similarly, if the temporary relocation site is not repurposed, its decommissioning will include dismantling stalls

and sheds, demolishing concrete structures, cleaning the site, and restoring it to its original condition, with waste transportation and management also carried out.

## **1.4 ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS**

### *1.4.1 Makeni Central Market and Relocation Sites Conditions*

*The environmental and social baseline conditions at the Makeni central market and Makeni relocation site are summarized below:*

- *Atmospheric environment (temperature, rainfall, wind pattern and humidity)*
- *Climate*
- *Air Quality (Noise and GHG emissions)*
- *Topographic and Geographic setting*
- *Geology and Hydrogeology (soil, surface and groundwater)*
- *Biological Environment*
- *Social and Socioeconomic status (demographic, livelihood, infrastructure etc)*

## **1.5 STAKEHOLDER ENGAGEMENT PROCESS**

The SEP outlines strategies for engaging stakeholders throughout the market upgrade project. It ensures transparent communication, meaningful consultation, and stakeholder involvement following Sierra Leonean legislative requirements, the RUSLP Stakeholder Engagement Plan (SEP), and the World Bank's Environmental and Social Standard 10.

The SEP aims to identify stakeholders and assess their interests, engage them, ensure transparent communication, informed participation, and provide mechanisms for feedback and grievances while ensuring the inclusion of feedback in the project phases.

During the ESIA stage, stakeholders have been identified and consulted using various consultation methods. Key meetings were held during the scoping, ESIA/ESMP and RP preparation phases, addressing stakeholder concerns, discussing relocation strategies, and highlighting the importance of the market upgrade for local economic growth and infrastructure resilience. The market design was presented to the Traders, and their opinions, concerns, and suggestions were sought throughout the process. They were also informed of the need to relocate during the market upgrade, to which they consented.

The SEP is an ongoing engagement where public consultations shall continue during construction, operation and decommissioning phases and stakeholders should be involved in decision-making through continuous feedback, ensuring fair representation for all groups, fostering responsibility and ownership of project outcomes.

## **1.6 IMPACT ASSESSMENT AND MITIGATION MEASURES**

### *1.6.1 Impact Assessment and Mitigation Measures at the Makeni Central Market Upgrade and the relocation Site Impact Assessment and Mitigation Measures at the Makeni Central Market Upgrade and relocation Sites*

The Makeni central market site impacts and mitigation measures during upgrade (demolition and construction), operation and decommissioning phases are summarized below, the

Impact significance levels are based on the likelihood of occurrence and the consequence rating criteria described in Table 6 - 5 of the main report

The assessment process involved looking at the environmental baseline features, uniqueness, potential vulnerabilities and the nature, location, and duration of construction activities, and project design features in effect throughout the construction operation and decommissioning phase. An understanding of the nature of the impacts the proposed Market Upgrade activities or operations would have on the natural and human environment is vital to decision-making on the path of both the beneficiaries, the subnational and national government.

#### Positive Impacts

The project is anticipated to have positive socio-economic impacts on traders and residents. The provision of a modern market will ensure that traders operate in a more convenient place. It is also anticipated that the project will result in job creation and labor remuneration accruing to residents and improve own source revenue generation of the beneficiary City Councils.

Inherent with the proposed project will be the following negative impacts throughout the respective phases:

#### Construction Phase

The impacts related to the construction phase include:

##### Air Emissions

- Airborne particles (dust) from soil disturbance and demolition works and from offsite quarrying, fugitive emissions during construction works and odors from paving activities, emissions from generators, machinery, and equipment (including from quarrying offsite)

##### Noise and Vibration

- Increase in vibration and noise levels from general demolition and construction activities, mobilization and operation of equipment and generators, and movement of vehicles onsite and offsite.

##### Wastewater Generation

- Concrete mixing, curing and washing of equipment and machinery and the use of mobile toilets will result in wastewater being generated at the construction sites

##### Solid waste

- Demolition, construction material and packaging material disposal and inadequate storage and disposal of domestic solid waste

##### Accidental releases

- Accidental spills of chemicals (paints, solvents) fuels and oils onsite and offsite (at quarrying site)

## Depletion of Resources

### Energy Resources

- Electricity consumption and fuel consumption for generators, vehicles and equipment operations onsite and offsite (at quarrying site)

### Water Resources

- Water depletion and quality deterioration from water consumption, runoff and sedimentation, and reduced soil permeability
- Alterations to the land surface, reduced ground permeability and water infiltration from site clearance, excavation and demolition activities, and sourcing of aggregate materials

### Biological Resources

- Loss of vegetation, fauna, flora and habitats from clearance, excavation, demolition, quarrying and inadequate disposal of resulting waste and wastewater

## Social Impacts

### Traffic

- Increase in traffic circulation from the transportation of construction materials and waste, traffic-related accidents or injuries onsite and offsite (at quarrying site)

### Health and Safety

- Impact on workers' safety (including from accidents) resulting from improper handling and storage of construction material, and construction and demolition activities
- Impact on workers' safety resulting from improper handling and storage of chemicals and solid waste generated related to demolition and construction activities
- Impact on workers' and community health and safety resulting from exposure to occupational hazards (e.g., noise, air pollution, dust, fire hazards, etc.) and potential for occupational accidents/ accidents and pedestrians, and disturbance to the nearby community.

### Land Use (Use of the existing site for construction)

- Resettlement impacts from the relocation of traders and integration challenges for the relocated traders into new market environment at their relocation site
- Loss of livelihoods because of the planned interventions and relocation
- Loss of private assets (land, structures, etc.)
- Possible social unrest among residents if they are not hired for the works

### Labour Influx

- Risk of labor influx from other communities, child labor, forced labor, undesirable behavior such as theft, alcoholism, drug abuse, GBV and SH/SEA, and transmission of communicable diseases (HIV/AIDS etc.)

## Operation Phase

Impacts related to the operation phase include:

### Air Emissions

- Change in overall atmospheric pollutant emissions (odor emissions from septic tanks, waste and food storage)
- Change in air emissions and GHG emissions (exhaust emissions and dust from traffic, generators operation, and fuel-powered equipment that might be used in the market site)

### Noise and vibration

- Noise emissions from the daily market activities.
- Movement of vehicles and motor bikes to and from the market, generators, maintenance activities

### Wastewater

- Treatment of domestic wastewater collected in septic tanks and potential leakage of the septic tank where wastewater will be collected prior to treatment in a wastewater treatment facility, or malfunction of the treatment system

### Solid waste

- Solid waste resulting from operational activities including food and market waste and food packaging materials. Waste generated from end-of-life solar panels and batteries

### Accidental Releases

- Spills and leaks from generators and maintenance activities

### Depletion of Resources

#### Energy Resources

- Electricity consumption and backup power system for cold room and equipment; fuel consumption for generators and transportation of goods and services.

#### Water Resources

- Water consumption for domestic purposes, washing (fruits, vegetables and animal products) and market cleaning

### Biological Resources

- Loss of vegetation and biodiversity from inadequate management of solid waste and wastewater, and the possibility of septic tank malfunctioning and wastewater leakage

### Social Impacts

#### Traffic

- Transportation of goods and market customers leading to congestion and increasing the risk of accidents

#### Health and Safety

- Impact on traders and workers' Health and Safety resulting from improper routine maintenance or repairs and lack of emergency preparedness
- Impact on traders, workers' and community health resulting from poor waste management and sanitation practices.
- Impact on traders' and workers' safety from risk of fire, inadequate management of security system, crimes, harassment and gender-based discrimination

## **Decommissioning Phase**

#### Air Emissions

- Air Emissions from generators, equipment and vehicles airborne particles (dust) from demolition works, debris transport and waste handling

#### Noise and Vibration

- Increase in vibration and noise levels from general demolition, mobilization and operation of equipment, and movement of vehicles.

#### Wastewater

- Site cleaning, washdown of equipment, and temporary worker facilities

#### Solid waste

- Demolition waste and domestic solid waste disposal, solar panels and batteries from solar systems

#### Accidental Releases

- Accidental spills of chemicals, fuels and oils

#### Depletion of Resources

### Energy Resources

- Fuel consumption for vehicles and equipment operation

Removal of electrical systems installations and renewable energy installations

### Water Resources

- Increase demand on local water resources for dust suppression, site cleaning and equipment washing

### Social Impacts

#### Traffic

- Increase in traffic circulation and traffic-related accidents or injuries from the transportation of waste from demolished or dismantled structures

#### Health and Safety

- Impact on workers' safety (including from accidents) resulting from improper handling and storage of materials, demolition activities and equipment
- Community health and safety risks from loud noise disturbing nearby residents, mismanagement of decommissioning waste and inadequate safety measures.
- Community health and safety risks from loud noise disturbing nearby residents, mismanagement of decommissioning waste and inadequate safety measures.

### **Impact Mitigation Measures**

The mitigation (preventive, reduction and control) measures and alternatives considered to ensure that the associated and potential impacts of the Proposed Project on the ecological and socio-economic environment are eliminated or reduced to as low as reasonably practicable, thus preserving the ecological integrity of the existing environment and improving the social conditions of the beneficiaries.

The approaches to the mitigation measures include enhancement (for the positive impacts), prevention, reduction, avoidance and compensation (for the significant negative impacts). The mitigation measures for each (significant and adverse) impact of the proposed project activities were generally identified based on the associated effect to the environment and human health/safety. Subsequently, the specific mitigation measures satisfying the mitigation requirement were established, putting into consideration available resources and competencies, on-site conditions, public concerns and technology.

Mitigation measures were subsequently proffered for adverse significant potential impacts. These measures were developed for the adverse impacts through a review of industry experience (past project experience), consultations and expert discussion with multi-disciplinary team and in consultation with the design consultants. Based on the impact assessment matrix in chapter 6, the overall ratings of impact significance High or Medium or

Low were established for each identified impact. The proffered mitigation measures and the expected final residual impact rating for the identified potential significant impacts.

The priority in mitigation is to first apply mitigation measures to the source of the impact (i.e., to avoid or reduce the magnitude of the impact from the associated Project activity), and then to address the resultant effect on the resource/receptor via abatement or compensatory measures or offsets (i.e., to reduce the significance of the effect once all reasonably practicable mitigations have been applied to reduce the impact magnitude).

## 1.7 ANALYSIS OF ALTERNATIVES

This section provides a detailed analysis of various alternatives considered to achieve the project's objectives. This analysis is crucial in identifying the most beneficial and least negatively impactful approach from both environmental and socio-economic perspectives.

Key Alternatives considered:

- Zero or No-project alternative: This option involves retaining the Makeni Central Market in its existing form. However, it is the least favorable due to the negative socio-economic and environmental implications, including persistent poor infrastructure and conditions, lack of employment opportunities, and unmitigated urban poverty. The proposed market upgrade would provide significant benefits that outweigh maintaining the status quo.
- Project Location Alternatives: Relocating the market was considered to a proposed site located at the outskirts of the city; however, a permanent move to this proposed new location was deemed ineffective due to the traders' refusal to move away from the existing central location within the city. No other suitable options were available. As for the relocation site, three sites were initially selected to accommodate the relocated traders; however, due to space constraints and overcrowding at two of the sites, only one site, Campbell and Savage Streets, was ultimately retained for relocation of traders during the market upgrade construction phase. The site was chosen based on factors such as space availability, accessibility, location away from wetlands and flood plains, and community familiarity.
- Project Design Alternatives: Various design options were evaluated, with Option 3bis emerging as the preferred choice. This option optimizes space usage, utilizes local materials, and simplifies construction while maintaining a vibrant urban space. It also offers flexibility and accommodates the diverse needs of traders, aligning with the local context. The other options considered and analyzed are the following:
  - Option 0A and 0B: These options use the cadastral area of 3,240 m<sup>2</sup> with multiple floors, leading to greater challenges in execution and maintenance and reduced effectiveness for commercial purposes.
  - Option 1: This option utilizes the full available area of 9,758 m<sup>2</sup> with 2 floors, requiring a wider surface area and extensive structural work. However, the basic module for traders is smaller than in Option 0.
  - Option 2A: This option also utilizes the full available area of 9,758 m<sup>2</sup> and offers building solutions that enhance space creation and accessibility. However, it requires significant investment, which led to a modified version, Option 2B.
  - Option 2B: This option retains the same urban approach and design as Option 2A but optimizes the available spaces and allows their flexible use, reduces costs and minimizes construction and maintenance complexity.
  - Option 3bis: This was selected as the optimal option, as it makes efficient use of the available area within the cadastral boundaries of 3,240 m<sup>2</sup>, accommodates the targeted minimum number of 1,580 traders (expanded to 1,724 traders as a maximum in the preliminary design) by providing 5m<sup>2</sup> as a basic module for stalls and 65 m<sup>2</sup> as a basic module for stores, and remains within the budget constraints.

- Structural Alternatives: The project evaluates several structural alternatives to ensure a stable, safe, and functional building, with the aim of identifying the best technical solutions. Three primary materials (concrete, brick, and steel) were assessed for their advantages and limitations based on performance criteria such as flexibility, durability, seismic capacity, fire resistance, thermal performance, construction time, and cost. While concrete offers durability and seismic strength, it requires additional insulation and longer construction time. Brick is cost-effective with good thermal insulation but lacks flexibility and seismic resistance. Steel allows for rapid construction, high flexibility, and superior seismic performance, though it has lower fire resistance and higher costs.

Based on the considerations above, concrete and steel were selected as the primary materials for market construction. In the preliminary design, concrete was selected for foundations, columns, beams, and load-bearing walls, while steel was used for reinforcement and for the rooftop structure.

- Sanitation System Alternatives: Three alternatives were assessed: cesspit, wastewater treatment lagoon, and Phyto depuration. Cesspits are not desired as a wastewater management alternative from a sanitary and environmental perspective. The Phyto depuration system was identified as the preferred alternative due to its effectiveness, low cost, minimal maintenance, and higher treatment efficiency compared to lagoons. This system aligns with the project's goals of enhancing environmental sustainability and improving the quality of life for market users. However, as a result of the lack of space near or around the central market, Phyto-depuration is not feasible. The only solution that can be implemented is the provision of septic tanks to store wastewater from the market, which will be regularly emptied by a licensed company and discharged into the nearest existing treatment lagoons, located 5 miles away and constructed by the Sierra Leone Water Company.
- Solid waste management alternatives: Several treatment options for biodegradable waste were evaluated, including aerobic and anaerobic treatment of biodegradable waste. For waste rejects, landfilling and waste to-energy incineration were considered. The proposed solid waste management strategy for Makeni central market involves a combination of sorting at source and recycling, aerobic composting for organic waste, and sanitary landfilling for waste rejects considering the present circumstances, capacities and resources available. This approach balances cost-effectiveness, technical feasibility, environmental protection and sustainability of operations.

## **1.8 Environmental and Social Management and Monitoring Plans**

This section encompasses a set of comprehensive measures aimed at monitoring potential risks and challenges, their impact on the natural and social environment, and the effectiveness of proposed mitigation measures. In addition to these measures, the plans developed for the market upgrade project, including the Labor Management Plan, Emergency Response Plan, Grievance Redress Mechanism, Gender-Based Violence Plan, and Gender Mainstreaming Strategy are referenced in relevant sections and attached as appendices. The plans will guide the implementation of responsible labor practices,

emergency preparedness, grievance resolution, gender equality and protection throughout the project. This integrated approach ensures the project remains resilient to uncertainties, adheres to required standards, and achieves its objectives efficiently.

A detailed Environmental and Social Management Plan (ESMP) with mitigation measures and institutional responsibilities has been developed for use right through the phases of the markets upgrade project (construction, operation and decommissioning). The ESMP details the important steps available to mitigate the impact that will arise during all phases of the project. The proponent and the contractor and relevant national and subnational authorities are the responsible parties in the implantation and monitoring of the ESMP

#### Project and ESMMP Costs

The proposed project construction period including the defects liability period is 24 months. The project is estimated to cost approximately: USD 6,000,000 and the cost of implementation of ESMMP is approximately USD. 1,503,090



## 1.9 Conclusion and Recommendations

The ESIA/ESMP for the Makeni Central Market upgrade provides a comprehensive evaluation of the project's potential benefits, risks and challenges across the construction, operation, and decommissioning phases, including the temporary relocation of traders. The report emphasizes that if impacts are effectively managed, the project will significantly improve market infrastructure and conditions, promote local economic growth, and enhance community well-being.

Key findings include:

- **Environmental Impacts:** The project will increase water consumption, waste generation, and pollution risks during construction, operation and decommissioning. Potential environmental risks include accidental spills, sewage overflow, and improper waste disposal. However, infrastructure upgrades such as sanitary facilities, a solar-powered borehole, enhanced energy access, and improved waste management systems will benefit the market while mitigating these impacts.
- **Social Impacts:** Temporary relocation of traders may disrupt livelihoods, create income loss, and trigger social unrest if not managed adequately. The ESIA highlights the importance of resettlement planning, provision of compensation and relocation support, livelihood restoration programs, and transparent communication with stakeholders to address these challenges. Gender and inclusion considerations are integrated, focusing on safeguarding against GBV and ensuring that vulnerable groups, including women and youth, benefit equitably from the project.
- **Health, Safety and Stakeholder Welfare:** Health and safety measures will be enforced throughout the project phases to protect workers and the community from occupational, environmental, health and safety hazards. Effective grievance redress mechanisms will be established to address concerns from traders, workers, and community members promptly and transparently.

Key recommendations include the implementation of mitigation and monitoring measures, maintaining stakeholder engagement and communication, promoting sustainability integration, and complying with the environmental and social management plans. By adhering to the mitigation measures, monitoring plan and social plans, the Makeni market upgrade project will foster sustainable development, enhance market functionality, and ensure positive outcomes for the traders, local economy and community.

# **1 INTRODUCTION**

## **1.1 RUSLP PROJECT BACKGROUND**

Sierra Leone has been facing a rapid urbanization growth in the last five decades, with the share of the population living in urban areas almost doubling between 1967 (21%) and 2015 (41%). Sierra Leone's National Development Plan (NDP 2019-2023) recognizes the trend of rural-to-urban migration that will characterize the economic development of Sierra Leone in years to come. Fiscal sustainability and investment capacity are among the challenges facing the City councils of Sierra Leone that limit their ability to provide services to their residents and to benefit from their economic growth potential. The lack of planning and development controls have exacerbated unstable living conditions and depletion of biodiversity and natural forest areas. In addition, Sierra Leone is highly exposed to a range of natural hazards due to its topography, location, high rainfall, and socio-economic conditions. Flooding, landslides, and droughts are significantly disrupting economic and social functions and imposing high costs for rehabilitation.

The Government of Sierra Leone has received funding from the International Development Association (IDA) of the World Bank (WB) for the implementation of the "Resilient Urban Sierra Leone Project" (RUSLP). The project is designed to address comprehensively, the multispectral urban development challenges and disaster risks of the country, with the aim for livable, safe, financially sustainable, and productive urban centers in the Western Area and secondary cities of Sierra Leone.

In order to improve integrated urban management, local public service delivery, disaster emergency management, and access to resilient infrastructure, the project (subcomponent 2c of the RUSLP: Resilient Municipal Infrastructure Investment and Urban Greening, Market Upgrading in Select Secondary Cities) will upgrade the central markets in two cities, Kenema and Makeni, to improve working conditions for traders, stimulate local economies and provide city councils with increased revenues through increased collection of market dues to finance council operations.

The Government of Sierra Leone commissioned Earth Link and Advanced Resources Development S.A.L. (ELARD) (the "ESIA Consultant") to conduct an Environmental and Social Impact Assessment (ESIA) and associated Environmental and Social Management Plan (ESMP) with a Resettlement Plan (RP) for the upgrade of Makeni and Kenema Central Markets in Sierra Leone. Reports for each market are prepared separately. This current ESIA report pertains to the Makeni Central Market Upgrade. The ESIA and associated ESMP report aim at identifying and assessing environmental and social risks and impacts resulting from the Project and proposing measures to minimize the significance of negative impacts and maximize the benefits.

## **1.2 ESIA OBJECTIVES**

The purpose of the environmental impact assessment is to identify, evaluate and mitigate potential negative environmental impacts, while enhancing positive ones. The purpose and findings of the study were disclosed to project affected persons in a series of stakeholder consultation and disclosure meetings to elicit community acceptance and participation.

The objectives of this ESIA study are the following, as specified in the ToR for the study attached in Appendix 5:

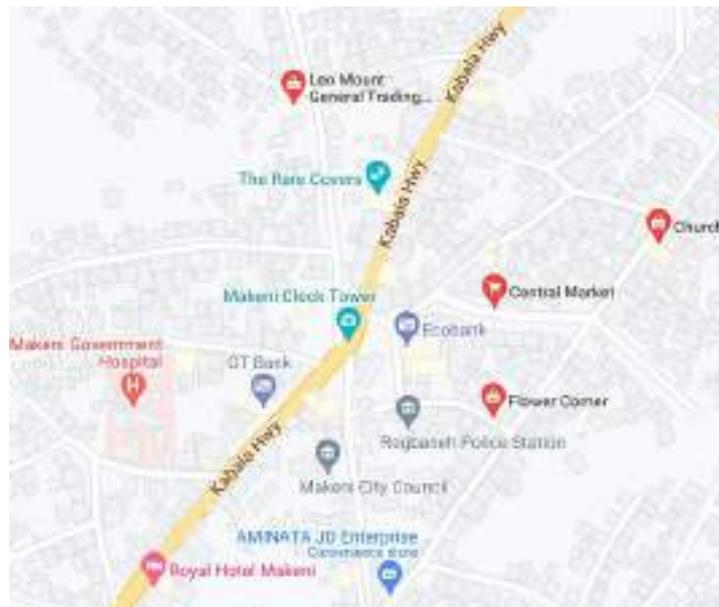
- Provision of project background information and site description.
- Identification of policy, legal and administrative framework.
- Provision of baseline data that includes Climate and Bioclimatic characteristics, Morphological and Topological characteristics, Geological and Tectonic characteristics, Air environment, Acoustic environment, Biotic environment, Socioeconomic environment, and technical infrastructures.
- Analysis of social diversity, exclusion, and overall gender analysis.
- Stakeholders' analysis.
- Analysis of alternatives.
- Identification of environmental and social impacts of the various phases and their level of significance. Environmental impacts include noise and vibration, air pollution and dust emissions, impacts on natural habitats, impacts on water resources, impacts on soil, and purchase of construction materials and equipment. Social impacts include loss of assets and livelihoods, labor impacts, gender equity examination, potential occupational and community health and safety issues, project activities impact assessment during the various project phases (planning, construction, operation and decommissioning).
- Description and analysis of occupational health and safety concerns.
- Provision of Environmental and Social Management Plan that includes a mitigation plan, monitoring plan, health and safety plan, implementation schedule and cost estimates.
- Provision of a Resettlement Action Plan.
- Establishment of a Grievance Redress Mechanism and plans such as Gender Based Violence, Gender Mainstreaming Strategy, Emergency Response Plan, and Labor Management Plan.
- Preparation of ESIA, RAP, and ESMP, disclosure and public consultation.

The ESIA process is presented in Appendix 1.

### **1.3 PROJECT AREA**

The project will be carried out in Makeni City Central Market shown in Figure 1-1.

The Makeni central market is situated in Makeni Town, Bombali District in the Northern province of Sierra Leone, Bombali District, Makeni Town. The Makeni Central Market is located at about 100m from the Makeni Clock Tower, and less than 1 km away from the Makeni City Council (MCC) Administrative Building. It is enclosed by Church Street, Campbell Street, Flower Corner, Station Road and Savage Square, with mostly commercial buildings (shops, stores etc.) and a few mixed commercial/residential structures lying in a geographical center location of Latitude 08° 53' 17', and Longitude 12° 02' 34'. The Makeni central market area is about 3,240m<sup>2</sup> and is owned by the City Council.





## **1.4 ESIA METHODOLOGY**

The ESIA methodology is consistent with the national regulations, WB requirements and the Study ToR (Appendix 5). It constitutes a systematic approach to the evaluation of the project and its associated activities throughout the project lifecycle.

The study involved a combination of literature reviews, field data collection and measurements, stakeholder engagement, data analysis, and report writing. Relevant reports, feasibility studies, and preliminary designs were reviewed to understand the environmental and social aspects specific to the project. Data collection methods included site observations, interviews with key informants and traders, focus group discussions with community members, consultations with local leaders, central and local authorities, and surveys or questionnaires.

The collected data covered physical factors such as the atmospheric environment, climate change, Greenhouse Gas (GHG) emissions, ambient air quality, acoustic conditions, and geological and hydrological characteristics. Additionally, biological and socio-economic data—including demographics, livelihoods, and available services—were gathered to provide a comprehensive understanding of the project's resources and potential impacts.

## **2 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK**

This section describes the relevant legislations, strategies, institutional arrangement, and international conventions applicable to the upgrade of Makeni Central Markets in Sierra Leone. It summarizes the national laws and describes the procedure for obtaining environmental permits to allow the project implementation, as well as the international environmental and social framework of the World Bank.

### **2.1 NATIONAL LEGISLATIONS**

The policies and plans, acts, and regulations relevant to the upgrade of Makeni central market in Sierra Leone are discussed in Table 2- 1.

**Table 2-1 Sierra Leone National Legislations, Policies, Plans, Acts and Strategies Applicable to the Project<sup>1</sup>**

Legislation	Year	Key Requirements	Relevance/ Implications to the project
<b>Policies and plans</b>			
1. National Referral Protocol (NRP) on Gender Based Violence	2012, updated in 2019, 2022, and 2024	<p>The GBV Referral Protocol is a technical guidance document that aims to ensure that all survivors/victims of GBV (Domestic and sexual violence) receive a prompt and comprehensive response from service providers that meets their needs from the first point of contact onwards. The protocol responds to the Government's Poverty Reduction Strategy (PRS)- Agenda for Change, the Child Rights Act 2007, and the three Gender Acts (Domestic Violence 2007, Registration of Customary Marriage, and Divorce Act, 2007 and the Devolution of Estates 2007), and other related policies.</p> <p>The 2024 NRP sets out the objectives and the terms of coordination and collaboration between the key governmental and non-governmental entities that support the process of reporting and responding to cases of SGBV. It outlines these entities' roles and responsibilities to do so in a way that puts the survivor at the center of the response.</p>	<p>The project shall ensure compliance with the protocol. This ESIA/ESMP puts forward a mechanism for preventing and responding to cases of GBV, and procedures to be followed on site. The project shall raise awareness among all key stakeholders about GBV and the Referral Protocol. Moreover, the GRM developed for the project shall also allow for GBV reporting through a special referral pathway.</p>
2. National Adaptation Plan	2021	<p>The plan responds to the overall objectives of the UNFCCC's National Adaptation Plan Guidelines for reducing vulnerability to the impacts of climate change by building adaptive capacity and resilience of the country and facilitating the integration of climate change adaptation into relevant existing and new policies, programs, and activities. It provides information on actions to reduce climate change vulnerability regarding water resources, agriculture and food security, public health, coastal zones, and communities across the country.</p>	<p>The project shall respond to the plan and promote actions to reduce and adapt to the impacts of climate change (such as flood risk reduction designs).</p>
3. National Social Protection Strategy	2018	<p>The first social protection policy was developed in 2011, focused on reducing poverty by ensuring that the poorest and vulnerable are afforded an equal opportunity to access</p>	<p>The project shall reflect the understanding of the strategy and ensure protection for all vulnerable</p>

<sup>1</sup> Land-related legislation has been covered in Section 5 of the Resettlement Plan (RP) – Regulatory and Policy Framework. Subsection 5.2 covers the National Policy Framework; and Subsection 5.3 covers the Constitutional, Legislative, and Regulatory Provisions.

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		<p>basic services and mitigate risks; and to strengthen the social protection delivery system. The current strategy goes much further than alleviating current poverty aiming to establish a gender-sensitive and age-appropriate framework for protection of the most poor and vulnerable.</p>	<p>groups. The objective of the project is to improve working conditions for traders, stimulate local economies and provide city councils with increased revenues through increased collection of market dues to finance council operations. This results in poverty alleviation. Moreover, the project will take the needs of disabled persons in the design of the market.</p>
<p>4. Sierra Leone National Action Plan</p>	<p>2018</p>	<p>The government of Sierra Leone initiated action since May 2018 towards the development of the second generation of Sierra Leone National Action Plan (SiLNAP II) for the full implementation of United Nations Security Council Resolutions (UNSCRs) 1325 on Women, Peace, and Security. The vision can be summarized as follows: "A resilient nation where communities are secured, the members co-exist peacefully, irrespective of their diverse socio-cultural, religious and political inclinations, women's, adolescent and girls' rights upheld, and they actively realize the benefits of the full tenets and provisions of UNSCR 1325 (2000) and 1820 (2008) and related sister resolutions with support, also, of male champions"</p>	<p>The project shall promote the plan and encourage the implementation of its activities. Women have been consulted separately, and their concerns and suggestions have been considered in the project design.</p>
<p>5. National Disaster Risk Management Policy</p>	<p>2018</p>	<p>The disaster management Policy is a comprehensive approach that enhances increased political commitment to disaster risk management, thereby encouraging government agencies to take the lead, supported by non-governmental organizations. It also promotes public awareness and the incorporation of disaster risk management into development planning. The policy highlights the sources of funding and the reduction of bureaucracies in accessing such funds for effective disaster coordination.</p>	<p>The project shall ensure the integration of disaster risk management (flooding, fires, etc.) into the project design, and shall promote an early assessment and monitoring of risks and an effectiveness in disaster response.</p> <p>The market design includes fire protection systems and emergency procedures have been highlighted throughout this ESIA/ESMP including the emergency response plan developed</p>

Legislation	Year	Key Requirements	Relevance/ Implications to the project
			for this project.
6. National Action Plan for Health Security (NAPHS)	2018	The NAPHS is based on the recommendations of the 2016 Joint External Evaluation, a process helping countries identify critical gaps within health systems and prioritizing opportunities for enhancing their systems. The plan aims to achieve a safe and secure country from health and economic consequences of public health hazards. The plan works to build a health system able to prevent, detect, and respond to public health threats through all sector collaboration.	The project shall be in line with the plan and secure health, safety and security in the upgraded market. Health and Safety mitigation measures have been provided, in addition to a Community Health and safety plan in line with the NAPHS.
7. Renewable Energy Policy of Sierra Leone	2016	This policy promotes renewable energy as an alternative to traditional, polluting energy sources. By encouraging renewable energy development, the policy supports pollution reduction, especially from fossil fuels, and promotes the efficient use of resources.	The project shall promote this policy by adopting renewable energy sources at the market and by recommending reliance on renewable sources to the extent possible.
8. National Policy Roadmap on Integrated Waste Management	2015	The waste management policy was developed to create a clean and healthy environment that is free from biological, chemical, and physical hazards posed by waste generated from communities, health facilities, industries and other sources. The roadmap incorporates hazardous healthcare waste management, municipal solid waste management, industrial waste management, liquid waste management and waste electrical and electronic equipment.	The project shall respect and promote compliance with the policy requirements and objectives through sound waste management. Proper waste management (collection and disposal) is part of the activities of the markets upgrade. Waste segregation, composting and recycling are recommended in this report. Impacts from waste have been assessed, and mitigation measures to manage waste resulting from the market site and relocation site have been provided.
9. National Environmental Policy	2013	This National Environmental Policy seeks to achieve sustainable development in Sierra Leone through the implementation of sound environmental management systems which will encourage productivity and harmony	An ESIA/ESMP is conducted to be able to establish the status of the site environment, highlight potential disturbances and propose mitigation

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		between man and his environment. It also promotes efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of people and serves to enrich the understanding of ecological systems and natural resources important to the nation.	measures. The project shall promote sustainable development, shall prevent damage to the environment and shall stimulate health and welfare of the relevant communities, in line with the Policy, through proper management of waste and wastewater from the market (mitigation measures are provided).
10. National Water and Sanitation Policy	2011	The policy contains the ambitious targets of extending national water supply and sanitation coverage to 74% and 66% respectively, aligned to the Millennium Development Goals (MDGs). The objective of this policy is to increase the political prioritization for Water, Sanitation and Hygiene in Sierra Leone, accelerate access to safe, reliable, affordable, and sustainable water and sanitation services throughout the country.	The improved market will enhance the current sanitation and hygiene conditions in Makeni market, addressing the existing underdeveloped and predominantly absent facilities. The new design provides water and sanitation facilities, impacts have been assessed, and mitigation measures have been provided for the project life cycle.
11. Forest Policy and its amendment	2010, updated in 2022	The policy supports: the restriction on activities within forests for the conservation of natural resources; the respect for international law and treaty; as well as the seeking of settlement of international disputes by negotiation, conciliation, or arbitration. The policy also supports the effective management of natural resources.	The project shall promote compliance with the policy and shall promote sustainable and efficient use of natural forest resources such as timber and bush sticks.
12. Conservation and Wildlife Policy	2010	The policy identifies the challenges to biodiversity conservation in Sierra Leone that result from a lack of knowledge due to "recent conflict, land use change, uncontrolled exploitation of natural resources, and a lack of recent comprehensive inventory". The vision of the Policy document is to establish "an integrated wildlife sector that achieves sustainable, rights-based management of wildlife resources for biodiversity conservation inside and outside	Although the project is located in an urban environment, it shall promote compliance to the policy requirements wherever applicable (even if indirectly). The project will be implemented in line with the requirements of ESS6. The ESIA/ESMP have assessed the

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		<p>wildlife conservation areas which benefits present and future generations of Sierra Leone and humankind in general." The Policy presents a plan for biodiversity conservation based on a set of "Policy Statements" outlining concrete Policy goals and develops the necessary institutional arrangements for Policy implementation.</p>	<p>impact on biodiversity through the construction, operation and decommissioning phases and have provided respective mitigation measures.</p>
<p>13. Disaster Management Preparedness Plan</p>	<p>2006</p>	<p>Part of the post-war recovery effort, the Government of Sierra Leone reviewed its National Security Structure to meet the demands of the 21st century. The Government mandated The Office of National Security to be 'the Government of Sierra Leone's primary Coordinator for the management of national emergencies such as disasters, both natural and man-made'. This plan is a comprehensive approach that enhances increased political commitment to disaster risk management, thereby encouraging government agencies to take the lead and supported by non-governmental organizations. It also promotes public awareness and the incorporation of disaster risk management into development planning. The policy highlights the sources of funding and the reduction of bureaucracies in accessing such funds for effective disaster co-ordination.</p>	<p>The project shall respect and comply with the plan requirements through incorporation of disaster risk management into the project planning.</p> <p>The ESIA/ESMP provides emergency procedures that promote public awareness and preparedness.</p>
<p>14. National Biodiversity Strategy and Action Plan</p>	<p>2003</p>	<p>The plan intended to conserve and promote the sustainable use of the different components of the country's biodiversity. Several key thematic areas are covered: terrestrial biodiversity, inland water ecosystems, forest biodiversity, marine and coastal biodiversity, and agricultural biodiversity. In addition, actions are also proposed for key cross cutting issues affecting the sustainable utilization of biodiversity, including: policy, legislation and institutional review, capacity building, identification and monitoring, sustainable use, incentive measures, research and training, public education and awareness, regulation of access to genetic resources, protection of indigenous knowledge and intellectual</p>	<p>The project shall promote the sustainable use of natural resources, shall promote the conservation of biodiversity and shall promote the know-how of the market's local communities.</p> <p>Impacts on Biodiversity have been assessed, mitigation measures have been provided, and the quantities of natural materials that will be used for the construction have been estimated.</p>

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		property rights of local communities, technology transfer and handling of biotechnology and exchange of information and technical cooperation.	
15. National Policy on the Advancement of women	2000	The National Policy on the Advancement of Women provides conducive environment, which will allow women to improve their status and participation, to empower them and enhance their capacities as agents of change and beneficiaries of political and economic development, thus ensuring the full use of human resources for national development. It provides integrated guidelines for evaluating the activities of government department/institutions, civil society organizations, donor agencies and NGOs that are engaged in implementing Women in Development programs.	The project shall support the advancement of women and shall promote their participation and involvement in development programs. Since women constitute 80% of the direct beneficiaries of the market upgrade, they have been consulted separately, and their concerns and suggestions have been considered in the project design, construction, and operation.
16. National Policy on gender mainstreaming	2000	The policy aims to mainstream gender concerns in the national development process to improve the social, legal, political, economic, and cultural condition of the population, particularly marginalized groups. Its aim is to provide for policy makers and other actors in the development field, reference guidelines for identifying and addressing gender concerns, particularly when taking policy decisions to redress imbalances which arise from existing inequalities; to promote access to and control over economically significant resources and benefits, or to ensure the participation of both women and men in all stages of development.	The project shall prevent gender inequality relating or promoted by its activities and shall promote compliance with the policy and facilitate the improvement of the social, economic, and cultural conditions of the population.  A GRM mechanism has been developed and will be implemented through the project lifetime to report any gender issue and to ensure a safe environment for women at all times.
<b>Acts</b>			
17. Gender Equality and Women Empowerment Act	2023	It is an act to address gender imbalances by making provision for increased appointment of women to decision-making positions and structures so as to achieve at least 30% representation, to provide for the promotion of gender equality in employment and training, to provide for the implementation of gender mainstreaming and budgeting, to provide for financial institutions to prescribe procedures for	The project shall support the advancement of women and shall promote their participation and involvement in development programs. Since women constitute 80% of the direct beneficiaries of the market upgrade, they have been consulted

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		the improvement of women's access to finance, and to provide for other related matters.	separately, and their concerns and suggestions have been taken into account in the project design, construction and operation.
18. Employment Act	2023	This act consolidates and improves the law relating to labor and employment, to provide for the promotion of equal opportunity and elimination of discrimination in employment and occupation and to provide for other related matters.	The project adheres to this act through the provision of a labor management plan that respects the act conditions, especially with respect to the age of employment, prohibition of violence and harassment at work, facilitation of the right to disclose any threat/violence, prohibition of forced labor, etc.
19. Environment Protection Agency Act and its amendments	2008, updated in 2010, and 2022	It is an act to provide for the continuation of the Sierra Leone Environment Protection Agency, to provide for more effective and efficient protection and management of the environment, and to provide for other related matters. In 2008/2010, the act emphasizes the processes and procedures leading to the acquisition of an environmental license with respect to the preparation of fully acceptable EIA studies. In 2022, the Act concerns: air pollution; airspace; chemical elements, including agro-chemicals, public health chemicals, explosives, chemicals used for mining purposes, petrochemicals; chlorofluorocarbon; climate change; controlled substances; waste water; sewage; air borne emissions; disposal of waste in land, water and airspace; greenhouse gas; mitigation measures; monitoring; water resources management, including atmospheric, surface and subsurface and underground water resources, in territorial waters, exclusive economic zone or any area under the jurisdiction of the country; wetlands.	The project respects the act and promotes the protection of the environment in all aspects. Environmental and Social impacts of the project have been assessed, and appropriate mitigation measures have been provided.
20. Local Government Act	2004, updated in 2016, and 2022	The Local Government Act of 2004 is being repealed and replaced to allow for the continuation of local councils, the devolution of functions, powers, and services to local	The project shall enhance local government and promote rural development in Makeni through

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		<p>councils, as well as to provide for the development of Sierra Leone. It provides the addition of new Districts created under the Provinces Order in 2017, reflecting the total number of 14 Districts. This Act deals with the establishment and operation of local councils around the country to enable meaningful decentralization and devolution of Government functions. It stipulates that a local council shall be the highest political authority in the locality and shall have legislative and executive powers to be exercised in accordance with this Act or any other enactment. It shall be responsible, generally, for promoting the development of the locality and the welfare of the people in the locality.</p> <p>The act promotes community participation in local development and governance and encourages city councils to involve residents in decision-making, particularly for infrastructure or services impacting the local community.</p>	<p>empowerment of the local councils and their role in the project operation, increasing their revenues and improving collection of market dues to finance their operations.</p> <p>The Makeni City Council has been involved throughout the stages of this ESIA/ESMP and will play a crucial role in the project, especially during market operation.</p>
<p>21. National Disaster Management Agency Act</p>	<p>2020</p>	<p>This Act establishes the National Disaster Management Agency, the National Disaster Management Fund and the National Platform for Disaster Risk Reduction and provides generally for administration aspects of disaster prevention, reduction, mitigation, and response. The National Disaster Management Agency shall manage disasters and similar emergencies throughout Sierra Leone and develop the capacity of communities to respond effectively to disasters and emergencies.</p>	<p>The project shall respect the act and comprise disaster management plans and procedures.</p> <p>This ESIA/ESMP highlights emergency procedures, and the market design provides security measures.</p>
<p>22. National Water Resources Management Agency Act</p>	<p>2017</p>	<p>This Act aims for the equitable, beneficial, efficient, and sustainable use and management of the country's water resources; to establish a National Water Resources Management Agency; to provide a Water Basin Management Board and Water Catchment Area Management Committees for the management of the water resources and for other related matters.</p>	<p>The project shall promote conservation, protection, and effective management of water resources in line with the act.</p> <p>The project impacts on water have been assessed and mitigation measures provided.</p>
<p>23. Sierra Leone Water</p>	<p>2017</p>	<p>This Act provides for the continuance in existence of the Sierra Leone Water Company; for a more efficient and</p>	<p>The project aims to benefit from existing water supply provided by the Sierra</p>

Legislation	Year	Key Requirements	Relevance/ Implications to the project
Company Act		effective management of community and rural water supply systems in specified areas; for the facilitation of water related sanitation and delivery in Sierra Leone; and for other related matters.	Leone Water Company and public/private owned water wells within the market area.  Connections have been conducted with the Sierra Leone Water Company to ensure the provision of water to the market.
24. Sierra Leone Meteorological Agency Act and its amendment	2022	This Act establishes the Sierra Leone Meteorological Agency in place of the Department of Meteorology and provides for other related matters.  The Agency shall serve as the sole authority for the provision of meteorological and climatological services throughout Sierra Leone, and shall, among other things, (a) advise Government on all aspects of meteorology, climatology, climate change and other climate related issues, and (b) develop Government policy in the field of meteorology, climatology, climate change and other climate related issues, (c) promote the use of meteorology in agriculture, food monitoring and in the monitoring of flood, drought, desertification and other related events, and (d) participate in international activities (including those of the Intergovernmental Panel on Climate Change (IPCC)).	The project climatological and climate change aspects shall be governed by this act.  SL Meteorological Agency has been contacted to collect meteorological and climatological data for the concerned city – Makeni
25. Roads Safety Authority Act	2016	This Act amends the Sierra Leone Road safety Authority Act, 1996 to provide for the substitution of the words: “Traffic Warden Corps” with the words: “Road Safety Corps” and for other related matters.	The project shall promote compliance to the act.  Traffic has been considered through this ESIA/ESMP to check Makeni general traffic trends, expected impacts from the project required mitigation measures, and involvement of the Roads safety Authority in traffic management during the project.
26. Sierra Leone Local Content Agency Act	2016	The Act establishes the Sierra Leone Local Content Agency to provide for the development of Sierra Leone local content	The project shall enhance the economic growth and shall promote

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		<p>in a range of sectors of the economy such as industrial, manufacturing, mining, petroleum, marine resources, agriculture, transportation, maritime, aviation, hotel and tourism, procurement of goods and services, public works, construction, and energy sectors. The prime objective of the Agency is to promote Sierra Leone local content development by effectively and efficiently managing the administration and regulation of Sierra Leone local content development in Sierra Leone.</p>	<p>local content development in Sierra Leone in line with the Act. It will ensure the recruitment of local artisans who will provide the required skills throughout the upgrade activities.</p>
<p>27. The right to Access Information Act</p>	<p>2013</p>	<p>This Act provides for the disclosure of information held by public authorities or by persons providing services for them and to provide for other related matters.</p>	<p>The project shall respect and promote compliance with the act. The ESIA/ESMP and RP reports shall be disclosed following clearance by PMU, World Bank, and EPA-SL.                      Consultations have been conducted while preparing the ESIA/ESMP and RP to inform the stakeholders on project activities and plans, expected impacts and mitigation measures. Stakeholders' feedback has been incorporated in the design phase.</p>
<p>28. National Protected Area Authority and Conservation Trust Fund Act</p>	<p>2012</p>	<p>This Act provides for the establishment of the National Protected Area Authority and Conservation Trust Fund, promotes biodiversity conservation, wildlife management, research, provides for the sale of ecosystems services in the National Protected Areas and provides for other related matters.</p>	<p>The project is in an urban environment and will have no direct impact on biodiversity, ecosystems, or protected areas. However, potential impacts have been assessed, and mitigation measures have been provided.</p>
<p>29. Persons with Disability Act</p>	<p>2011</p>	<p>This Act establishes the National Commission for Persons with Disability, to prohibit discrimination against persons with disability, achieve equalization of opportunities for persons with disability and to provide for other related matters</p>	<p>The project shall provide the basic services and needs of persons with a disability and shall adhere to the act requirements. The project design shall incorporate disability friendly requirements: Washroom facilities for disabled persons and ramps will be</p>

Legislation	Year	Key Requirements	Relevance/ Implications to the project
			provided in the upgraded market.
30. Anti-Corruption Act	2008	This act establishes an independent Anti- Corruption Commission for the prevention, investigation, prosecution and punishment of corruption and corrupt practices and to provide for other related matters.	The project shall promote compliance with the act through all stages. A GRM procedure has been developed and will be implemented throughout the project phases.
31. The Child Rights Act	2007	The Child Rights Act of 2007 provides for the promotion of the rights of the child compatible with the Convention on the Rights of the Child, adopted by the General Assembly of the United Nations on 20th November 1989, and its Optional Protocol of 8th September 2000, and the African Charter on the Rights and Welfare of the Child, and for other related matters. The Act includes a section on the right of children to grow up with parents, among others.	The project shall promote compliance with the Act, protection of children and preservation of their rights. This will be incorporated in the codes of conduct of every contractor and sub-contractor who will be working in this project. The LMP highlighted in this ESIA/ESMP tackles child rights and minimum employment age.
32. Public Health Amendment Act	2004	This Act amends the Public Health Act (Ordinance) of 1960 by the repeal and replacement of the fines contained in the Act.	The project shall promote compliance with the Public Health Act and protect public health. It will ensure the provision of PPE for all workers and use dust suppressants; haulage covers and avoid spillages to protect public health. Occupational and Community health and safety impacts have been assessed, mitigation measures have been provided in addition to OHS and CHS plans.
33. Constitution of Sierra Leone	1991	It is an Act to make provision for a new Constitution of Sierra Leone, and for connected purposes. The Constitution of the Republic of Sierra Leone consists of 192 articles divided into fourteen Chapters and four Schedules: The Republic of Sierra Leone (I); Fundamental Principles of State Policy (II); the	The project shall promote compliance with the Constitution.

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		Recognition and Protection of Fundamental Human Rights and Freedoms of the Individual (III); The Representation of People (IV); The Executive (V); The Legislature (VI); The Judiciary (VII); Ombudsman (VII); Commissions of Inquiry (IX); Armed Forces (XI); The Laws of Sierra Leone (XII); Miscellaneous (XIII) and Transitional Provisions (XIV).	
34. The Forestry Act	1988	The Chief Conservator of Forest, with the directives of the Minister, is responsible for the implementation of its regulations. He therefore has the role of preserving the forest environment, promoting the practice of forestry in all use of forestland, to ensure sustainability of forest products, and the protection of the soil and water resources that constitute the environment.	The project will comply with the act and will not utilize forest products from unlicensed dealers.
35. The Monuments and Relics Commission Act	1962, amended in 1967	In 1962, the Monuments and Relics Ordinance issued in 1946 was upgraded into an Act that was amended in 1967. This act is the key legislation guiding the protection and management of ancient, historical, and natural monuments, relics, and artifacts of archeological, ethnographic, or historical significance. It primarily aims to preserve Sierra Leone's cultural heritage.	The project shall respect the Act and shall promote the protection and management of national and cultural heritage.  The project has no direct impact on cultural heritage. However, a chance-find procedure has been developed.
36. Public Health Ordinance	1960	This Act provides with respect to matters of public health in Sierra Leone, including, among other things, water supply, drainage, water pollution, sanitation, hygiene and wholesomeness of food, the control of animals, and nuisances. The Minister of Health shall be the principal authority for purposes of this Act.	The project shall respect the ordinance relating to public health in Sierra Leone.  Occupational and Community health and safety impacts have been assessed, mitigation measures have been provided in addition to OHS and CHS plans.
37. Employer and Employed Act	1960	The Act regulates relations between employers and the employed and safeguards the health of the employed. Sets forth provisions relating to the formation and interpretation of contracts of service, the recruitment of native labor for foreign services, restrictions on the engagement of industrial workers, employment of women, adolescents, and children	The project shall promote compliance with the Act and shall respect the regulations between employers and employed.  The ESIA/ESMP highlights a labor management plan that supports the

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		apprenticeship contracts. Also regulates the death, insolvency and change of residence of employer; breaches of contract and disputes between employer and employed, provisions as to agents; advances by employers.	good relation between employers and employed.
<b>Regulations</b>			
Drug and Substance Abuse Public Emergency Response Regulations	2024	The regulation introduces a legal framework in Sierra Leone to combat drug-related activities and provide treatment and rehabilitation. The main parts include: <ul style="list-style-type: none"> <li>- Prohibition on the promotion, transportation, and use of prohibited drugs and substances: Bans the production, promotion, transportation, and use of prohibited drugs, including synthetic substances like Kush, premises cannot be used for producing or distributing these substances. aiding, abetting, or facilitating any prohibited drug-related activity is also illegal, etc.</li> <li>- Drug and substance abuse treatment and rehabilitation centers: Establishes drug and substance abuse treatment and rehabilitation centers that offer case management, psychosocial support, and essential services, provide health measures and legal safeguards for confidential and non-discrimination in treatment, etc.</li> <li>- Drug and substance abuse enforcement powers; role of authorized officials, supported by police or armed forces (enter, search, seize premises involved in illegal drug activities, arrest suspected individuals, etc.)</li> <li>- Offences and penalties.</li> </ul>	The project shall comply with this regulation and shall enforce zero drug-related activities at the site, during construction and operation. The ESIA/ESMP highlight measures to conduct regular inspections during project implementation, collaborate with law enforcement and public health authorities and raise awareness among workers and traders to ensure compliance with the law.
The right to Access Information Regulations	2022	The Right to Access Information Regulations 2022 in Sierra Leone was introduced to operationalize the Right to Access Information Act (2013). These regulations aim to enhance transparency, accountability, and good governance by providing detailed rules on how citizens can request information from public institutions and how authorities must manage these requests. The regulations are under the	The project shall promote the objective of these regulations by sharing information through consultations with the public, ensuring transparency, accountability through the SEP process, and sharing awareness on the procedures adopted with public

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		mandate of the Right to Access Information Commission (RAIC), which promotes open governance. They align with both national and international standards for freedom of information. These updates emphasize structured procedures, including timelines for responding to requests, measures for compliance, and the handling of grievances if access is denied.	authorities to access information.
Forestry Regulation	1990	Generally, community forests are managed by the Forestry Division or by agreement with the Division; it could be managed by the local government; or Community Forest Association. Based on this responsibility of the Division, no protected forest shall be tampered with in any way as is stated in section 21, subsection (2) of the Forestry Act - 1988, without written permission from the Chief Conservator of the forest	The project will comply with the act and will not utilize forest products from unlicensed dealers.
<b>Presidential Initiative</b>			
Feed Salone	2023	This initiative aims to transform the agricultural sector in Sierra Leone and achieve food security within 5 years. The initiative focuses on: <ul style="list-style-type: none"> <li>✓ Promoting sustainable and climate smart agriculture: "Encouraging practices that conserve resources, adapt to climate change, and protect the environment.</li> <li>✓ Supporting smallholder farmers: "Providing access to land, finance, technology, and training to empower smallholder farmers, who are the backbone of Sierra Leone's agriculture sector.</li> <li>✓ Developing agribusiness: "Fostering the growth of agribusinesses to add value to agricultural products, create jobs, and increase market access for farmers.</li> <li>✓ Investing in infrastructure: "Improving rural infrastructure, including roads. Storage facilities and irrigation systems, to facilitate agricultural production</li> </ul>	The project shall complement this initiative and support in achieving it. The project improves market infrastructure. This will promote sustainable business environment, support traders that are mostly selling agriculture and food product and could enhance their businesses growth.

Legislation	Year	Key Requirements	Relevance/ Implications to the project
		and market access. -smart agriculture.	

## **2.2 INTERNATIONAL CONVENTIONS**

Sierra Leone has signed several conventions that will be considered in this ESIA/ESMP report as summarized in Table 2-2.

**Table 2-2 Sierra Leone International Conventions Applicable to the Project**

Conventions	Date of Ratification	Key Requirements	Implications to the project and ESIA
African Convention on the Conservation of Nature and Natural Resources	Signed by Sierra Leone on December 9, 2003.	The convention aims to enhance environmental protection, to foster the conservation and sustainable use of natural resources; and to harmonize and coordinate policies in these fields with a view to achieving ecologically rational, economically sound, and socially acceptable development policies and programs for the Convention area.	The project activities shall be in line with the convention
Convention on Wetlands (Ramsar)	Signed by Sierra Leone on December 13, 1999. And came into effect on April 13, 2000.	Sierra Leone agreed to include conservation of wetlands in land use planning throughout the country, establish nature reserves within wetland areas, promote training in research and management; and consult with other countries about the implementation process.	The project construction and operation activities are not expected to affect any wetlands.
United Nations Framework Convention on Climate Change (UNFCCC)	Signed by Sierra Leone on February 11, 1993. And came into effect on June 22, 1995.	The convention is to regulate levels of greenhouse gas concentration in the atmosphere, to avoid the occurrence of climate change on a level that would lead to adverse impacts on various sectors and receptors (water resources, agriculture, health, tourism, infrastructure, coastal zones, etc.), impede sustainable economic development, or compromise initiatives in food production	GHG emissions resulting from the project should be reduced; and measures to adapt to climate change impacts should be adopted. It should be noted that the market upgrade design will reduce flood risk.
Vienna Convention for the Protection of the Ozone Layer	Signed by Sierra Leone in 2001 and came into effect on August 29, 2001.	It is a framework agreement in which States agree to cooperate in relevant research and scientific assessments of the ozone problem, to exchange information, and to adopt appropriate measures to prevent activities that harm the ozone layer.	The project shall comply with the convention provisions and shall prevent activities and emissions that are harmful for the ozone layer
African Charter on the Rights and Welfare of the Child Convention	Signed by Sierra Leone in 2002.	The convention aims to protect the private life of the child and safeguard the child against all forms of economic exploitation and against work that is hazardous, interferes with the child's education, or compromises his or her health or physical, social, mental, spiritual, and moral development.	The project shall comply with the convention provisions and ensure child welfare. Through the increase of storage space in the market, the project aims to reduce school absenteeism because of children having to accompany traders to carry wares to the market every

Conventions	Date of Ratification	Key Requirements	Implications to the project and ESIA
			morning.
Forced or Compulsory Labor Convention	Ratified by Sierra Leone on August 25, 2021. And came into force on August 25, 2022.	The Protocol requires States to adopt effective measures to prevent forced labor in all its forms, and to provide victims with protection and access to effective remedies, including compensation. Forced labor victims may be found in various sectors such as domestic work, construction, manufacturing, agriculture, and fishing.	The project shall comply with the convention provisions and avoid any forced labor
Montreal Protocol	Ratified by Sierra Leone on August 29, 2001.	The Montreal Protocol on Substances that Deplete the Ozone Layer is the landmark multilateral environmental agreement that regulates the production and consumption of nearly 100 man-made chemicals referred to as ozone depleting substances (ODS). When released to the atmosphere, those chemicals damage the stratospheric ozone layer, Earth's protective shield that protects humans and the environment from harmful levels of ultraviolet radiation from the sun.	The project shall comply with the protocol provisions and avoid the use of harmful ODS
Protocol of the African Charter on Human and Peoples rights on the rights of older persons in Africa	Adopted on January 31, 2016. And signed on June 17, 2020.	The Protocol is a transformative legal instrument providing norms and standards in ensuring respect and protection of the rights of older persons in Africa. Its adoption would ensure that older persons are treated with dignity and respect, and as equal members of society	The project shall promote compliance with the protocol and protect the rights of older persons
Protocol to the African Charter on Human and Peoples rights on the rights of women in Africa	Signed by Sierra Leone on December 9, 2003. Ratified on July 3, 2015.	The Protocol guarantees extensive rights to African women and girls and includes progressive provisions on: <ul style="list-style-type: none"> <li>- Harmful traditional practices as of child marriage and female genital mutilation;</li> <li>- Reproductive health and rights;</li> <li>- Roles in political processes;</li> <li>- Economic empowerment;</li> <li>- Ending violence against women.</li> </ul>	The project shall promote compliance with the protocol and protect the rights of women and girls

Conventions	Date of Ratification	Key Requirements	Implications to the project and ESIA
Sendai Framework for disaster risk reduction 2015-2030	-	The framework aims to prevent new and reduce existing disaster risks: (i) Understanding disaster risk; (ii) Strengthening disaster risk governance to manage disaster risk; (iii) Investing in disaster reduction for resilience and (iv) Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction.	The project shall comply with the framework and comprise a risk management plan
Stockholm Convention on Persistent Organic Pollutants (POPs)	Ratified by Sierra Leone on September 26, 2003.	The convention aims to regulate the production, distribution, use and disposal of POPs which are harmful substances that pose an unreasonable risk to human health and the environment. Sierra Leone has so far developed two national implementation plans to elaborate the current situation on POPs and commitments and actions that it intends to undertake in the management and control of POPs for the period of 17 years beginning 2008.	The project shall promote compliance to the national implementation plan requirements and prevent the release of POPs into the environment.
UNESCO Convention for the Protection of the World Cultural and Natural Heritage	Ratified by Sierra Leone on January 7, 2005. And came into effect on April 7, 2023.	This convention aims to protect and preserve culturally and naturally significant sites around the world and encourages countries to identify and safeguard their cultural and natural heritage sites of outstanding value for future generations. By signing the <i>Convention</i> , each country pledges to conserve not only the World Heritage sites situated on its territory, but also to protect its national heritage.	The project shall respect the convention's requirements for the protection of the cultural and natural heritage at or around the project site, if any <sup>2</sup> .
UN Convention on the Rights of the Child	Signed by Sierra Leone on February 13, 1990. And ratified on January 18, 1990.	The UNCRC consists of 54 articles that set out children's rights and how governments should work together to make them available to all children. Under the terms of the convention, governments are required to meet children's basic needs and help them reach their full potential. Among the possible issues to be discussed in Sierra Leone are: elimination of corporal punishment, early detection and prevention of child abuse, welfare of children with physical and mental disabilities, sexual abuse of children, measures to improve medical treatment for children, etc.	The project shall promote compliance with the convention provisions and put in place all measures to safeguard children's rights; the project proponent should ensure that child labor is prevented throughout the upgrade.

<sup>2</sup> There are no World Heritage Sites in or near Makeni, according to the UNSECO webpage: <https://whc.unesco.org/en/tentativelists/?action=listtentative&state=sl&order=states>

## 2.3 INSTITUTIONAL CONTEXT

The following government institutions are those with a bearing on the Markets upgrade project and associated environmental and social issues. The role(s) of each of these institutions, particularly with respect to implementation and monitoring of the ESIA-ESMP, is summarized in Table 2-3.

**Table 2-3 Sierra Leone Institutional Context Applicable to the Project**

Institution	Role and Responsibilities
World Bank (WB)	The WB is supporting Sierra Leone's efforts to enhance access to infrastructure and basic services in urban areas, strengthen disaster preparedness and response systems, improve working conditions for traders, stimulate local economies, and provide city councils with increased revenues through increased collection of market dues to finance council operations.
Ministry of Finance (MoF)	The MoF has the broad responsibility for financial management, procurement, and monitoring and evaluation functions of the project. It is the beneficiary of the project. MoF shall allocate a budget for implementing and monitoring environmental and social mitigation measures, ensuring that financial resources are available to fulfill the project requirements.
Project Management Unit (PMU)	The PMU works under the supervision of the MoF Fiscal Decentralization Division (FDD). PMU is responsible for project management and implementation, including environmental and social (E&S) management, M&E, communications, and grievance redress.
Ministry of Local Government and Rural Development (MLGRD)	This Ministry is responsible for promoting leadership in policy formulation, coordination, standard setting and oversight in order to ensure democratic local governance, maintenance of peace and the provision of services to improve the welfare of the people and eradicate poverty in the country through good governance. In the ESIA/ESMP context, MLGRD facilitates collaboration with local councils to support monitoring, community engagement, GRM, and to guide project implementation.
Ministry of Water Resources (MWR)	This Ministry has the mandate for the development of policies and programs for the provision of safe drinking water on a constant and sustainable basis to the entire population of Sierra Leone. In the context of the market upgrade ESIA/ESMP, MWR is in charge of monitoring water quality and managing any impacts on local water resources associated with the project implementation.
Ministry of Social Welfare, Gender and Children's Affairs (MSWGCA)	The Ministry is responsible for responding to the social needs pertaining to Gender inequalities, social depravity of groups like the disabled, women's rights, children's rights, religious rights among others in Sierra Leone. In the context of the market upgrade ESIA/ESMP, MSWGCA ensures the inclusion of vulnerable groups, gender and social welfare in the consultation events, addressing their specific needs, with relevant reporting.
Ministry of Health and Sanitation (MoHS)	The Ministry's vision is to ensure a functional national health system delivering efficient, high quality healthcare services that are accessible, equitable and affordable for everybody in Sierra Leone, and the overall goal is to maintain and improve the health of its citizens. In the context of the market upgrade ESIA/ESMP, the Ministry oversees public health impacts especially in term of sanitation and waste management during the market implementation phases, their mitigation and monitors relevant indicators.

Institution	Role and Responsibilities
Ministry of Labor and Social Security (MLSS)	<p>The Ministry contributes to Sierra Leone's socio-economic development by developing and implementing policies, legislation, and programs focused on promoting social security and protection, preventing workplace accidents and diseases, fostering sound labor and employment relations, enhancing vocational guidance and job counseling, upholding the dignity of employers and employees, and maintaining essential labor statistics.</p> <p>In the context of the market upgrade ESIA/ESMP, MLSS's role lies in monitoring labor practices, overseeing employment conditions for workers and the implementation of the LMP, and ensuring occupational health and safety standards through implementation of the OHS Plan.</p>
Ministry of Tourism and Cultural Affairs (MTCA), Monuments and Relics Commission	<p>The Ministry promotes sustainable tourism for economic growth and socio-cultural empowerment to preserve, protect and promote cultural diversity with a view to reviving and strengthening national consciousness, understanding and appreciation of cultural heritage and artistic creativity, as well as enhance its contribution to poverty reduction and overall development.</p> <p>The Monuments and Relics Commission has the mandate of providing for the preservation of Ancient, historical and natural monuments, relics and other objects of archaeological, ethnographical, historical or other scientific interest. It has the responsibility of ensuring the preservation, protection and promotion of Sierra Leone's cultural heritage assets. It will be responsible for making sure that project staff and workers, 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 the chance find procedure during the project induction.</p>
Ministry of Planning and Economic Development	<p>The Ministry of Planning and Economic Development is the government Ministry that is responsible for the formulation and implementation of the country's economic development policies. It plays a crucial role in guiding the nation's economic growth, poverty reduction, and sustainable development.</p> <p>The newly enacted National Development Induced Resettlement Act 2023 gives the MoPED the responsibility to oversee the conduct of all Resettlement project activities with possible resettlement implication and the approval of the Resettlement Plan. The ministry has also established a Resettlement Directorate. Thus, the Ministry shall play a role in overseeing the market upgrade RP implementation.</p>
Ministry of Works and Public Assets (MOWPA)	Responsible for the issuance of works guidelines for the construction of the relocation site and the upgrade of the main market.
Ministry of Lands, Housing and Country Planning (MLHCP)	Responsible for the issuance of building permits for both the upgrade of the main market and the construction of the relocation site. Ensures that construction meets safety and building standards in line with national regulation.
Makeni City Council	The City Council is responsible for a range of vital services for people and businesses within its jurisdiction. These encompass widely recognized functions such as social care, schools, housing and planning and waste collection, as well as lesser known yet essential services such as licensing, business support, registrar services and pest control. The Makeni City Council is responsible for overseeing the organization, safety and cleanliness of the market during its operation. The council is also responsible for the collection and disposal of solid waste from the market, and accountable for the upkeep of local roads and infrastructure, assuring their optimal state for both vehicular and pedestrian use. In addition, the Makeni City Council works to enhance the living standards of the community, focusing on areas such as water supply

Institution	Role and Responsibilities
	and social services. It is in charge of collecting fees from registered stalls, stores and other commercial and business structures to finance the services it provides. In the context of the market upgrade ESIA/ESMP, the City Council is responsible for overseeing and facilitating the project implementation in collaboration with PMU and concerned stakeholders, ensuring coordination between project stakeholders (including traders' unions and representatives) with the project stakeholders, support in raising awareness of the cut-off date and GRM, addressing traders' questions and guiding them to the relevant party/ pathway to address their concerns/ grievances/ suggestions, overseeing implementation of the ESMMP during construction and operation phases, etc.
The Environment Protection Agency (EPA)	EPA is a statutory agency for the protection of the environment and for other related matters. In the context of the market upgrade ESIA/ESMP, the EPA has the overall responsibility of permitting and monitoring the project's compliance with the standards and legislation relating to environment, and the implementation of the ESMMP.
Sierra Leone Police (SLP)	SLP are responsible for controlling operations and enforcing regulations. In the context of the market upgrade ESIA/ESMP, SLP supports enforcement of environmental and social protection measures and regulations, especially in preventing and controlling non-compliances and illegal activities in the project area and the management of traffic through the traffic division.
Electricity Distribution and Supply Authority (EDSA)	EDSA is responsible for the distribution and supply of electricity in Sierra Leone. In the context of the market upgrade, EDSA ensures the provision of electricity to the project site during the market implementation and operation phases. It has no major role in the ESIA-ESMP.
Sierra Leone Water Company (SALWACO)	The company is a government-owned entity under the direct supervision of the Ministry of Water Resources that provides piped water supply services. In the context of the market upgrade, it ensures sustainable water sourcing and management, particularly regarding water availability and quality in project areas (main market site and relocation site). It has no major role in the ESIA-ESMP.
Sierra Leone Roads Authority (SLRA)	It is a semi-autonomous government entity responsible for the administrative control, planning, development and maintenance of all national road networks and related structures. It is also responsible for traffic management, as well as the condition of the roads. In the context of the market upgrade ESIA/ESMP, SLRA is in charge of providing advice on access roads, overseeing road conditions and ensuring access routes are maintained and any damage from the market upgrade is promptly repaired.
Sierra Leone Roads Safety Authority (SLRSA)	Responsible for road safety and managing traffic and parking activities around the project.
Sierra Leone National Fire Force (SLNFF)	SLNFF is responsible for enhancing effective management and protection of fire disaster against human resources and property, and hence reducing poverty and contributing to economic growth, through efficient firefighting, search and rescue and disaster preparedness mechanisms in the country.
Sierra Leone Traders Union	Serves as the focal point for the affected traders; will be responsible for supporting the relocation activities (movement of traders to relocation site). The Union will also serve in the relocation committee.
Non-Governmental Organizations (NGOs)	Local NGOs are licensed by the MoPED and work on national issues of concern through advocacy, awareness raising, lobbying, support to vulnerable groups, etc. They will play a role in and support in receiving and handling grievances related to GBV and SEA/SH. NGOs will work in

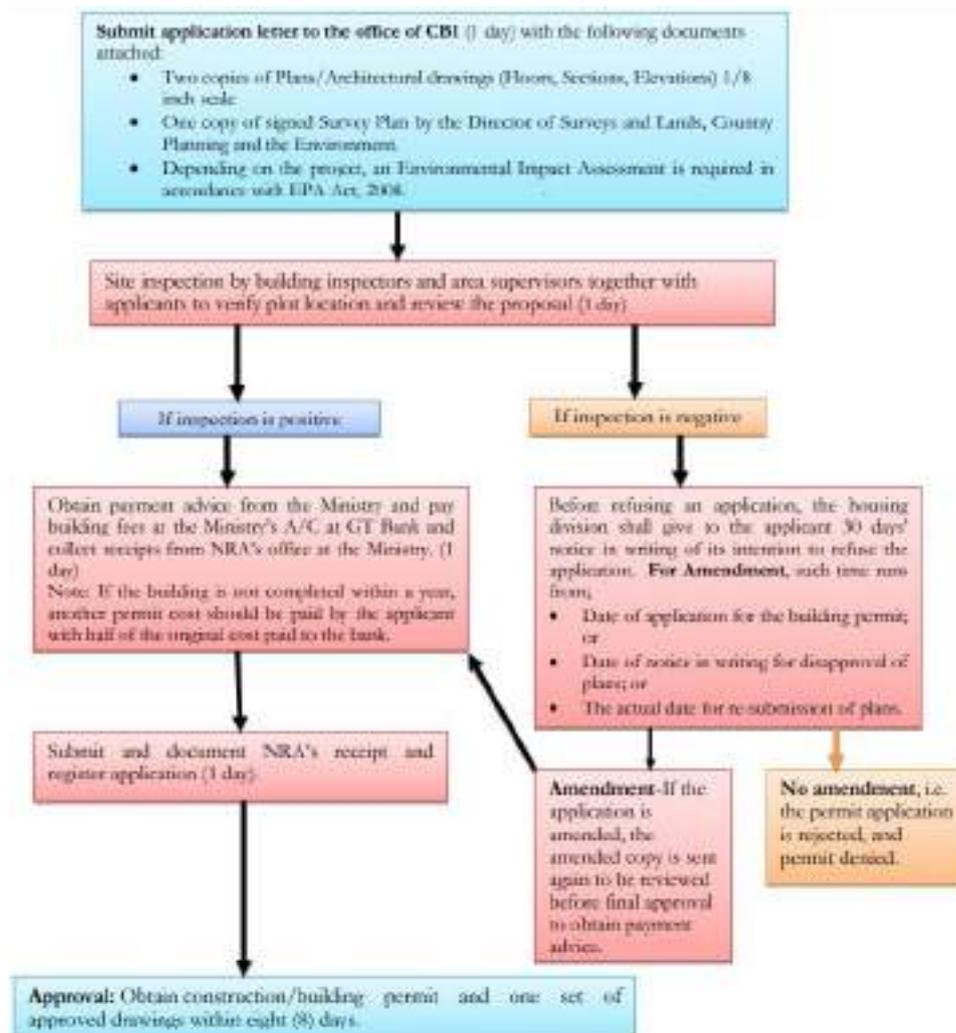
Institution	Role and Responsibilities
	coordination with the City Council (level 1) and the PMU (level 2) to address such grievances in the market.
Community Based Organizations (CBOs)	Local CBOs are licensed by local councils; their role focuses on issues impacting the community, to address their needs and reach marginalized groups. They conduct advocacy campaigns on local issues of concern.
Contractor(s)	The contractor will be responsible for the project execution and the implementation of all relevant mitigation and monitoring measures and conditions outlined in ESIA and ESMP during construction and decommissioning phases, ensuring compliance with the ESMP developed for both phases of the project.

## 2.4 PROJECT-SPECIFIC PERMITS AND LICENSES

Following the review of national legislation, international conventions and institutional context, the project's compliance framework extends to obtaining essential permits and licenses before commencing construction activities. The contractor must obtain the following permits and licenses to ensure compliance with regulatory and legal requirements:

EIA license: the Environmental Protection Agency Act of 2008 (amended in 2010 and 2022), mandates that an Environmental Impact Assessment must be conducted for projects with potential environmental impacts (Part VI of this amended act). The ESIA process is summarized in Appendix 1.

- Construction permit: As per the Local Government Act of 2004 (amended in 2017 and 2022), local councils in Sierra Leone issue construction permits to regulate construction activities within their jurisdictions and to ensure compliance with urban planning.
- Building Permit: The Ministry of Lands, Housing, and Country Planning mandates that all new building constructions, as well as any repairs, alterations, renovations, installations, disposals, or demolitions of existing structures, must be approved through a building permit. This authorization ensures that construction meets safety and building standards in line with national regulations. The procedure for obtaining building permits is summarized in Figure 2-1.



**Figure 2-1 Procedures for obtaining building permit**

Source: Audit Service Sierra Leone (ASSL), 2019

## 2.5 WORLD BANK ENVIRONMENTAL AND SOCIAL FRAMEWORK AND STANDARDS

The Environmental and Social Framework (ESF) is a framework approved in 2016 and applied to all Investment Project Financing (IPF) since October 2018. The framework consists of:

1. A Vision for Sustainable Development.
2. Ten (10) Environmental and Social Standards (ESSs).
3. An Environmental and Social Policy for IPF.
4. An Environmental and Social Directive for IPF.
5. A Directive on Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups.

The ESF supports green, resilient, and inclusive development by strengthening protections for people and the environment and making important advances in areas such as labor, inclusion and non-discrimination, gender, climate change, biodiversity, community health and safety, and stakeholder engagement.

The relevant Environmental and Social Standards (ESSs) that the project should be following and addressing are summarized in Table 2-4.

**Table 2-4 World Bank Environmental and Social Standards applicable to the Project**

Environmental and Social Standards	Project Requirements and Responsibilities
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	The ESIA, ESMP shall comply with the WB requirements for assessing, managing and monitoring environmental and social risks and impacts associated with the project in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs). The ESIA, ESMP will follow the outline mentioned in ESS1 Guidance Notes.
ESS2: Labor and Working Conditions	The project shall comply with the ESS2 Guidance requirements. The project shall: <ul style="list-style-type: none"> <li>• Promote safety and health at work;</li> <li>• Promote the fair treatment, non-discrimination and equal opportunity of the workers;</li> <li>• Protect the project workers including vulnerable workers (women, workers with disabilities, children, migrant, etc.);</li> <li>• Prevent the use of forced labor and child labor;</li> <li>• Support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law;</li> <li>• Provide accessible means to raise workplace concerns.</li> </ul>
ESS3: Resource Efficiency and Pollution Prevention and Management	The project shall comply with the ESS3 Guidance requirements. The project shall: <ul style="list-style-type: none"> <li>• Promote the sustainable use of resources, including energy, water, and raw materials;</li> <li>• Avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities;</li> <li>• Avoid or minimize project related emissions of short-and long-lived climate pollutants; and</li> <li>• Avoid or minimize generation of hazardous and nonhazardous waste.</li> </ul>
ESS4: Community Health and Safety	The project shall comply with the ESS4 Guidance requirements. The project shall: <ul style="list-style-type: none"> <li>• Anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and nonroutine circumstances;</li> <li>• Promote quality and safety, and considerations relating to climate change in the design and construction of infrastructure, including dams;</li> <li>• Avoid or minimize community exposure to project-related traffic and road safety risks, diseases, and hazardous materials;</li> <li>• Have in place effective measures to address emergency events;</li> <li>• Ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.</li> </ul>

Environmental and Social Standards	Project Requirements and Responsibilities
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	<p>The project shall comply with the ESS5 Guidance requirements. The project shall:</p> <ul style="list-style-type: none"> <li>• Avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives;</li> <li>• Avoid forced eviction;</li> <li>• Mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost; and (b) assisting displaced persons in their efforts to improve, or at least restore their livelihoods and living standards in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.</li> <li>• Improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure.</li> <li>• Conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant.</li> <li>• Ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.</li> </ul>
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	<p>The project shall comply with the ESS6 Guidance requirements. The project shall:</p> <ul style="list-style-type: none"> <li>• Protect and conserve biodiversity and habitats;</li> <li>• Apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity;</li> <li>• Promote the sustainable management of living natural resources;</li> <li>• Support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.</li> </ul>
ESS8: Cultural Heritage	<p>The project shall comply with the ESS8 Guidance requirements. The project shall:</p> <ul style="list-style-type: none"> <li>• Protect cultural heritages from the adverse impacts of project activities and support its preservation;</li> <li>• Address cultural heritage as an integral aspect of sustainable development;</li> <li>• Promote meaningful consultation with stakeholders regarding cultural heritage;</li> <li>• Promote the equitable sharing of benefits from the use of cultural heritage.</li> </ul>

Environmental and Social Standards	Project Requirements and Responsibilities
ESS10: Stakeholder Engagement and Information Disclosure	<p>The project shall comply with the ESS10 Guidance requirements. The project shall:</p> <ul style="list-style-type: none"> <li>• Establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project affected parties;</li> <li>• Assess the level of stakeholder interest and support for the project and enable stakeholders' views to be taken into account in project design and environmental and social performance;</li> <li>• Promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them;</li> <li>• Ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible, and appropriate manner and format;</li> <li>• Provide project-affected parties with accessible and inclusive means to raise issues and grievances and allow Borrowers to respond to and manage such grievances.</li> </ul>

To align with the WB ESF, it is essential to evaluate the policies of the Government of Sierra Leone against each ESS. While Sierra Leone has several environmental, social, and labor regulations in place, gaps exist in their alignment with the World Bank's comprehensive ESS requirements, especially in areas such as stakeholder engagement, grievance mechanisms, biodiversity conservation, and community health and safety. Table 2-5 compares and identifies gaps in the main policies and standards of the Government of Sierra Leone compared to each ESS.

**Table 2-5 Gap Analysis between applicable WB ESSs and the SL National Regulation<sup>3</sup>**

Scope/Objective	Description of Bank Policy	Description of the main Government of Sierra Leone Regulation	Gaps Identified	Gap Bridging Actions
<b>ESS 1: Assessment and Management of Environmental and Social Risks and Impacts</b>				
<ul style="list-style-type: none"> <li>• Identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.</li> <li>• To adopt a mitigation hierarchy approach to:                             <ul style="list-style-type: none"> <li>✓ Anticipate and avoid risks and impacts.</li> <li>✓ Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels.</li> <li>✓ Once risks and impacts have been minimized or reduced, mitigate; and</li> <li>✓ Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.</li> </ul> </li> </ul>	<p>The standard provides guidance on assessing the Project's potential environmental and social risks and impacts and addressing potential impacts through planning and mitigation hierarchy approach.</p>	<ul style="list-style-type: none"> <li>• The Environment Protection Agency Act and its amendments (2022, 2010, 2008) provide for the effective protection of the environment and for other related matters. The Act alludes to ambient air, water and soil quality, the pollution of air, water, land and other forms of environmental pollution including the discharge of waste and the control of chemicals, toxic, and hazardous substances.</li> <li>• The Act requires certain categories of operations to carry out Environmental and Social impact assessment studies in order to obtain an EIA license. Such studies cover but are not limited to identifying environmental and social impacts of the project, mitigation measures and the preparation of environmental and social management and monitoring plans. Community consultations and grievance</li> </ul>	<p>Even though the regulation seeks to anticipate and mitigate/avoid risks and impacts, the Sierra Leone EPA Act lacks comprehensive social risk management, structured and continuous stakeholder engagement, grievance mechanisms, adaptive management practices, and tools like the Environmental and Social Commitment Plan, which are core to ESS1's approach to safeguarding communities and the environment.</p>	<p>Projects in Sierra Leone funded by the World Bank generally implement additional safeguards and procedures to ensure compliance with ESS1:</p> <ul style="list-style-type: none"> <li>• A GRM will be established, run, tracked and monitored by the PMU.</li> <li>• Assistance/compensation will be provided for the affected parties by the government through the City Council.</li> <li>• The City Council will be fully involved in the project preparatory stage through consultations for them to become abreast with project components, and the roles they will play during implementation.</li> <li>• The capacities of the City Council's staff on World Bank ESF will also be built at the early stage of project implementation to enable them to collaborate effectively in addressing this gap.</li> <li>• Supervision and monitoring of implementation of the ESMP and the hierarchy of measures figuring in ESS1 should be</li> </ul>

<sup>3</sup> Land-related legislation has been covered in Section 5 of the Resettlement Plan (RP) – Regulatory and Policy Framework. Subsection 5.4 covers the International Framework including the World Bank requirements and ESS5. Land-related legislation has been covered in Section 5 of the Resettlement Plan (RP) –Sub-section 5.4 covers the WB ESS 5 requirements, similarities and differences with the local regulatory framework and gap-filling measures.

Scope/Objective	Description of Bank Policy	Description of the main Government of Sierra Leone Regulation	Gaps Identified	Gap Bridging Actions
		<p>redress mechanisms are part of the process. A required management plan is the Public Consultation and Disclosure Plan.</p> <ul style="list-style-type: none"> <li>The Act advocates for the freedom of access to information, record keeping, education and public awareness, and highlights juridical proceedings and miscellaneous provisions.</li> </ul>		ensured,
<b>ESS2: Labor and Working Conditions</b>				
<ul style="list-style-type: none"> <li>To promote safety and health at work, fair treatment, non-discrimination, and equal opportunity of project workers including vulnerable workers such as women, persons with disabilities, children</li> <li>To prevent the use of all forms of forced labor and child labor.</li> <li>To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.</li> <li>To provide project workers with accessible means to raise workplace concerns.</li> <li>OHS Hazard identification and right of employees to remove themselves from such workplaces without being punished.</li> </ul>	<p>ESS2 promotes fair treatment, non-discrimination, and provision of equal opportunities for workers engaged on projects it supports. It strongly encourages protection of all project workers, including vulnerable groups such as women, persons with disabilities, children (of working age) and migrant workers, contracted workers, and primary supply workers, as appropriate. It provides certain requirements that the project must meet in terms of working conditions, protection of</p>	<p>The Employment and Employed Act (2023) provides for the consolidation and improvement of the law relating to labor and employment, and for all the matters necessary to promote equal opportunity and eliminate discrimination in employment and occupation. The Act covers the following matters: business; contract of employment or service; earnings; discrimination; employer; equal remuneration; national minimum wage; strike; trade dispute; violence and harassment; wage.</p> <p>The Constitution of Sierra Leone (1991) Act No. 6 guarantees fair working conditions, equal pay for equal work, and fair compensation.</p>	<p>The Sierra Leone Employment Act of 2023 likely addresses various elements to bring it closer to the WB ESS2 on labor and working conditions. However, it may still have areas of partial or total non-compliance, including enhanced grievance systems, comprehensive health and safety standards, reliable enforcement of anti-discrimination policies, and guaranteed employment contracts.</p>	<p>For World Bank-funded projects, supplementary measures may be necessary to align with ESS2 requirements fully:</p> <ul style="list-style-type: none"> <li>The project will adopt and enhance the existing RUSLP GRM dedicated to labor, which addresses concerns promptly.</li> <li>An Occupational health and Safety plan and a Labor Management Plan tackling working conditions, occupational health and safety, child labor, etc., have been developed as part of this report to guide project implementers in managing labor-related issues in addition to Emergency procedures.</li> <li>Labor Management Procedures (LMP) have been prepared as part of this report, will be consulted upon, adopted and</li> </ul>

Scope/Objective	Description of Bank Policy	Description of the main Government of Sierra Leone Regulation	Gaps Identified	Gap Bridging Actions
	<p>the work force (especially the prevention of all forms of forced and child labor), and provision of a grievance mechanism that addresses concerns on the project promptly and uses a transparent process that provides timely feedback to those concerned.</p> <p>Under ESS 2, workplace processes will be put in place for project workers to report work situations that they believe are not safe or healthy, and to remove themselves from a work situation which they have reasonable justification to believe presents an imminent and danger to their life or health. Project workers who remove themselves from such situations will not be required to return to work until necessary remedial action to correct the situation has been taken. Project</p>			<p>disclosed by the PMU to meet the requirements of the ESS.</p> <ul style="list-style-type: none"> <li>Workers will be sensitized on the LMP and their rights to remove themselves from unsafe workplaces, and the fact that they will not be retaliated against if they do so in line with the LMP/ESS 2 provisions.</li> </ul>

Scope/Objective	Description of Bank Policy	Description of the main Government of Sierra Leone Regulation	Gaps Identified	Gap Bridging Actions
	workers will not be retaliated against or otherwise subject to reprisal or negative action for such reporting or removal.			
<b>ESS3 Resource Efficiency and Pollution Prevention and Management</b>				
To achieve the sustainable use of resources, including implementing measures that avoid or reduce pollution resulting from project activities	The ESS3 provides requirements for projects to achieve sustainable use of resources, including energy, water, and raw materials, as well as implement measures that avoid or reduce pollution resulting from project activities. The standard places specific consideration on hazardous wastes or materials and air emissions (climate pollutants) given that the current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of present and future lives.	In addition to the Environmental Protection Act and its amendments, the National Environmental Policy and its amendment aim to promote sustainable resource use, reduce waste, and prevent environmental degradation through policies to control pollution from industrial, agricultural and urban sources. The National Water Resources Management Agency Act provides a framework for the sustainable use and conservation of water resources, with a focus on protecting water quality and preventing pollution. The act highlights regulation of water withdrawals, waste discharge, and conservation practices. The National Policy Roadmap on Integrated Waste Management Act incorporates management of	While Sierra Leone's environmental policies offer a foundation for addressing resource efficiency and pollution, key gaps relative to ESS3 requirements include the lack of rigorous resource efficiency targets across sectors; limited enforcement of pollution control standards with sector-specific guidelines, minimal frameworks for hazardous waste and materials management, and weak monitoring, reporting and enforcement mechanisms for continuous improvement.	Relevant WB EHS guidelines will be adopted to achieve sustainable use of resources and reduce pollution from the construction, operation, and decommissioning works. These will be specified in ESMPs, and contractors will be required to adopt relevant provisions in their site-specific Environmental Management Plans.

Scope/Objective	Description of Bank Policy	Description of the main Government of Sierra Leone Regulation	Gaps Identified	Gap Bridging Actions
		municipal solid waste, hazardous healthcare waste, industrial waste, liquid waste and waste electrical and electronic equipment. The National Renewable Energy Policy encourages the development of renewable energy, supports pollution reduction and promotes the efficient use of resources.		
<b>ESS4 Community Health and Safety</b>				
<ul style="list-style-type: none"> <li>• To anticipate and avoid adverse impacts on the health and safety of project affected communities during the project lifecycle from both routine and non-routine circumstances.</li> <li>• To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams.</li> <li>• To ensure that safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.</li> </ul>	This standard recognizes that project activities, project equipment and infrastructure increase the exposure of project stakeholder communities to various health, safety and security risks and impacts and thus recommends that projects implement measures that avoid or limit the occurrence of such risks. It provides further requirements or guidelines on managing safety, including the need for projects to undertake safety assessment for each phase of the project, monitor incidents and accidents and prepare regular reports on such	The National Action Plan for Health Security in 2018, The Public Health Ordinance (1960) and Public Health Act (Amended in 2004) revise and consolidate all the laws and regulations pertaining to the prevention of disease, promote, safeguard, maintain and protect the health of humans and animals, and provide public health information to be disclosed to communities for related matters.	The regulations do not consider assessment of events and measures to deal with occurrences and emergencies. The regulations lack effective implementation strategies, emergency preparedness, community engagement, and integrated approaches.	Anticipated impacts from the project are assessed and mitigated as part of this ESIA/ESMP. Contractors will also be required to adopt requirements stated for health-related issues, including implementation of the proposed occupational and community health and safety plans. PMU shall ensure that: <ul style="list-style-type: none"> <li>• Projects undertake safety assessments for each phase,</li> <li>• Incidents and accidents are monitored and reported, and regular monitoring reports are prepared.</li> <li>• Incidents and accidents are investigated, and shortcomings are identified and considered to avoid such mishaps in the future.</li> <li>• An emergency preparedness and response plan are prepared as part of this report and will be</li> </ul>

Scope/Objective	Description of Bank Policy	Description of the main Government of Sierra Leone Regulation	Gaps Identified	Gap Bridging Actions
	monitoring. ESS4 also provides guidance on emergency preparedness and response.			implemented.
<b>ESS5</b>				
<b>ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources</b>				
<ul style="list-style-type: none"> <li>• To protect and conserve biodiversity and habitats.</li> <li>• To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.</li> <li>• To promote the sustainable management of living natural resources.</li> <li>• To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.</li> </ul>	ESS6 promotes the conservation of biodiversity or natural habitats and supports the protection and maintenance of the core ecological functions of natural habitats and the biodiversity they support. It also encourages projects to incorporate environmental and social strategies that address any major natural habitat issues, including identification of important natural habitat sites, the ecological functions they perform, the degree of threat to the sites, and priorities for conservation.	The Forestry policy and its amendment in 2022, the National Protected Area Authority and Conservation Trust Fund Act (2012), the National Biodiversity Strategy and Action Plan, the Conservation of Wildfire policy are policies that provide measures for protecting biodiversity and ensuring the sustainable management of living natural resources. They promote co- management activities that require working with local communities to take governance actions that reduce the risk of biodiversity loss.	Adequate provisions are covered by national laws and policies. While policies exist, there are challenges in implementing and enforcing these policies effectively, and challenges in conducting comprehensive assessment and monitoring, especially with the lack of up-to-date data and long-term financing.	The project will take measures to protect and conserve biodiversity and habitats and to meet all requirements specified in the ESS6 - although the project site is a developed area with very limited biodiversity coverage. Applicability to this project is limited.
<b>ESS8 Cultural Heritage</b>				

Scope/Objective	Description of Bank Policy	Description of the main Government of Sierra Leone Regulation	Gaps Identified	Gap Bridging Actions
<ul style="list-style-type: none"> <li>• To protect cultural heritage from the adverse impacts of project activities and support its preservation.</li> <li>• To address cultural heritage as an integral aspect of sustainable development.</li> <li>• To promote meaningful consultation with stakeholders regarding cultural heritage.</li> <li>• To promote the equitable sharing of benefits from the use of cultural heritage.</li> </ul>	<p>This standard sets out general provisions on cultural heritage preservation and recommends protecting cultural heritage from the adverse impacts of project activities. It addresses physical or tangible cultural resources, which are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be in urban or rural settings, and may be above or below ground, or underwater. It also addresses intangible cultural heritage such as practices, representations, expressions, instruments, objects and cultural spaces that communities</p>	<p>The Environmental Protection Agency Act and its amendments include provisions for cultural heritage in the context of ESIA's (mandates consideration of cultural heritage in project planning).                      The National Land Policy 2015 recognizes the importance of cultural and historical sites, encouraging the integration of cultural heritage considerations in development projects.                      The Monuments and Relics Act (1962, amended in 1967) also provides for the cultural heritage of archaeological, historical, and other scientific interest.</p>	<p>National regulations and policies do not sufficiently address cultural heritage as an integral part of sustainable development and promotion of equitable sharing of benefits. The policies have limited recognition and protection of indigenous people's cultural heritage and lack a structured mechanism for community involvement and benefit-sharing in heritage management. The policies also lack a clear emergency procedure for cultural heritage protection. Intangible cultural heritage is not covered in Sierra Leonean legislation either.</p>	<p>Stipulations in ESS8 will be strictly adhered to.                      Adverse impacts on cultural heritage from the project activities are identified in the ESIA, and provisions will be made to support its preservation through the proposed mitigation measures.                      All Contractor contracts will include a Chance Find Procedure. Contractors shall be instructed about the importance of preserving archeological and cultural heritage, the needed measures and procedures, including the Chance Find Procedure.</p>

Scope/Objective	Description of Bank Policy	Description of the main Government of Sierra Leone Regulation	Gaps Identified	Gap Bridging Actions
	<p>recognize as part of their cultural heritage. Projects involving significant excavations, demolition, movement of earth, flooding, or other environmental changes are to take cognizance of this standard in the ESMF.</p>			
<b>ESS10 Stakeholder Engagement and Information Disclosure</b>				
<ul style="list-style-type: none"> <li>To establish a systematic approach to stakeholder engagement that will help the borrower identify stakeholders and build and maintain a constructive relationship with them as project-affected parties. To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be considered in project design and environmental and social performance. To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.</li> <li>To ensure that appropriate project information on environmental and social risks and impacts is disclosed to</li> </ul>	<p>ESS10 seeks to encourage open and transparent engagement between the borrower and the project stakeholders PAP throughout the project lifecycle. The standard establishes a systematic approach to stakeholder engagement that potentially helps the borrower to identify stakeholders and build and maintain a constructive relationship with them, as well as disclose information on the environmental and social risks and impacts to stakeholders in a timely, understandable, accessible, and appropriate manner and format. It recommends</p>	<p>The EPA Act (2022) requires parties seeking permits to implement environmentally sensitive projects to develop an ESIA and organize public disclosures following procedures that allow stakeholders at different levels to understand sources of risks and agree with proposed measures for monitoring and mitigation. The Local Government Act and its amendment in 2022 promotes community participation in local development and governance and encourages city councils to involve residents in decision-making, particularly for infrastructure or services impacting the local community. The Right to Information Act (2013) provides for the disclosure of information held by public authorities or persons providing services to the public. It requires</p>	<p>Sierra Leone regulations cover some aspects of stakeholder engagement, but significant gaps exist in comparison with ESS10, such as the lack of continuous engagement through all project phases, inadequate mechanisms to ensure inclusive consultation, especially for vulnerable groups, limited provisions for proactive information disclosure to the public, absence of formal, accessible, and effective grievance mechanisms and reporting requirement for engagement activities.</p>	<p>Aligning with ESS10 would require strengthening stakeholder engagement:</p> <ul style="list-style-type: none"> <li>The project shall develop a stakeholder Engagement Plan that sets a plan for consultations throughout the project lifecycle, with all categories of stakeholders including vulnerable groups. The SEP shall also include a GRM based on the existing grievance redress mechanism for resolving grievances for the RUSLP.</li> <li>The GRM is a decentralized and transparent system which ensures quick resolution of complaints and disputes; it also has the structure for disclosing vital information to requisite stakeholders.</li> <li>It also provides a means for effective and inclusive engagement. This instrument</li> </ul>

Scope/Objective	Description of Bank Policy	Description of the main Government of Sierra Leone Regulation	Gaps Identified	Gap Bridging Actions
<p>stakeholders in a timely, understandable, accessible, and appropriate manner and format.</p> <ul style="list-style-type: none"> <li>To provide project-affected parties with accessible and inclusive means to raise issues and grievances and allow the borrower to respond to and manage such grievances.</li> </ul>	<p>that stakeholder engagements are commenced as early as possible in the project development process and continued throughout the lifecycle of the Project. This allows for stakeholders' views to be considered in the project design and environmental and social performance. The borrower is also expected to implement a grievance mechanism to receive and facilitate resolution of concerns and grievances.</p>	<p>public disclosure processes that foster transparency and meaningful engagement.</p>		<p>which satisfies almost all the requirements of ESS10 will be applied during project implementation to bridge the gaps in national regulations and policies.</p>

## 2.6 WORLD BANK ENVIRONMENTAL, HEALTH, AND SAFETY GUIDELINES

The Environmental, Health and Safety (EHS) guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). The EHS guidelines contain performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. The applicability of the EHS Guidelines is tailored to the hazards and risks established for the Markets upgrade project based on the results of the environmental and social assessment. The general EHS Guidelines are organized as illustrated in Appendix 2.

In addition to the WB General EHS Guidelines, the market upgrade project will consider the recommendation of the EHS Guidelines for Construction Materials Extraction, which are intended to be used in conjunction with the General EHS Guidelines. These guidelines offer key recommendations for managing environmental, health, and safety risks associated with the extraction of construction materials such as aggregates, limestone, and clay. The guidelines address the following main areas:

**Environment:** Environmental concerns during the operation, construction, and decommissioning phases of construction materials extraction include air emissions, noise and vibrations, water management, waste disposal, and land conversion. The guidelines provide measures to prevent and control emissions, including dust and noise, to minimize impacts on surrounding communities and ecosystems. They also outline strategies for managing water use and quality to ensure that extraction activities do not adversely affect local water resources. Additionally, the guidelines emphasize the importance of restoring extraction sites post-operation, which includes recontouring, replanting, and restoring habitats.

**Occupational Health and safety:** Occupational health and safety hazards during the operational phase of construction materials extraction primarily include respiratory hazards, noise, and physical hazards. The guidelines recommend ensuring worker safety through the provision of personal protective equipment (PPE), training, and proper site management practices. They also emphasize the importance of identifying and mitigating risks such as accidents, exposure to hazardous materials, and the operation of heavy machinery. Furthermore, the guidelines advocate for the implementation of emergency preparedness and response plans to address potential incidents.

**Community Health and Safety:** Community health and safety issues specific to construction materials extraction projects include land instability, water contamination, explosive safety, and decommissioning. The guidelines recommend engaging with local communities to inform them about potential risks and the mitigation strategies related to extraction activities. They also advise implementing traffic management plans to ensure the safety of local populations from transportation activities associated with construction materials. Additionally, the guidelines suggest measures to mitigate noise, dust, and vibrations to minimize the impact on nearby communities.

### 3 PROJECT DESCRIPTION

#### 3.1 MAKENI CENTRAL MARKET SITUATION

The location of the proposed market upgrade is Market Road/Church Street in Makeni city. The intervention will help to improve market conditions for petty traders and their accompanying family members including children and customers.

Situated in the Northern province of Sierra Leone, Bombali District, Makeni Town, the Makeni Central Market is located at about 100 m from the Makeni Clock Tower, and less than 1 km away from the Makeni City Council Administrative offices. It is bordered by Church Street, Campbell Street, and Station Road Flower Corner, strategically located at Latitude 08° 53' 17" and Longitude 12° 02' 34". The market area spans about 3,240m<sup>2</sup> and accommodates 2,745 traders [with 1,209 (44%) selling inside the market and 1,536 (56%) selling outside the market at different locations] as per the baseline Survey findings. The location and boundaries of Makeni Central Market are illustrated in Figure 3-1.

Makeni Central Market land housing is predominantly owned by the Makeni City Council. The City Council has constructed market structures, including stalls within the market available space owned by the Council, yet these are insufficient to accommodate all the traders within the city. Consequently, some traders utilize nearby private properties, hindering market expansion. They pay for the private space they rent, and most of them use moveable tables.

Operating throughout six days a week, Sunday serves as a holiday for some traders, with no specific time for the opening and closing, whereby traders manage their businesses at their own time. Raw fish traders source their supply within Makeni city, while dry fish traders venture outside the city to 'luma' for weekly fish purchases. The market faces challenges, lacking essential facilities such as sanitation, storage, adequate space, electricity, a paved floor, and disability-friendly infrastructure, causing inconveniences for both traders and buyers.

The roads surrounding the market are in relatively good condition. These roads will be affected relatively during the construction phase of the project. Figure 3-2 presents photos taken during the field survey conducted at the Makeni City Market.



**Figure 3-1 Makeni Market in Sierra Leone (Lat: 08°C53'17", Long: -12°02'34")**



Figure 3-2 Photos from the Makeni central market

### 3.2 MAKENI CENTRAL MARKET UPGRADE PURPOSE AND OBJECTIVES

The main objectives of the market upgrade are to improve working conditions for traders, stimulate local economies, and provide city councils with increased revenues through

increased collection of market dues. The market is situated in the Central Business District of Makeni about 30m from the Makeni Clock Tower, 100m from the central Mosque and Central Police Station. The site is surrounded by mostly commercial buildings (shops etc.) and a few residential houses and commercial Banks (50m away).

As the Makeni central market suffers from several problems (inadequate water, electricity, proper toilets, ablution and storage facilities, pavements, and adequate roofing in addition to flooding during the rainy season); the upgrade is based on flood risk reduction considerations and consists of the construction of new standard market buildings to accommodate the existing and future business community (traders and their accompanying family members).

### 3.3 MAKENI CENTRAL MARKET CURRENT SITE CONDITIONS

#### 3.3.1 Makeni Central Market Site Existing Infrastructure and Services

According to the feasibility study prepared by the Feasibility and Design Consultants, the main infrastructures available (or not) in Makeni central market are presented in Table 3-1.

**Table 3-1 Availability Status of the main infrastructure within the Makeni Central Market**

Market Infrastructure	Makeni	
	Availability	Remark
Clean water supply	A pipe-borne tap and a borewell are available within the market.	The presence of a pipe-borne tap indicates the likelihood of having as much water as needed.
Electricity Supply	The EDSA power grid is available, and no other source of electrical power was observed. Electricity is not available to all market traders (only part of the market is using electricity). It was observed that the only part of the market using electricity is the section where raw fish is sold which was privately provided by the fish traders.	The presence of electricity around the market implies it is accessible. Therefore, electricity can be made available to all the market facilities. If funds are available, the project will utilize solar panels as a source of electrical power.
Cold Room	No cold room was found within the market, but there is one around the market. In Makeni, the only cold room observed very close to the market, was the one along Campbell Street which is being operated privately.	The provision of a cold room within the market is a serious concern, considering the limited space. Maybe the Council can adopt a PPP to make cold rooms available nearby.
Stores	The City Council owns commercial stores within the market area. Some traders rent land spaces from the Council and build their own private stores.	Apparently, the retailers are keeping their goods in quarters (dwellings) and shops within the market. Some of these shops are owned by the Makeni City Council but provision for additional spacious stores should be taken into consideration in the design of the market upgrade.
Health	No health facility except for small pharmacies within and around the market owned by stores owners.	A small clinic within the market will be of help, at least for first aid purposes

Market	Makeni	
Daycare/School	A primary school was identified near the market in Church Street. However, no daycare was identified within or near the market.	It will be of help if a daycare is provided in or nearby the market site.
Financial Outlets	There are several money transfer facilities (e.g., Afrimoney, Orange Money) seen in the market area. Ecobank is located less than 100 m from the market.	There is a concern that this Orange Money transfer facilities are not permanent, and it may not be there in the next few years. However, the local council and the traders' union can make sure such a facility always exists nearby
Security Post	There is a police station very close to the market.	The police station may be able to provide the necessary security. However, if there is space, a security post can be provided in the market
Parking Space	An informal lorry park was observed about 200 m from the market	However, that space cannot be upgraded to efficiently be of service to the market, because it is informal and has a lot of resettlement implications
Drainage Facility	The drainage system was observed to be very poor. Steady surface water was randomly observed during the rainy season.	These observations were made during the dry season. The traders confirmed the presence of flood water during the rainy season. As part of the external works, there will drainages (0.6m wide and 0.6m deep) around each structure whilst the existing drainage channels along Market Road, Church Street and Campbell Street be cleaned up to enhance the flow of water from the markets to the nearest stream.
Wastewater, Sanitation and Hygiene	A restroom building housing 5 toilets are present within the market borders. Wastewater from these latrines is discharged inside some sort of cesspits that need to be periodically emptied by dump trucks.	The market currently has inadequate toilets and a wastewater management system, which will be upgraded as part of the project. The upgrade intervention may involve implementing nature-based solutions, such as Phyto depuration basins, to manage wastewater. These basins will treat the wastewater, which will then be discharged through sub-irrigation.
Solid Waste Management	Waste management is poor in the market area. Currently it is being predominantly collected by the City Council, although some traders use private service providers.	A comprehensive waste management plan shall be put in place to ensure proper waste management of the upgraded market.

Source: JV Politecnica & ISC, 2024

The project will enhance the infrastructure of the Makeni central market by addressing several key areas. Interventions include the construction of a two-floor (G+1) market building with stalls and stores for traders, complete with ramps, staircases, windows and doors. Essential systems to be installed include an electrical network complemented by solar panels, a firefighting system and plumbing infrastructure for water supply and liquid waste management. Ventilation and HVAC systems will be integrated to ensure comfortable temperature and air quality for traders and visitors throughout the year. Cold rooms will also

be provided to offer much-needed cold storage facilities. The plumbing scope covers earth protection, waste piping, liquid waste drainage, and the installation of septic tanks and soak away systems to ensure efficient sanitation. The following sections provide a summary of the market upgrade components.

### *3.3.2 Makeni Central Market Site Surroundings*

The Makeni Central Market and most of the adjacent land are used for residential and commercial purposes. Most of the houses around the market are of mixed use and have shops and stores attached to them, some of these buildings share common boundaries with the markets. However, there are some forms of trade (selling/buying) activities in every residential and commercial building and road around the market area. There are nearby, commercial banks, including Ecobank, Sierra Leone Commercial Bank, Rokel Commercial Bank, Access Bank and GT Bank – listed in order of proximity – can be found. Additionally, the area features a police station, cosmetic and perfume stores, pharmacies, a flower store, restaurants, a church, a mosque, a primary school and more. Unfortunately, the studies could not obtain records of the population of the CBD.

### *3.3.3 Makeni Central Market Upgrade Components*

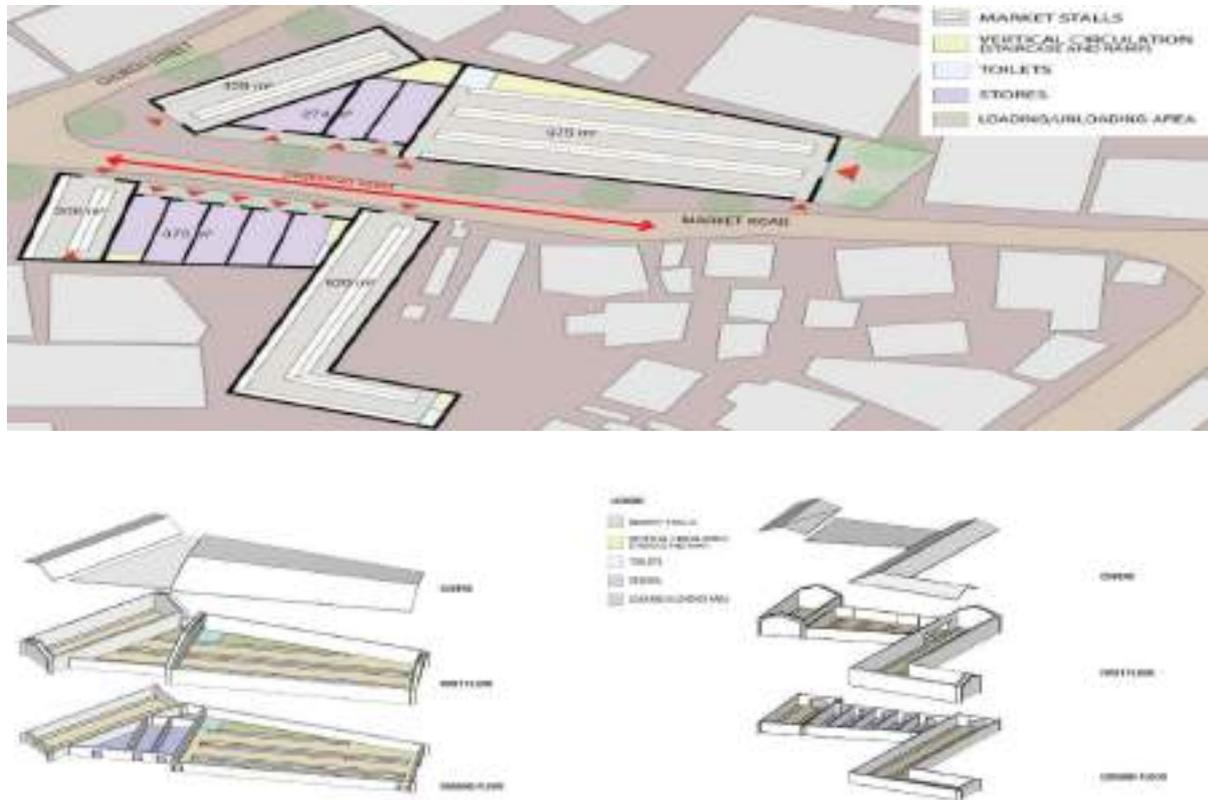
The most practicable intervention for such an upgrade is the construction of new standard market buildings to accommodate the existing and future business community. The key elements considered for design options are:

- Design of infrastructure based on identified and prioritized needs (of both men and women): stalls, access roads, drainages, water supply and reticulation, sanitary facilities, firefighting, garbage disposal, ventilation, solar power, lighting, cold rooms, security, auxiliary facilities, parking lots.
- Calculation of required space based on existing infrastructure standards.
- Site planning including layout of buildings.
- Cost implications.

The feasibility study assessed the related services in Makeni market site to include and incorporate in the design phase all currently unavailable and inadequate facilities for the smooth and effective operation of the market. According to the revised feasibility study, the selected design option (viable option 3bis) is limited to the existing market cadastral area of 3,240 m<sup>2</sup>; no expansion is foreseen, as shown in Figure 3-3. The Upgraded Makeni central market will consist of two separate buildings, designed to host around 1,580 traders in total, featuring G+1 type buildings.

At the Preliminary design phase, the option selected during the feasibility study was slightly modified. The revised Option consists of two blocks. Block A includes a reduced cold room area, combined cold and hot water plants, a janitor's store on the ground floor, and a medical room, administration room, and independent WC facility on the first floor. The key difference is in Block B, where high-level storage provisions have been omitted. Ramps and one disabled washroom will be provided on each floor in both blocks, in addition to a

loading bay (39 m<sup>2</sup>) at Block A, for efficient market operations via the market road access. The trader capacity is estimated at 362 traders on the ground floor and 500 traders on the first floor in both blocks, assuming one trader per stall. However, the total capacity could reach 1,724 traders if considering two traders per stall.



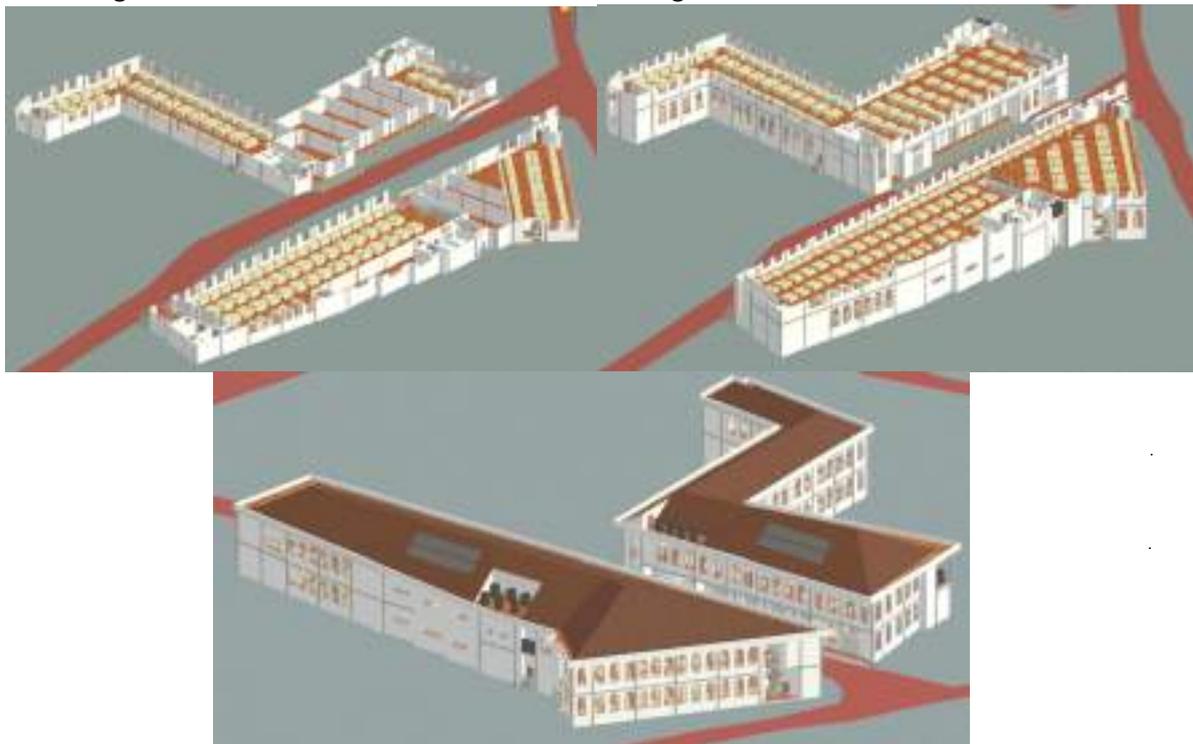
**Figure 3-3 Proposed footprint of the Makeni Market Upgrade (Ground floor)**

Source: JV Politecnica & ISC, 2024

The upgraded Makeni central market consisting of two Block A and B, each of two floors (Ground + 1) will have the following components:

- Market Stalls: A basic model of 5 m<sup>2</sup> is proposed which will be used by 2 traders. Each unit measures 5x2 meters with an area of 10m<sup>2</sup>. Each 10m<sup>2</sup> stall is divided into two 5m<sup>2</sup> segments, which will be shared by two traders. The circulation path between stalls differs, with some stalls structured in arrays and others positioned individually. The corridors range from minor paths at 1.5 meters wide to major passageways that are 3 meters wide.
- Stores: 8 stores, 65 m<sup>2</sup> for each store, at the ground floor level, 3 in Block A and 5 in Block B.
- The design incorporates essential services and common areas. These include but are not limited to:
  - ✓ Washrooms
  - ✓ Loading and unloading Bays
  - ✓ Residual space
  - ✓ Cold Rooms

- ✓ Hot and cold-water room
  - ✓ Security Post
  - ✓ Janitors Room
  - ✓ Healthcare center
- Architectural considerations: The Makeni central market upgrade design incorporates key features such as amenities, storage provisions, trader capacity, and site-specific considerations. The design includes stepped and ramped entry/exit points, enclosed staircases that follow egress and fire safety requirements, and street-facing retail units with roll-up doors for efficient loading and unloading operations. The septic tank location will be closer to Church Street for improved access from sanitary facilities. Figure 3-4 illustrates the architectural 3D design of Makeni central market.



**Figure 3-4 Architectural 3D Design of Makeni central market**

Source: JV Politecnica & ISC, 2024

#### Storm Water Drainage:

Foul and surface water drain systems shall be installed in accordance with all Local or BS standards, all below ground drainage should within the site boundary and co - ordinate it with the drainage outside the boundary to outfall connections to municipal water courses or as directed by Supervising Engineer.

Drainage pipe work shall be graded to ensure self-cleansing velocities of 0.75m/s are achieved on both foul and surface water drains. Foul drainage shall be installed to limit the proportional depth to no more than three quarters of the drain diameter. Surface water shall be permitted to run at full bore.

All open areas shall be treated with silt traps and oil interceptors, where practical roof drainage shall not pass through the oil interceptors. The specification of oil/petrol interceptors along with fittings is to satisfy the requirements of the relevant authorities. Channel drains, used for area drainage in open areas, must be in areas of low vehicle/cart or pedestrian loading area. Where used, gullies are to be trapped and located against kerbs if possible. Catch pits are to be provided on all subsoil/ French drain runs. Catch pits to have a minimum of 300mm sump for silt collection, existing land drainage, if present, is to be always maintained.

Access to the drainage system shall be provided by means of manholes at junctions and changes of direction. Manholes shall be of sufficient size to allow blockages to be cleared from the surface or where too deep to allow man or hand hole entry. All manhole covers and frames shall be of suitable loading considering the trafficking area in which they are installed. Where manholes are located inside buildings, double sealed airtight covers shall be provided.

### 3.4 MAKENI RELOCATION SITE CONDITIONS

#### 3.4.1 Relocation Site Description

In order to achieve the market upgrade and referring to the recent RP survey conducted in May-June 2024, 1,654 traders were identified inside the project hoarding area, and as such need to be relocated. The project hoarding area is defined as the market building and the area likely to be affected by the project activities for construction works, as illustrated in Figure 3-5. This area was delineated on the ground with the Feasibility and Design Consultants prior to the enumeration and census of PAPs; fences will demarcate this area prior to the initiation of construction works.



**Figure 3-5 Map showing the project hoarding area at the Makeni Central Market site (construction boundaries in light blue surrounding the existing market)**

Source: JV Politecnica & ISC, 2024

Four temporary sites were initially selected to accommodate the traders during the construction phase of the project: Campbell Street-Church Street, Teko Market and Sesay Street Market, and Turn Table Market. Turn Table site was later removed from the list of potential relocation sites since the market is fully occupied by its existing traders and will not be able to accommodate the relocation of additional Makeni Central Market traders.

Additionally, the market is situated within a residential area, which limits the possibility of its expansion to accommodate more traders.

At a later stage, all other sites were also excluded, with Campbell Street /Savage Square designated as the only location for the Makeni relocated traders.

- **Campbell Street /Savage Square:** This site is conveniently located 100 meters Southeast from the Makeni Clock Tower, less than 100 meters from the Makeni City Council and the main market itself. Geographical coordinates are approximately 8° 89' 06.68" for latitude and -12° 04' 00.64" for longitude as illustrated in Figure 3-6. The total length of the two streets is approximately 1.5 Km, with an average of 9 m width.



**Figure 3-6 Campbell Street & Savage Street relocation site**

Source: JV Politecnica & ISC, 2024

### 3.4.2 Relocation Site Existing Infrastructure and Services

It is important to note that the buildings being assessed at the relocation site are owned by the Makeni City Council.

The site is accessible via motorable routes. Campbell Street is paved with asphalt, while Savage Street remains unpaved. Both streets are conveniently located near the central market of Makeni, an area where street trading is common. Campbell Street is particularly busy with traders, often leading to traffic congestion during the day. Despite this, both streets can accommodate vehicles of all sizes, from small cars to heavy trucks, ensuring smooth access for traders and transporters.

The drainage system at the site was observed to be in good condition. Residential dwellings line the back of either side of the streets, contributing to the mixed-use nature of the area.

However, the site lacks several critical facilities. At the time of the visit, there was no security post, nor were there any fire safety or emergency prevention measures. Additionally, there were no toilet facilities available. The site also lacked a power supply from EDSA or any other agency, which meant that trading activities ceased after sunset due to the absence of lighting.

### 3.4.3 Relocation Site Land Use

Campbell Street, a key route to the city center and administrative area, plays a significant role in street trading. Approximately 70% of its upper section is filled with temporary wooden tables and structures where traders sell their goods. The site is primarily used for a mix of commercial and residential activities, with a strong emphasis on commerce. Many sections of these streets are occupied by stalls, creating a lively marketplace where food, raw agricultural produce, and agro-based products are sold.

Although there are no formal stores along the streets, several concrete shops are present. These shops, owned either by the Council or by private individuals, are used for commercial purposes, with some operating as pharmacies.

### 3.4.4 Relocation Site Components

The Makeni relocation process involves the development of Campbell & Savage Streets. The relocation plan considered 2 design options, presented in Table 3-2, featuring open-plan, single-floor sheds made from composite materials like timber, concrete, and zinc. The major difference between the options lies in the proposed design materials and Option 2 was selected since it offers a more secure and safe design.

**Table 3-2 The Two design options planned for the Makeni Relocation Site**

Option 1	Option 2
This option uses <b>timber frame structure with zinc</b> covering the entire surface, including the sides and roof	This option uses a composite design of <b>timber, zinc, and concrete</b> to provide more durable, safe, and secure sheds for the relocation market.
This design is the most Cost-effective, but it raises significant safety concerns. The use of zinc to cover the sides of the sheds poses safety risks for the market stall area	This option has the same layout, capacity, and amenities as Option 1 but offers a more secure and safe design. The dwarf walls for Site 1 along Campbell Street and Savage Street are designed using timber materials, while the dwarf walls at Sites 2 and 3 are designed using brick walls for the enhanced safety of traders and workers, and increased security (against vandalism and theft). The columns are designed using timber and concrete materials to enhance the structural integrity of the temporary sheds.
All stalls are constructed using timber materials.	All stalls are constructed using timber materials.
This option utilizes timber and zinc for the store sheds.	This option features timber and zinc for the store sheds.
This option does not provide washrooms and water facilities at any of the three sites in Makeni City due to space constraints.	This option does not provide washrooms and water facilities at any of the three sites in Makeni City due to space constraints

Source: JV Politecnica & ISC,2024

The facilities at the relocation site will be as follows:

- Market stalls: A basic model of 5 m<sup>2</sup> is proposed which will be used by 2 traders. The circulation paths between stalls vary, with some arranged in rows and others positioned individually. The corridors range from narrow paths, 1 meter wide, to wider passageways, 2 meters wide. All stalls are designed using timber materials.
- Stores: Due to space constraints and the characteristics of the relocation site, no store facilities are provided at Campbell & Savage Street.
- Services and common areas: For the proper functioning of the market relocation site, various aspects essential to supporting the relocated communities were assessed, including available infrastructure, facilities, services and land use. Essential services necessary to support traders' activities and ensure smooth operations and a conducive environment for commerce at the relocation site were found to be absent and needed to be ensured before relocating the traders. The required services are shown in Table 3-3.

**Table 3-3 Services required at the relocation site**

	<b>Campbell Street-Church Street</b>
Electricity Supply	x
Cold Room	x
Security post	x
Toilet Facilities	x
Clean Water Supply	x
Selling Space	x
Stores	x
Cover for sunlight and rain	x
Drainage facility	

Source: JV Politecnica & ISC,2024

The selected option has been planned to include 26 market sheds accommodating approximately 1,300 traders; 20 sets of mobile toilets with tanks to aid the supply of water to the toilet facilities; 36 movable dust bins; and 1 solar-powered borehole that will serve as the primary source of water (Table 3-4). The toilets will be installed in accessible areas along the Campbell Street and Savage Street; these will be located a few meters away from the market sheds along the street. Due to space constraints, there will be no specially designed toilets for the disabled persons. The layouts of the sheds at the Makeni relocation site are shown in Figure 3-7.

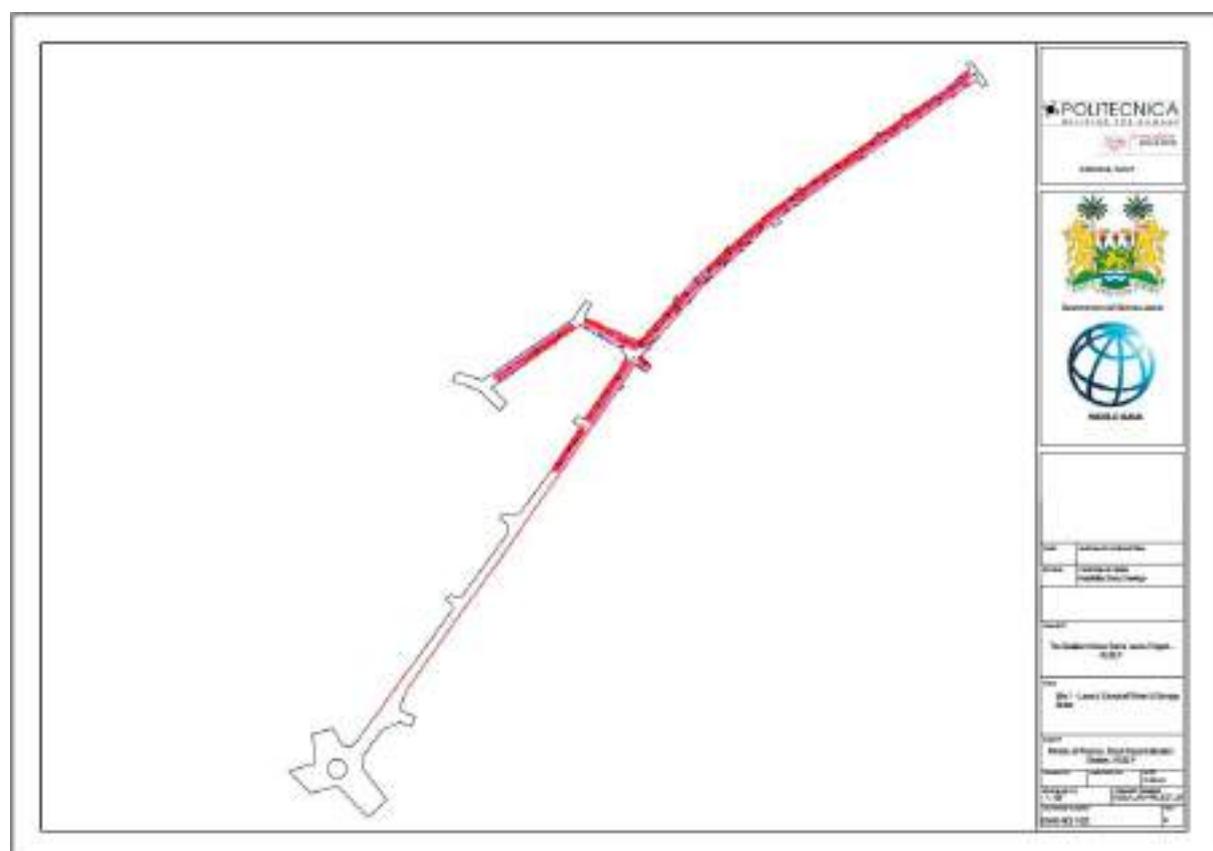
It is worth noting that 366 traders sell goods — such as cosmetics, salon products, electronics, etc. that are difficult to accommodate at the relocation site due to the nature of their goods and the site's arrangement. These traders will be provided with additional support (or an “additional compensation package”) in addition to the disturbance allowance, to enable them to self-relocate to other markets in the city.

**Table 3-4 Makeni relocation site facilities breakdown**

<b>Facility</b>	<b>Quantity</b>	<b>Proposed material</b>	<b>Construction area (m<sup>2</sup>)</b>	<b>Approximate Capacity (Traders)</b>
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Facility	Quantity	Proposed material	Construction area (m <sup>2</sup> )	Approximate Capacity (Traders)
1. Campbell Street/ Savage Square	26	Timber and Zinc	5,000	1,300
2. Mobile toilet facility with 200 liters water tanks and steel towers	20			
3. Moveable trash bins	36			
4. Solar-Powered borehole	1			
<b>Total</b>			<b>5,000</b>	<b>1,300</b>

Source: JV Politecnica & ISC, 2024



**Figure 3-7 Layout of the sheds at Makeni relocation site – Campbell Street**

Source: JV Politecnica & ISC, 2024

### 3.5 PLANNING PHASE

This phase included several activities that are under development by the Feasibility and Design Consultants and the ESIA Consultants, such as:

- Site screening
- Ground truthing
- Scoping
- Feasibility and baseline studies
- Finalization of geometric, structural, and architectural designs

- Completion of preliminary studies including topographical, geotechnical, hydrological, and traffic studies
- Completion of the ESIA, ESMP, and RP studies
- Development of tenders for contractors
- Planning for mobilization
- Site preparation and transportation of materials to the site.

The preliminary studies for the Makeni central market and the Makeni relocation site, as well as the ESIA/ESMP and RP studies (including consultations with PAPs) are ongoing. Once these work streams have all been completed, the necessary licenses acquired, and the construction contractor assigned, the site's preparatory activities will commence. During this phase of the project, environmental and social impacts do not typically occur. However, the decisions made during this stage can determine the extent of impacts likely to occur during the subsequent phases of the project.

### **3.6 CONSTRUCTION PHASE**

The estimated total duration of the construction works at both the Makeni central market and Makeni relocation site is planned to be approximately 24 months. This includes 6 months for the preparation of the relocation site, 12 months for the relocation process and the upgrade of the market building, followed by a 6-month defect liability period. Therefore, the work should take place during the first 6 months at the relocation site (all in parallel) and during the following year (12 months) at the main market site.

During this phase, several activities related to the planned construction works will be carried out. Various environmental and social impacts will arise during the construction phase, particularly in relation to land preparation and civil works. These include noise generation, air pollution, soil erosion, occupational health and safety risks, community health and safety risks, labor influx, and resettlement issues.

However, at the time of writing this draft report, data related to construction activities was not made available since the project is still at the preliminary design phase. The following data is missing and would need the contractor's intervention, at a further stage, to be completed:

- Construction Program and Schedule
- List of raw materials, their sources and estimated quantities for construction (type, quantity and source)
- Types and quantities of chemicals to be used during construction
- List of equipment and machinery to be used during construction (types, numbers, specifications)
- Estimated number of workers to be hired,
- Estimated quantity of water and energy supply needed,
- Estimated fuel consumption by type
- Estimated generation of wastewater during construction (L/day) from different sources (domestic, construction...)
- Estimated quantity of solid waste that will be generated by type (domestic, construction and demolition)

- Anticipated number/volume of trucks (per day) needed during Construction for transportation of workers, raw materials and C&D wastes, routing, access roads & working hours.

The Contractor Environmental and Social Management Plan (C-ESMP) should include detailed data and information on the number of construction workers to be hired, types and numbers of machinery and equipment, raw material sources and estimated quantities, fuel consumption estimates etc

### 3.6.1 Description of Activities

Construction activities will include the demolition of obsolete structures using earth-moving equipment at the Makeni central market. For both the Makeni central market and Makeni relocation site, the work will involve site preparation, including debris removal, marking out work areas, and earthworks such as drilling and excavation. The construction of the Makeni central market and Makeni relocation site includes substructure works, concrete works, block work, woodwork, metal work, floor and ceiling finishing, painting and decorating, electrical installation, mechanical and plumbing installation.

### 3.6.2 Equipment and Machinery

Construction equipment and machinery that are expected to be used during the construction of the Makeni central market and Makeni relocation site are summarized in Table 3-5. All equipment, machinery and tools used in the construction activities shall be maintained to be in a safe condition. The contractor shall provide the services of competent workers to ensure that all machinery and equipment can be operated in a safe and efficient manner.

**Table 3-5 General construction equipment and tools usually used during construction**

Equipment and Tools	
Excavators	Drills
Bulldozers	Grinder
Loaders (bobcats)	Pick Up truck
Welding Machine	Concrete Mixer (Truck)
Rock Breaker (Jack Hammer)	Concrete Pump (Truck)
Compressor	Plate compactor

### 3.6.3 Employment, Labor and Working Conditions

The contractor shall ensure that no person is employed on any operation unless the person has sufficient knowledge of and experience in the type of operation being conducted, or the person is being adequately supervised and trained by a person with sufficient knowledge of and experience in the type of operation being carried out, and the person has been adequately instructed as to the dangers likely to arise and the precautions to be taken against those dangers and the person is not under-aged.

The contractor shall supply each construction worker in the Makeni central market and Makeni relocation site with Personal Protective Equipment (PPE) including hard hats, safety

boots, overalls, and reflective vests. Where required for specific jobs, safety gloves, dust masks and hearing and eye protection gears will be provided.

The contractor shall submit an occupational, health and safety (OHS) plan to protect workers from health and safety hazards or risks, to prevent or reduce the incidence and severity of injury and spillages arising from working in or with hazardous substances, and to assist and facilitate the improved management of health and safety issues on site.

### 3.6.4 *Utility Requirements*

#### 3.6.4.1 *Power Supply*

For the construction of the Makeni central market and Makeni relocation site, the project contractors will apply to the Electricity Distribution and Supply Authority (EDSA) power line to connect to the grid during the construction phase to operate equipment and machinery. Electricity will also be supplied by a backup diesel generator during electricity blackouts.

#### 3.6.4.2 *Fuel*

Fuel for vehicles and machinery will be sourced from local fuel outlets. No information regarding fuel storage utilities and associated measures has been provided by the time this report was prepared for both the Makeni central market and Makeni relocation site.

#### 3.6.4.3 *Water Supply*

The contractors will require substantial volumes of water for various construction purposes such as mixing cement and curing concrete. Additionally, water for domestic consumption by workers will be needed on site. While the standard water consumption in Sierra Leone is estimated at around 120 liters per capita per day (*UN-Habitat/WHO, 2020*), for this construction phase, where work will take place for 8 to 9 hours a day, water consumption will be considered at half of the standard rate, i.e. 60 liters per capita per day. The exact number of workers to be hired for the construction of the Makeni central market and Makeni relocation site is not yet determined at this stage. Water for the construction works will be sourced from nearby rivers and streams, and the Sierra Leone Water Company (SALWACO) according to the Feasibility and Design Consultants. Water will be transported to the project site using water tanker vehicles.

### 3.6.5 *Wastewater Generation*

The generated wastewater will have to be discharged into an onsite septic tank to be emptied regularly and discharged where indicated by the City Council in the construction ESMP. The estimated domestic sewage generation from workers on site is estimated at around 80% of their water consumption, i.e., around 48 liters per capita per day. However, the number of workers to be hired for the construction of the Makeni central market and Makeni relocation site is not known at this stage.

### 3.6.6 *Waste Generation and Management*

Waste generated during this phase will mainly consist of demolition and construction waste. Rubble will result from the demolition of the existing market structure that will comprise wood,

metals, concrete, tiles, etc. As for construction waste, they will include waste materials from construction activities including unusable/excess soils, scrap materials (wood, metal, etc.), packaging (cement bags, cardboard, plastics, etc.), and excess materials (e.g. concrete). Moreover, excavation works at the Makeni central market are expected to generate approximately 3,916 m<sup>3</sup> of excavation waste, while Makeni relocation site will produce around 1,108 m<sup>3</sup>.

Domestic waste will be also generated from workers on site. While the national average waste generation in Sierra Leone is approximately 0.45 kg per capita per day (Kanty, P.F., et al., 2024), during the construction phase, where work will take place for 8 to 9 hours a day, waste generation will be considered at half the standard rate, i.e. 0.23 Kg per capita per day. Given that the number of workers that will be hired is not known at this stage, the total daily generation of domestic waste cannot be estimated at this stage and remains unknown for the Makeni central market and Makeni relocation site.

### 3.6.7 *Post-Construction Closure*

The primary objective of post-construction closure is to safeguard the environmental and community health and safety of an area once construction activities have ceased.

Closure of construction sites for the Makeni central market and Makeni relocation site will involve ensuring that all construction materials, waste, equipment, etc. are cleared away, all waste disposal sites closed, and the project areas rendered safe for public use. Closure of the construction sites will be the responsibility of the construction contractor.

## **3.7 OPERATION PHASE**

The following presents data on the operation phase for the Makeni central market after its upgrade, as well as for the temporary operation at Makeni relocation site, based on the information available at the time of writing this ESIA report. It should be noted that specific operational data, such as the estimated quantities of water and energy supply needed, as well as the estimated quantities of waste and wastewater that will be generated, have not been provided yet at this stage, as the project is still in the preliminary design phase, but were estimated.

### 3.7.1 *Activities*

The operation phase of the Makeni central market is expected to begin as soon as the construction activities are completed. The Makeni central market is designed to accommodate approximately 1,580 traders with the capacity to expand to 1,724 traders. The traders who will be relocated and will return to sell their products at the upgraded market are estimated to be around 1,654 traders; some of them may return to their initial location outside the market, the area affected by the construction works.

The operation of Makeni relocation site is expected to commence immediately after construction is completed and will serve for a maximum of 24 months while the Makeni central market is being upgraded. Relocation site are designed to accommodate approximately 1,674 traders, ensuring that all affected traders can continue their activities during the central market upgrade.

### 3.7.2 Energy Consumption and Power Supply

Energy for the upgraded Makeni central market will be sourced from the national grid EDSA, solar power and diesel generator. The primary energy source will be the national grid, while the diesel generator and solar power will serve as secondary sources. Energy will be distributed across the market as follow: stalls area (lighting and fans), cold room (lighting, refrigeration equipment including indoor evaporation and outdoor condensing units), water heater for cold and hot water facilities, main stores (Variable Refrigerant Flow (VRF)) air conditioning system, and upper storage facilities (lighting). The market will have a 200kVA generator as a secondary power source, with 100kVA of renewable solar energy providing 50% of the total energy needs.

Energy for the operation of temporary Makeni relocation site will only be sourced from the national grid energy distributors (EDSA), based on the preliminary design study.

### 3.7.3 Water Consumption

During the operation phase, the project will incur water consumption mainly for domestic purposes and market cleaning.

At the upgraded Makeni central market, water will be stored in a 5,000-gallon nominal capacity reinforced concrete underground tank and 5,000-liter nominal capacity plastic cold water storage overhead tank. Water will be sourced from a solar-powered borehole that will be drilled on site. Moreover, the market will be equipped with a tank for the storage of rainwater and its reuse in WC water boxes (for flushing purposes), which will reduce water consumption.

At the Makeni relocation site, water facilities are not provided for any of the three locations. Traders will need to use water from surrounding areas.

The estimated water consumption during the operation at Makeni relocation site is approximately 138,420 liters per day. This estimate accounts for 1,654 traders and 44 workers, each using 60 L/d. Additionally, 1,218 helpers are estimated to use 50% of the average water consumption (30 liters per day), as they are not present at the market all day and therefore consume less water compared to traders and workers. It is important to note that:

- This estimate does not account for water usage by visitors since their number is unknown.
- The number of traders, workers, and helpers inside the Makeni central market after the upgrade is estimated to be lower than the 1,654 traders, 44 workers, and 1,218 helpers considered for the relocation. This is due to the fact that relocation will encompass traders that are inside the market and those within the construction boundaries affected by the construction activities (outside the market building). Therefore, water consumption in the Makeni central market is estimated to be slightly lower than 138,420 L/day since those within the construction boundaries affected by the construction activities will return to their selling place outside the market building.

### 3.7.4 Wastewater Generation

Wastewater during operation in the market will be mainly generated from domestic uses (sanitation, washing, etc.) and market cleaning activities.

At the Makeni central market, the current wastewater management system will be upgraded as part of the project. The preliminary design suggests septic tanks for the storage of wastewater. The septic tank will be constructed in accordance with the Ministry of Works' specifications and will be regularly emptied by a licensed company and discharged into the nearest existing wastewater treatment lagoons, located 5 miles away and constructed by the Sierra Leone Water Company.

At Makeni relocation site, and according to the preliminary design, 20 mobile toilets will be installed at five suitable locations along Campbell Street and Savage Street. Additionally, 200-liter capacity water tanks, mounted on 1.5-meter-high steel towers, will be provided to supply water to the toilet facilities.

The estimated wastewater generation during Makeni relocation site operation is approximately 110,736 liters per day (80% of water consumption). This estimate accounts for 1,654 traders and 44 workers, each generating 48 L/day. Additionally, 1,218 helpers are estimated to generate 24 L/d as they are not present at the market all day. It is important to note that:

- This estimate does not account for wastewater generated by visitors whose number is unknown.
- The number of traders, workers, and helpers inside the Makeni central market after the upgrade is estimated to be lower than the 1,654 traders, 44 workers, and 1,218 helpers considered for the relocation. This is due to the fact that relocation will encompass traders that are inside the market and those within the construction boundaries affected by the construction activities (outside the market building). Therefore, wastewater generation in the Makeni central market is estimated to be slightly lower than 110,736 L/day since those within the construction boundaries affected by the construction activities will return to their selling place outside the market building.

### 3.7.5 Waste Generation and Management

Waste generated during this phase will typically consist of domestic waste that will be generated by the traders and workers working in the market and the visitors. The average domestic solid waste generated per capita in Sierra Leone is equivalent to 0.45 kg per person per day, with 84% being biodegradable organic waste (Sood, 2004).

The estimated domestic waste generation during the operation of Makeni relocation site is approximately 519 Kg per day. This estimate accounts for 1,654 traders and 44 workers, each generating 0.23 Kg/day; in addition to 1,218 helpers who are estimated to generate 0.12 Kg/day as they are not present at the market site all day. It is important to note that this estimate does not account for waste generated by visitors, and waste generation in the upgraded Makeni central market is expected to be slightly lower than 536.7 Kg/day for the same reasons listed above.

At the Makeni central market, in addition to domestic waste, the operation will also generate waste related to the maintenance and replacement of solar panels and backup batteries. This includes damaged or end-of-life solar panels (within 20-25 years from the upgrade) and batteries (within 4-5 years). The generated waste will be disposed of in appropriate bins, collected and disposed of by the Makeni City Council or by a private waste management company.

### **3.8 DECOMMISSIONING PHASE**

For the Makeni central market, this phase is unlikely to occur in the short-to-medium term. However, after prolonged use of the market, demolition may be required whether partial or complete, due to factors such as the expiration of tenure, changes in land use, or shifts in local planning and development priorities. Additionally, structural deterioration over time could necessitate decommissioning. Activities during the decommissioning phase will involve demolition of market structures such as buildings, stores, stalls, etc., removal of infrastructure including utilities, waste collection and disposal including hazardous and non-hazardous materials, site restoration including landscaping or preparing for future use and transportation and management of waste and materials off-site.

For the temporary relocation site, unless the structures are repurposed for another use instead of being demolished once the traders have moved back to the upgraded Makeni central market, the decommissioning phase will occur, and the activities will be similar in some aspect to the decommissioning of the Makeni central market. Activities will involve the removal of stalls, stores, and sheds, demolition of concrete structures, and the restoration of the site to its original state and condition. Activities will include also waste collection and disposal from the demolition process, transportation and management of waste and materials off-site, and site cleaning.

## 4 ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

This chapter establishes the baseline environmental and social conditions within the designated Study Area. Environmental conditions considered mainly cover the physical and biological environments, in addition to the socio-economic and cultural contexts.

For this purpose, existing documents were collected, reviewed, and analyzed to define the characteristics of the existing environment and data was collected through site visits, baseline assessment survey, field measurements, and consultation meetings with officials and traders.

### 4.1 PHYSICAL ENVIRONMENT AT THE MAKENI CENTRAL MARKET SITE

#### 4.1.1 Atmospheric Environment

Climatic data relating directly to Makeni City was collected from the online web portals - weatherspark.com – since data for Makeni city was not available at Sierra Leone Meteorological Agency (SLMet) when requested.

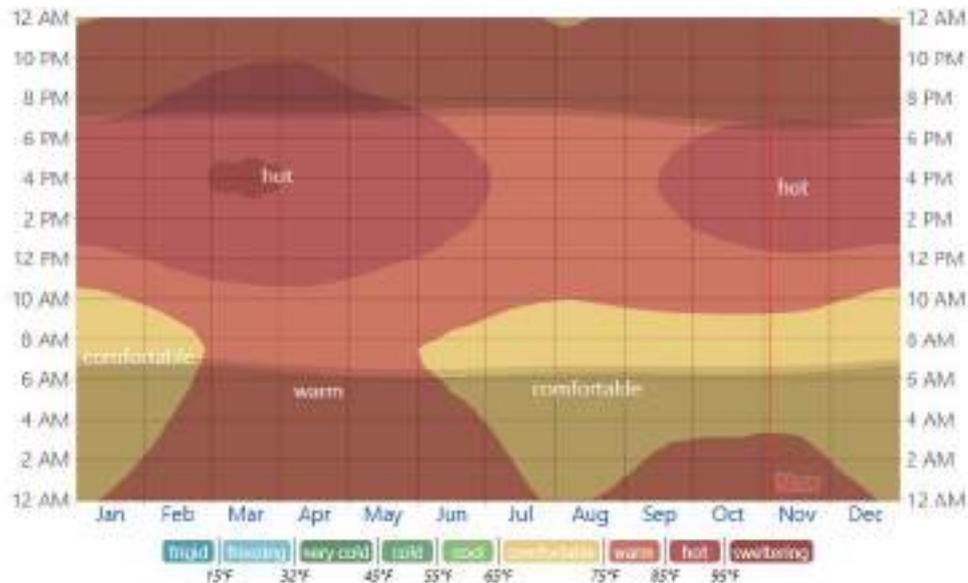
##### 4.1.1.1 Temperature

The seasonal temperature and precipitation cycle for each season are similar across the regions in Sierra Leone (which includes Makeni), with noticeable variations in the distribution of monthly precipitation. The temperature is consistently high throughout the country averaging 24.9°C to 28.7°C. Daily temperatures vary from 25°C to 34°C and can get as low as 20°C during Harmattan. The coldest and the hottest months of the year are August and March respectively. The daily average high (red line) and low (blue line) temperature with 25<sup>th</sup> to 75<sup>th</sup> and 10<sup>th</sup> to 90<sup>th</sup> percentile bands are presented in Figure 4-1. The thin dotted lines are the corresponding average perceived temperatures. Figure 4-2 shows the average hourly temperature in Makeni.



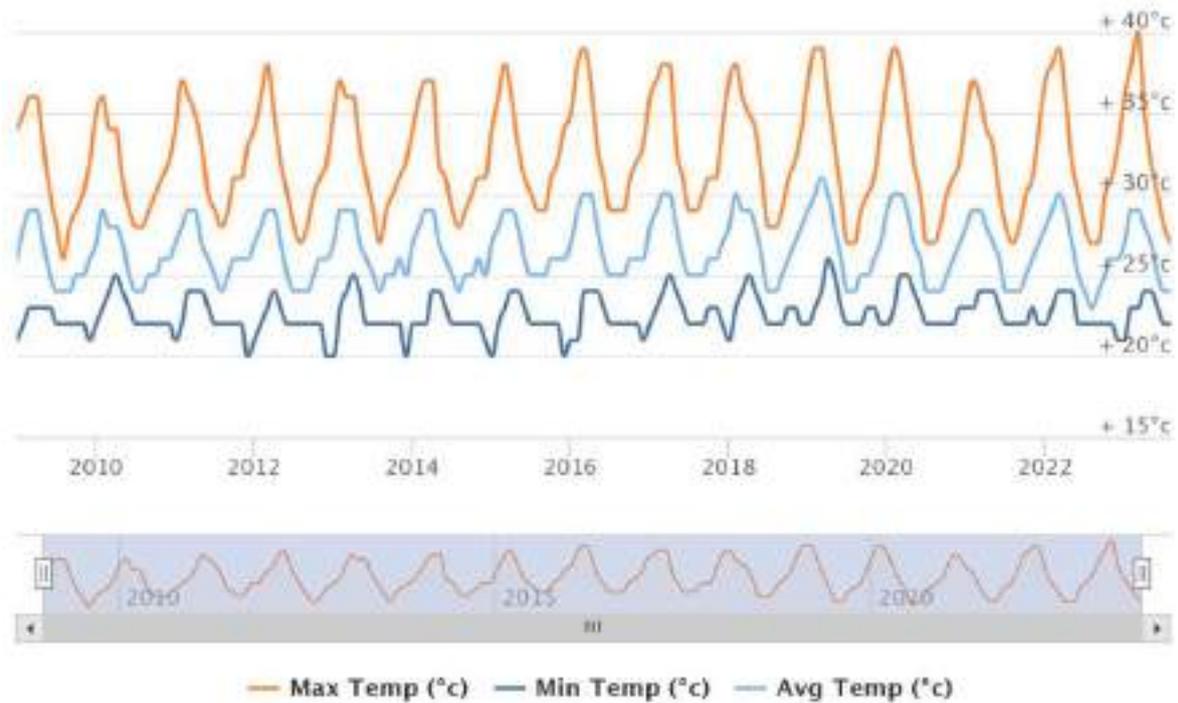
**Figure 4-1 Average Low and High temperature graph for Makeni City**

Source: weatherspark.com



**Figure 4-2 Average Hourly Temperature in Makeni**  
 Source: weatherspark.com

Figure 4-3 below presents the average temperature compared for previous years (2010-2022).

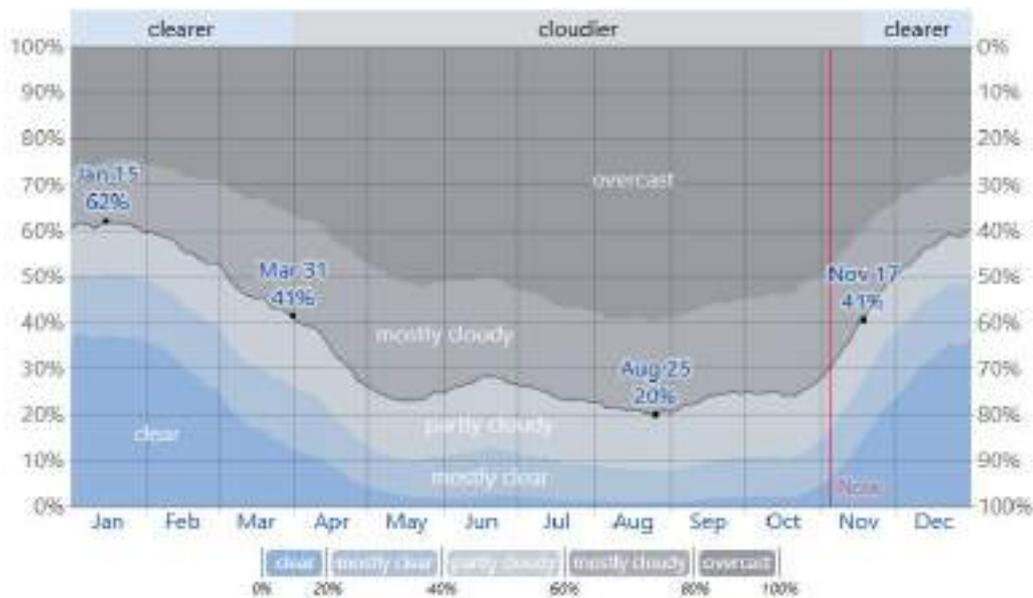


**Figure 4-3 Average Temperature Compared for Previous Years (2010-2022)**  
 Source: weatherspark.com

4.1.1.2 Cloud Cover

In Makeni, the percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The period characterized by clearer skies commences around November 18 and extends for approximately 4.4 months, concluding near April 1. January stands out as the clearest month of the year in Makeni, with the sky predominantly clear, or partly cloudy 61% of the time. Conversely, the cloudier phase of the year begins

around April 1 and lasts for 7.6 months, ending around November 18. The cloudiest month of the year in Makeni is August, during which on average the sky is overcast or mostly cloudy 79% of the time (Figure 4-4).



**Figure 4-4 Average temperature in Makeni City compared for previous years (2010-2022)**  
 Source: weatherspark.com

4.1.1.3 Rainfall

Makeni experiences extreme seasonal variation in monthly rainfall. The rainy period of the year lasts for 9.0 months, from March 9 to December 9, with a sliding 31-day rainfall of at least 0.5 inches. The month with the most rain in Makeni is August, with an average rainfall of 21.4 inches.

The rainless period of the year lasts for 3.0 months, from December 9 to March 9. The month with the least rain in Makeni is January, with an average rainfall of 0.1 inches (Figure 4-5).



**Figure 4-5 Average Monthly Rainfall in Makeni City**  
 Source: weatherspark.com

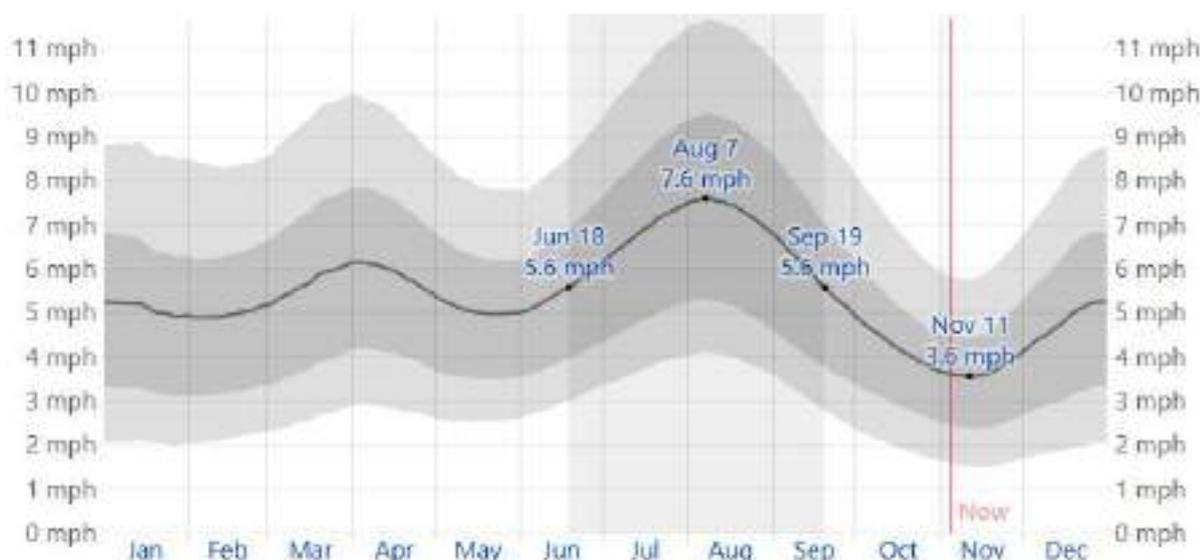
Figure 4-5 shows the average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25<sup>th</sup> to 75<sup>th</sup> and 10<sup>th</sup> to 90<sup>th</sup> percentile bands. Table 4-1 presents the rainfall in Makeni city.

**Table 4-1 Average annual rainfall accumulation for Makeni City**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall	0.1"	0.2"	0.6"	2.1"	5.9"	12.1"	16.8"	21.4"	15.8"	8.0"	2.2"	0.3"

4.1.1.4 Wind Speed

The average hourly wind speed in Makeni experiences significant seasonal variation over the course of the year. The windier part of the year lasts for 3.0 months, from June 18 to September 19, with average wind speeds of more than 5.6 miles per hour. The windiest month of the year in Makeni is August, with an average hourly wind speed of 7.4 miles per hour. The calmer time of year lasts for 9.0 months, from September 20 to June 19. The calmest month of the year in Makeni is November, with an average hourly wind speed of 3.7 miles per hour.



**Figure 4-6 Average Wind Speed in Makeni**

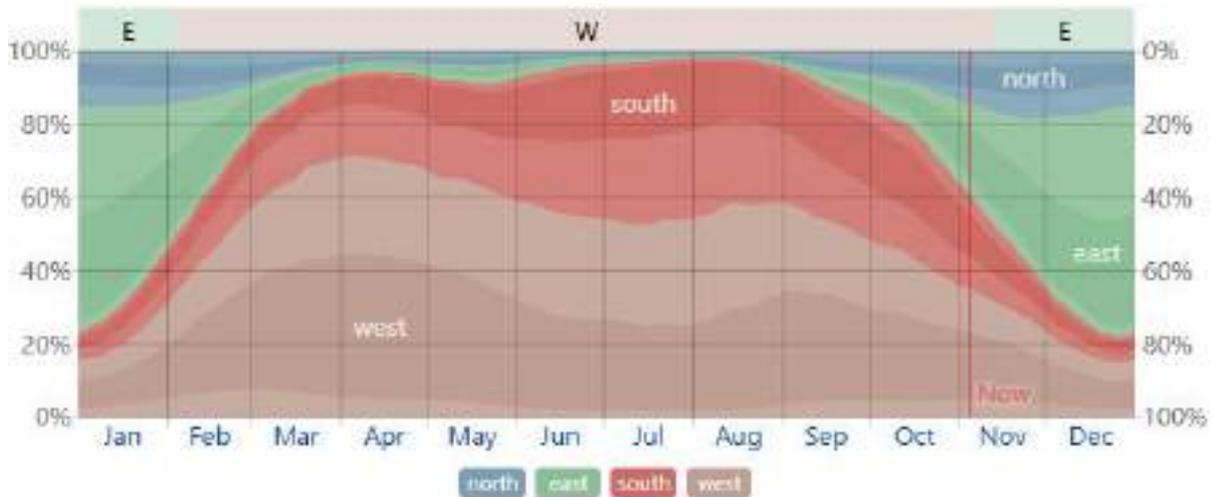
Source: weatherspark.com

Figure 4-6 shows the average of mean hourly wind speeds (dark gray line), with 25<sup>th</sup> to 75<sup>th</sup> and 10<sup>th</sup> to 90<sup>th</sup> percentile bands.

**Table 4-2 Average Wind Speed for Makeni City**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wind Speed (mph)	5.1	5.0	5.7	5.9	5.1	5.5	6.9	7.4	5.8	4.2	3.7	4.8

The wind blows most often from the west for 9.3 months, from February 4 to November 14, with a peak percentage of 72% on April 4. The wind blows most often from the east for 2.7 months, from November 14 to February 4, with a peak percentage of 62% on January 1 (Figure 4-7).



**Figure 4-7 Wind direction in Makeni City**  
Source: weatherspark.com

4.1.1.5 Humidity

Humidity comfort in Makeni is determined by the dew point, which signifies whether perspiration can effectively evaporate from the skin, providing cooling relief. Lower dew points create a drier sensation while higher dew points lead to an increased feeling of humidity. Unlike temperature, which typically varies significantly between night and day, the dew point tends to change at a slower pace. Consequently, even when temperatures drop at night, a muggy day is typically followed by a muggy night.

Makeni experiences extreme seasonal variation in the perceived humidity. The muggier period of the year lasts for 10 months, from February 10 to December 21. During this time, the comfort level is often muggy, oppressive, or even miserable accounting for at least 59% of the period. The month with the muggiest days in Makeni is August, with 31.0 days that are muggy or worse. In contrast, the month with the fewest muggy days in Makeni is January, with 14.7 days that are muggy or worse as shown in Figure 4-8 and Table 4-3.



**Figure 4-8 Humidity Comfort Levels in Makeni City**  
Source: weatherspark.com

The percentage of time spent at various humidity comfort levels, categorized by dew point.

**Table 4-3 Humidity comfort levels, Makeni City**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Muggy days	14.7d	17.6d	24.9d	27.7d	30.7d	30.0d	31.0d	31.0d	30.0d	31.0d	28.6d	20.1d

#### 4.1.2 Climate Change

The Sierra Leone Medium-term National Development Plan (MTNDP) highlights climate change as one of the major risks facing Sierra Leone since it threatens food security and the livelihoods of most of the population engaged in agriculture and/or fisheries.

Based on Sierra Leone's National Adaptation Plan (NAP) and Nationally Determined Contributions (NDCs), which align with the objectives of the United Nations Framework Convention on Climate Change (UNFCCC) and the National Climate Change Policy Framework (NCCPF), Table 4-4 summarizes both the current situation and the anticipated future impacts of climate change across aspects affected by the project activities in Makeni, Sierra Leone. This table aims to provide a clearer understanding of how climate change is currently affecting the country and what future challenges may arise.

**Table 4-4 Current and Future impacts of Climate Change across aspects affected by/ relevant to the project activities**

Aspect	Current Situation	Impacts of Climate Change
Water Resources and Energy	Major water uses include domestic (drinking, cooking, hygiene), agriculture (irrigation), industrial (beer, spirits, soft drink, cooling, and waste disposal), and hydroelectric power production	<ul style="list-style-type: none"> <li>• Increase in water and energy supply problems due to the shifting rainfall patterns.</li> <li>• Decreased access to water.</li> <li>• Reduced stream flow of rivers and streams</li> </ul>
Infrastructure	Infrastructure in Sierra Leone is vulnerable to climate impacts across the country	<ul style="list-style-type: none"> <li>• The coast will be impacted by sea level rise, beach erosion and coastal flooding.</li> <li>• Inland infrastructure will be affected by storms and hurricanes.</li> <li>• Impacts on urban drainage.</li> <li>• More roads will be flooded.</li> <li>• Water and sanitation infrastructure are sensitive to storm surge, sea level rise and flooding.</li> <li>• Wastewater collection and treatment facilities can easily be inundated by water level rise.</li> </ul>
Health	Sierra Leone has one of the highest malnutrition and child mortality rates in the world, making the country's population extremely vulnerable to climate shocks	<ul style="list-style-type: none"> <li>• Increased incidents of high temperature morbidity and mortality (projections revealed 5 to 10% increase in warm nights over the period 2021-2080)</li> <li>• Increased diarrheal diseases, seafood poisoning, and increases in dangerous pollutants.</li> <li>• Increase in waterborne diseases.</li> <li>• Reduced water quality, warm spells, and disease outbreaks</li> </ul>

Aspect	Current Situation	Impacts of Climate Change
		<ul style="list-style-type: none"> <li>Warmer seas contribute to toxic algae blooming and increased cases and food poisoning from consumption of shellfish and reef fish.</li> </ul>
Environment	Sierra Leone's natural resources are already under pressure from population growth, dependence on biomass for energy needs, water pollution, and environmentally unsound mining activities, leading to high rates of deforestation, increased rates of soil erosion, and occurrence of landslides.	<ul style="list-style-type: none"> <li>Ecosystems will be severely impacted by climate change stressors (increased storm surges, flash floods, high winds, etc.)</li> <li>Under current climate, Sierra Leone has the potential land cover of about 6% tropical wet forest, 49% tropical moist forest, 21% sub-tropical wet forest, and 23% sub-tropical moist forest. Basically, because of climate change, Land cover is expected to change (60% of the country will be under tropical dry forest, 24% under tropical very dry forest, and 12% cover under subtropical moist forest)</li> <li>Change in flora and fauna.</li> <li>Increase in landslides and floods.</li> </ul>
Disaster Management	Sierra Leone is vulnerable to the increasing severity of droughts, floods and severe storms and their impacts on sectors such as agriculture, fisheries, as well as infrastructure and hydroelectric power production	Increase in floods that will overwhelm existing systems, contaminating drinking water and creating sewage overflows.

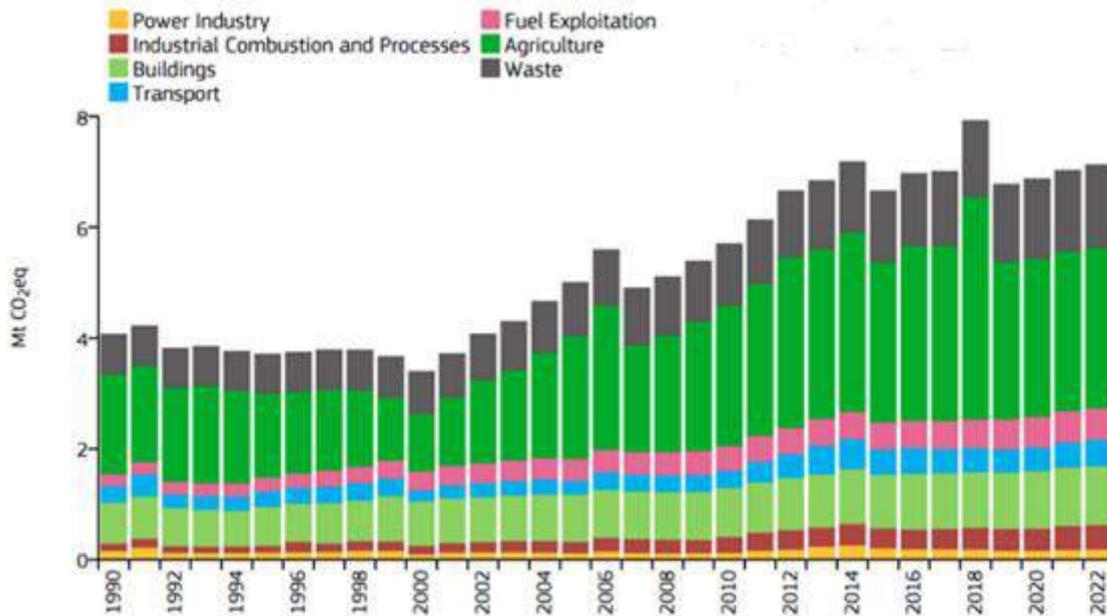
Source: SL-NDC, 2021

Climate projections for Sierra Leone, derived from the Regional Climate Model (RCM), anticipate temperature increases, more warm spell days and extreme events such as high rainfall events and rising sea levels. The country faces multiple risks from climate change that threaten key economic sectors and increase poverty and unemployment rate since it affects the agriculture and natural resources in Sierra Leone.

#### 4.1.3 GHG Emissions

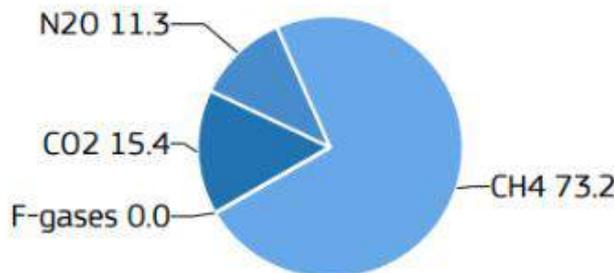
EDGAR (Emissions Database for Global Atmospheric Research) Community GHG Database, that is a collaboration between the European Commission, Joint Research Centre (JRC), and the International Energy Agency (IEA), was reviewed to extract information on GHG emissions.

The environmental effects of greenhouse gas emissions are generally regarded as a regional rather than a local issue. According to the Emissions Database for Global Atmospheric Research (EDGAR), Sierra Leone's GHG emissions dramatically increased by 75% between 1990 and 2022. These emissions predominantly originated from the agricultural sector followed by the changes in land use and waste such as illustrated in Figure 4-9.



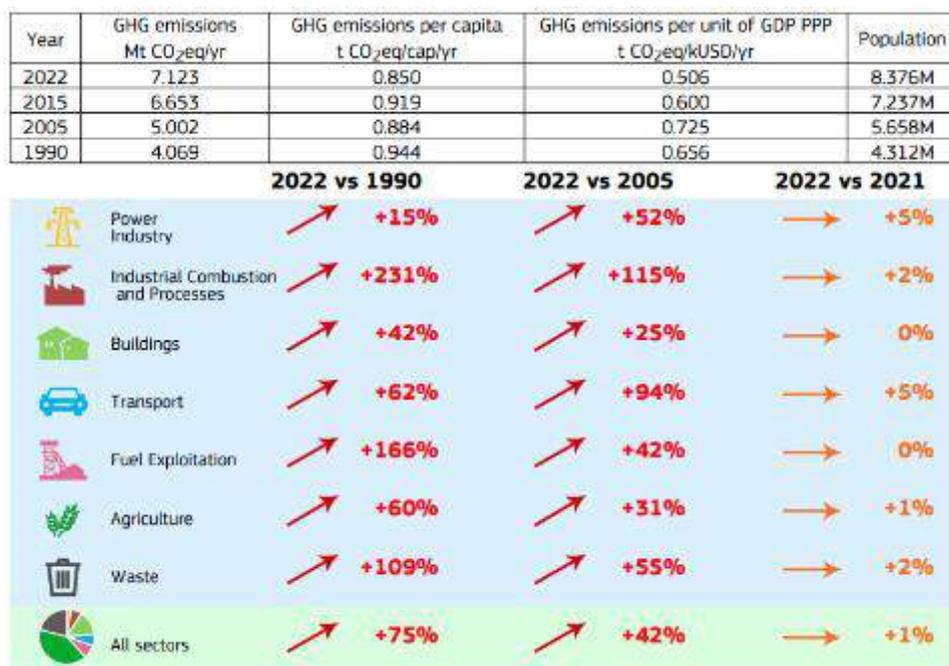
**Figure 4-9 Sierra Leone GHG emissions by sector between 1990 and 2022**  
 Source: EDGAR, 2023. GHG emissions of all world countries

GHG emissions data includes emissions from carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated gases (F-gases). In Sierra Leone in 2022, CH<sub>4</sub> constituted the highest proportion, accounting for 73.2% in 2022 of total GHG emissions as depicted in Figure 4-10.



**Figure 4-10 Sierra Leone GHG % in 2022**  
 Source: IEA-EDGAR, 2023

According to EDGAR data, Sierra Leone's GHG experienced a notable surge. Increasing by 75% between 1990 and 2022 and by 42% from 2005 to 2022. Figure 4-11 summarizes the main change in GHG emissions in Sierra Leone across the years 1990, 2005, 2021 and 2022, highlighting distinct trends in various sectors. Notably, industrial combustion and processes, as well as fuel exploitation, emerge as the sectors contributing most significantly to the overall increase, experiencing jumps of 231% and 166%, respectively.



**Figure 4-11 Change in GHG emissions in Sierra Leone (1990-2022)**

Source: IEA-EDGAR, 2023

#### 4.1.4 Air Quality

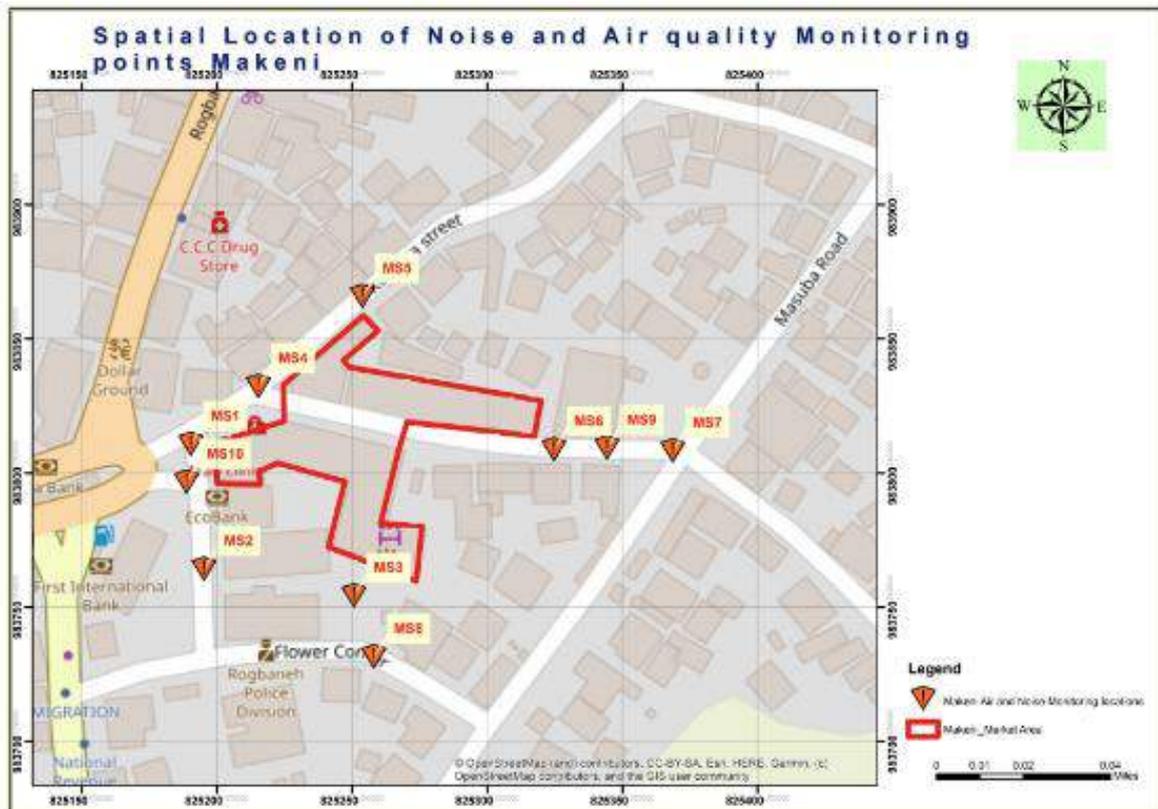
Air pollution is a major problem in Sierra Leone but no significant studies on air pollution have been carried out in other urban areas in Sierra Leone except for Freetown. Major sources of air pollution in Freetown city are vehicular exhaust emissions, industrial activities, sand and quarry industries, road and building industries, all of which produce enormous amounts of pollutants in their vicinity.

The air quality in Sierra Leone in general is largely affected by the weather conditions especially with regards to particulate matter (dust). During the dry season, the atmosphere is dry with low humidity and high evaporation which aids mechanical dust generation (PM<sub>10</sub>-PM<sub>2.5</sub>). This is more pronounced during the Harmattan Period of the dry season (December to February) when trade winds from the Northeast heavily laden with dust blow through the West African Region. During the wet season, high humidity and rainfall levels suppress dust creation. The presence of unsealed roads, slash and burn agriculture and forest degradation in much of rural Sierra Leone including the projects areas contribute negatively to the air quality during the dry season.

Air quality in the market area is dependent on several parameters including the extent of the study area, the surrounding terrain, human activities, metrological conditions, the existing emission to air and the location of sensitive receptors.

Air quality measurements for carbon monoxide, nitrogen dioxide, sulfur dioxide, and PM<sub>2.5</sub> were conducted in Makeni during the study period of September and October 2023, at 10 predetermined locations in the project site and its surroundings and using Huma-I black HI-150 portable air quality monitor to assess the existing level of air pollution. PM<sub>10</sub> was excluded from the test due to the rainy season which could affect the results. Measurements were conducted 24 hours over two days (12 continuous hours per day). For security reasons, no

nighttime measurements were conducted. The sampling points are illustrated in Figure 4-12. The equipment was calibrated prior to each use.



**Figure 4-12 Location of air quality and Noise sampling points in and around Makeni central market**

Only readings for PM<sub>2.5</sub> were recorded while the rest of the parameters showed no results because they were far below the detection limit, most probably affected by the rainy reasons. PM<sub>2.5</sub> measurements that are illustrated in Figure 4-13 and compared to WHO standards, show that a high levels of PM<sub>2.5</sub> are detected, especially in the points chosen next to the roads, therefore estimated to be mainly emitted by vehicles.

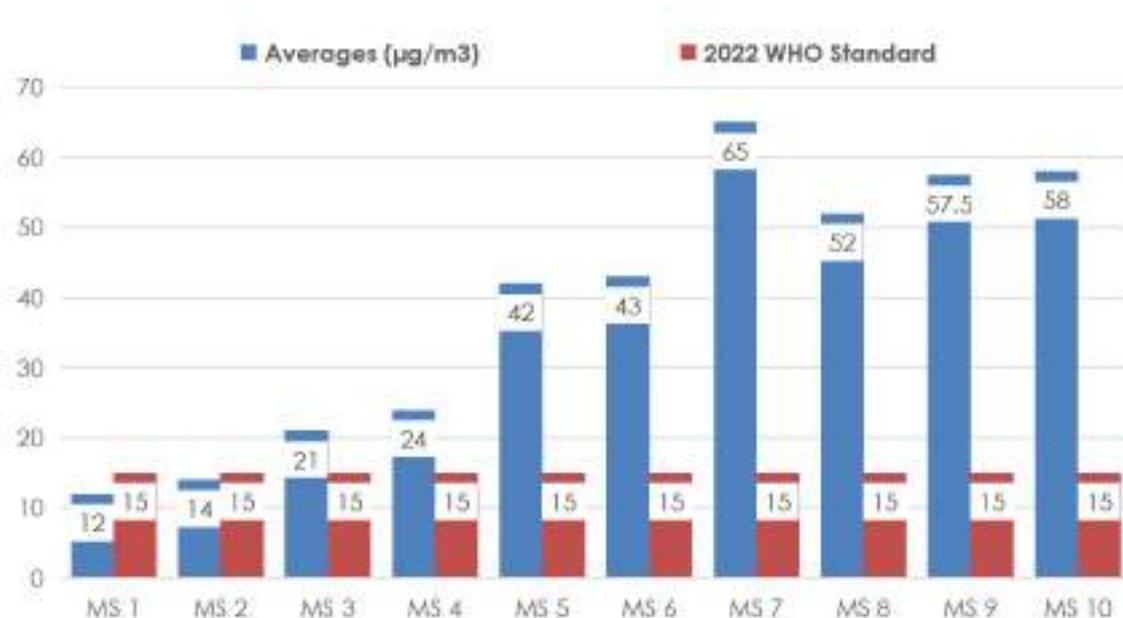


Figure 4-13 PM<sub>2.5</sub> baseline results, Makeni central market

Table 4-5 Particulate Matter (PM<sub>2.5</sub>) baseline results in Makeni central market area

X-Coordinates	Y-Coordinates	Sample Points	Averages PM <sub>2.5</sub> (µg/m <sup>3</sup> )	2022 WHO Standard
825190.2918	983810.8399	MS 1	12	15
825195.2307	983764.2731	MS 2	14	15
825250.6169	983754.3953	MS 3	21	15
825215.3391	983832.3594	MS 4	24	15
825253.7919	983865.8733	MS 5	42	15
825324.7004	983808.8996	MS 6	43	15
825368.6213	983808.3704	MS 7	65	15
825258.0253	983731.6411	MS 8	52	15
825344.2796	983809.4288	MS 9	57.5	15
825188.7043	983796.7287	MS 10	58	15

All the results exceeded the WHO 2022 standard of 15µg/m<sup>3</sup> of 2021 except for MS1 and MS2. These measurements displayed a gradual increase from sample point MS1 to MS6, with a notable spike at MS7 which is close to the Makeni clock tower. However, at MS8 there was a decrease in levels followed by subsequent increases as shown in Figure 4-13 and Table 4-5. These high levels may be related to the vehicle's emissions since most of the sampling points are near the roads.

Recorded data shows that the Air Quality Index (AQI) is below the USEPA threshold of 100 µg/m<sup>3</sup> for MS1 to MS4, while it exceeds the accepted threshold for the remaining sampling points, as indicated in Figure 4-14.



**Figure 4-14 Air quality index for Makeni central market**

The AQI is an index for reporting daily air quality. It tells how clean or polluted the air is, and what associated health effects might be a concern, especially for ground-level ozone and particle pollution.

The U.S. AQI is EPA's index for reporting air quality. The AQI is divided into six categories. Each category corresponds to a different level of health concern. Each category also has a specific color. The color makes it easy for people to quickly determine whether air quality is reaching unhealthy levels in their communities as shown in Figure 4-15.

EPA establishes an AQI for five major air pollutants regulated by the Clean Air Act. Each of these pollutants has a national air quality standard set by EPA to protect public health:

- Ground-level ozone.
- Particle pollution (also known as particulate matter, including PM<sub>2.5</sub> and PM<sub>10</sub>).
- Carbon monoxide.
- Sulfur dioxide.
- Nitrogen dioxide.



**Figure 4- 15 Air Quality Index Chart**

Source: Credit USEPA

#### 4.1.5 Acoustic Environment

Field surveys for monitoring noise levels in dBA were conducted at 10 predetermined locations (Figure 4- 12) for 24 hours over two days (12 hours each) due to security reasons, at each sampling point. This consists of determining and quantifying the prevailing baseline sound environment and the sources of noise. Ambient sound pressure levels were measured, between September and October 2023, near sensitive receptors in and around the Makeni central market's environment. The locations of the samples were selected based on their proximity to potential sources of noise. The 10 locations for the noise measurements were also selected to be representative of the studied area and away from being influenced by interferences such as wind, impulsive sounds, and electromagnetic radiation from high-voltage transmission lines.

Noise measurements were recorded using the Environmental Sound Level Meter set to measure the LAeq, LAE and LAF values over a 15-minute interval in 10 locations, shown in Table 4-6. Baseline noise measurement results range between 55.8 dBA to 95.0 dBA, with an average representing the equivalent continuous sound pressure level of 73.4 dBA in the surveyed locations slightly higher than the WB standard of 70 dBA (for commercial areas) for daytime.

**Table 4-6 Noise measurements in Makeni central market**

X-Coordinates	Y-Coordinate	Sample point
825190.2918	983810.8399	MS1
825195.2307	983764.2731	MS2
825250.6169	983754.3953	MS3
825215.3391	983832.3594	MS4

<b>X-Coordinates</b>	<b>Y-Coordinate</b>	<b>Sample point</b>
825253.7919	983865.8733	MS5
825324.7004	983808.8996	MS6
825368.6213	983808.3704	MS7
825258.0253	983731.6411	MS8
825344.2796	983809.4288	MS9
825188.7043	983796.7287	MS10

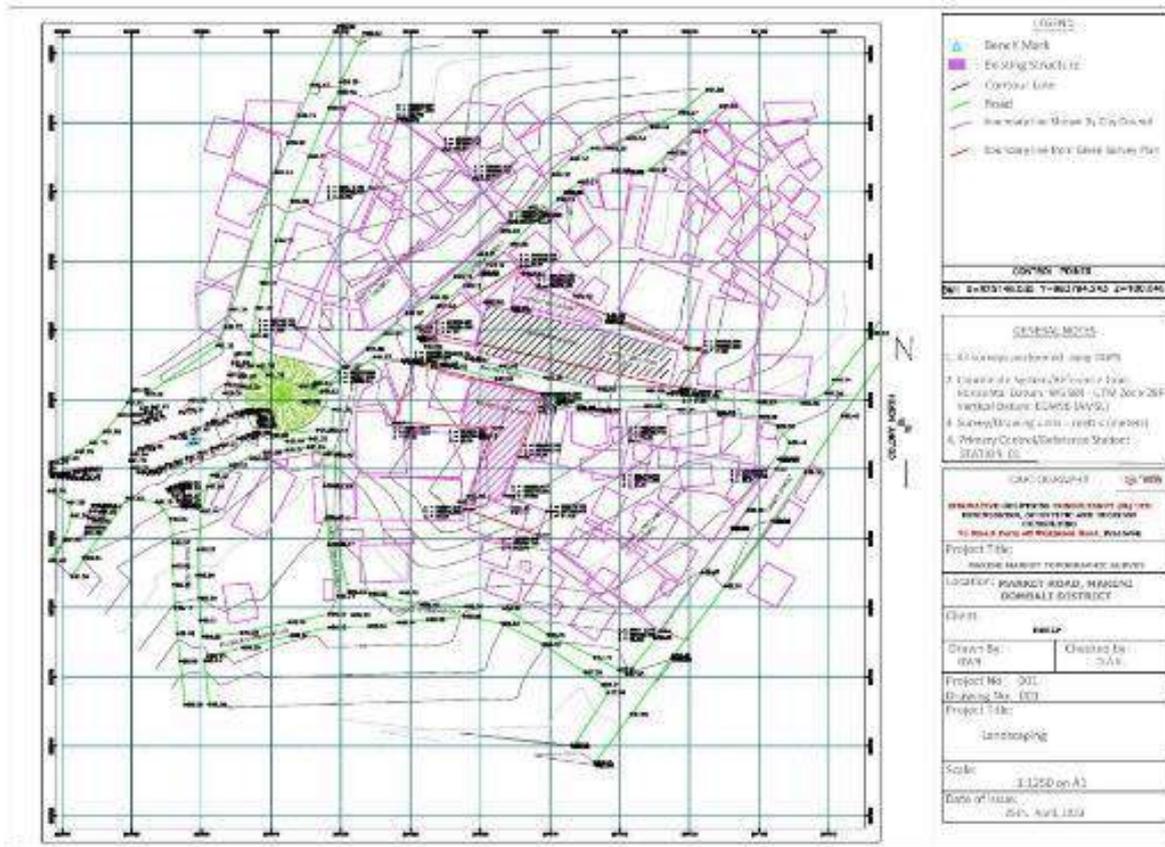
#### 4.1.6 Topography and Geographic Setting

The Republic of Sierra Leone is a small coastal West African country bordered by Guinea to the North and East, Liberia to the South, and the Atlantic Ocean to the West. Almost half of the country consists of coastal lowlands with extensive mangrove swamps. To the east of the coastal plains are rolling wooded hills, leading into mountainous plateau areas. The country has an area of 71,620 square kilometers (km<sup>2</sup>) and had an estimated population of approximately 7.9 million in 2020.

Makeni City is located 184 kilometers east of Freetown, situated in the central part of the country. Geomorphologically, Makeni city has been constructed on relatively flat terrain, and it is surrounded by flat areas, except for the Wusum Hills to the north-northwest and the Mena Hills to the south-southwest of the city. These hills rise to approximately 100 m above the surrounding plains.

The Makeni Central market occupies an area of 3,240m<sup>2</sup>. A topographic survey has been conducted for the Makeni market site as part of the feasibility study; the relevant map is shown in Figure 4- 16.

The survey revealed that there are no steep slopes in the site; therefore, massive earthworks will not be required during leveling or grading during the site preparation works. The survey showed that the Makeni market site has a slope of about 5%.



**Figure 4-16 Topography Map of Makeni Central Market**

Source: Politecnica FS, 2024

#### 4.1.7 Geology and Hydrogeology

The geological data was extracted from desk studies on information gathered on information applicable to the site, the Sierra Leone Geological Map and the geotechnical study conducted by the FS consultant.

About 75% of the Sierra Leone country is underlain by rocks of Precambrian age, with a coastal strip of about 50 km in width comprising marine and estuarine sediments of Tertiary and Quaternary to recent age.

Figure 4-17 shows the geological map of Sierra Leone, and Figure 4-18 highlights the seven major stratigraphic units recognized in Sierra Leone (the Granite Greenstone Terrain, Kasila group, Marampa Group, Rokel River Group, Saionia Scarp Group, Basic and Alkaline Intrusions, and the Bullom Group).

Makeni city, situated in the northern region of Sierra Leone and covering an estimated area of 19,827 acres (80,237 m<sup>2</sup>), is located within the granite-greenstone terrain (Figure 4-18), which represents portions of ancient continental nuclei situated on the periphery of the West African Craton. Regional reconnaissance mapping has revealed the presence of supracrustal rocks and basic to ultrabasic intrusions in this area. The geological substratum beneath Makeni predominantly consists of rocks of Archaean age (Figure 4-17), estimated to be around 3,000 million years old. Within Makeni city, the Wusum and Mena Hills exemplify the granite-type rock formations where they are exposed at the surface.

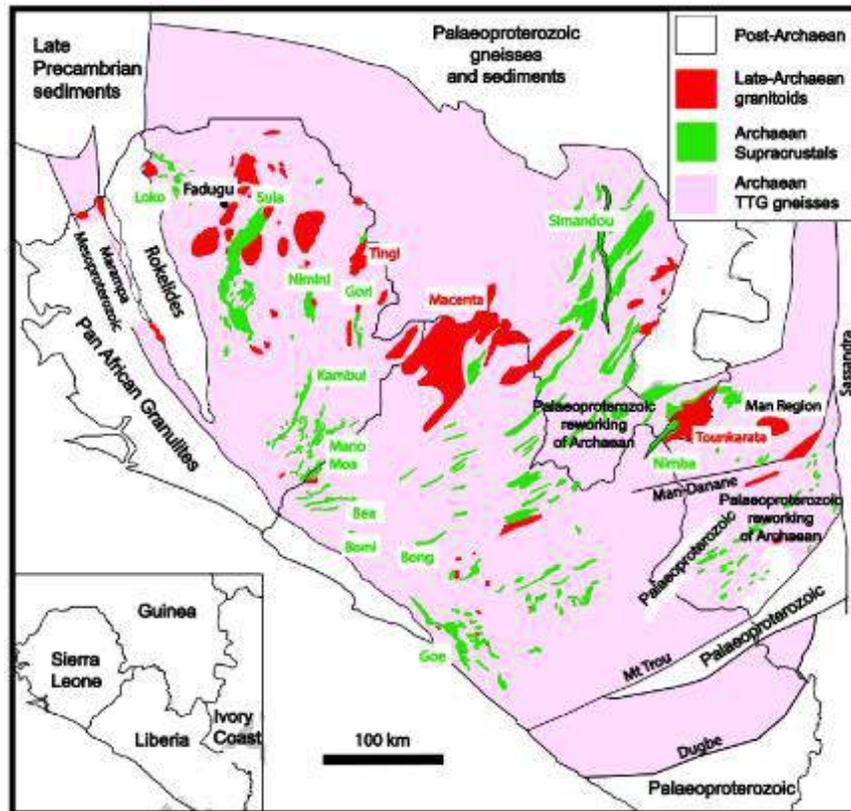


Figure 4-17 The Geological Map of Sierra Leone

Source: Rollinson H., 2016

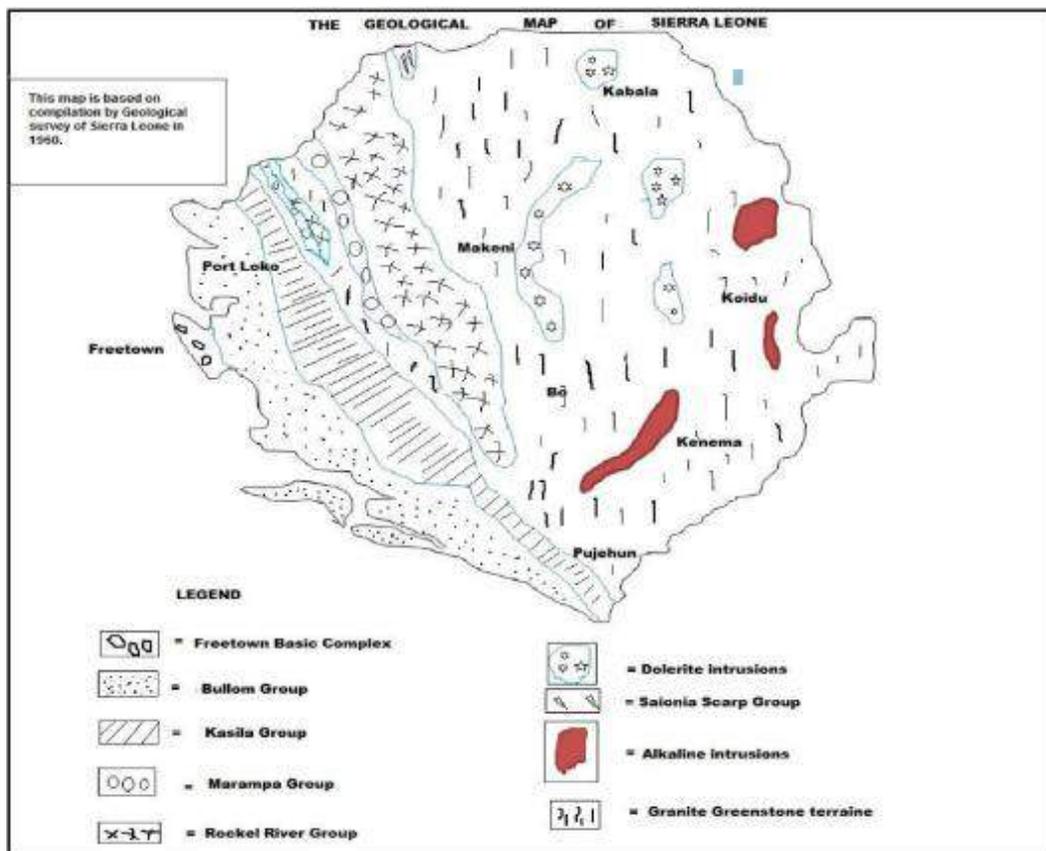
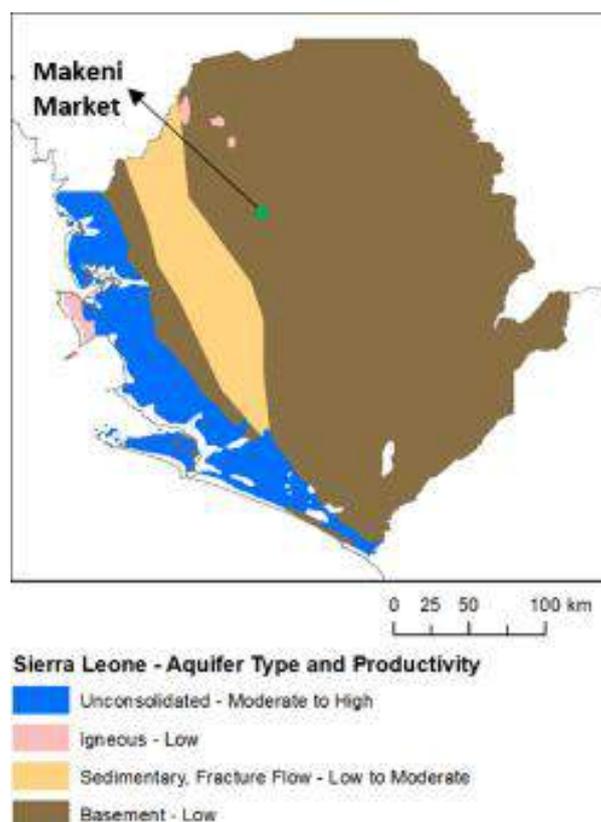


Figure 4-18 Geological map of Sierra Leone and its associated stratigraphy

Source: Dixey F., 1925

As illustrated in Figure 4-20, the study area is located at in Makeni, Bombali district in the northern province of Sierra Leone. It was revealed by the geotechnical survey that the study area is primarily composed of basement rocks, including porphyritic granitic rocks that have a high silica content and gneiss. The region is largely characterized by partially weathered granitic rocks below an average depth of 6 m, which display signs of multiple episodes of deformation and metamorphism, as well as fresh bedrock below an average depth of 10 m. Additionally, the area is covered by reddish-brown laterite, likely resulting from the weathering of the crystalline basement rocks. These rocks are primarily composed of granite-type igneous rocks, with younger sedimentary deposits and red iron-rich soils overlying them.

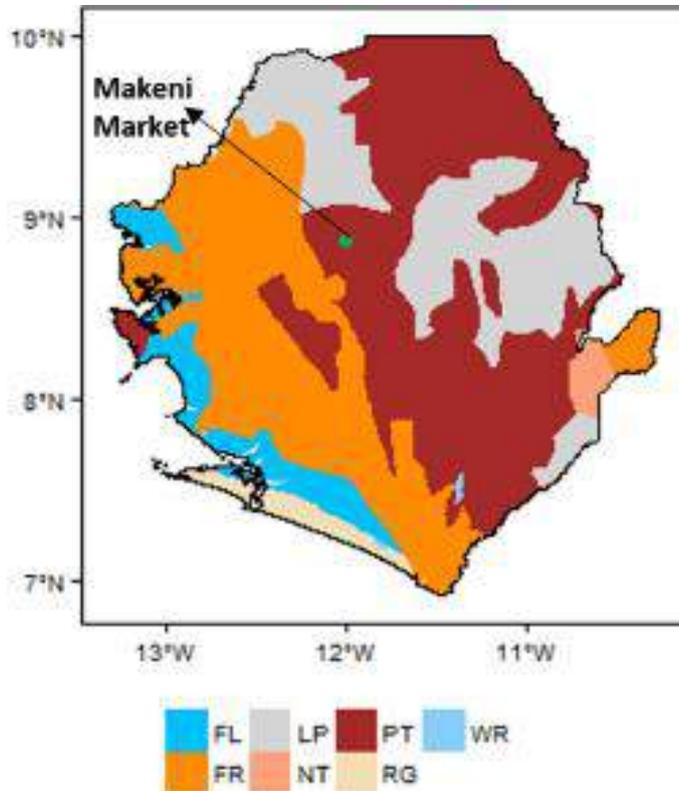
As for the hydrogeology of the area, fifteen (15) boreholes were drilled at the vicinity of the Makeni central market to investigate the subsurface. The groundwater level was encountered at depths varying between 3 and 10 m below ground level (bgl). However, during some periods of the year, seasonal rise in groundwater level is expected whereby perched water could be present at various depths. Fluctuations in groundwater levels are also expected throughout the year depending upon variations in precipitation, runoff, evaporation, irrigation practice and other hydrological factors not evident at the time the borings were performed. Rocks underlying the project site are mainly granitic rocks that may form low yielding aquifers in the area, which is also indicated by the large-scale hydrogeological map of Sierra Leone (Figure 4-19).



**Figure 4-19 Hydrogeological map of Sierra Leone**  
Source: British Geological Survey (BGS)-Earthwise, 2024.



topsoil is constituted of dark organic material and extends to an average depth of 0.2 m. Deeper soil consists mainly of clayey sand with gravel, clayey gravel with sand, and gravelly clay with silt and sand overlying moderately weathered granitic bed rock.



**Figure 4-21 Soil map of Sierra Leone**

Source: British Geological Survey (BGS)-Earthwise, 2024.

The feasibility study concluded that the soil is not expansive or collapsible and is underlain by competent geologic materials at shallow depth. Additionally, the water level is not considered high, and the material has a high bearing strength with the exception of the soft to medium hard gravels and clays, which can be found way down and at intermittent depths within the boreholes. These weak/ soft layers can be improved through proper compaction which will decrease the voids and improve the density of the various layers. Thus, the soil is considered geotechnically suitable for the proposed market upgrade. Table 4-7 summarizes the result of borehole logs and trial pits logs obtained by the feasibility study team during the baseline reports.

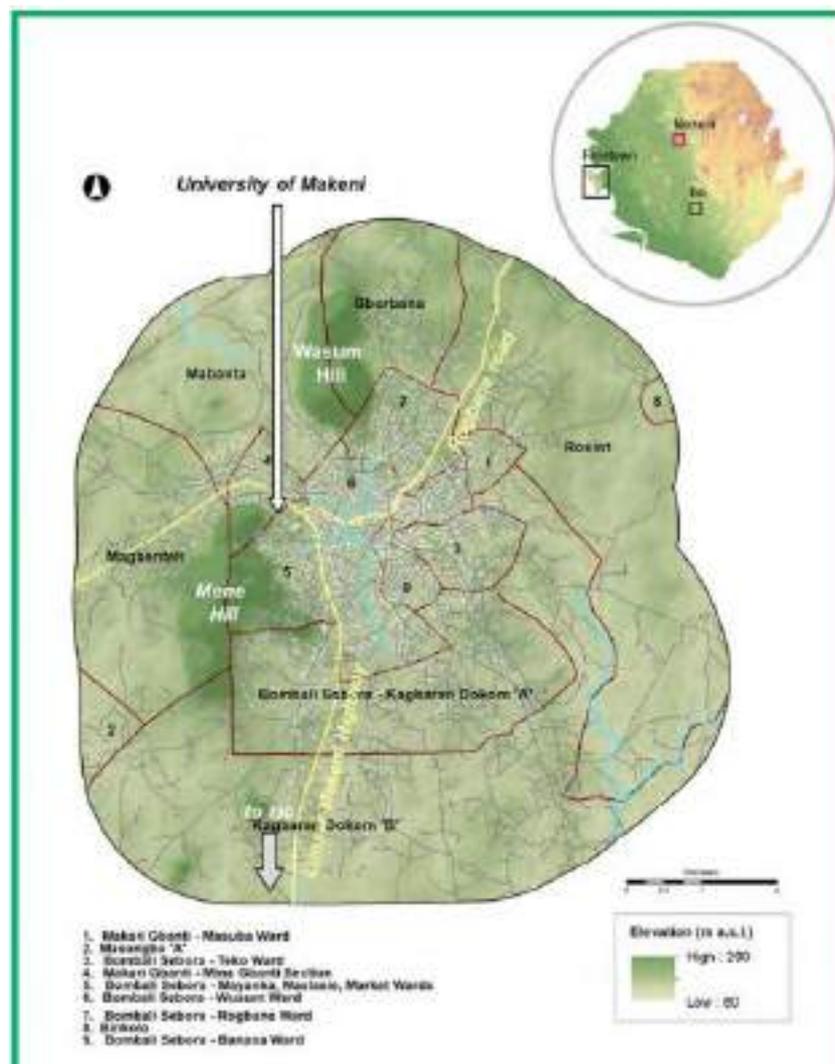
**Table 4-7 Results of the baseline parameters of borehole logs and trial pits logs**

Site	Average depth of topsoil	Avg. depth of residual soils	Avg. depth of weathered bedrock	Avg. depth of fresh bedrock	Avg. depth of groundwater
Makeni	0.2 m	2 m	Below 6 m	Below 10 m	Between 3 m and 10 m

Source: JV Politecnica & ISC, 2024

#### 4.1.9 Surface and Groundwater Sampling

The Makeni City Hazard and Risk Assessment report (WB, 2018) states that Makeni is traversed by two primary natural watercourses, one to the east of the city and one flowing through the city center (Figure 4-22). Both waterways have extensive natural floodplains. Additionally, there are several smaller tributaries and watercourses that drain the interior of the city into these main channels. All these watercourses flow southward, following the gentle north-to-south topographic slope of the region. The areas around the channels and their floodplains are prone to natural flooding, with varying degrees of risk from medium to high. Human activities like deforestation, construction in these areas, sand mining, and built drainage systems worsen this natural flood risk. In addition to flooding, and in hilly areas like Wusum and Mena Hills, there is also a potential for landslides.



**Figure 4-22 Map showing Makeni watercourses**

Source: WB, 2018

For the Makeni Market site, one (1) Surface Water (SW) sample was collected from Campbell Street Bridge and one (1) Groundwater (GW) sample was collected from Munhu Market on the 4th of November 2023. The location of these sample is shown in Figure 4-23. To ensure accuracy and prevent contamination during the samples' transport process, a few

parameters were tested on-site while the remaining parameters were analyzed by the National Water Resources Management Agency (NWRMA) laboratory. The results are presented in Table 4-8 and compared to WHO standards for Groundwater quality. Test results are attached in Appendix 3.



**Figure 4-23 Location of the Surface and Groundwater Samples**

**Table 4-8 Surface and groundwater Sampling Results**

Parameter	Value of SW	Value of GW	WHO limit
pH	7.12	6.15	6.5-8.5
Turbidity (NTU) <sup>4</sup>	81	3	<5.0
Conductivity ( $\mu\text{S}/\text{cm}$ ) <sup>5</sup>	564	428	<500
Dissolved Oxygen (mg/L) <sup>6</sup>	4.0	5.1	>6
Total Dissolved Solids (mg/L)	280	214	<300
Total Suspended Solids (mg/L)	217	--	<20
Salinity (ppt) <sup>7</sup>	0.32	0.25	<0.4
Aluminum (mg/L)	0.005	0.005	<0.2
Ammonia (mg/L)	0.93	0.27	No value
Calcium Hardness (mg/L)	25	25	<250
Copper (mg/L)	0.025	0.10	<1.0
Iron (mg/L)	1	0.09	<0.30
Nitrite(mg/L)	0.13	0.03	3.0
Nitrate (mg/L)	0.99	>10	<10

<sup>4</sup> NTU: Nephelometric Turbidity Units

<sup>5</sup>  $\mu\text{S}/\text{cm}$ : microsiemens per centimeter

<sup>6</sup> Mg/L: milligrams per liter

<sup>7</sup> Ppt: parts per trillion

Parameter	Value of SW	Value of GW	WHO limit
Potassium(mg/L)	12	12	<6.0
Orthophosphate (mg/L)	0.025	0.56	<10
Sulphate (mg/L)	25	26	<400
Chloride(mg/L)	25	25	<250
Chromium	0.02	0.04	<0.05
Fecal Coliforms (Total)	>10	>10	Zero
Non- Fecal Coliforms	>10	>10	<10

The surface water sample collected from Campbell Street Bridge indicates that most tested parameters meet WHO standards. However, Turbidity, Electrical Conductivity (EC), Dissolved Oxygen (DO), Total Suspended Solids, Iron, Potassium, Fecal Coliforms, and Non-Fecal Coliforms do not meet the recommended values since the bridge is used by many people where solid waste, wastewater and sewage are discharged and dumped in large quantities.

Total Suspended Solids and turbidity are interrelated parameters. Elevated levels may result from erosion and runoff and can be mitigated through filtration methods.

DO exhibits a slightly lower value, potentially due to stagnant water, especially in inadequate storage systems. This poses health risks as it allows harmful bacteria to thrive. Improving water movement can enhance the dissolved oxygen content.

High potassium levels stem from anthropogenic activities like farming, with hexavalent potassium having adverse health effects. Reduction methods include iron exchange or reverse osmosis.

Iron presence is linked to environmental geology, posing health risks. Reduction methods involve catalytic filtration and oxidizing filters.

The abundance of Fecal Coliform bacteria suggests water source contamination by feces, posing health risks like diarrhea. Chlorination with residual chlorine at 0.3-0.5 mg/l after thirty (30) minutes of disinfection is recommended.

Non-Fecal Coliforms result from anthropogenic activities, posing minor health risks. Control measures include environmental controls, distillation (heating), and filtration methods.

As for the groundwater sample collected from "Munku Market", most parameters comply with WHO standards. However, Dissolved Oxygen (DO), Potassium, Nitrate, Fecal Coliforms, and Non-Fecal Coliforms deviate from the recommended values. It is noteworthy that low pH is a common trait in Sierra Leone groundwater due to the acidity of certain rocks. Groundwater was collected from a hand dug well and not from a borehole.

DO exhibits a slightly lower value, possibly due to stagnant water, especially in inadequate storage systems, creating health risks by facilitating the proliferation of harmful bacteria. Enhancing dissolved oxygen content is achievable through ensuring the free flow of water.

Elevated Nitrate levels can result from anthropogenic activities like agricultural runoff or fertilizer use, posing adverse health risks. Treatment options include the ion exchange process or reverse osmosis.

The presence of high potassium is linked to anthropogenic activities such as farming, with hexavalent potassium having adverse health effects. Reduction methods involve iron exchange or reverse osmosis.

Similar to the surface water sample result, the substantial presence of Fecal Coliform bacteria suggests water source contamination by human or animal feces, potentially causing health issues such as diarrhea. Recommended treatment includes chlorination with residual chlorine at a level of 0.3-0.5 mg/l after thirty (30) minutes of disinfection.

Non-Fecal Coliforms in the water result from anthropogenic activities, posing minor health risks. Implementing proper environmental controls, distillation (heating), and filtration methods can effectively reduce their presence.

## **4.2 BIOLOGICAL ENVIRONMENT AT THE MAKENI CENTRAL MARKET SITE**

According to the UNEP World Database on Protected Areas (WDPA) database in 2015, there are 50 protected areas in Sierra Leone. The country is acclaimed for its wildlife, including 147 known species of wild mammals, 172 known breeding bird species, 67 known reptile species, 35 known amphibian species, 750 species of butterflies including the giant African swallowtail, one of the largest butterflies, and about 200 known species of fish.

Based on desk reviews and field investigations, biodiversity within the Market study area is almost non-existent, being a built-up commercial and residential environment. No vegetation was found within and around Makeni market, except for the well-known cotton tree, and three other trees, all of which are found near the perimeter of the Market.

Similarly, no important fauna species are found in the area that is primarily urban. The presence of rats, lizards and insects is normal, and in such case, they are not threatened or of ecological concern and can flee the project site during construction works.

## **4.3 SOCIO-ECONOMIC ENVIRONMENT AT THE MAKENI MARKETS SITE**

The social baseline study commenced with a comprehensive review of available data and pertinent literature materials concerning the project's area of influence (AOI). The AOI covers the area within which potential impacts are expected to occur, and this encompasses (1) the physical footprint of the market and the immediate outer area where construction fences are to be installed; and (2) the relocation site.

This was followed by a reconnaissance visit in May 2023, which was succeeded by field investigations conducted in early September 2023. ELARD's social expert and data collectors were engaged in these investigations to validate the ground-truth facts obtained from the literature and to gather primary data essential for this report. The social study employed participatory techniques with the aim of fostering awareness, mutual understanding, trust, and capacity building.

The socioeconomic survey was carried out through questionnaire administration and Focus Group Discussions. After consideration of several options for designing the Makeni central market survey method, the socio-economic survey questionnaire was designed in such a way that it captures all the required information from the market users that is needed for the ESIA Study. The sample size for this survey comprises all traders from the market. The

Socioeconomic questionnaire consists of 8 sections with 110 questions. The questionnaire administration generated information about traders, demographic and socioeconomic characteristics, education, health, and sanitation, amongst others. The census of the people affected by the project constituted the initial step in the Resettlement Plan (RP) process, whereby a specific RP survey was subsequently carried out in May and June 2024 to collect information about Project Affected Persons (PAPs). It involved enumerating and registering a list of legitimate beneficiaries<sup>8</sup> according to their location before initiation of the project implementation. This served as a baseline for monitoring and evaluation. All the market traders who are engaged in different business activities, e.g., selling vegetables, fruits & flowers, cooked food, household utensils, wooden products, and ready-made garments, etc. were interviewed in the market. Specific data collection activities and results are detailed below.

This section presents a description of the socio-economic baseline conditions in the affected market based on the above and covers the following topics:

- Demographics
- Economy, employment, livelihoods, and skills
- Infrastructure and services
- Land use
- Heritage
- Traffic and transport

The objective of this section is to offer a comprehensive understanding of the current socio-economic conditions within this community. This understanding serves as the basis for assessing the potential impacts of the proposed project on the local population and infrastructure.

The following subsections provide detailed data analyses and results for Makeni City.

### 4.3.1 *Demographics*

#### 4.3.1.1 *Market Population*

Sierra Leone's total population was estimated to be 7.9 million in 2020 with an annual growth rate of 2.1%. As per the Data portal statistics, the population in 2024 comprises 49.9% of females and 50.1% of males. Girls and women remain marginalized across all sectors and gender inequality remains high.

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<sup>8</sup> The following eligibility criteria were established (in the RP report) for individuals affected by the project:

- Owners of the affected structures
- Occupants living in or using the affected structures for the purpose of living
- Occupants using the affected structures for selling purposes
- Operators of the business (This refers to individuals who may not be the property owners but are registered operators of businesses with the Makeni City Council (MCC) and were identified during the census survey)
- Vulnerable persons (individuals who possess at least one source of vulnerability)
- Business workers (employees whether formally or informally employed, who receive a daily wage by the business owner and were present during the census survey).

The eligibility criteria were designed to ensure that only those with a legitimate stake in the affected structures and businesses are recognized for support.

According to the Mid-Term Population and Housing Census – 2021, Makeni City has a population of around 85,000 people, in an area of approximately 14 km<sup>2</sup> (resulting in a population density of around 6,000 people/km<sup>2</sup>). The Makeni Central Market was reported to host around 4,000 regular traders, according to the Council and Traders' Union.

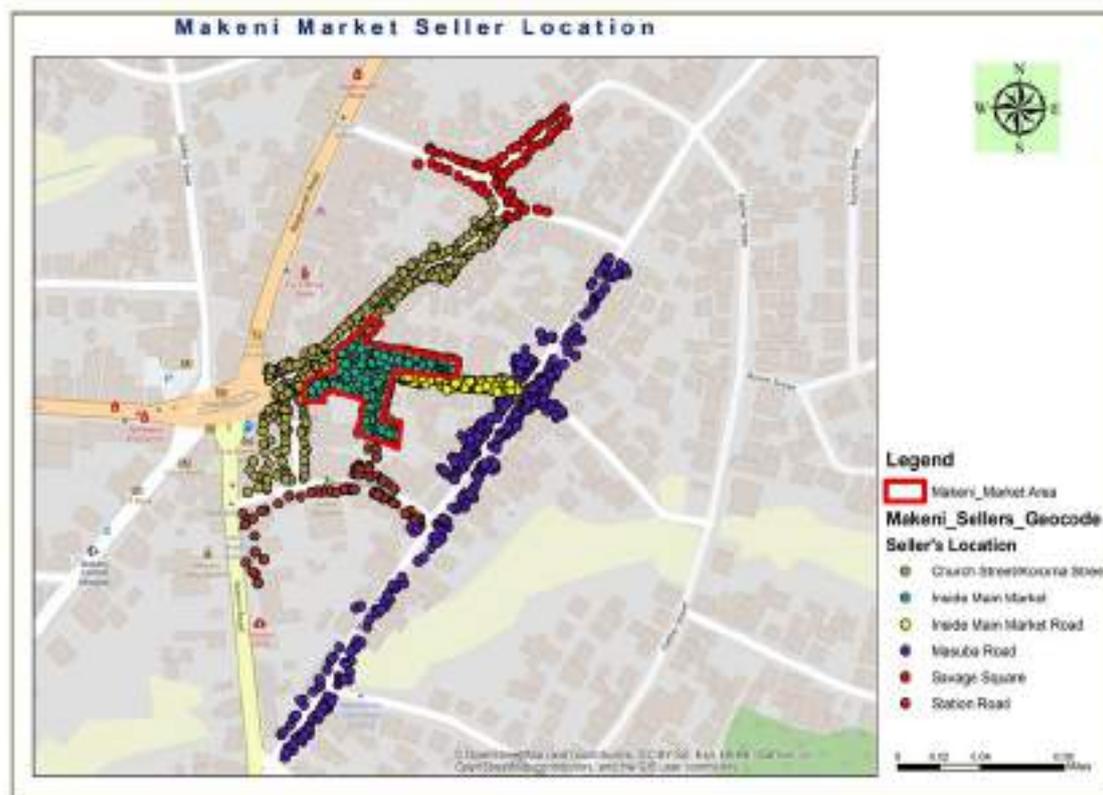
The field surveys conducted at the Makeni market revealed that there are 2,745 market traders. These traders are situated both within the market premises (Makeni central market) and in its peripheral areas (outside the official market boundaries), as illustrated in Table 4-9. The highest percentage of market traders operate inside the market confines (1,209 traders or 44%) while the remaining percentage is distributed among 5 locations around the center of the market ( Table 4-9).

In addition, 4,610 workers/helpers are employed to provide various services for the 2,745 market traders. The services they offer range from cleaning, selling, parking goods, loading and offloading goods, and much more.

**Table 4-9 Location distribution of Market traders in Makeni markets**

<b>Traders Location</b>	<b>Number of traders</b>	<b>Percentage</b>
Church Street/Koroma Street	552	20.1
Inside Main Market Buidling – under study for upgrade – Makeni central market	1,209	44.0
Inside Main Market Road	294	10.7
Masuba Road	496	18.1
Savage Square	84	3.1
Station Road	110	4.0
<b>Total</b>	<b>2,745</b>	<b>100</b>

Figure 4-24 shows the geolocation of all the traders and their stalls, tables, stores, etc. in and outside the Makeni market.



**Figure 4-24 Geolocation of all the traders in and outside the Makeni markets**

4.3.1.2 Gender Distribution

The market traders' data in Makeni city markets reveals that the percentage share of female traders (2,347 traders or 85.5%) significantly surpasses the percentage share of male traders (398 traders or 14.5%). Table 4-10 presents the number and percentage of female and male traders in Makeni Market.

**Table 4-10 Gender distribution of market traders in Makeni markets**

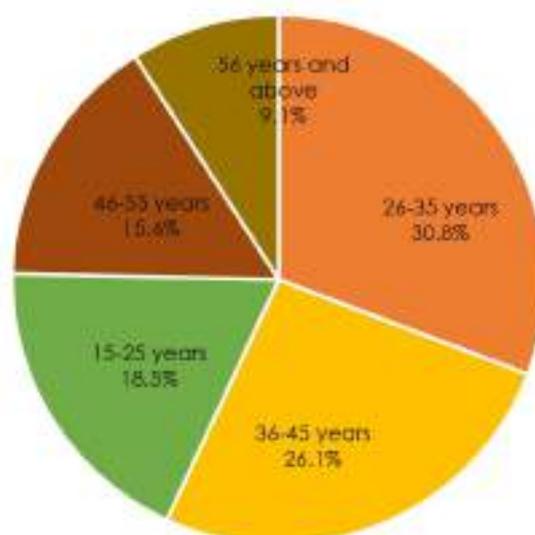
Sex	Inside Main Market	Inside Market Road	Church Street	Masuba Road	Savage Square	Station Road	Number of traders
Female	1,046	281	448	418	69	85	<b>2,347</b>
% Female	38.1	10.2	16.3	15.2	2.5	3.1	85.5
Male	163	13	104	78	15	25	<b>398</b>
% Male	5.9	0.5	3.8	2.8	0.5	0.9	14.5
<b>Total</b>	<b>1,209</b>	<b>294</b>	<b>552</b>	<b>496</b>	<b>84</b>	<b>110</b>	<b>2,745</b>

4.3.1.3 Age Distribution

The age distribution of market traders is a crucial aspect of the market's socio-economic characteristics. Table 4-11 and Figure 4-25 highlights the percentage of market traders per age group category. The largest age group of market traders in the Makeni markets, comprising 30.8%, fall within the age group of 26 to 35 years old.

**Table 4-11 Age Distribution of Makeni markets traders**

Age	Total Number of traders	Percentage	Number of Female traders	Number of Male traders
15-25	507	18.4	419	88
26-35	846	30.8	725	121
36-45	716	26.1	624	92
46-55	427	15.6	368	59
56 and above	249	9.1	211	38
<b>Total</b>	<b>2,745</b>	<b>100</b>	<b>2,347</b>	<b>398</b>

**Figure 4-25 Age distribution of market traders in Makeni markets**

#### 4.3.1.4 Marital Status

Approximately 65.0% of the market traders are married, with just over 19.7% being unmarried. The numbers of those who are divorced or either widowed or widowers or cohabitating are low, at 3.2%, 9.9%, 1.5% and 0.7%, respectively (Table 4-12).

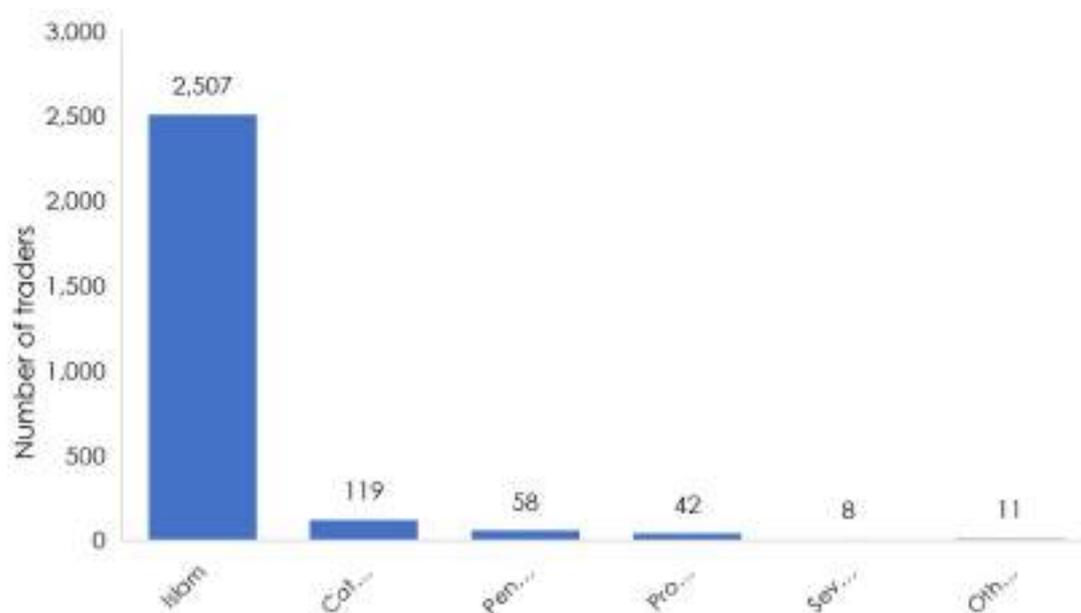
**Table 4-12 Marital status of Makeni markets traders**

Marital Status	Total Number of traders	Percentage %	Number of Female traders	Number of Male traders
Single	542	19.7	424	118
Married	1,785	65.0	1,529	256
Separated/Divorced	87	3.2	80	7
Widow	272	9.9	269	3
Widower	40	1.5	35	5
Cohabitating	19	0.7	10	9
<b>Total</b>	<b>2,745</b>	<b>100</b>	<b>2,347</b>	<b>398</b>

#### 4.3.1.5 *Ethnicity and Religion Status*

The Makeni markets is home to two major (2) ethnic groups; Themnes, the predominant group, followed by Limbas.

The distribution of market traders across religious affiliations is illustrated in Figure 4-26 and Table 4-13. The field survey data revealed that 91.3% of the total traders in Makeni markets are Muslims, while around 4.4% are Catholic, and the remaining traders are distributed between Pentecostal, Protestant and Seven-day Adventist.



**Figure 4-26 Religious distribution of Makeni markets traders**

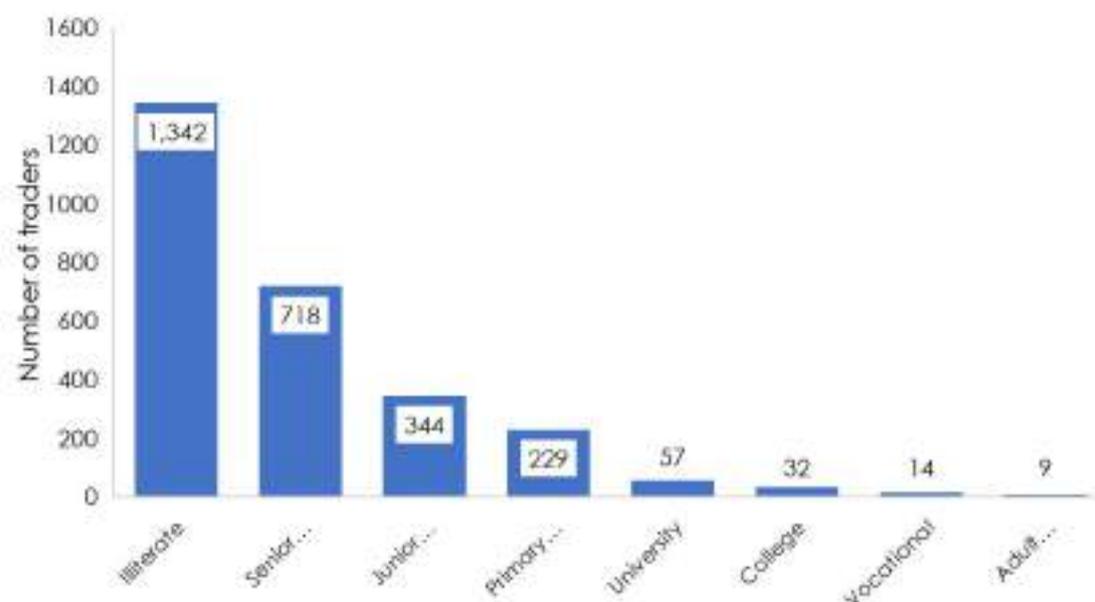
**Table 4-13 Religious status of Makeni market traders**

Religion	Total Number of traders	Percentage %	Number of Female traders	Number of Male traders
Islam	2,507	91.3	2,137	370
Catholic	119	4.4	106	13
Protestant	42	1.5	37	5
Pentecostal (born again)	58	2.1	50	8
Seventh day Adventist	8	0.3	7	1
Other	11	0.4	10	1
<b>Total</b>	<b>2,745</b>	<b>100</b>	<b>2,347</b>	<b>398</b>

#### 4.3.1.6 *Educational Status*

According to Sierra Leone's education plan 2022-2026, the number of children and youth (aged 3-24 years) having access to school reached 4.1 million in 2019 (50% female), representing 52% of the total national population.

The field survey data collected regarding the educational levels of market traders indicated that a significant proportion of market traders in Makeni (48.9%) are illiterate and lack any formal education. Consequently, a very small percentage of the market traders in the market have completed secondary school, while tertiary education among market traders is almost nonexistent. Figure 4-27 and Table 4-14 summarize the educational status of market traders in Makeni market.



**Figure 4-27 Education status of market traders in Makeni markets**

**Table 4-14 Educational status of market traders in Makeni markets**

Educational Status	Total Number of traders	Percentage %	Number of Female traders	Number of Male traders
Illiterate	1,342	48.9	1,236	106
Primary school	229	8.3	203	26
Junior Secondary school	344	12.5	275	69
Senior secondary school	718	26.2	555	163
College	32	1.2	23	9
University	57	2.1	42	15
Vocational	14	0.5	8	6
Adult school	9	0.3	5	4
<b>Total</b>	<b>2,745</b>	<b>100</b>	<b>2,347</b>	<b>398</b>

#### 4.3.1.7 *Status of GBV in Project Area*

Even though gender equality exists in Sierra Leone's rural communities, the status of the GBV in the project area is very moderate because of the awareness and the recent declaration of GBV as state of emergency and the 2019 Amended Sexual offense Act and the Gender Equality Women's Empowerment (GEWE) Act of 2022 respectively. In addition, there are mechanisms established by government to enable residents in the project area to make their

complaints by calling 116 and to access service by reporting to the Sexual Assault Syndicate (SAS) Officer at the nearest Family Support Unit (FSU). A report on the status of GBV issues in the project area (prepared by the GBV service consultants of the project) is attached as appendix 17.

#### 4.3.1.8 *Status of Business Ownership*

Out of the total 2,745 market traders, 2,601 (94.7%) reported having an individual enterprise, while 135 of the traders (4.9%) are family enterprises as shown in Table 4-15.

**Table 4-15 Status of business ownership in Makeni markets**

Business Ownership Status	Total Number of traders	Percentage %	Number of Female traders	Number of Male traders
Individual enterprise	2,601	94.7	2,247	354
Family enterprise	135	4.9	97	38
Branch of company	6	0.2	2	4
Cooperative	2	0.1	0	2
NGO	1	0.1	1	0
<b>Total</b>	<b>2,745</b>	<b>100</b>	<b>2,347</b>	<b>398</b>

#### 4.3.1.9 *Business Registration Legal Status*

Regarding the legal registration status of businesses owned by market traders (Table 4-16):

- Out of the 2,745 business owners, 2,432 (88.6%) have no form of legal registration.
- Only 275 (10.0%) of businesses are registered with the local council.
- 37 (1.4%) businesses are registered with the National government.
- 1 (0.0%) business is registered with both the National government and council.

**Table 4-16 Legal status of business registration of Makeni markets Traders**

Legal Status (Business registration)	Number of traders	Percentage	Number of traders inside the market (with percent out of registration status category)
Not registered	2,432	88.6	1,073 (44%) – 923 Female/150 Male
Registered with Council	275	10.0	115 (41.8%) – 82 Female/33 Male
Registered with Government	37	1.4	21 (56.8%) – 20 Female/1 Male
Registered with both Government and Council	1	0.0	0 (0%)
<b>Total</b>	<b>2,745</b>	<b>100</b>	<b>1,209 (44%)</b>

#### 4.3.1.10 Business Duration and Occupied Space

A considerable number of markets traders occupying spaces in all Makeni markets have been there for a considerable number of years, selling for their livelihood and the livelihood of their families as revealed by the study.

In the Makeni markets, the survey shows that 841 (30.7%) traders have been selling in the market for over 15 years, followed by 363(13.2%) who have been selling in the market for a period between 10 and 15 years (Table 4-17).

**Table 4-17 Number of years spent in the Makeni markets by market traders**

Duration in the Market	Number of traders	Percentage
1-5 years	844	30.7
6-10 years	697	25.4
10-15 years	363	13.2
15 years and above	841	30.7
<b>Total</b>	<b>2,745</b>	<b>100</b>

A large portion of the market traders, 1,138 or 41.5%, occupied spaces without any allocation (just settled). 420 traders or 15.3% rented the space; 437 or 15.9% inherited it from a family member; and 338 (14.1%) were given the space as a gift (Table 4-18).

**Table 4-18 Status of the space occupied by Makeni markets traders**

Occupying Space	Inside Main Market	Inside Market Road	Church Street	Masuba Road	Savage Square	Station Road	Total	%
Bought	15	2	6	1	1	0	25	0.9
Council Property	99	67	41	54	8	34	303	11.0
Giving as a Gift	168	29	120	46	16	9	388	14.1
Inherited	250	33	84	44	15	11	437	15.9
Just Settled	486	140	220	229	34	29	1,138	41.5
Renting	187	22	79	121	10	1	420	15.3
Leasing	4	1	2	1	0	26	34	1.2
<b>Total ALL</b>	<b>1,209</b>	<b>294</b>	<b>552</b>	<b>496</b>	<b>84</b>	<b>110</b>	<b>2,745</b>	<b>100</b>
Bought	9	2	4	1	1	0	17	0.6
Council Property	87	65	33	47	7	23	262	9.5
Giving as a Gift	157	28	101	39	14	7	346	12.6
Inherited	225	33	71	35	12	9	385	14.0
Just Settled	433	137	182	212	26	25	1,015	37.0
Renting	133	15	55	84	9	0	296	10.8
Leasing	2	1	2	0	0	21	26	0.9
<b>Total FEMALE</b>	<b>1,046</b>	<b>281</b>	<b>448</b>	<b>418</b>	<b>69</b>	<b>85</b>	<b>2,347</b>	<b>85.5</b>
Bought	6	0	2	0	0	0	8	0.3
Council Property	12	2	8	7	1	11	41	1.5

Occupying Space	Inside Main Market	Inside Market Road	Church Street	Masuba Road	Savage Square	Station Road	Total	%
Giving as a Gift	11	1	19	7	2	2	42	1.5
Inherited	25	0	13	9	3	2	52	1.9
Just Settled	53	3	38	17	8	4	123	4.5
Renting	54	7	24	37	1	1	124	4.5
Leasing	2	0	0	1	0	5	8	0.3
<b>Total MALE</b>	<b>163</b>	<b>13</b>	<b>104</b>	<b>78</b>	<b>15</b>	<b>25</b>	<b>398</b>	<b>14.5</b>

### 4.3.2 Livelihoods

#### 4.3.2.1 Employment

According to Sierra Leone's education plan 2022-2026 report, Sierra Leone total labor force was reported to be 2.7 million in 2020. According to the demographic and health survey conducted in 2019, men are more likely to be employed than women (72% versus 69%) and rural men and women are more likely to be employed than urban men and women. The unemployment rate was estimated at 4.6% in 2020. Most individuals are employed in the agricultural sector, and those with no formal education were the most disposed to work in this field.

In all Makeni markets, survey data revealed that around 45.1% of the market traders exclusively engage in selling activities and do not rely on additional employment, showcasing a substantial reliance on their market-based business endeavors. Table 4-19 summarizes the employment status of Makeni markets traders. These percentages reflect a significantly high proportion of individuals engaged in business activities in the market.

**Table 4-19 Employment status of Makeni markets traders**

Trader Occupation	Number of traders	Percentage %	Number of Female traders	Number of Male traders
Traders only	1,237	45.1	1,039	198
Traders & self employed	1,217	44.3	1,049	168
Traders and employed	270	9.8	242	28
Traders and Farmers	19	0.7	15	4
Traders and Government Employees	2	0.1	2	0
<b>Total</b>	<b>2,745</b>	<b>100</b>	<b>2,347</b>	<b>398</b>

#### 4.3.2.2 Income

The field survey data conducted at Makeni markets aimed to assess the socio-economic status of market traders. The data revealed that approximately 83.6% of the main source of income for individuals in Makeni market is derived from their own businesses. Supplementary

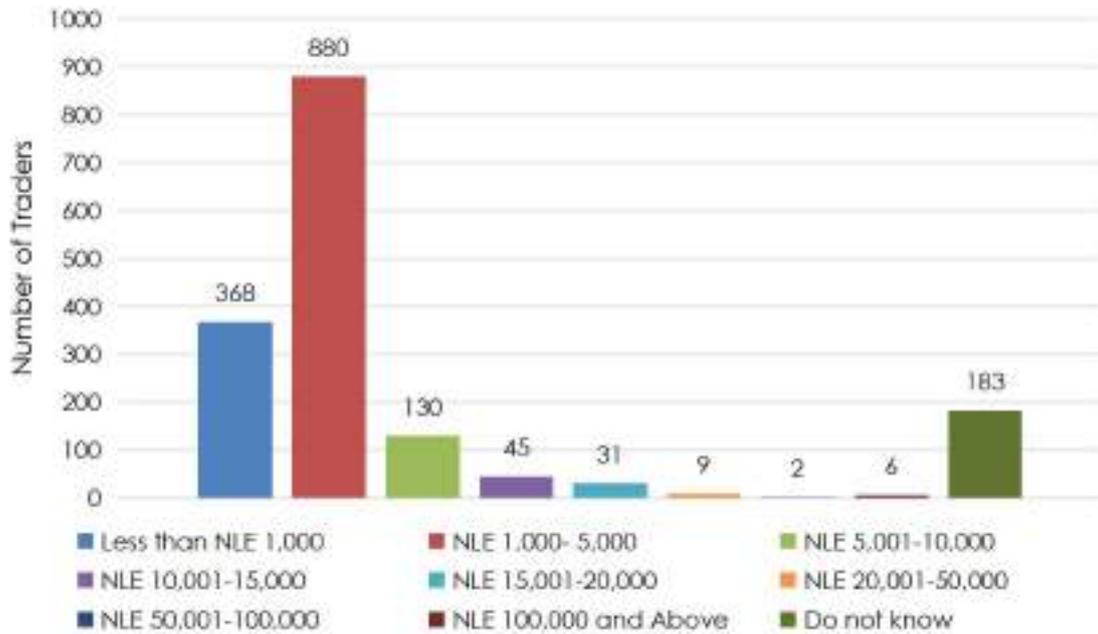
sources such as husband salary, social allowances, earnings from agricultural produce contribute to households' income as shown in Table 4-20.

**Table 4-20 Main sources of household income of Makeni markets traders**

Main Source of Income	Number of traders	Percentage
Business owner in the market	2,295	83.6
Husband's salary	176	6.4
Money From Relatives	144	5.2
Salary from working in the market	68	2.5
Money from Agricultural produce sale	34	1.2
Transfer income from abroad	14	0.5
Business located outside the market area	10	0.4
Rent collected from the market area	2	0.1
Rent collected from outside	2	0.1
<b>Total</b>	<b>2,745</b>	<b>100</b>

During the initial socio-economic survey, traders were reluctant to disclose information regarding their revenues (gross income, total earnings before expenses) or incomes (net income, profit after deducting expenses). The provided monthly average of traders' household income, is an estimate based on data shared by a limited number of traders, representing the net income retained after fulfilling all obligations and it is approximately NLE 400, which is significantly lower than the national minimum wage of NLE 800<sup>9</sup>. Following the initial market survey, a second survey was conducted for RP preparation, targeting affected traders by the project activities to gather more detailed income (and other) data. The RP presents these findings as monthly household income ranges, the distribution of which among traders is represented in Figure 4-28.

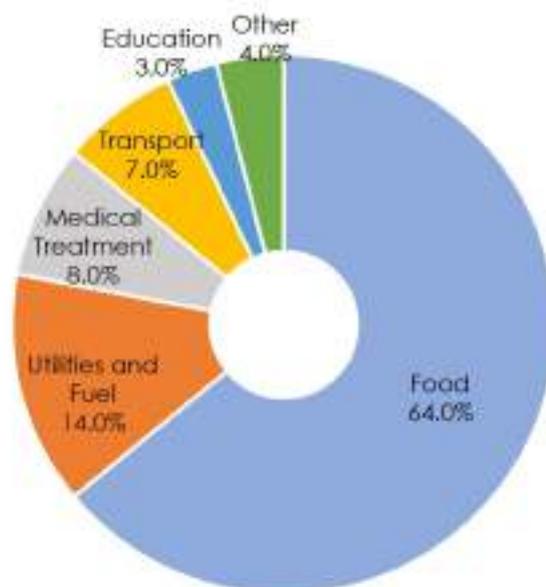
<sup>9</sup> <https://news.bloombergtax.com/payroll/sierra-leone-increases-minimum-wage>



**Figure 4-28 Household monthly income range of Makeni affected traders**

When assessing the change of income over the last 5 years for the market traders, around 60% of the Makeni respondents reported a decrease in their incomes over the past five years. About 30% indicated no change in their income, and only 10% reported an increase during this period.

64% of market traders' monthly income is allocated to expenditures on food and drink, followed by expenditure on utilities and fuel (14%) and then medical treatment (8%) (Figure 4-29) .



**Figure 4-29 Makeni markets traders' monthly expenditures**

Nearly half of market traders (47.2%) stated that they lack enough money to buy food and drink, and that they often resort to borrowing money or seeking temporary assistance from relatives to meet this need. Compared to the national poverty rate of 57.9%, it shows that the

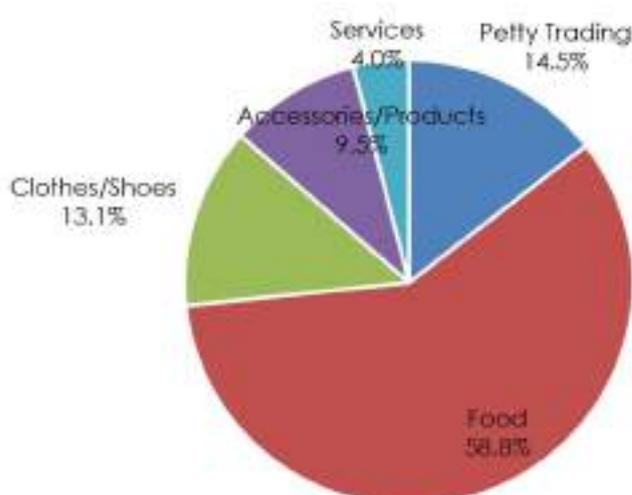
market area poverty level is lower than the national rate. About 32.8% of market traders reported having enough money for food, but they have difficulty allocating sufficient funds to buy clothes. For most market traders in Makeni central market, purchasing expensive and durable household goods such as a TV or refrigerator is not affordable. Only 19.0% of traders' households can afford food and clothes but have difficulty in buying expensive durable household goods (Table 4-21).

**Table 4-21 Statements about Makeni market traders' financial conditions**

Which of the following statements best describes your household's financial conditions?	Percentage
There is not enough money even for food, we must go into debt or get help from relatives or friends	47.2%
There is enough money for food, but we have difficulty with buying clothes	32.8%
There is enough money for food and clothes, but purchasing expensive durable goods such as a TV or refrigerator, is a problem	19.0%
We can buy durable goods from time to time, but purchasing more expensive things, is beyond our means	0.6%
Refusal to answer	0.4%

#### 4.3.2.3 *Income Generating Activities*

As shown in Figure 4-30, the income-generating activities at the Makeni market represent the various operations that traders engage in to earn money. The Makeni market features a diverse range of activities, including products sales, service provision, and trade. A significant portion of these activities is food-related, with traders selling agricultural products, chicken, meat, fish, eggs, groundnuts, condiments, etc. comprising 58.8% of the market's activities. Additionally, 14.5% of the activities involve petty trading, while clothing and shoes account for 13.1%. The market also provides the sale of accessories and products such as school items, bags, articles, phone accessories contributing 9.5%. Finally, 4.0% of the activities involve services such as medical services, money transaction, grinding services, etc.



**Figure 4-30 Distribution of the main income generating activities at the Makeni markets**

#### 4.3.2.4 Health Concerns

According to the MTNDP, Sierra Leone's health sector is facing challenges due to weak infrastructure, weak human resource base, low per capita expenditure on health, inadequate disease prevention, limited access to health services, etc. The 2019 Demographic and Health Survey (DHS 2019) in Sierra Leone shows that the under-five mortality rate decreased by 0.34% from 2013 to 2019 but remains high as one in eight children died before the age of five in 2019.

In the Market area, there is a healthcare facility around 50 m and a hospital (Loreto Hospital) situated around 200-300m south-east of the market. The survey conducted among Makeni market traders showed that most of the respondents have sought medical assistance for illness. The illnesses that most required medical treatment in the previous year were malaria (50%), fever conditions (38%) and gastrointestinal disorders (12%). These health issues could be exacerbated by poor management of solid waste and wastewater, leading to unsanitary conditions in Makeni Markets. Patients visit hospitals or nurses' places for the treatment of malaria and severe fever illness, while viral infections are usually self-treated.

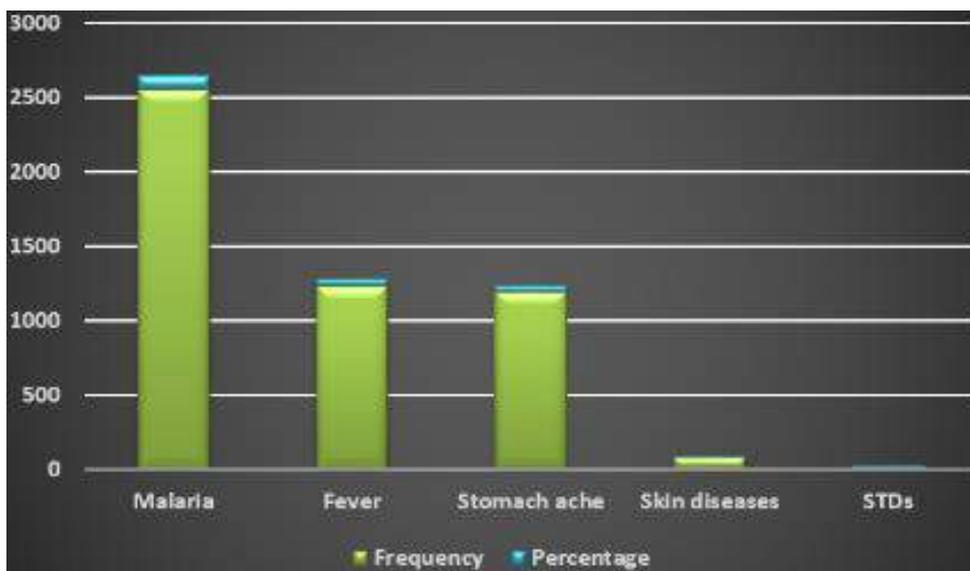
It is noteworthy that most market traders surveyed in Makeni market had no medical insurance, and around 87.6% of the respondents consider medicines to be unaffordable. Additionally, nearly 62.6% felt there had been no improvement in their ability to afford medicines over the past 5 years, as shown in Figure 4-32.

Nearly all respondents reported requiring medical assistance at some point, with some specifically mentioning that they struggle to afford medicines and treatments when sick. Many expressed a desire for an affordable clinic near or within the market area to save time and reduce costs.

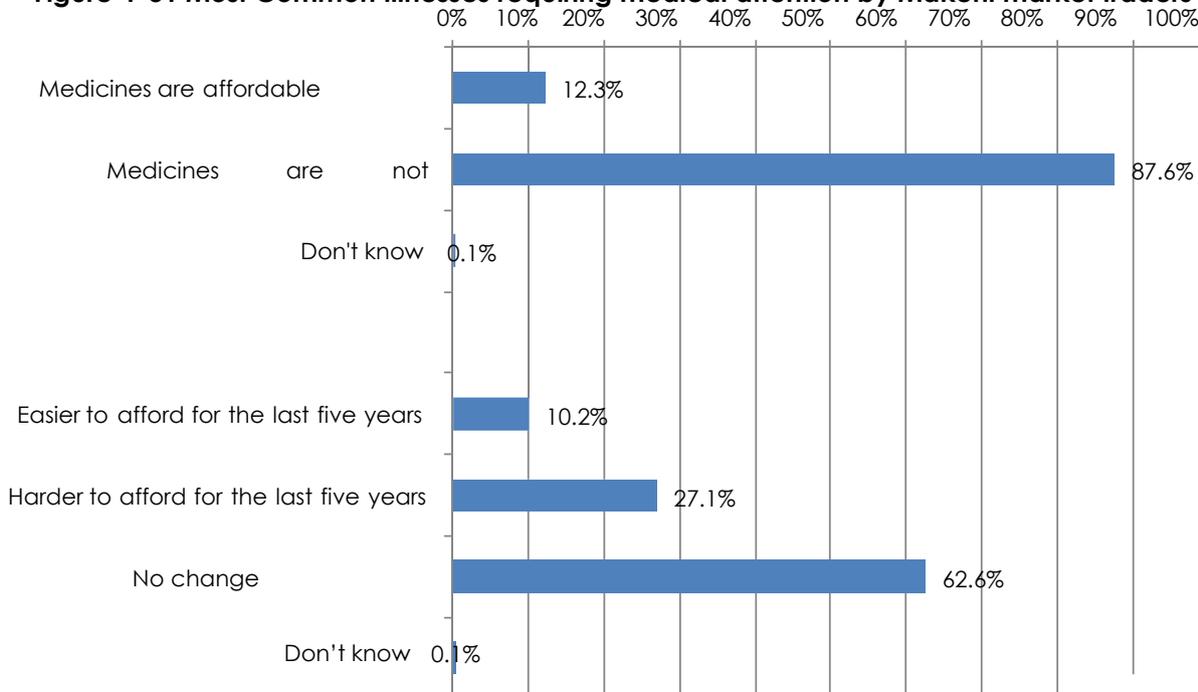
When affected with severe Malaria, fever and infections, most respondents sought medical care from doctors (48.1%) and nurses (36.6%), with fewer consulting pharmacists (6.9%). A smaller portion sought help from herbalists (3.2%), and 1.6% consulted religious leaders. While self-medication was reported by only 3.6%, as illustrated in Figure 4-31.

**Table 4-22 Means of seeking medical and health care by Makeni market traders**

Means of Seeking Health Care	Number of traders	Percentage
Doctor	1,320	48.1
Nurse	1,004	36.6
Pharmacist	190	6.9
Herbalist	88	3.2
Self-medicated	100	3.6
Religious leader	43	1.6
<b>Total</b>	<b>2,745</b>	<b>100</b>



**Figure 4-31 Most Common Illnesses requiring medical attention by Makeni market traders**



**Figure 4-32 Affordability of medicines for traders in the Makeni market**

### 4.3.3 Infrastructure and Services

In general, the current infrastructure in Sierra Leone is in poor conditions due to the civil war and deferred maintenance (roads with limited or non-existent rail; river transport systems are often impassable during the rainy season; a large proportion of the population lacks access to clean water and sanitation facilities; the operation of wastewater collection and treatment facilities depends on gravity flow and is inundated by water level rise). Referring to the International Trade Administration data (SLIEPA, 2024), 80% of the energy source in Sierra Leone is provided by fuelwood biomass, while 13% is provided from imported petroleum products). The major markets in Bo, Kenema and Makeni are in a poor state, characterized by leaking roofs, poor toilets, waste disposal problems and inadequacy of space in the

markets. They also lack water and electricity. There is a need to modernize these markets, which have the potential of being a major source of revenue for the Local Councils.

#### 4.3.3.1 *Land Use*

The market and most of the adjacent land are used for residential and commercial purposes. With most of the structures within the market being commercial (used also for residential purposes). Most of the houses around the market are of mixed used (residential and commercial) and most have shops and stores attached to them or that form part of the original design. It can be estimated that over 95% of commercial activities (mostly selling of food products; raw agricultural produce, and agro-based industrial produce) are taking place within the market facility.

Several essential facilities were identified around the market, including a police station, a healthcare facility, a hospital, a church, a mosque, a primary school, a bank, and pharmacies. However, no daycare or manufacturing facility were found within or in the vicinity of the market site.

The Market area land, which is about 3,240m<sup>2</sup>, is owned by the City Council and is sandwiched by privately owned parcels of land. The traders selling in the market have no issue with land ownership, since the land and market facilities are owned by the City Council. Those selling on nearby private properties normally pay rent to the corresponding property owners, and they normally build their own stalls and tables. The majority uses moveable tables.

#### 4.3.3.2 *Type of structures occupied*

Makeni markets have an urban structure plan prepared by the Makeni City Council. The market area is built in masonry structures of stalls, shops and several carpentry temporary structures as shown in Table 4-23.

**Table 4-23 Type of structures occupied by traders in Makeni markets**

Type of structures occupied by traders	Inside Main Market	Inside Market Road	Church Street	Masuba Road	Savage Square	Station Road	Total	%
Stalls	860	244	405	342	74	95	2,020	73.6
Small tables business	235	29	99	111	4	8	486	17.7
Shops	41	3	21	8	1	2	76	2.8
Stores	11	0	3	1	0	0	15	0.5
Sell on the floor	57	15	21	33	5	3	134	4.9
Residential and small business shop	5	3	3	1	0	2	14	0.5
<b>Total ALL</b>	<b>1,209</b>	<b>294</b>	<b>552</b>	<b>496</b>	<b>84</b>	<b>110</b>	<b>2,745</b>	<b>100</b>
Stalls	767	234	328	283	62	73	1,747	63.6
Small tables business	196	27	85	101	2	8	419	15.3
Shops	27	2	10	2	0	2	43	1.6

Type of structures occupied by traders	Inside Main Market	Inside Market Road	Church Street	Masuba Road	Savage Square	Station Road	Total	%
Stores	7	0	3	1	0	0	11	0.4
Sell on the floor	45	15	19	30	5	2	116	4.2
Residential and small business shop	4	3	3	1	0	0	11	0.4
<b>Total FEMALE</b>	<b>1,046</b>	<b>281</b>	<b>448</b>	<b>418</b>	<b>69</b>	<b>85</b>	<b>2,347</b>	<b>85.5</b>
Stalls	767	10	77	59	12	22	273	9.9
Small business tables	196	2	14	10	2	0	67	2.4
Shops	27	1	11	6	1	0	33	1.2
Stores	7	0	0	0	0	0	4	0.1
Sell on the floor	45	0	2	3	0	1	18	0.7
Residential and small business shop	4	0	0	0	0	2	3	0.1
<b>Total MALE</b>	<b>1,046</b>	<b>13</b>	<b>104</b>	<b>78</b>	<b>15</b>	<b>25</b>	<b>398</b>	<b>14.5</b>

#### 4.3.3.3 *Material of occupied structures*

The study results show that out of the 2,745 market traders surveyed in the Makeni City market, 1,554 (56.6%) have business structures that are constructed primarily using thatch or sticks, or a combination of both, representing the largest share of space occupancy within the market (Table 4-24). Other construction materials used include makeshift CI sheet walled structures (pan body) (284 or 10.3%), concrete blocks (235 or 8.6%), brick wall (186 or 6.8%), board house (185 or 6.7%), concrete blocks with plaster (163 or 5.9%), mud blocks with plaster (105 or 3.8%), and mud blocks (33 or 1.2%).

**Table 4-24 Nature of stall/shop/ store in relation to material made-up in Makeni markets**

Nature of your stall/shop/ store	Number of traders	Percentage %	Number of Female traders	Number of Male traders
Thatch or stick	1,554	56.6	1,362	192
Pan body	284	10.4	214	70
Concrete blocks	235	8.6	210	25
Brick wall	186	6.8	152	34
Board house	185	6.7	159	26
Concrete blocks with plaster	163	5.9	128	35
Mud blocks/with plaster	105	3.8	93	12
Mud Blocks	33	1.2	29	4
<b>Total</b>	<b>2,745</b>	<b>100</b>	<b>2,347</b>	<b>398</b>

#### 4.3.3.4 Proposed Market Facility

During the socioeconomic survey data collection process, traders were asked individually to propose the type of market structure that they may want to see constructed by the project in relation to number of floors. Analyses shown in Table 4-25 and Table 4-26 reveal the responses received from traders.

Out of the 1,209 market traders selling inside the market, 396 (32.8%) proposed a G+3 number of floors; 301 (24.9%) proposed a G+2 number of floors; 158 (13.1%) proposed a G+1 number of floors; and 354 (29.4%) proposed a flat structure (Table 4-25).

**Table 4-25 Traders inside the Makeni central market proposal in relation to the market structure desired**

Proposed number of floors	Number of traders inside the market	Percentage of traders inside the market	Number of Female traders	Number of Male Traders
G+3	396	32.8	355	41
G+2	301	24.9	246	55
Flat	354	29.4	281	73
G+1	158	13.1	143	15
<b>Total</b>	<b>1,209</b>	<b>100</b>	<b>1,025</b>	<b>184</b>

In general, out of the 2,745 market traders, 903 (32.9%) proposed a G+3 number of floors, 684 (24.9%) proposed a G+2 number of floors, 493 (18.0%) proposed a G+1 number of floors and 665 (24.2%) proposed a flat structure (Table 4-26).

**Table 4-26 Traders' proposal in relation to the Makeni market's structure desired**

Proposed number of floors	Number of traders	Percentage of traders	Number of Female traders	Number of Male traders
G+3	903	32.9	739	164
G+2	684	24.9	585	99
G+1	493	18.0	431	62
Flat	665	24.2	592	73
<b>Total</b>	<b>2,745</b>	<b>100</b>	<b>2,347</b>	<b>398</b>

Traders' preferences regarding the market's structure have been integral to the design process, with a multi-floor design option considered and evaluated. However, the final market design decision incorporated various factors beyond stakeholder input, such as cost considerations and the practicality of implementation. Noting that at a later stage, the selected and approved market design was subsequently presented to, discussed with, and validated with a sample of affected traders during FGDs held as part of the RP preparation.

During the focus group discussions (FGDs) that were held after the preliminary design was completed to validate it, the traders engaged, who were representatives of various trader categories, affirmed their initial suggestion and confirmed that they are fine with the proposed market structure.

#### 4.3.3.5 Overview of Existing Services

When assessing the local infrastructure, concerns were raised by market users on Makeni central market regarding several aspects:

1. **Water Supply and Public Toilets:** Approximately 70% of market traders expressed dissatisfaction with the water supply, citing both the irregular availability of water delivery and poor water quality whenever water is available.
2. **Liquid Waste (wastewater) and Solid Waste Disposal:** All of the market traders expressed concerns about the inadequacy of both wastewater and solid waste disposal facilities.
3. **Crime and Policing:** several market traders highlight the need to improve crime prevention and policing.
4. **Shopping Facilities:** The need for better shopping facilities was also mentioned by several respondents.

In summary, the critical sensitivities related to infrastructure and services are as follows: water supply, water quality, sanitation facilities, waste disposal, storage for goods, and power supply.

- Energy

There is an Electricity Distribution and Supply Authority (EDSA) power line providing electricity to the market from the National Grid. While electricity is the main source of energy used in the market, not all market traders have access to power supply as electrical installation is limited to certain areas of the market and mainly available in shops and stores. It was observed that the market section where raw fish is sold is using electricity which is privately provided by the fish traders.

Very few traders across the market area have access to generators for commercial basis and some traders with small-scale milling (milling of rice, and cassava to flour dust, dry pepper to powdered form) done in the market are using engine machines that consume fuel.

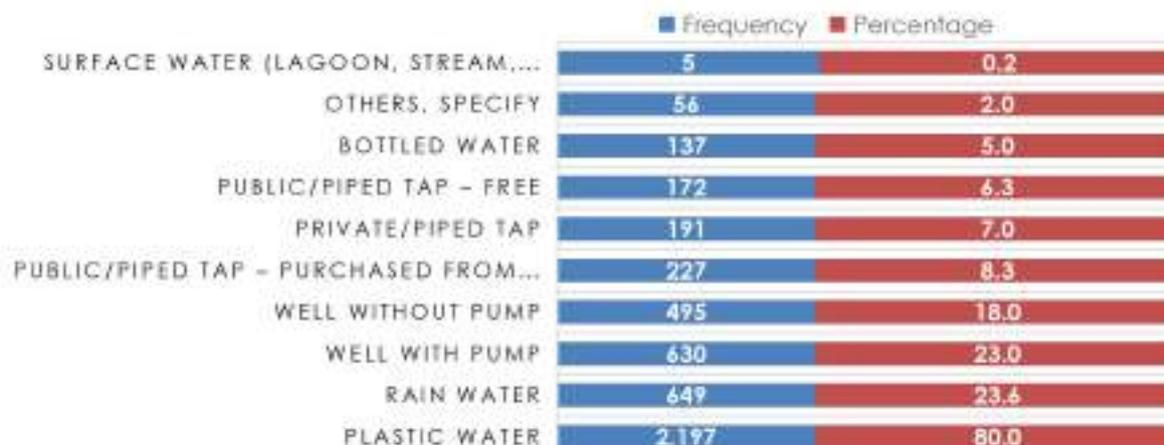
- Water Supply

The Makeni Central market water supply is mainly from a commercially operated hand dug well-paying Le 2.00 for a 20 L container. However, the well is not effective as it is manually operated, lacks a tank or any form of reservoir, and is insufficient to meet the market's water needs. Two pipe-borne taps were found very close to the toilet building, one of which is reported as "not functional", implying only one is in active use. From the information gathered in the field surveys, the traders are mostly using boreholes instead of tap water.

Given that the FS and PD reports did not specify the borehole location yet, the feasibility study and design team will propose borehole locations to enhance the water supply and improve access to clean water, in addition to the supply that will be provided by SALWACO for the market.

The Makeni market field survey revealed that approximately 80% of traders have access to potable water through buying plastic water sources in their homes, and about 8.7% of households have taps for potable water, while the remaining households receive water through their own wells. Therefore, market traders must obtain water from privately owned

facilities. The survey results for access to potable water in Makeni market are summarized in Figure 4-33.



**Figure 4-33 Access to potable water in Makeni markets**

- Solid Waste Management

Solid waste management is a major issue in Sierra Leone. Only small percentages of the solid waste generated are collected and disposed of, resulting in heaps of uncollected garbage in open spaces, streets, roadside drains, etc. The result of all these is flooding of roads, pollution of groundwater and escalating outbreaks of cholera and other waterborne diseases.

Solid waste management practices in the cities pose severe challenges for the city councils. Rapid urbanization and lack of planning have meant that city councils with their limited budgets have been overwhelmed in the management of solid waste. Consequently, health issues abound, and many areas of various cities are not livable and investment friendly.

At the level of the Makeni Central Market, a solid waste collection service is provided by the City Council and is managed by their waste management department. However, there are some challenges in waste collection around the market area due to insufficient waste disposal bins, that normally lead to illegal dumping of waste when the available bins are full, and there are delays in emptying them. A few traders use private service providers.

- Wastewater, Sanitation and Hygiene

A detailed analysis of the current market situation has shown that there is an existing three-compartment pit latrine block situated close to the Sylvanus market, in a facility privately owned and operated. Wastewater from these latrines is discharged inside a sort of cesspits that need to be periodically emptied by cesspool emptier, leading to water resource pollution at the discharge points, and thus constituting a public health hazard.

Waste and sanitation facilities are poor in the market and the city. Therefore, water and sanitation related diseases transmission will be favored, such as fever and gastro-intestinal problems that were detected in the market area and are likely to increase among the market traders.

- Storage of Goods and Refrigeration

There are formal storage rooms in the market, but these are not sufficient to accommodate the trader's wares.

#### 4.3.3.6 *Cultural and Natural Heritage*

##### **Makeni City**

Makeni, the capital of Bombali district, is situated in the northern part of Sierra Leone and is a dynamic city. Makeni is home to the themne people who are largely engaged in agricultural activities. The town is therefore a major trading center for agricultural production such as palm oil and kernels, as well as rice, and the Makeni women are particularly known for their Gara tie-dyeing talents. Makeni cotton tree, Makeni clock tower, Makeni old town hall, and Makeni central mosque are among must-see historical places in Makeni. The city is also home to several educational institutions, including the University of Makeni.

##### **Makeni Central Market**

The Makeni Central Market is one of the main markets in Sierra Leone that serves as a vital hub for the Makeni community, facilitating economic activity and social interaction. This daily exchange can foster a sense of shared identity and cultural traditions.

The Makeni Central Market in Sierra Leone is known for its extensive range of goods, including fresh produce, spices, clothing, handicrafts, and traditional artifacts. The most sold items at the market are food related; the market offers a wide variety of locally produced food and agricultural products such as fresh fruits, vegetables, and spices. Informal petty traders, selling on the ground of the market and its surroundings form a notable portion of the market landscape.

There are no sites of cultural significance that will be affected in or around the project site.

#### 4.3.3.7 *Traffic and Transportation*

The market area is surrounded by several motorable routes, including both unpaved and paved roads, providing access to numerous communities and making the market generally accessible. Currently, there is a free flow of goods to and from the market. However, the road network that is in poor condition could cause challenges in transporting materials to the site during the construction phase of the project. Additionally, some roads, along with the area designated for hoarding, are expected to be cordoned off during construction for truck access, material unloading, laydown of equipment/machinery, etc. Table 4-27 illustrates the Makeni central market road network and highlights those expected to be cordoned off or subject to congestion. The proposed transport routes for the market construction will include surrounding roads that will not be cordoned off and provide access to the market upgrade site.

**Table 4-27 Makeni Central Market Road network**

Road	Road Condition/Description	Expected Impact during construction (e.g. Cordoned Off, subject to Congestion, accessible)
Campbell Street	Asphalt-paved, two lanes road, drained on both sides.	Part of the road is expected to be cordoned off. The rest of the road is subject to congestion.

Road	Road Condition/Description	Expected Impact during construction (e.g. Cordoned Off, subject to Congestion, accessible)
Kabala Highway/Rogbaneh Road	Asphalt-paved, two lanes road, drained on both sides	Provide access to the market upgrade site. Congestion is expected to occur.
Station Road	Asphalt-paved, two lanes road, drained on both sides	Provide access to the market upgrade site. Congestion is expected to occur.
Church Street	Unpaved, undrained road, with compacted dark brown soil.	Provide access to the market upgrade site. Congestion is expected to occur.
Vincent Road	Asphalt-paved, two lanes road, drained on both sides.	Provide access to the market upgrade site.
Magbenteh Road	Asphalt-paved, two lanes road, drained on both sides	Provide access to the market upgrade site.
Magboroka Road	Asphalt-paved, two lanes road, drained on both sides.	Provide access to the market upgrade site.
Flower Corner	Unpaved, but drained on one side, with compacted dark brown soil	Provide access to the market upgrade site.

Source: Adopted from JV Politecnica & ISC, 2024

A baseline traffic survey was conducted in September 2023, on the roads that might be impacted during the project's construction phase. These routes will serve as access points to the market site during construction.

#### A- Survey Methods

Surveyors were mobilized to designated survey locations, as shown in the figures below. The surveys were conducted between 07:00 and 17:00, covering a 10-hour period generally considered the busiest time of the day. Manual classified counts (MCC) were carried out following UK guidelines (Guidelines for Traffic Impact Assessment by the Institution of Highways and Transportation, 1994, and Department for International Development Overseas Road Note 40) to determine the quantity and types of traffic on the roads.

#### B- Assessment of Importance and sensitivity of receptors

An assessment was conducted to evaluate the importance and sensitivity of receptors that may be impacted by project-related traffic. Receptors were categorized based on their importance and sensitivity, ranging from very low to very high.

#### C- Technical Difficulties or Uncertainties

The survey team faced limitations due to the lack of existing traffic survey data in the city. However, the data collected indicates minimal peak-time traffic flows and negligible congestion, suggesting that additional data, if available, would likely not alter the conclusions drawn from the existing data.

#### D- Baseline Traffic Conditions

The survey revealed that most of the main public roads (Campbell Street, Station Road) that will be used by contractors during the construction of the proposed Makeni Market are currently in good condition.

During the survey, it was observed that these roads generally lack dedicated footpaths or pedestrian crossings. As a result, pedestrians were often seen walking directly on the road or on roadside verges where available. Pedestrians were also observed crossing the roads at potentially unsafe locations.

The survey further identified street traders occupying positions along the roads, with some street trading encroaching onto the main road, requiring vehicles to maneuver around them.

The traffic survey was conducted in September 2023, which is not considered the peak period for traffic flows. The peak traffic period typically occurs in December, driven by more favorable weather conditions and longer daylight hours. However, the traffic flows recorded during this survey likely reflect the average annual traffic flows in the areas under consideration. Traffic flows in Makeni Market summarized in Table 4-28

**Table 4-28 Traffic flow summary in Makeni central market**

Location	Average Flow Per Counting Period (Vehicle/hr)	Peak Hourly Flow (Vehicle/hr)		Percentage (%) of Heavy Vehicles
		8:00 am till 12:00 pm	1:00 pm till 5:00 pm	
From Makeni Central Market	30.9	45		9.7
To Makeni Central Market	33.4	60		8.9

The main survey conclusion includes:

- At the time of the traffic survey on site, a significant portion of traffic passing through the market consisted of motorbikes and heavy vehicles transporting traders/ buyers and goods to and from the market.
- Many vehicles in use were older models.
- Based on the traffic survey results, vehicles are more frequent during late hours at the end of the market day to unload goods to the market stores. However, motorbikes evenly ply the market route throughout the market hours, but peak during the morning (7am – 10am) and evening (5pm – 6pm) daily.
- No congestion was observed during the survey period.
- The roads were in good condition and suitable for heavy vehicles; and
- The roads were shared by slow-moving road users such as street vendors and cart pushers.

This revision aims to present the information more logically and cohesively, making it easier to follow the progression from survey methods to findings and baseline conditions.

#### **4.4 ENVIRONMENT AT THE MAKENI RELOCATION SITE**

The assessment of the relocation site, discussed in section 3.4, highlighted the environmental and social conditions summarized in Table 4-29.

**Table 4-29 Makeni relocation site conditions**

Issue	Makeni Relocation Site
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Issue	Makeni Relocation Site
	Campbell & Savage Streets
Environmental Components	
Landscape features	Relatively flat land with no vegetation cover.
Biological Environment/ Vegetation	No presence of savanna grasslands due to its status as already developed areas. Presence of the well-known cotton tree near the Campbell Street and Church Street Area.
Market Structure	Concrete structures are present both within the relocation site and in the surrounding areas.
Water Source and Supply	Not available
Energy Source	Not available – the site does not receive power supply from EDSA or any other agency.
Solid waste	The Council has established an effective system for waste collection from vendors, implementing a “Waste to Health” livelihood program.
Geology	The relocation site has the same geological characteristics as the main Makeni central market since it is located at a relatively close distance within Makeni city.
Demographics	The community is composed of various population demographics, including able elders, women, people with disabilities, youth, children, and infants, each with distinct needs and roles within the community.
Land Ownership	Situated on property belonging to the council
Toilet facilities	There are no toilet facilities
Drainage channels	Available drainage facility
Medical Healthcare centers	No clinic nearby the site
Safety Measures	There is an absence of safety signage, security measures, fire prevention or emergency responses.
School infrastructure	No schools were found in the vicinity of the proposed relocation site
Road Network	<p>The road/street itself will be utilized for the temporary relocation structures. This road will be cordoned off.</p> <p>Campbell Street and Station Road consist of an asphalt-paved, two-way single-lane road, drained on both sides.</p> <p>The primary proposed routes for use during the relocation site construction include the roads adjacent to Campbell Street, and part of Savage Road providing access to Campbell Street.</p>

Source: Adopted from JV Politecnica & ISC, 2024

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## 5 PUBLIC CONSULTATION AND STAKEHOLDER ENGAGEMENT

### 5.1 INTRODUCTION

The Stakeholder Engagement Plan (SEP) outlines the strategies and protocols for engaging with stakeholders throughout the project lifecycle. It aims to ensure transparent communication, meaningful consultation, information disclosure, constructive relationships, ongoing engagement and the inclusion of individuals and groups affected by or interested in the project.

For the market upgrade project, stakeholder engagement during project design phase included consultations with traders and communities in and around the project area. Through consultation meetings, stakeholders and Project-Affected Persons (PAPs) contributed to the project design by raising environmental and social concerns and offering recommendations for improvement. The consultations during the design phase were conducted in line with Sierra Leonean legislative requirements, the RUSLP Stakeholder Engagement Plan (SEP) and the World Bank Environmental and Social Standard ESS10 under the Environmental and Social Framework. These frameworks emphasize the importance of transparency, accessibility, accountability, inclusiveness, and collaboration across all stages of the project.

This engagement process is not only to address potential risks, but also to promote a sense of responsibility, commitment, and local ownership, ensuring smoother implementation and long-term operation.

### 5.2 OBJECTIVES OF THE SEP

The SEP is essential under ESS10 of the World Bank ESF, outlining protocols for stakeholder engagement, encompassing public information disclosure and consultation at every stage of the project life cycle. The SEP serves as a comprehensive guide for communication with stakeholders, offers mechanisms for expressing concerns, providing feedback, facilitating collaboration between project staff and local communities, thereby minimizing and mitigating social risks associated with proposed project activities.

The SEP for the market upgrade project has been developed to identify and engage stakeholders and affected individuals, informed by the principles and requirements outlined in the RUSLP SEP document. The SEP objectives, applicable before, during and after implementation, are as follows:

- 1- Identify Relevant Stakeholders: Determine the affected parties during the project life cycle and who has the potential to influence its outcome.
- 2- Enhance Stakeholder Understanding: Enable stakeholders to better understand the proposed project, its potential impacts, proposed mitigation measures, and the benefits it may bring.
- 3- Inform Participation Opportunities: Advise affected parties on how they can raise concerns and contribute to the decision-making process.

- 4- Assess Stakeholder Interests: Evaluate stakeholders' interests and ensure their perspectives are integrated into project design and environmental and social performance.
- 5- Ensure Timely Information Disclosure: Ensure timely, understandable, accessible, and appropriate disclosure of project information on environmental and social risks and impacts to stakeholders.
- 6- Accessible Grievance Mechanisms: Provide project-affected parties with accessible, inclusive, and culturally sensitive channels to raise issues and grievances, enabling effective response and management by the Government.
- 7- Ensure Openness and Transparency: Maintain clear communication throughout the process.
- 8- Build Positive Relationships: Foster positive relationships with all affected and concerned parties at each stage of the process to facilitate ongoing dialogue.
- 9- Document Feedback: Record and address questions, concerns, comments, and suggestions from stakeholders.

### **5.3 STAKEHOLDER ENGAGEMENT PROCESS**

The SEP has been implemented in various stages as listed below:

- i. Identification of stakeholders.
- ii. Stakeholder analysis to determine the level of consultation and engagement which is required for each stakeholder group.
- iii. Identification of stakeholder engagement methods for affected parties and other interested parties.
- iv. Identification of methods for consulting disadvantaged/vulnerable individuals or groups.
- v. Stakeholder notification.
- vi. Summary of Consultation activities undertaken.
- vii. Stakeholder meetings at which records of issues, comments, questions, and concerns of stakeholders are taken; and
- viii. Information disclosure and consultation plan.
- ix. Ongoing Engagement
- x. Grievance Mechanism

During the development of the ESIA/ESMP, comprehensive consultations have been conducted to engage various stakeholder groups, ensure diverse perspectives in the project's planning and implementation, and address project needs and priorities. The techniques that have been used during the consultations align with those suggested by the RUSLP SEP, as outlined in Table 5-1. The same techniques will be adopted for future

consultations that will take place during the next phases of the market upgrade project, including construction, operation, and decommissioning.

**Table 5-1 Techniques used for the stakeholders' consultation**

Engagement Method	Purpose and Details
Public meetings	<p>Disseminating comprehensive project details to a wide array of stakeholders, particularly communities and market traders.</p> <p>Affording the group the opportunity to express their perspectives and thoughts.</p> <p>Cultivating connections with the affected communities, placing a special emphasis on those directly impacted.</p> <p>Dispensing non-technical information in an accessible manner.</p> <p>Orchestrating meetings through various mediums such as presentations, PowerPoint slides, posters, and brochures.</p> <p>Documenting discussions, comments, and questions for future reference.</p>
Focus group meetings	<p>Delivering project information to a specific group of stakeholders.</p> <p>Providing stakeholders with a platform to share their perspectives on targeted baseline information, project design, specific needs, etc.</p> <p>Establishing and fostering relationships with the involved community groups.</p> <p>Documenting and taking into consideration the responses and feedback obtained during these sessions.</p>
Formal and informal meetings	<p>Presenting detailed project information to a gathering of stakeholders.</p> <p>Providing a platform for the group to express opinions, concerns and views.</p> <p>Establishing professional relationships with high-level stakeholders.</p> <p>Disseminating technical information relevant to the project.</p> <p>Documenting and recording the discussions that take place during these meetings.</p>
One-on-one meeting, direct communication with PAPs	<p>Conducting phone calls and visits to establish personal relationships.</p> <p>Addressing and resolving individual concerns and grievances.</p> <p>Sharing detailed information regarding market design, impacts, mitigation measures, and implementation timelines.</p> <p>Encouraging participatory development within the community.</p>

Source: GoSL, 2021

The means of consultation for vulnerable individuals and groups have been also recognized and should be actively incorporated into the whole consultation process as presented in Table 5-2. To empower and educate these communities, awareness campaigns, training initiatives, and dissemination activities must be implemented. These efforts aim to enhance the sustainability of the actions taken and equip the community with the skills and knowledge to effectively manage issues in the post-project period.

**Table 5-2 Techniques and required resources for consulting Vulnerable Groups**

Vulnerable groups and individuals	Specific needs and characteristics	Preferred means of notification/consultation	Additional Resources Required
Physically challenged persons	Lack of access to meeting places, transportation and language barriers, visual impairment	Meet identifiable associations of persons with disabilities	Information translated to indigenous languages, sign language/ translators, braille, accessible meeting locations
Women, girls, poor and disadvantaged, children, pregnant school-age girls	Limited voice, low representation, lack of access to information, Cultural and traditional barriers, poverty stigma	Focus group meetings, use of gender champions, Focus group meeting(s) with disadvantaged children and their guardians	Engagement of local NGOs who work with vulnerable people at the community level to help disseminate information and organize

Vulnerable groups and individuals	Specific needs and characteristics	Preferred means of notification/consultation	Additional Resources Required
			consultations
High illiteracy including the homeless	Limited voice, low representation, lack of access to information	Focus group meetings, engagement at the local level including the use of radio and town hall meetings	More information dissemination through the local radio and town criers, illustrated posters, local language skits and discussions.

Source: GoSL, 2021

## 5.4 STAKEHOLDER IDENTIFICATION AND ANALYSIS

The project stakeholders include individuals, groups, or entities directly or indirectly impacted by the market upgrade project, as well as those with specific interests in its outcomes. Stakeholders have been categorized into three groups, and the main stakeholders within each category—who have been consulted or may be consulted at a later stage—are illustrated in Table 5-3.

1. Affected Parties comprise individuals, groups, or entities within the Project Area of Influence directly influenced by the project, such as market traders, workers and nearby communities. Their close engagement is essential for identifying impacts, making decisions on mitigation, and managing present conditions.
2. Other Interested Parties include those not experiencing direct impacts but perceiving their interests as affected, influencing the project in some way.
3. Vulnerable Groups, experiencing disproportionate impacts, require special engagement efforts.

**Table 5-3 Stakeholders Core Categories**

Project Proponents	Affected parties	Other Interested Parties	Vulnerable Groups
Ministry of Finance Ministry of local Government and Rural Development Ministry of Lands, Housing and Country Planning Ministry of Works and Public assets Ministry of Health and Sanitation Ministry of Environment	Environment Protection Agency City Council The Environmental Foundation for Africa Municipal waste collection and disposal workers Waste recycling companies Landowners Small and Medium Enterprises Market women/ businesses. Workers at construction sites of roads, drainage system and other infrastructure Residents and businesses around construction areas Market cooperatives Markets traders' and unions Market Current users,	Judiciary/police Parliament Ministry of Justice and Attorney-General's Office The Ministry of Social Welfare Ministry of Gender and Children's Affairs Resettlement issues for displaced populations Office of the Administrator and Registrar-General Guma Valley Water Company Sierra Leone Roads Authority Roads Maintenance Fund Electricity Distribution and Supply Agency Quantity Surveyors The Anti-Corruption Commission (for grievance redress) Contractors National Fire Force Quantity Surveyors	Women Children Elderly Persons Illiterate people Persons with disability, orphans.

Project Proponents	Affected parties	Other Interested Parties	Vulnerable Groups
	merchants, and vendors Market executives Market and Relocation site stakeholders Market Customers	Other International Finance/ Development Institutions Community-based organizations Civil Society	

Source: Adapted from GoSL, 2021

## 5.5 KEY STAKEHOLDER MEETINGS

During the development of the ESIA/ESMP, several meetings were planned to disclose the project, to inform key stakeholders about the project activities and outcomes and obtain their feedback.

### 5.5.1 Scoping Phase Consultation Activities

The conducted meetings at the ESIA scoping phase are shown in Figure 5-1, and a summary of the main points discussed are presented in Table 5-4 while the detailed meeting minutes report is attached in

Appendix 4, encompassing in-depth discussions from the focus group meetings and key informant interviews held. Each meeting's list of participants and photos are included. The report also comprises the main responses and results obtained from the various questionnaires distributed to the participants during the sessions.



Figure 5-1 Photos of Makeni key stakeholders' meetings at the scoping stage

**Table 5-4 Summary of Key Stakeholder Meetings held in Makeni during the Scoping Phase**

Date	Number and gender of participants	Stakeholders Group	Subject	Main concerns/issues/questions	Main agreements/answers/suggestions
Monday 18 September, 2023	39(27M/12 F)	Makeni City Council Mayor, Chief Administrator, and key staff	<ul style="list-style-type: none"> <li>- Prayers</li> <li>- Self-introduction</li> <li>- Welcoming notes</li> <li>- General statements</li> <li>- Questions/Concerns and Responses</li> <li>- Focus group discussions and questionnaires on:                             <ul style="list-style-type: none"> <li>• Project impact</li> <li>• GBV</li> <li>• Communication</li> <li>• Women's concerns</li> <li>• Men's concerns</li> <li>• Youth's Concerns</li> <li>• Persons with special needs concerns</li> <li>• Elderly concerns</li> <li>• Poor people concern</li> </ul> </li> <li>- Refreshment</li> </ul> Administrative agreement	After introducing the meeting participants and main objectives, questions and concerns were raised by the Makeni City Council staff regarding the project impacts and the relocation site. The main concerns included: <ol style="list-style-type: none"> <li>1. The inclusion of petty traders without tables in data collection</li> <li>2. Waste handling procedures</li> <li>3. Employment process and quota and potential involvement of youth in the project</li> <li>4. Market size and capacity to handle more than five hundred cars</li> </ol>	In response to these concerns, the following answers and suggestions were provided: <ul style="list-style-type: none"> <li>• Data collection team assured that no one was left uncounted, and the questionnaire included a GPS section to confirm participants' presence in the market</li> <li>• Extend data collection to other markets in the town under similar/other projects</li> <li>• Collaborate with the waste management team in the council and implement strategies during construction to manage generated waste effectively</li> <li>• The project prioritizes employing Sierra Leoneans, particularly individuals from neighboring communities with the required skills. Community members have already been hired for project development</li> </ul> The market might not accommodate over five hundred cars. However, unfortunately, the provision for a car park will not be made as part

Date	Number and gender of participants	Stakeholders Group	Subject	Main concerns/issues/questions	Main agreements/answers/suggestions
Tuesday 19 September, 2023	40 (29M/11F)	Makeni Central Market Stakeholders, representatives from the following: <ul style="list-style-type: none"> <li>- Market executives</li> <li>- Market and Relocation site stakeholders</li> <li>- Elder men</li> <li>- Elder women</li> <li>- Buyers' representative</li> <li>- Market youth</li> <li>- Market Elderly People</li> <li>- Market cooperatives</li> <li>- Markets traders'</li> <li>- Market Current users, merchants, and vendors</li> <li>- Civil Societies</li> <li>- Community-based organization</li> <li>NGO</li> </ul>		After introducing the meeting participants and main objectives, questions and concerns were raised by the Makeni Market Stakeholders representatives regarding the project impacts and the relocation site. The main concerns included: <ol style="list-style-type: none"> <li>1. The relocation land and the project budget</li> <li>2. Seeking clarification on whether the market planned for Kenema is the same as the one in Makeni</li> <li>3. The importance of including youths in employment opportunities, both in skilled and unskilled labor, as they contribute to the city's development</li> <li>4. Traders fear from losing their space in the market space after construction to wealthier individuals, citing past experiences such as the lorry park issue</li> </ol> Employment process and quota during project implementation	of the investment. The following answers and suggestion were provided: <ul style="list-style-type: none"> <li>• Constraints of the project were highlighted, citing limitations in both budget and land size. The relocation site might not meet the anticipated size for the market structure and purchasing nearby houses was not feasible for expansion</li> <li>• Clarification on the concept of "upgrade" that it involves demolishing the old structure and constructing a new, modern facility to improve the market facility, provide better trading space, and improve income and livelihoods. In general, the same market design would be implemented in both markets.</li> <li>• Demand for workers would arise through both project contractors and the Council, addressing potential employment issues.</li> <li>• Data collected aims to address relocation challenges in the future.</li> </ul> Proposing an employment quota (ideally 60%) to actively involve youth and enhance the project

Date	Number and gender of participants	Stakeholders Group	Subject	Main concerns/issues/questions	Main agreements/answers/suggestions
					inclusivity. A preference for employing Sierra Leoneans, particularly individuals from neighboring communities with the necessary skills. Community members have already been hired for project development.
Wednesday 20 September, 2023	37(26M/11F)	Agencies and Departments representatives from: – The Environment Protection Agency (EPA) – Sierra Leone Water Company (SALWACO) – EDSA – SLRA – SLRTC – Pharmacy Board – Traditional Healers – Religious Leaders representative – Youth Commission Disaster Management Agency		After introducing the meeting participants and main objectives, and expressing gratitude for the project implementation, questions and concerns were raised by the Makeni agencies and departments representatives regarding the project impacts and the relocation site. The main concerns included: 1. The security status at the relocation site 2. Measures in place to ensure that traders will retain their selling spaces after the market upgrade 3. Current health and sanitation challenges in the market and the urgent need to incorporate a	In response, the ELARD team leader and the Chief Administrator's representative explained the arrangements for the relocation site and how the collected data aims to address challenges related to relocation and reinstatement of traders in the new market. The project will respect the local content policy <sup>10</sup> and ensure employment opportunities for local communities and youth.

<sup>10</sup> <https://www.localcontent.gov.sl/local-content-policy/>. The Sierra Leone Local Content Policy focuses on fostering economic growth by ensuring that local resources, labor, and businesses benefit from economic activities, particularly in key sectors such as mining, agriculture, and infrastructure. The key policies aim to:

1. **Promote the employment of Sierra Leoneans in all sectors of the economy:** Promotes the recruitment, training, and capacity building of Sierra Leoneans to enhance their participation in the workforce across various sectors.
2. **Promote the utilization of locally available Sierra Leonean goods and services:** Encourages companies to procure goods and services from local businesses to support the growth of domestic industries and entrepreneurship.
3. **Support the domestic private sector through targeted Public and Private Procurement:** Encourages government entities to give preference to domestic suppliers.
4. **Promote the development of human resources capacity of Sierra Leoneans:** Enhances the skills of the Sierra Leonean workforce by providing training according to the skills needed in the economy.
5. **Ensure the promotion of Local Ownership:** Encourages local partnership between Sierra Leoneans and foreign investors and their agents.

Date	Number and gender of participants	Stakeholders Group	Subject	Main concerns/issues/questions	Main agreements/answers/suggestions
				<p>proper sanitation design through the technical team</p> <p>4. The market space and its capacity to include all mentioned facilities in the proposed upgrade</p> <p>Nature and extent of employment opportunities</p>	
<p>Wednesday 20 September, 2023</p>	<p>37(24M/13 F)</p>	<p>Ministries Representatives from:</p> <ul style="list-style-type: none"> <li>- Ministry of Trade and Industry</li> <li>- Ministry of Planning and Economic Development</li> <li>- Ministry of Local Government and Rural Development</li> <li>- Ministry of Agriculture and Food Security;</li> <li>- Ministry of Social Welfare, Gender and Children's Affairs;</li> <li>- Ministry of Water Resources;</li> <li>- Ministry of Tourism and Culture;</li> <li>- Ministry of Health and Sanitation</li> <li>- Ministry of Youths</li> <li>- Ministry of Labour and Social Security</li> </ul>		<p>After introducing the meeting participants and main objectives, gratitude was expressed, and questions and concerns were raised by the Makeni ministries representatives regarding the project impacts and the relocation site. The main concerns included:</p> <ol style="list-style-type: none"> <li>1. Inquiries were made about whether the relocation site is secured and sufficient for the present market population</li> <li>2. Inquiries on measures to prevent traders from losing their selling spaces post-construction</li> <li>3. Inquiries were made about the relocation timing and temporary structures</li> <li>4. The importance of community engagement before relocation was highlighted</li> <li>5. Inquiries were made about health and sanitation challenges in the current market</li> </ol>	<p>The following answers and suggestions were provided:</p> <ul style="list-style-type: none"> <li>• Considering women and children in market operations</li> <li>• The World Bank goal is to reduce poverty, and they will urge adherence to their criteria in the project</li> <li>• Clarification that arrangements for a relocation site will be with the assistance of Makeni Council and stakeholders. The data collected aims to address relocation challenges and the reinstallation process.</li> <li>• Clarification that the engineers would design the market plan based on the fixed available space, accommodating all mentioned facilities</li> </ul>

Date	Number and gender of participants	Stakeholders Group	Subject	Main concerns/issues/questions	Main agreements/answers/suggestions
Thursday 21 September, 2023	37(26M/11F)	Meetings with Security Forces representatives: <ul style="list-style-type: none"> <li>- Police in Makeni City,</li> <li>- Military in Makeni City,</li> <li>- Fire force</li> <li>- Office of National Security</li> <li>- Disaster Management Agency</li> <li>- Family Support Unit (FSU)</li> <li>- Prisons department</li> <li>- Local Council Police</li> <li>- Traditional Rulers</li> </ul>		After introducing the meeting participants and main objectives, gratitude for the market upgrade was expressed and questions and concerns were raised by the Makeni security forces representatives regarding the project impacts and the relocation site. The main concerns included: <ol style="list-style-type: none"> <li>1. The importance of adhering to safety guidelines to avoid issues faced by other structures in the past. Safety should be prioritized</li> <li>2. The need to involve the fire force in safety assessments for public buildings</li> <li>3. The importance of sensitizing the public about the project to facilitate the implementation of the project and to make sure that everyone is aware about the relocation details in order to reduce conflicts and challenges</li> </ol>	The following answers and suggestions were provided: <ul style="list-style-type: none"> <li>• Calling the fire force to ensure that building standards are met and making the maintenance process easier for the council</li> <li>• Having a security post at the new market to safeguard traders' goods</li> <li>• The development planning officer assured that all concerns had been registered, expressing hope that the World Bank would address them.</li> </ul>
Friday 22 September, 2023	36(23M/13F)	Affected property owners and the Makeni City Council Mayor, Chief administrator and key staff		After introducing the meeting participants and main objectives, questions and concerns were raised by Makeni affected property owners and the council staff regarding the project impacts and the relocation site. The main concerns included: <ol style="list-style-type: none"> <li>1. Inquiries about the project start date and the timeline for compensation</li> <li>2. Inquiries about the alternative</li> </ol>	The following answers and suggestions were provided: <ul style="list-style-type: none"> <li>• Encouraging landowners to consider allocating space for future development</li> <li>• Compensation wouldn't necessarily match asset value but intended to provide support</li> <li>• The project's start date would depend on data collection</li> </ul>

Date	Number and gender of participants	Stakeholders Group	Subject	Main concerns/issues/questions	Main agreements/answers/suggestions
				business location 3. Inquiries on land space emphasizing that the provided space should anticipate future market expansion 4. Inquiries about the potential space loss after construction and clarification on whether the new market would remain as free as the current market	process and the construction is likely to begin early next year <ul style="list-style-type: none"> <li>The market will not be totally free but affordable, contributing to municipal revenue for broader development challenges.</li> </ul>
Friday 22 September, 2023	32(24M/8F)	Drivers and Riders Representatives from: – Motor drivers' union – Bike rider's – Kekeh Riders – Omolankay Pushers		After introducing the meeting participants and main objectives, questions and concerns were raised by Makeni drivers and riders' representatives regarding the project impacts and the relocation site. The main concerns included: 1. Concerns about whether the relocation site could accommodate all traders 2. Challenges faced due to market congestion 3. Concerns on indicators and signs on the working site	The following suggestions were provided: <ul style="list-style-type: none"> <li>Use of visible signposts during construction to inform riders</li> <li>Signboards and posts would be prominently displayed at the construction site</li> <li>Satisfaction with the market upgrading project was expressed after the longstanding need for improved facilities in the central market.</li> </ul>

### 5.5.2 ESIA/ESMP and RP Consultation Activities

As part of the ESIA and RP preparation stage, an onsite visit to the market was conducted in March 2024 in the presence of PMU team and WB team to guide the ESIA/ESMP/RP next steps and ensure effective relocation planning and implementation. The onsite visit was conducted in both sites, Makeni and Kenema.

Below is a summary of key discussions and action points following the visit to Makeni Council, Makeni central market, and proposed relocation site.

1. The two proposed relocation site mentioned by the PMU were visited, along with the discussed roads.
2. The WB team suggested assessing the opinion and willingness of both traders and buyers to relocate to the proposed site, considering their location and distance from the current market and residences.
3. The WB Team requested the Engineering Consultants prepare and share maps illustrating the construction works' footprint, facilitating identification of affected traders for relocation and corresponding measures.
4. Two categories of affected traders were identified: those within the market footprint to benefit from the upgrade; and those located outside the market building who will be relocated without direct stall benefits.
5. Registration Deadline: Evidence of registration deadline communication and meetings with traders' unions was discussed, with available photos serving as proof.
6. Close coordination with engineering consultants is crucial to guide facility provision at relocation site.
7. Grouping traders by product categories, as proposed by ELARD's Social Expert, was suggested for efficient relocation site allocation.
8. Mapping residential addresses of affected traders who should be relocated alongside selected relocation site, to determine suitability and proximity was suggested, while also considering traders' product categories and preferences as well (for clustering similar types of products).
9. Different compensation types, including relocation, loss of income, and disturbance allowances, will be explored in a scheduled meeting between PMU, WB Social Safeguards Expert, and the ESIA Consultant's team.

An additional round of surveys and focus group discussions, intended for the RAP, was conducted in May- June 2024 to be able to quantify the number of traders who will be affected by the market upgrade construction works, and capture their feedback, concerns and suggestions relating to the market upgrade and relocation process. A summary of the FGDs outcomes is provided in the RP report.

## 5.6 CONTINUOUS ENGAGEMENT

Stakeholder Engagement is a continuous process, and three principles will be guiding the process to ensure transparency, responsiveness, and inclusivity throughout the project life cycle.

- 1- The first principle involves adopting an open and Life-Cycle approach to public consultations during the construction, operational and decommissioning phases.
- 2- The second principle emphasizes informed participation and feedback, aligning with the project's goals and allowing stakeholders to express their views, enabling effective analysis and addressing comments and concerns.
- 3- The third principle, focusing on actively involving all stakeholders in the consultation process with a special attention given to vulnerable groups, including women, youth, the elderly, illiterate persons, and persons with disabilities, considering their specific cultural sensitivities.

The SEP for the market upgrade project has been following the below steps:

1. Plan: the role and impact of all relevant stakeholders is defined in Appendix 6.
2. Engage: the engagement will aim to be meaningful, respectful, inclusive, localized, impartial and transparent.
3. Consider feedback: the engagement will receive opinions and/or feedback, of which some requests may not be relevant and/or not possible to be addressed within the implementation period of the project, while others may be relevant and should be addressed.
4. Document: engagement processes will be documented through a stakeholder document which will capture the date and place, stakeholders engaged with, and summary of issues raised. Stakeholder registers should be consolidated across the project and documented for monitoring purposes.
5. Report Back: After each consultation, stakeholders' issues and actions will be addressed and reported to PMU/ WB. The SEP will undergo periodic revisions and updates throughout project implementation to ensure that the information it contains is current and aligned with the project context and development phases. Any significant alterations to project activities or schedules will be promptly incorporated into the SEP, and communication of these changes will be timely and comprehensive, targeting key project stakeholders. The publication of status and annual reports on stakeholder interaction will be one of the channels used to convey comprehensive project information to stakeholders and ensure transparency.

The Environmental and Social Impact Assessment (ESIA) and Resettlement Plan (RP) prepared for the Project will be disclosed on the Ministry of Finance's (MoF) website and the World Bank's external website. In addition to these disclosures, appropriate forms and mechanisms will be utilized to ensure the documents are disseminated to a wide range of stakeholders in a timely, understandable, and accessible manner and format.

For the ESIA/ESMP phase, a public consultation will be held before contract closure to present the findings of the ESIA and ESMP to stakeholders, PAPs and the public, following disclosure of the approved environmental and social instruments. The outcomes of the consultation will be integrated into this report before final disclosure.

## 6 DESCRIPTION OF ENVIRONMENTAL AND SOCIAL IMPACTS

### 6.1 IMPACT IDENTIFICATION AND ASSESSMENT METHODOLOGY

The primary function of an environmental impact assessment study is to predict and quantify potential environmental and social impacts, assess and evaluate their magnitude and significance, and develop an Environmental and Social Management Plan to mitigate these impacts. Environmental and social impacts could be positive or negative, direct or indirect, local or regional, reversible or irreversible. The consequence of impacts depends on the nature and magnitude of the activity being undertaken, and on the type of mitigation measures that are envisaged as part of the project concept.

The potential positive and negative impacts of the project construction, operation, and decommissioning phases are identified based on the methodology described in the following subsections.

#### 6.1.1 Impact Identification

The identification and analysis of impacts consists of appraising the preliminary design information submitted by the feasibility study and design consultants, in conjunction with the baseline information of the site. Impacts from similar projects, as cited by literature, were also examined to identify potentially significant impacts on the environment and surrounding communities. After identifying the project impacts, the ESIA evaluates their significance and determines mitigation measures to eliminate/minimize these impacts.

Identification of potential environmental and socio-economic impacts and their severity is facilitated using a matrix that shows the main activities at the project site and the environmental and socio-economic components/ receptors affected. Impacts can be induced during the construction phase of the project and later during its operation.

The extent of impact depends primarily on the various management practices that would be adopted during the construction and operation phases of the Project, the latter being of long-term nature.

The matrix shown in Table 6-1 was developed to summarize the impacts expected during the construction, operation, and decommissioning phases. The matrix describes the potential impacts through identifying the sources/activities and these receptors (environment/human).

**Table 6-1 Initial Impact Identification Matrix**

Component Activity	Air Quality	Noise	Geology, Hydrogeology, Soil and Groundwater Resources	Ecology	Cultural Heritage	Traffic	Visual Amenity	Socio-economy	Health and Safety
<b>Construction</b>									
Mobilization/Operation/Demobilization of Equipment	X	X	X	X	-	X	X	X	X
Site Clearance, Grading and Excavation Activities	X	X	X	X	X	X	X	X	X
Construction Activities	X	X	X	X	-	X	X	X	X

Component Activity	Air Quality	Noise	Geology, Hydrogeology, Soil and Groundwater Resources	Ecology	Cultural Heritage	Traffic	Visual Amenity	Socio-economy	Health and Safety
Vehicles movement	X	X	-	-	-	X	-	X	X
Storage of Fuel/ raw materials on site	X	-	X	X	-	-	X	-	X
Accidental Spills (fuels)	X	-	X	X	-	-	X	-	X
Inadequate waste disposal (solid and liquid)	X	-	X	X	-	-	X	X	X
<b>Operation</b>									
Normal Operation	X	X	X	X	-	X	-	X	X
Maintenance Activities	-	X	X	-	-	-	-	-	X
<b>Decommissioning</b>									
Mobilization/Operation/Demobilization of Equipment	X	X	X	X	-	X	X	X	X
Demolition, dismantling activities and site restoration	X	X	X	X	-	X	X	X	X
Inadequate waste disposal	X	-	X	X	-	-	X	X	X

### 6.1.2 Significance Assessment

The environmental and socio-economic impacts are assigned a level of significance (Low, Moderate or High) based on the Likelihood (Low, Moderate or High) of the impact and the consequence (Insignificant, Minor, Moderate, Major, Critical and Beneficial) of that impact. Several considerations are built into the Impact Consequence Criteria including nature, direction, magnitude, geographic extent, duration, timing, and reversibility of the impact. Some basic questions which can be used to address the above considerations are shown in **Table 6-2**.

**Table 6-2 Questions for Addressing Considerations under Impact Consequence Criteria**

Issue	Question	Criterion
Nature of impact	What is the nature of the impact?	P: Positive N: Negative D: Direct I: Indirect
Magnitude of the impact	To be assessed for each impact category separately	L: Low M: Medium H: High
Extent of the impact (geographical scale of the impact)	Is the extent of the impact localized or confined to a designated area around the project site, or does it extend regionally/ nationally/ globally?	L: Local - Change or effect only within the project site or extends to areas immediately outside G: Global - Regional, national, or international changes or effects.
Duration of the impact	Is the impact likely to persist for a long or short term?	S: Short term M: Medium term L: Long term
Timing of the impact	Are the consequences likely to be limited to the construction or operation phase?	C: During construction O: During operation D: During decommissioning
Reversibility of the impacted condition (impacted condition can be changed or	Are the consequences likely to be reversible or irreversible?	R: Reversible I: Irreversible

Issue	Question	Criterion
reversed)		

Consequence criteria (Nature, Magnitude, Extent, Timing, Duration, and Reversibility) are ranked into six levels of significance based on their rating as listed in Table 6-3. The duration criterion is defined as follows:

- Short term: impacts predicted to last only during individual construction activities, and that would resolve as soon as the source of the impact stops (up to 2 years) or shortly afterwards.
- Medium term - impacts predicted to last between a few months to a few years following cessation of the impact (depending on the impact).
- Long-term - anticipated impacts with a longer duration than the project (lasting several years after cessation of the impact), but which will subside with time.

**Table 6-3 Consequence Assessment Criteria**

Criteria	Consequence Rating
Nature: Negative Magnitude: High Extent: Global (large area of effect that supports sensitive receptors) Timing: Short, medium, or long-term Reversibility: Irreversible	5. Critical
Nature: Negative Magnitude: High Extent: Local (area supports a significant proportion of sensitive receptors) Timing: Short, medium, or long term Reversibility: Reversible or irreversible	4. Major
Nature: Negative Magnitude: Moderate Extent: Local (area of effect encompasses an area that supports either a moderate or minor proportion of sensitive receptors) or global Timing: Short, medium, or long term Reversibility: Reversible	3. Moderate
Nature: Negative Magnitude: Low Extent: Local (sensitive receptors located in the immediate vicinity of the source or areas immediately outside) Timing: Medium or long-term (1 – 5 years or > 5 years) Reversibility: Reversible	2. Minor
Nature: Negative Magnitude: Low – unlikely to be noticeable Extent: Local (absence or presence of sensitive receptors located in the immediate vicinity of the source) Timing: Short-term Reversibility: Reversible	1. Negligible
Changes that result in a net positive impact to an ecosystem, environment, or population.	B. Beneficial

The likelihood of the occurrence of the impact is then rated according to the criteria outlined in Table 6-4.

**Table 6-4 Likelihood Categories and Rankings Impacts**

Score	Category	Definition
H=3	High	The impact will occur under normal operational conditions
M=2	Moderate	The impact may occur at some time under normal operating conditions
L=1	Low	The impact is very unlikely to occur under normal operating conditions but may occur in exceptional circumstances

Impact Significance Level is assigned according to the Likelihood of Occurrence cross-tabulated with the Consequence Rating Criteria as shown in Table 6-5.

**Table 6-5 Impact Significance Levels**

		Consequence Rating					
		Negligible 1	Minor 2	Moderate 3	Major 4	Critical 5	Beneficial B
Likelihood Rating	Low L=1	1	2	3	4	5	+
	Moderate M=2	2	4	6	8	10	++
	High H=3	3	6	9	12	15	+++

**Legend**

Consequence Rating	Likelihood L- Low (1) M- Medium (2) H- High (3)	Significance	
1- Negligible		+ to +++	Beneficial
2- Minor		1 to 3	Low
3- Moderate		4 to 9	Medium
4- Major		10 to 15	High
5- Critical			
B- Beneficial			

### 6.1.3 Management of Impacts

The following apply for the different levels of impact significance:

- Low significance: These impacts are considered to be acceptable. Implementation of mitigation and monitoring measures are required to ensure these impacts remain at low significance. Management of these impacts is the responsibility of the project proponent, and the contractors and consultants involved in the project implementation.
- Medium Significance: It must be demonstrated that the significance of these impacts cannot be reduced further. These impacts must be managed in conjunction with affected stakeholders or population in a manner defined during the ESIA process.

- High significance: These impacts are not tolerable. They are likely not to be acceptable to affected populations even with compensation. Measures to reduce the significance of the impacts to Medium or Low need to be identified. This may involve project re-design, consideration of alternatives meeting the same objectives or any other means to reduce the significance of the impact. The final decision on impact acceptability must be made in conjunction with affected stakeholders in a manner defined during the ESIA process.
- Beneficial: These are positive impacts that should be maintained by the project proponent. Proponents should demonstrate through the implementation of the monitoring plan that these impacts remain positive and to the extent possible, enhance their benefits through complementary measures.

Residual impacts refer to those effects of a project predicted to remain after the application of mitigation measures. Residual impacts will be scored for significance after all possible mitigation measures are applied.

## 6.2 PRE-SCREENING OF POTENTIAL SOURCES OF IMPACTS

Based on a literature review of the impacts of similar projects, international standards and guidelines, in addition to a detailed review of the project as described in section 4, the various impacts of the project were pre-screened according to the phase of the project activity as well as the pathway of the impact. The results of the pre-screening process are summarized for the construction phase, and later during market operation in Table 6-6 and Table 6-7, respectively.

The extent of impact depends primarily on the various management practices that would be adopted during each phase of the Market upgrade process, and it is anticipated that the project design will evolve to consider the recommendations from this ESIA where applicable, as well as operational design elements which will be clearer going forward.

**Table 6-6 Potential Impacts during the Construction Phase of the Market Upgrade and the Relocation Site**

Sources of Impacts during Construction	Potential Impacts during Construction
Mobilization/ operation/ demobilization of Powered Mechanical Equipment	<ul style="list-style-type: none"> <li>• Increase in air pollutants emissions.</li> <li>• Increase in vibration and sound levels.</li> <li>• Potential impacts on geology, hydrogeology, soil, and water resources</li> <li>• Nuisance to surrounding sensitive receptors due to air and dust emissions in addition to vibration and noise generation.</li> <li>• Potential health and safety hazards to workers and the public</li> <li>• Potential accidents.</li> </ul>
Demolition works (only applicable to the Market Site)	<ul style="list-style-type: none"> <li>• Airborne particulates (dust) from the demolition of structures</li> <li>• High vibration and sound levels.</li> <li>• No impacts are anticipated on fauna and flora given the predominantly urban nature of the market project area.</li> <li>• Nuisance to surrounding sensitive receptors due to air and dust emissions in addition to noise generation.</li> <li>• Generation of demolition waste to be disposed of</li> </ul>

Sources of Impacts during Construction	Potential Impacts during Construction
	<ul style="list-style-type: none"> <li>Potential health and safety hazards to workers and the public, potential accidents</li> </ul>
Site clearance, grading, and excavation activities	<ul style="list-style-type: none"> <li>Airborne particulates (dust) from soil disturbance</li> <li>Increase in vibration and sound levels.</li> <li>No impacts from clearance, grading and excavation works are anticipated on fauna and flora given the predominantly urban nature of the market project area.</li> <li>Soil disturbance and potential impacts on geology, hydrogeology, and groundwater resources (e.g., changes in water drainage, erosion, runoff, sedimentation, grading)</li> <li>Nuisance to surrounding sensitive receptors due to air and dust emissions in addition to noise generation.</li> <li>Generation of excavation waste</li> <li>Potential health and safety risks and hazards to workers and the public and potential accidents</li> <li>inadequate compensation support</li> </ul>
Construction works	<ul style="list-style-type: none"> <li>Airborne particulates (dust) from works and from trucks involved in the works and the transport of materials</li> <li>Noise generation</li> <li>Traffic congestion around the market area</li> <li>Potential contamination of soil and water resources from inadequate storage of raw materials (including hazardous material), accidental spills, inadequate storage and disposal of domestic solid waste, demolition waste and of wastewater</li> <li>Nuisance to surrounding sensitive receptors due to air and dust emissions, noise generation and traffic congestion.</li> <li>Potential health and safety hazards to workers and the public</li> <li>Depletion of natural resources (water, sand, gravel, etc.)</li> <li>Generation of construction waste and wastewater <ul style="list-style-type: none"> <li></li> </ul> </li> <li>Borehole drilling and electrical systems installation pose health concerns on workers' and the community</li> </ul>
Movement of trucks to transport material and people in and out of the construction site	<ul style="list-style-type: none"> <li>Increase in sound levels, air and dust emissions.</li> <li>Increased traffic volumes and congestion</li> <li>Potential increase in vehicular accidents in the community</li> </ul>
Storage of fuel and raw materials on site	<ul style="list-style-type: none"> <li>Potential for fuel and oil spills leading to contamination of soil, water resources and air</li> <li>Air pollution from exposed piles of raw materials</li> <li>Potential runoff from exposed piles of raw materials leading to contamination of water bodies</li> </ul>
Upgrade of the market	<ul style="list-style-type: none"> <li>Potential loss of property (business space, residence, fixed structures, etc.) and/or livelihoods because of temporary relocation of the market and demolition of fixed structures.</li> </ul>
Inadequate management (handling and disposal) of solid domestic and construction waste (including empty cement bags, piles of	<ul style="list-style-type: none"> <li>Contamination of soil, water resources and air</li> <li>Aesthetic nuisance</li> <li>Increased risk of rodents, pests, and consequently diseases and health problems.</li> </ul>

Sources of Impacts during Construction	Potential Impacts during Construction
sand and dirt due to excavation, etc.) and domestic wastewater	

**Table 6-7 Potential Impacts during the Operation Phase of the Market Upgrade and the Relocation Site**

Sources of Impacts during Operation	Potential Impacts during Operation of the Market Upgrade	Potential Impacts during Operation of the relocation site
Operation of the Market	<ul style="list-style-type: none"> <li>• Improvement of livelihoods</li> <li>• Enhanced market operations that are made easier (storage of goods, selling operations and organization, enhanced power supply, health services, etc.)</li> <li>• Potential attraction of more youth to venture into trade business.</li> <li>• Increase of the business stability</li> <li>• Improved sanitation and public health (from cold storage of perishable food products, availability of restrooms, improved sanitation and waste management, etc.)</li> <li>• Potential reduction of congestion in the market</li> <li>• Increased revenues to the local Council and traders</li> <li>• Potential economic growth</li> <li>• Reduced flood risk and resulting damages.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance of the traders' livelihood during the market upgrade period</li> <li>• Potential loss of regular customers</li> <li>• Improved sanitation and public health (cold storage of perishable food storage, availability of restrooms, improved sanitation and waste management, etc.)</li> <li>• Potential increase of traffic congestion at the relocation site</li> </ul>
Solid waste and wastewater generation	<ul style="list-style-type: none"> <li>• Reduction in pollution, nuisance, and public health hazards from solid waste and wastewater with the adoption of a sound solid waste management plan, creation of restrooms and improved sanitation and wastewater disposal.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in pollution, nuisance, and public health hazards from solid waste and wastewater with the adoption of a sound solid waste management plan, creation of restrooms and improved sanitation and wastewater disposal</li> </ul>
Maintenance of the market	<ul style="list-style-type: none"> <li>• Potential noise disturbance in the market area</li> <li>• Potential temporary interference with market operations</li> <li>• Increased generation of solid waste from maintenance activities</li> </ul>	<ul style="list-style-type: none"> <li>• Potential noise disturbance in the relocation site</li> <li>• Potential temporary interference with relocation site operations</li> <li>• Increased generation of solid waste from maintenance activities</li> </ul>

### 6.3 SOURCES OF CUMULATIVE IMPACTS

Cumulative impacts refer to the successive, incremental, and/or combined effects of an action, project, or activity. For practical purposes, the identification and management of cumulative impacts are focused on those recognized as significant based on concerns raised by stakeholders including affected traders. These impacts are only considered where the ESIA process predicts significant residual impacts, even after mitigation measures have been applied.

Cumulative impacts arise from the combined influence of a project activity with other past, present, and future human activities. They result from interactions between different actions, between actions and the environment, and among various environmental components. The following cumulative impacts will be considered during the assessment of the Project's impacts:

- Air Emissions from existing dust conditions surrounding the market (including from weather conditions as cited in Section 4.1.4), from existing generators and equipment, unpaved roads, and from improper management of waste generated.
- Noise emissions related to the activities in the area (market business as usual operation, transportation of goods, visitors, etc.)
- Surface and Groundwater pollution due to improper disposal of waste and sewage, untreated wastewater discharges from existing cesspools, and in the absence of a wastewater treatment plant in the city.
- Waste emissions due to improper waste disposal, collection, and management at the city level.
- Existing traffic around the market area.

Whenever applicable, the effect of these potential cumulative impacts on the different receptors will be taken into consideration as part of the subsequent assessment of project-related impacts.

### 6.4 IMPACT ASSESSMENT AT THE MAKENI CENTRAL MARKET SITE

Based on the feasibility study, preliminary design and desk reviews, the environmental and social impacts from the Makeni Market site upgrade (demolition and construction), operation and decommissioning are assessed and presented below.

#### 6.4.1 Emissions

##### 6.4.1.1 Air Quality

- **During Construction**

In general, impacts on air emissions are expected during the construction phase of the project, since activities such as demolition, the transport of raw materials, operation of equipment and machinery, and use of generators on construction sites are necessary and unavoidable. Dust generated from demolition works, site clearance and excavation, as well as the movement of vehicles on dusty roads, can lead to significant nuisance. The resulting dust particles may pollute the local atmosphere around the site, posing potential health risks for workers and individuals near the site, including respiratory complaints and diseases.

Furthermore, air pollution is likely to occur due to emissions from various activities, including fuel combustion in equipment engines, power generators, concrete batching plants, mixers and pumps, operational vehicles, and paving activities. These emissions comprise hydrocarbons and other gases such as carbon monoxide, carbon dioxide-12, nitrogen oxides, sulfur oxides, and particulate matter, which have the potential to pollute the air and adversely affect the health and well-being of people, crops, and sensitive natural fauna and flora. However, these impacts can be mitigated through the application of minor mitigation measures.

In addition, workers might be exposed to asbestos during the demolition phase. Asbestos, the generic term for a group of naturally occurring, fibrous minerals known for its tensile strength, flexibility, durability, poor heat conduction and relative resistance to fire and chemical attack (WHO, 2014; IARC, 2018), is harmful to human health. The exposure to asbestos causes a wide range of Asbestos-Related Diseases (ARDs) such as asbestosis; lung cancer; mesothelioma, and gastrointestinal cancer. To avoid such consequences on workers and the surrounding community (especially traders who do not need to relocate), the presence of asbestos in existing market structures must be assessed by an Expert; and in case it is found to be present, demolition activities should be performed following the Occupational Safety and Health Administration (OSHA) standards and the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation as summarized in the mitigation measures presented in the mitigation table (section 8.2).

In addition to on-site air quality impacts, indirect air quality impacts may arise offsite, primarily from quarrying activities associated with the extraction of aggregate materials. Particulate matter and gaseous emissions generated during the extraction, transport, and processing of aggregates can contribute to air pollution in surrounding areas, potentially affecting local communities, nearby receptors and the broader environment.

- **During Operation**

It is anticipated that the project will have beneficial impacts on air quality. The project interventions to improve infrastructures including renewable energy (solar panels installation), road improvement, etc. will reduce emissions and improve air quality within the market site and community. By introducing renewable energy in addition to the national supply relying on fossil fuels, the project will help reduce greenhouse gas (GHG) emissions that contribute to climate change, as well as air pollutants emissions.

If not managed properly, operating activities at the market may also lead to air pollution and odor emissions. Potential issues include prolonged piling of solid waste, rotting foodstuffs particularly vegetables and meats, inadequate cleaning of sanitary facilities, on-site waste burning (if applicable), and emissions and odors from full or improperly emptied septic tanks. However, the provision for cold storage in the market upgrade will reduce the risk of decay of perishable food products, and thus the emission of odors. Moreover, if the upgraded market attracts more traffic compared to the current situation, this will lead to increased emissions (gaseous, particulate and GHG) from vehicles. Finally, the operation of the generator as a backup source of energy for the market will lead to air emissions, particulate matter and GHG emissions.

- **During Decommissioning**

Air quality is expected to be negatively impacted by demolitions works, debris transport and waste handling, which may exacerbate respiratory conditions among workers and nearby communities. Dust and particulate matter will be generated during demolition and waste transport, while emissions from equipment and vehicles will further contribute to air pollution. In case any waste resulting from waste disposal is burned, this might result in harmful air emissions (in addition to regular combustion emissions), depending on the components of the waste.

#### 6.4.1.2 Noise

- **During Construction**

Noise generated by construction activities would be a function of the noise levels generated by the type and amount of equipment operating at any given time, the timing and duration of construction activities, the proximity of nearby sensitive receptors, and the presence or lack of shielding at these sensitive receptors. Construction noise levels would vary on a day-to-day basis during each phase of construction depending on the specific task being executed. In general, noise levels at receptors near the proposed project would be higher than ambient noise levels during the day, especially during demolition, excavation, and operation of heavy equipment.

Construction activities anticipated by the project would include demolition of existing structures, earthworks, granular bases preparation, concrete and structures construction, drainage, sewer and water supply networks provision and construction, etc. Noise from such activities will create a nuisance for workers, traders who do not need to relocate, and people residing near the construction site. Some common impacts of noise include sleep disturbance, hearing loss, increases in blood pressure, heart rate and cardiac output, and interference with communication. Demolition works are expected to cause high noise levels. However, traders within the hoarding area and its immediate vicinity who will be most affected by such noise, will be relocated to a sufficiently distant site, thus avoiding their exposure to such noise levels. Moreover, the works will be scheduled during daytime (7:00 a.m. to 7:00 p.m. at most) and thus will not lead to disturbances in the market vicinity at night. Construction workers and staff will be exposed to such construction noise, requiring protective measures.

Baseline noise measurement results ranged between 55.8 dBA to 95.0 dBA at the surveyed locations, with an average of 73.4 dBA, slightly exceeding the WB standard of 70 dBA (for commercial areas) for daytime.

In addition to on-site impacts on noise, indirect noise impacts are expected to arise offsite, primarily from quarrying activities associated with the extraction of aggregate materials. Noise will be generated during the extraction, transport, and processing of aggregates, leading to impacts on surrounding areas, potentially affecting local communities, nearby receptors and the broader environment (mainly fauna that might be present nearby).

The negative impacts of the high vibration levels will be limited to the demolition and construction phase and can be reduced by implementing a set of mitigation measures (Section 8).

- **During Operation**

The upgraded market will be a hub for trading, hosting numerous traders, workers, helpers and customers at any given time, and elevated noise levels in this area may be a source of disturbance for users within the market and for nearby communities.

High noise levels will also be caused by vehicular movement for delivering goods to the market, grinding activities in the market, operation of the power generator, and maintenance activities, in addition to the crowd present at the market. This impact will be reduced by the implementation of the mitigation measures presented in the ESMP table (section 8.2)..

- **During Decommissioning**

During decommissioning, high noise levels will be generated by demolition equipment and their activity, trucks, and heavy equipment. This noise pollution may cause discomfort and nuisance for workers, nearby traders and residents. Prolonged exposure could lead to hearing damage/ loss for workers if no protective measures are adopted. Common impacts of high noise levels on receptors (including traders along roads adjacent to the market building, and nearby residents) include sleep disturbance, hearing loss, increases in blood pressure, heart rate and cardiac output, and interference with communication. The fact that upon decommissioning the traders will have left the market structure reduces the number of receptors that will be impacted to the workforce mainly, and any nearby occupants.

#### 6.4.1.3 Wastewater Generation

- **During Construction**

The estimated domestic sewage generation from workers on site is estimated at around 48 liters per capita per day. However, the number of workers to be hired is not known at this stage and should be determined by the selected contractor. Construction workers and site staff will generate sewage that, if discharged without treatment, can contaminate soil, surface water, groundwater, and cause odor generation. Moreover, wastewater may result from concrete pouring, curing and washing of mixers, and from cleaning and dust suppression on site. Such slurry has a high sediment content that could contaminate water bodies and resources.

If appropriate sanitary facilities for construction workers and site staff are not provided and no strict rules of hygiene are maintained, domestic wastewater may find its way into the ground and groundwater. If septic tanks used for sanitary facilities are not leak proof and experience leakage, or if they are improperly emptied and discharged onto land or into water courses, there is a potential risk of groundwater pollution. This risk is heightened by the underlying granitic rocks, which may form low yielding aquifers in the area.

If vehicles are washed onsite without proper containment of washdown water, pollutants may seep into the ground and contaminate the groundwater.

- **During Operation**

During operation, the proposed facility is anticipated to host a significant number of traders and visitors daily. Market traders, workers, and helpers will generate slightly less than 110,736 L/d of wastewater estimated from the sanitary facilities and from washing and cleaning activities in the market. The generated wastewater will be collected in septic tanks that will

be emptied in a nearby licensed wastewater treatment facility. This will lead to beneficial impacts on soil, water resources and public health. However, should any leakage from the septic tank, overflow of the wastewater from the septic tank, they will lead to soil and groundwater contamination and to public health risks, the emission of unpleasant odors, attraction of pests, and contribution to the spread of waterborne diseases.

- **During Decommissioning**

During decommissioning, there is a potential for wastewater generation from site cleaning, water spraying, equipment washdown, and temporary worker facilities (in the absence of a labor camp, such impacts will be lower than if a camp is established). If not managed properly, this wastewater could contribute to soil, surface and groundwater contamination, and generate odors.

#### 6.4.1.4 Solid Waste

- **During Construction**

Considerable amounts of solid waste are expected to be produced during the demolition, site preparation, and construction phase. Demolition waste will consist of concrete, wood, metals, thatch and other materials from which the existing market structures were made. Construction waste streams will include standard construction materials such as concrete waste, timber, wooden scaffolding, packaging materials, useless or damaged equipment/materials, excavated earth materials, etc. Approximately 3,916 m<sup>3</sup> of excavation waste (soil) will be generated from site preparation. Inadequate management and disposal of construction waste, such as heavy waste (large, bulky and dense materials) can lead to soil compaction and chemicals, paints or hazardous substances, etc., can lead to soil and water (surface/ground) contamination.

In addition, domestic waste will be generated by the workers on site such as unwanted materials, food leftovers, broken equipment and rags. Improper management and disposal of these waste streams could affect the visual appearance of the existing market site and its surroundings, contaminate soil, water, and air quality, and increase public health risks and diseases associated with elevated levels of chemicals and pollutants.

- **During Operation**

The operation phase of the project is expected to generate a significant volume of waste, approximately slightly lower than 519 Kg per day from traders, workers and helpers, resulting from packaging materials, food products sold in the market, and from human occupancy. Improper storage and disposal of this waste could lead to littering, blockages in drainage channels, contamination of soil, surface water and groundwater, and potential public health hazards.

During the operation phase, effective solid waste management (including healthcare waste) will be a collective responsibility shared among various stakeholders, including the City Council, Traders, visitors (customers), and licensed waste handlers. The market upgrade is expected to have a positive impact on waste management, as its design will incorporate a dedicated space for waste collection, enhancing overall waste handling practices.

Additionally, improper disposal/ management of sludge generated from wastewater storage in the septic tanks may have potential negative impacts on air (including odor generation), soil and water quality.

Furthermore, the waste generated from solar panels and batteries contains hazardous materials that may leak or release harmful substances (especially batteries). If not disposed of properly, this waste can pose significant environmental and health risks.

- **During Decommissioning**

During decommissioning, demolition activities are expected to generate substantial quantities of solid waste, including timber, tiles, scrap metals, and stones in addition to domestic waste from workers, solar panels and batteries from solar systems. Improper management of this solid waste can lead to environmental degradation, including contamination of soil, water and air, soil compaction, aesthetic nuisance, and could increase public health risks and diseases associated with elevated levels of chemicals and pollutants.

#### 6.4.1.5 Accidental Releases

- **During Construction**

The potential sources of accidental spills in this project include chemicals (paint, solvents), fuel and oils for generating sets as part of equipment operations and maintenance during the construction phase (including off-site at quarrying sites where construction materials will be extracted).

These spills may contain BTEX such as benzene and toluene and methyl tertiary butyl ether (MTBE). These monocyclic aromatic hydrocarbons tend to readily evaporate from surface spills and biodegrade under aerobic and anaerobic conditions given their relatively good solubility and volatility, particularly MTBE and benzene. Spills consisting of BTEX; Poly Aromatic Hydrocarbons (PAH), chlorinated hydrocarbons, as well as heavy metals such as Nickel, Copper, Chromium and Zinc persist in the receiving environment, and when mixed with soil, they tend to adhere and accumulate due to their low evaporation and biodegradability.

A back-up generator will be present on-site during the construction phase. There is a high risk of accidental spills during maintenance on site if no precautionary measures are in place.

The rocks underlying the project site are mainly granitic rocks that may form low yielding aquifers in the area. Hence, releases at the project site may potentially contaminate such aquifers.

- **During Operation**

A back-up generator will be present on-site for the market operation. The potential sources of accidental spills in this project include chemicals such as paint and solvents, fuel and oils used for generating sets, as part of equipment operations and maintenance during the operation phase.

These spills may contain BTEX such as benzene and toluene and methyl tertiary butyl ether (MTBE). These monocyclic aromatic hydrocarbons tend to readily evaporate from surface spills and biodegrade under aerobic and anaerobic conditions given their relatively good solubility and volatility, particularly MTBE and benzene. Spills consisting of BTEX; Poly Aromatic

Hydrocarbons (PAH), chlorinated hydrocarbons, as well as heavy metals such as Nickel, Copper, Chromium and Zinc persist in the receiving environment, and when mixed with soil, they tend to adhere and accumulate due to their low evaporation and biodegradability.

There is also a high risk of accidental spills during maintenance on site if no precautionary measures are in place.

Additionally, the rocks underlying the project site are mainly granitic rocks that may form low yielding aquifers in the area. Hence, releases for the project site may potentially contaminate such aquifers.

- **During Decommissioning**

During decommissioning, the use of fuel and oil for machinery operation and maintenance, as well as the potential use of chemicals, may result in leaks if not handled and managed properly. This can lead to soil and groundwater contamination.

#### 6.4.2 *Depletion of Resources*

##### 6.4.2.1 *Energy Resources*

- **During Construction**

During construction, electricity will be supplied from the National Electricity Distribution and Supply Authority and by a backup generator. Fuel for the operation of construction and demolition equipment and machinery will also be needed on a daily basis, in addition to fuel for quarrying equipment offsite (indirect impact). The impact on energy consumption during the construction phase is thus expected to be high.

- **During Operation**

During operation, electricity will be mainly supplied by the National electric power supplier's grid. In addition, a diesel generator and solar power, including panels and batteries, will serve as secondary sources of energy. The impact on energy consumption during the operation phase is also expected to be moderate.

- **During Decommissioning**

Decommissioning involves the use of heavy machinery and equipment that rely on fuel, resulting in increased energy demand and high fuel consumption. Additionally, the decommissioning process includes the removal of electrical installations and renewable energy installations, such as solar panels, which may lead to the loss of energy resources if these are not repurposed.

##### 6.4.2.2 *Water Resources*

- **During Construction**

The construction of the market will necessitate water for construction purposes such as spraying for dust control, concrete curing and cement mixing, etc. In addition, a significant number of workers on site and the establishment of temporary facilities (excluding labor camps), leading to a high demand for water among construction staff and workers. If water

management is not effectively implemented during this phase, pressure on the local water supply, and thus stress on the low-yielding aquifer beneath the market may increase.

In addition to the on-site water demands, indirect impacts may arise offsite, particularly from the increased extraction of aggregate materials, which may place pressure on local water resources in terms of water required for quarrying operations, potential impacts on water quality from runoff and sedimentation, and reduced soil permeability and rainwater infiltration – and thus groundwater recharge – from the loss of soil and vegetation cover.

- **During Operation**

Water will be required for the operation of the upgraded market, for washing and cleaning purposes, and for the lavatories. Given the large number of market users (traders, their helpers and workers, and customers) and the size of the market, a significant volume of water, slightly lower than 138,420 L/d will be consumed by market traders, workers and helpers. Water will be sourced from a solar-powered borehole that will be dug on site and will be stored in one underground concrete tank and overhead tanks. Moreover, the market will be equipped with an underground tank for the storage of rainwater and its reuse in WC water boxes (for flushing purposes), which will alleviate water extraction from the borehole.

If water management is not implemented properly and efficiently during the operation phase, increased pressure on the low yielding aquifer beneath the market may potentially occur given that water will be supplied from a solar-powered borehole that will be dug on site.

- **During Decommissioning**

Water may be required for dust suppression during demolition, cleaning of equipment, in addition to domestic use (including potable water) by workers, potentially increasing demand on local water resources.

#### 6.4.2.3 Topography, Soil Erosion and Collapse from Grading, Trenching and Excavation

- **During Construction**

Site clearance, grading and excavation activities are expected to occur and impact surface drainage and ground permeability, thus potentially reducing ground infiltration. Thin surface soil and underlying bed rock are to be excavated. During the wet season, this would lead to increasing runoff and adding suspended solids to surface water, which will potentially increase the risk of flooding in this flood prone area.

Material stockpiles such as sand that are neither contained nor covered during rainfall can lead to erosion and transportation by runoff water.

The activities are only temporary in nature, but the main impact relates to lost soil and the paved areas from which stormwater runoff will increase and infiltration to groundwater will decrease, potentially increasing the risk of flooding.

In addition to the direct impacts from site activities, the sourcing of aggregate material for the project is associated with quarrying operations elsewhere in Sierra Leone, which can have offset indirect impact associated with construction activities at the Makeni Central Market. Quarrying activities, if not properly managed, may lead to land degradation and erosion, including the loss of topsoil and disruption of local habitats and ecosystems. These

activities can also exacerbate the risk of erosion and further reduce land stability in surrounding areas, potentially affecting local topography and increasing the likelihood of further environmental degradation.

- **During Operation**

As stated above, the activities are only temporary in nature, limited to the construction phase.

- **During Decommissioning**

During decommissioning, the use of heavy machinery can disturb the topsoil, leading to erosion. Furthermore, the storage of heavy materials and equipment can compact the soil, reducing its fertility and altering the natural landscape. Soil contamination may occur from hazardous materials, such as metals or oils present in construction waste, rendering the land unsuitable for future uses like agriculture or development. After decommissioning, if the land is repurposed for different activities, this could result in land-use conflicts or modifications and limitations as a result of contamination.

#### 6.4.2.4 Biological Resources

- **During Construction**

The impact on biodiversity during the clearance and excavation of market infrastructure will be negligible since the market is already developed and existing, ruling out the need to clear or disturb any biodiversity beyond the current boundaries. The main construction activities having negative impacts on biodiversity are earth-moving activities, generation of noise, construction and demolition waste materials, and wastewater effluent discharges. Waste resulting from demolition and construction works and activities can harm biodiversity in case it is dumped at or near sensitive receptors instead of being removed from the project site and properly disposed of.

Moreover, indirect impacts on biodiversity and habitats may arise offsite from the extraction of aggregate materials, which may place pressure on fauna, flora and their habitats in terms of threatening already vulnerable, threatened or endangered species, loss of vegetation cover, ecosystems and habitats.

- **During operation**

Given the limited existing biodiversity, the project's operation activities are anticipated to cause minimal additional disruption to the ecological environment. The main potential impacts on biological resources during the operation phase could be associated with inadequate management of solid waste and wastewater, and the possibility of septic tank malfunctioning and wastewater leakage, which could lead to negative effects on the limited site biodiversity.

- **During Decommissioning**

Decommissioning activities often involve the destruction of plants if the market had landscaped green spaces.

Biodiversity around the market is limited given the urban nature of the site. However, wildlife that may have adapted to the market's environment such as small mammals and insects,

could lose their habitats/ have to relocate. Demolition activities lead to the generation of noise, construction and demolition waste materials, and wastewater effluent discharges. Waste and wastewater resulting from demolition works and activities can harm biodiversity in case they are dumped at or near sensitive receptors instead of being safely disposed of.

### 6.4.3 Social Impacts

#### 6.4.3.1 Socio-economic

- **During Construction**

##### **Negative Impacts:**

The proposed market upgrade will temporarily disrupt current market operations and services provided to residents, leading to livelihood disruptions for traders and their workers, temporary loss of selling spaces, permanent loss of assets and structures, physical displacement and integration challenges for PAPs and vulnerable groups at their relocation site. The outcome of the census, asset and inventory survey (RP survey) indicated that there are various types of fixed assets under private ownership that will be impacted by the demolition works. These assets are used by the traders and many of them are fixed since they cannot be moved as the traders transfer to their relocation site. Examples of these include a single structure used as a residential dwelling, fixed shelves and tables, toilet facilities, wooden doors, cement walls with steel doors, and three privately owned plots of land.

The proposed project will result in resettlement impacts, primarily affecting those who earn their livelihood or reside within the area of influence. These impacts will be short-term during the relocation process from the existing market to their relocation site, and during the process of relocating once again back to the upgraded market and will comprise loss of business income as businesses will not be able to function during this time period. Thus, traders will face temporary income loss, which will be compensated under a transitional support to reflect the loss of income for the period of time when the business is not able to fully function prior to displacement, as explained in the RP report prepared for the project. Relocation costs such as transportation of assets and products will also be covered by the project under the practical support. Fixed assets and structures that cannot be moved will be compensated at the market price of purchasing and transporting to the market location, these assets in new condition, the cost of constructing/ fixing/ installing these assets, and a disturbance allowance of 10% of cash compensation for full replacement, or at a rate determined by the MLHCP.

Furthermore, given that the design of the relocation site in Campbell Street and Savage Street could accommodate 1,300 traders (i.e. less than the total number of traders currently active in the central market), the Traders' Union Executive and the Local Council Administration engaged with 308 out of 366 remaining traders who cannot be accommodated at the relocation site due to the nature/ type of the goods they sell and the site arrangement. This engagement took place in January 2025 to explore potential relocation spots for them. These traders expressed their willingness to find spaces in other markets across the city throughout the construction period, and requested that the project should provide them with additional support apart from their disturbance allowances.

Consequently, a lumpsum of NLE 1,715 per trader was adopted for this group of traders in addition to the disturbance allowance.

Livelihood restoration measures (non-monetary) such as the provision of improved equipment and training on financial literacy skills will also be planned as part of the RP. Workers will also entail loss of income during the relocation period and will be compensated for it under the disturbance allowance.

The trader and their family occupying the mixed-use commercial and residential structure will temporarily lose their residence during the construction phase. To mitigate this, the RP, recommends providing rental fees for a period of two years (duration of the market upgrade works) for accommodation near the relocation site, in addition to a disturbance allowance of 10% of cash compensation for full replacement, or at a rate determined by the MLHCP.

The owners of the three structures that are fully owned by traders along with the associated lands will be compensated at full replacement cost for their losses of all private immovable assets (including lands) that will be demolished/taken over for the market upgrade, as required by ESS5, in addition to a disturbance allowance of 10% of cash compensation for full replacement, or at a rate determined by the MLHCP.

As for vulnerable PAPs, the RP recommends providing additional support to them based upon their source of vulnerability, such as:

- Details of the Compensation Agreement and GRM to be verbally read out by a MCC representative to illiterate heads of households;
- In-person support to guide young or child-headed, disabled, single-parent, elderly, and discriminated heads of households, orphans, households with more than five children through the RP implementation process to reduce anxiety and ensure they receive their compensation on time;
- In-person support for adult PAPs with mental disability;
- Practical support to address physical disability of PAPs (e.g., provision of tri-walkers, rollators, and other equipment).

These practical support measures for vulnerable PAPs will be designed on a case-by-case basis during RP implementation.

On the other hand, no physical impact such as the risk of accidents and nuisance from construction works, is expected to occur to the customers since they are not likely to visit the market whilst the upgrade works are ongoing.

Moreover, during construction, the market relocation process and the construction works may cause inconvenience to the surrounding and poor communities who are dependent on the market for their shopping and needs. In addition, the neighboring community and traders may have complaints and grievances regarding disturbances from the ongoing construction activities and disturbances. These may reduce accessibility to the market and the number of customers, leading to decreased business activities for traders who will not be relocated. Furthermore, potential social tensions and conflicts may arise if local employment expectations are not met, resulting in conflicts that could delay project implementation.

Additionally, without adequate labor conditions and contractual protection, workers may be at risk of receiving wages below the legally required minimum rate and could be pressured into agreements that disregard established work schedules and rest periods if contractors do not abide by local labor laws and WB guidelines.

Construction works also incur a potential risk of labor influx from other regions, introducing risks such as child labor, forced labor, theft, alcoholism, drug abuse, gender-based violence (GBV), sexual harassment (SH), sexual exploitation and abuse (SEA), and transmission of HIV/AIDS and other diseases. An influx of workers may further strain existing communal utilities and services, such as water supply, waste and sewage management, and healthcare facilities. Such labor may also compete with locals on job opportunities and increase unemployment rates.

In spite of the completed and planned consultations with PAPs on individual entitlements and compensation, some traders might express dissatisfaction with the compensation allocated to them, requiring efforts by the City Council and relevant authorities to resolve such issues through the GRM and avoid recourse to judicial measures.

Additionally, changes to the local landscape resulting from the works at the market may negatively affect the overall well-being of traders and the broader community during construction, but these will be reversed upon completion of the works.

All these impacts will be managed through the mitigation measures detailed in section 8 of this report, in addition to the plans developed for the smooth and compliant implementation of the project (LMP, GRM, GBV, GMS), which ensure social risks are minimized throughout the construction phase.

Given that an alternative relocation site has already been secured and a Resettlement Plan (RP) has been developed to assess and address the impacts outlined above, provide proper resettlement assistance, restore livelihoods, and offer support to empower traders and enhance their capacity to rebuild and strengthen their businesses post-relocation, the impacts resulting from the market upgrade and relocation are expected to be significantly mitigated.

In addition to the direct impacts from site activities, indirect impacts offsite, particularly from quarrying activities, could involve changes in local land use, aesthetic/landscape deterioration, and nuisance from quarrying activities and associated traffic, particularly if the extraction sites are located near agricultural, residential, commercial or touristic areas.

### **Positive Impacts:**

Despite the risks and challenges, the construction phase will **create opportunities for job** creation within the local community, especially for youth, whereby locals will be employed to undertake jobs at the construction site (the contract might employ 12 technical staff, 30 skilled technicians and 50 unskilled labourers of which 30% should be women employees throughout the construction period), contributing to poverty alleviation and reducing unemployment. Engagement in construction works may **equip local workers with new skills** and experience, which could improve their future employability in similar projects, and thus their livelihoods.

Furthermore, public consultations conducted during the planning process have actively involved the local community in key decisions, such as the allocation of business spaces. This inclusive approach **enhances transparency and community trust**, preventing dissatisfaction, minimizing opposition/ complaints/conflicts, and fostering collaboration between stakeholders during the market upgrade project implementation.

- **During Operation**

**Positive Impacts:**

The upgraded market would have direct positive socio-economic impacts due to the expected **increased income** for the traders within the market and their respective suppliers. The improved and organized working conditions would increase stability of the businesses and attract more customers.

As incomes rise, traders and their workforce can expect **improved standards of living**, including better housing, greater purchasing power, and improved health outcomes due to increased access to health services and a more stable income.

The **MCC can source revenue** from the traders in the upgraded market through organizing registration and collection of levies. This contribution will enable the council to finance its operations, including maintaining the market and carrying out other developments within the city.

The upgraded market will include fencing and security measures to **enhance safety** of traders and their goods. The market will include facilities that improve infrastructure and services such as ramps and stairs, a medical room/healthcare facility, sanitary facilities with disabled-accessible WC facilities, sewage management, a hot and cold-water plant room, a dedicated cold room, a security post, a janitor's room, loading and unloading bays, administrative room and overhead storage spaces. The road around the market will be also improved. When properly managed, the project will improve and enhance the overall working environment, providing a cleaner, safer and more efficient marketplace. This in turn will **improve business stability** and foster business growth. The upgraded market will **create new job opportunities** in the market such as for security personnel, and maintenance workers. Furthermore, traders might benefit from **capacity-building** programs including training in financial literacy and business management which will empower them to manage their businesses more effectively.

**Negative Impacts:**

However, given that the market will hold valuable goods and properties, ineffective site security and surveillance systems could attract thieves and potentially result in loss of property and lives.

Inadequate management of market operations may lead to complaints and grievances from both the neighboring community, customers, or among traders themselves. Issues such as noise, infrastructure problems, traffic congestion, and waste management could lead to dissatisfaction and conflicts that could affect the market's operation and reputation.

Similarly, ineffective management of essential services like water, electricity, waste disposal, and sanitation could negatively affect both market users and the surrounding community. Poor waste management and sanitation could lead to public health risks, while ineffective

use of water and electricity could reduce the overall efficiency of the market and cause added financial burden on the MCC and eventually on the fees to be paid by traders.

These impacts will be managed through the mitigation measures detailed in section 8 of this report, along with the plans developed (LMP, GRM, GBV, GMS, etc.) to ensure smooth and compliant implementation of the project across its phases.

- **During Decommissioning**

**Negative Impacts:**

Decommissioning and site closure can have significant socioeconomic impacts on the traders and the community. Similar impacts to those from the construction phase are expected to result from decommissioning of the market, requiring preparation of an RP. The closure may result in the loss of livelihoods for traders and workers who rely on the market for their livelihoods. Without proper relocation or alternative job opportunities, they and their families may experience financial instability and hardship, leading to economic decline and increased poverty within the community.

As the market closes and traders relocate, local businesses that depend on the market's daily operations may suffer if an alternative market is not provided. The absence of these businesses could lead to a decline in local economic activity, reducing income levels and customer traffic in the area. Furthermore, unemployment is likely to increase, especially if alternative job opportunities or an alternative market are not provided.

In addition, decommissioning works also incur a potential risk of labor influx from other regions, introducing risks such as child labor, forced labor, theft, alcoholism, drug abuse, gender-based violence (GBV), sexual harassment (SH), sexual exploitation and abuse (SEA), and transmission of HIV/AIDS and other diseases. An influx of workers may further strain existing communal utilities and services, such as water supply, waste and sewage management, and healthcare facilities. Such labor may also compete with locals on job opportunities and increase unemployment rates.

Relocation challenges for traders to an alternative site may hinder their ability to adapt and impact customer flow and operational costs, and residents may experience reduced access to goods and services if alternative markets are not easily accessible.

In addition, in the absence of clear communication and support during the closure, social unrest and protests may occur and vulnerable groups may be affected, worsening socioeconomic inequalities. Proactive planning for alternative livelihoods/ markets and support during the transition is crucial to address these challenges.

These impacts will be managed through the mitigation measures detailed in section 8 of this report, along with the plans developed (LMP, GRM, GBV, GMS, etc.) to ensure smooth and compliant implementation of the project across its phases.

**Positive Impacts:**

The decommissioning phase provides **opportunities for alternative development**. If the affected traders and workers are successfully relocated to a well-managed alternative market site with adequate infrastructure and services and proper facilities, they would benefit from increased customer traffic, and adequate working conditions, leading to the stabilization and growth of their businesses.

The decommissioning phase will create temporary employment opportunities in the deconstruction, relocation, and management of the market closure. Local workers may be hired for these tasks, contributing to short-term economic benefits.

If proactive planning is done during the decommissioning phase, affected traders can benefit from **support programs** such as livelihood restoration initiatives, skill-building workshops, and training tailored to their needs, which will improve their resilience and long-term economic stability

#### 6.4.3.2 *Health and Safety*

- **During Construction**

##### **Occupational Health and Safety:**

Similarly to any construction project, there is a risk of compromising human health and safety due to unforeseen events and accidents during the construction phase. Mismanagement of heavy machinery poses a threat to operators, and activities like steel works or welding may lead to injuries. Accidents involving machinery, equipment, or falls from heights, etc. are also possible. While some incidents may be minor, others could have severe consequences, including permanent disability or loss of life for construction workers.

Moreover, construction activities entail diverse sources of chemicals, construction waste, fugitive emissions and other hazards. These arise from earth excavation and movement, disturbed surface areas, unpaved roads, open storage piles, paving, asphalt application, machinery, and vehicles, among others. Workers at construction sites will have direct exposure to chemicals, dust, and air pollutants such as SO<sub>x</sub>, NO<sub>x</sub>, CO, and VOCs. Exposure to these emissions can lead to acute impacts such as respiratory problems and chronic impacts such as cancer. Therefore, implementing mitigation measures is crucial to minimize exposures and risks. Borehole drilling and electrical systems installation pose health concerns on workers' and the community. Workers may also face exposure to communicable diseases such as skin infections, sexually transmitted infections (including HIV/AIDS), tuberculosis and other infections due to close personal contact.

##### **Community Health and Safety:**

The construction works may also pose risks to the surrounding community through the increased heavy vehicle traffic that can lead to accidents, exposure to emissions and accidents from the works, affecting the health and safety of nearby pedestrians and residents.

In addition to the on-site health and safety hazards, indirect impacts may arise offsite, particularly from the extraction of aggregate materials. Quarrying operations pose health risks primarily to workers (dust and emissions, noise, accidents, etc.), and to surrounding communities (air and noise pollution, aesthetic nuisance, traffic, accidents, etc.) as well.

All these impacts can be mitigated through the implementation of the mitigation measures listed in the ESMP section (section 8).

- **During Operation**

##### **Occupational Health and Safety:**

The market upgrade aims to enhance safety and public health in Makeni market site through the implementation of key infrastructure improvements, including facilities such as a robust drainage system, reliable water supply, proper sanitation, and efficient waste management. The market will help protect traders, workers and customers from extreme weather conditions such as vulnerability to rainfall, floods, and heat from the sun. Additionally, the provision of security systems in the upgraded market will protect valuable goods, reduce theft, and ensure a safer environment for traders and customers alike, if properly maintained and operated.

However, if it is not properly managed, the project could pose potential risks. Ineffective management of market operations, routine maintenance, and emergency response protocols may lead to adverse outcomes such as property damage, crimes, public health risks, injuries, or even fatalities. Ineffective waste management can result in health hazards, including the spread of infections and diseases, pests and rodents, pollution and GHG emissions from dumping and burning, putrefaction of biodegradable waste, accumulation of non-biodegradable waste, aesthetic nuisance, as well as respiratory illnesses.

Additionally, vulnerable groups, including women and people with disabilities, may be particularly at risk of harassment or discrimination and unequal treatment of women, including disparities in pay, may also emerge as challenges during market operations.

#### **Community Health and Safety:**

The Makeni upgraded market may also present health and safety hazards to the surrounding community in case of inadequate waste management practices which can contribute to air, water and soil pollution.

Additionally, there is a risk of fire outbreaks within the market during its operation, stemming from factors such as electrical faults, or smoking-related incidents that can cause property damage and harm individuals present at the market or in its vicinity.

Furthermore, the upgraded modern market may increase congestion and security risks, including theft, physical altercation and petty crimes such as pickpocketing, and harassment, particularly affecting vulnerable groups including women and people with disabilities.

These risks will be avoided through the implementation of mitigation measures and ongoing monitoring. The regular evaluation of operations will be crucial to identify and address any emerging safety or security concerns effectively.

- **During Decommissioning**

#### **Occupational Health and Safety:**

The decommissioning phase can pose significant health risks for workers that may be exposed to the inhalation of dust and particulate matter generated during demolition activities, which can lead to respiratory issues and other long-term health complications. Additionally, exposure to hazardous waste materials, such as chemicals and heavy metals, can further increase the risk of serious health problems. The loud noise generated by machinery and work can lead to hearing impairment over time, while physical risks associated with working at heights or handling heavy materials can result in falls and injuries. Occupational accidents on site could lead to temporary or permanent physical injuries/impairment. Communicable diseases such as skin infections, sexually transmitted infections

(including HIV/AIDS), and tuberculosis could be transmitted due to close personal contact among workers.

### **Community Health and Safety:**

During the market decommissioning phase, community health and safety risks may arise from loud noise generated by heavy machinery and demolition activities, which can disturb nearby traders and residents. Mismanagement of decommissioning waste, such as improper disposal or uncontrolled dumping, may lead to environmental contamination, health hazards and aesthetic nuisance. Additionally, the movement of heavy vehicles transporting waste increases the risk of accidents in the surrounding area as well as traffic and noise nuisances. Inadequate safety measures during this phase can also result in incidents of sexual harassment or accidents that may pose serious threats to the well-being of residents and pedestrians/ market customers.

#### 6.4.3.3 Cultural (Tangible) and Intangible Heritage

The impact on archaeological features due to construction works and decommissioning is negligible, as there is no verifiable information on the presence of already existing relics, artifacts or any valuable items or sites of cultural significance within or around the project site. However, there is an existing cultural society bush around 200m from the market site.

A chance find procedure, detailed in Appendix 9, has been developed in line with WB ESS8 to address the potential discovery of previously unknown heritage or archaeological resources encountered during project implementation.

During the operation phase, the market upgrade could benefit the city's cultural and intangible heritage and enhance the aesthetics of the area since the well-designed market could provide space for local artisans and crafts people to sell their products, showcasing traditional crafts and supporting the preservation of cultural skills and techniques. The upgraded market could incorporate elements of local architecture and design reflecting the city's identity and can emphasize sustainable and traditional practices.

#### 6.4.3.4 Traffic

- **During Construction**

Construction activities are anticipated to significantly increase heavy vehicle traffic in the area during site preparation, the transportation of raw materials and construction waste. This surge in traffic is likely to cause congestion around the market. Areas that are expected to be cordoned off during works for truck access, materials unloading, laydown of equipment/machinery, etc. include the hoarding area delimited by the FS Consultants for the RP survey at the main market, outlined in Table 4-27. Upon closing the access roads due to the construction and for relocation purposes, the traffic will increase on the Rogbaneh road and possible congestion might occur around the Clock Tower, Campbell Street and Masuba Road areas.

Additionally, if transportation is conducted using overloaded or uncovered trucks, there is an increased risk of accidents and pedestrians. Furthermore, dust and spillage from fine earth materials during transit may exacerbate road conditions and negatively impact air quality.

Nearby shops and stalls are particularly vulnerable to these traffic-related impacts; the implementation of appropriate mitigation measures can help mitigate these impacts and reduce their severity.

In addition to the on-site traffic impacts, indirect impacts may arise offsite, particularly from the extraction of aggregate materials where traffic circulation will increase for the loading and transportation of construction materials. This will lead to associated air and noise pollution, and potential accidents.

- **During Operation**

During the operation phase of the Central Market, an increase in traffic is anticipated due to the movement of trucks transporting goods to and from the market, as well as incoming customers. This heightened traffic might cause traffic congestion, pose a risk of accidents or injuries to traders and visitors, particularly those with disabilities around the market premises, and lead to air and noise pollution.

- **During Decommissioning**

During the decommissioning phase, traffic from heavy trucks and machinery incoming to the site and transporting demolition debris and waste may increase, resulting in road congestion around the market area. This heightened traffic can lead to delays, accidents, air and noise emissions, and conflicts with existing road users.

#### 6.4.4 *Summary of Impacts for the Market Upgrade*

The Makeni central market site impacts during construction, operation, and decommissioning are summarized in Table 6-8, Table 6-9, and Table 6-10 respectively.

**Table 6-8 Makeni central market site impacts during construction (upgrade)**

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Emissions</b>										
<b>Air Quality</b>	Airborne particles (dust) from soil disturbance and demolition works, and from offsite quarrying	N/D	M	L	M	C	R	3. Moderate	3. High	9. Medium
	Fugitive emissions during construction works and odors from paving activities	N/D	M	L	M	C	R	3. Moderate	3. High	9. Medium
	Emissions from generators, machinery, and equipment (including from quarrying offsite)	N/D	M	L	S	C	R	3. Moderate	2. Moderate	6. Medium
	Potential Asbestos fibers dispersion from demolition and clearing of the existing structures	N/D	H	L	L	C	I	4. Major	2. Moderate	8. Medium
<b>Noise</b>	Change in vibration and noise levels from general demolition and construction activities, mobilization and operation of equipment & generators, and movement of vehicles on-site and offsite (at quarrying site)	N/D	H	L	L	C	R	4. Major	3. High	12. High
<b>Wastewater Generation</b>	Inadequate storage and disposal of domestic wastewater generated	N/D	H	L	L	O	R	4. Major	2. Moderate	8. Medium
<b>Solid Waste</b>	Demolition and Construction solid waste disposal	N/D	H	L	L	C	R	4. Major	3. High	12. High
	Inadequate storage and disposal of Domestic solid waste	N/D	M	L	L	C	R	3. Moderate	3. High	9. Medium
<b>Accidental Releases</b>	Accidental spills of chemicals (paint, solvents), fuel and oils on-site and offsite (at quarrying site)	N/D	H	L	L	C	I	4. Major	2. Moderate	8. Medium
<b>Depletion of Resources</b>										
<b>Energy Resources</b>	Electricity consumption and fuel consumption for generator, vehicles and equipment operation on-site and offsite (at quarrying site)	N/D	H	L	M	C	R	4. Major	3. High	12. High
<b>Water Resources</b>	Depletion of water resources	N/D	M	L	M	C	R	3. Moderate	2. Moderate	6. Medium
	Water depletion and quality deterioration from water	N/I	H	L	L	C	I	4. Major	3. High	12. High

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
	consumption, runoff and sedimentation, and reduced soil permeability									
<b>Topography, Soil Erosion and Collapse from Grading, Trenching and Excavation</b>	Alterations to the land surface, reduced ground permeability and water infiltration from site clearance, excavation and demolition activities, and sourcing of aggregate materials.	N/D	H	L	L	C	I	4. Major	3. High	12. High
<b>Biological Resources</b>	Loss of vegetation, fauna, flora and habitats from clearance, excavation, demolition, quarrying and inadequate disposal of resulting waste and wastewater	N/D	L	L	L	C	R	2. Minor	1. Low	2. Low
<b>Social Impacts</b>										
<b>Traffic</b>	Increase in traffic circulation from the transportation of construction materials and waste, traffic-related accidents or injuries, on-site and offsite (at quarrying site)	N/D	M	L	S	C	R	3. Moderate	2. Moderate	6. Medium
<b>Health and Safety</b>	Impact on workers' safety (including from accidents) resulting from improper handling and storage of construction materials, construction equipment handling and construction and demolition activities	N/D	H	L	L	C	R/I	4. Major	3. High	12. High
	Impact on workers' safety resulting from improper handling and storage of chemicals and solid waste generated related to demolition and construction activities Borehole drilling and electrical systems installation pose health concerns on workers' and the community	N/D	M	L	M	C	R	3. Moderate	3. High	9. Medium
	Impact on workers' and community health and safety resulting from exposure to occupational/ safety hazards (e.g., noise, air pollution, dust, fire hazards, etc.) and potential for accidents/ accidents and pedestrians, and disturbance to the nearby	N/D	H	L	L	C	R/I	4. Major	3. High	12. High

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
	community.									
<b>Socio-economic</b>	Resettlement impacts from the relocation of traders and integration challenges for the relocated traders into new market environment at their relocation site	N/D	H	L	S	C	R	4. Major	3. High	12. High
	Loss of livelihoods because of the planned interventions and relocation	N/D	M	L	S	C	R	3. Moderate	3. High	9. Medium
	Loss of private assets (land, structures...)	N/D	H	L	L	C	I	4. Major	3. High	12. High
	Possible social unrest among residents if they are not hired for the works	N/D	H	L	L	O	R	4. Major	3. High	12. High
	Grievances regarding construction activities from nearby traders and residents, and regarding relocation impacts from PAPs. And risk of conflicts between the market traders and the City Council in the allocation of temporary selling spaces.	N/D	M	L	L	O	R	3. Moderate	2. Moderate	6. Medium
	Risk of labor influx from other regions, child labor, forced labor, undesirable behavior such as theft, alcoholism, drug abuse, GBV and SH/SEA, and transmission of HIV/AIDS	N/I	H	L	M	C	R	4. Major	2. Moderate	8. Medium
	Job Opportunities for skilled and unskilled members of the community (the contract might employ 12 technical staff, 30 skilled technicians and 50 unskilled labourers of which 30% should be women employees throughout the construction period),, capacity building and skill development, and increased community participation.	P	-	-	-	C	-	Beneficial	3. High	Beneficial

**Table 6-9 Makeni central market site impacts during operation**

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Emissions</b>										
<b>Air Quality</b>	Change in overall atmospheric pollutant emissions (odor emissions from septic tanks, waste and food storage)	N/D	M	L	L	O	R	3. Moderate	2. Moderate	6. Medium
	Change in air emissions and GHG emissions (exhaust emissions and dust from traffic, generator's operation, and fuel-powered equipment that might be used in the market site)	N/D	L	L	L	O	R	2. Minor	3. High	6. Medium
<b>Noise</b>	Noise emissions from the daily market activities. Traffic, generator operation and maintenance activities	N/D	M	L	L	O	R	3. Moderate	3. High	9. Medium
<b>Wastewater Generation</b>	Treatment of domestic wastewater collected in septic tanks	N/D	L	L	L	O	R	1. Negligible	2. Moderate	2. Low
	Potential leakage of septic tanks where wastewater will be collected prior to treatment in wastewater treatment facility, or malfunction of the treatment system	N/D	H	L	L	O	R	4. Major	2. Moderate	8. Medium
<b>Solid Waste</b>	Solid waste (including healthcare waste) disposal resulting from operation activities	N/D	M	L	L	O	R	3. Moderate	2. High	6. Medium
	Improper disposal of sludge	N/D	H	L	L	O	R	4. Major	2. Moderate	8. Medium
	Waste generated from end-of-life solar panels and batteries	N/D	H	L	L	O	I	4. Major	2. Moderate	8. Medium
<b>Accidental Releases</b>	Spills and leaks from generators and maintenance activities Potential sewage overflow from the septic tank	N/D	H	L	L	O	I	4. Major	2. Moderate	8. Medium
<b>Depletion of Resources</b>										
<b>Energy Resources</b>	Electricity consumption and backup power systems for cold room, lighting and equipment, fuel consumption for generator and transportation of goods	N/D	M	L	L	O	R	3. Moderate	3. High	9. Medium
<b>Water Resources</b>	Water consumption for domestic purposes, washing and market cleaning	N/D	M	G	L	O	R	3. Moderate	3. High	9. Medium

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Biological Resources</b>	Loss of vegetation and biodiversity from inadequate management of solid waste and wastewater, and the possibility of septic tank malfunctioning and wastewater leakage	N/D	L	L	S	O	R	1.Negligible	1. Low	1. Low
<b>Social Impacts</b>										
<b>Traffic</b>	Transportation of goods and market customers leading to congestion and increasing the risk of accidents	N/D	H	L	L	O	R	4. Major	2. Moderate	8. Medium
<b>Health and Safety</b>	Impact on traders and workers Health and Safety resulting from improper routine maintenance or repairs and lack of emergency preparedness	N/D	H	L	L	O	R/I	4. Major	2. Moderate	8. Medium
	Impact on traders, workers, and community's health resulting from poor waste management and sanitation practices.	N/D	M	L	L	O	R	3. Moderate	2. Moderate	6. Medium
	Impact on traders and workers' Safety from risk of fire, inadequate management of security system, crimes, harassment and gender-based discrimination	N/D	H	L	L	O	R/I	4. Major	1. Low	4. Medium
	Creation of a safer environment in market area	B	-	-	-	O	-	Beneficial	3. High	Beneficial
	Improved community health and safety due to improved infrastructure and reduced exposure to pollutants	B	-	-	-	O	-	Beneficial	3. High	Beneficial
<b>Socio-economic</b>	Inadequate management of market operations, leading to health and safety risks and grievances from the surrounding community	N/D	H	L	L	O	R	4. Major	2. Moderate	8. Medium
	Potential impact on safety due to lack of adequate supervision, monitoring, and control	N/D	H	L	L	O	I	4. Major	1. Low	4. Medium
	Increased income, improved operating conditions for traders within the market and their suppliers, and more attractive market to customers leading to business stability	P	-	-	-	O	-	Beneficial	3. High	Beneficial
	Source of revenue to the City Council and potential for new job opportunities.	P	-	-	-	O	-	Beneficial	3. High	Beneficial

**Table 6- 10 Makeni central market site impacts during decommissioning**

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Emissions</b>										
<b>Air Quality</b>	Airborne particles (dust) from demolition works, debris transport and waste handling	N/D	M	L	M	D	R	3. Moderate	3. High	9. Medium
	Emissions from equipment and vehicles	N/D	M	L	S	D	R	3. Moderate	2. Moderate	6. Medium
<b>Noise</b>	Increased vibration and noise levels from general demolition, mobilization and operation of heavy equipment, and movement of vehicles	N/D	H	L	L	D	R	4. Major	3. High	12. High
<b>Wastewater Generation</b>	Site cleaning, washdown of equipment, and temporary worker facilities	N/D	H	L	L	D	R	4. Major	2. Moderate	8. Medium
<b>Solid Waste</b>	Demolition waste, domestic solid waste disposal, solar panels and batteries from solar systems	N/D	H	L	L	D	R	4. Major	3. High	12. High
<b>Accidental Releases</b>	Accidental spills of fuel, oils and chemicals	N/D	H	L	L	D	I	4. Major	2. Moderate	8. Medium
<b>Depletion of Resources</b>										
<b>Energy Resources</b>	Fuel consumption for vehicles and equipment operation Removal of electrical systems installations and renewable energy installations	N/D	M	L	S	D	R	3. Moderate	3. High	9. Medium
<b>Water Resources</b>	Increased demand on local water resources for dust suppression, site cleaning and equipment washing	N/D	M	L	M	D	R	3. Moderate	2. Moderate	6. Medium
<b>Soil Erosion and Collapse</b>	Soil erosion, compaction and contamination from the use and storage of heavy machinery and of heavy materials, and demolition activities	N/D	H	L	L	D	I	4. Major	3. High	12. High
<b>Biological Resources</b>	Habitat loss for small mammals and insects, loss of biodiversity at sensitive receptors where waste and wastewater from decommissioning might be dumped.	N/D	L	L	M	D	R	2. Minor	1. Low	2. Low
<b>Social Impacts</b>										

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Traffic</b>	Increase in traffic circulation and traffic-related accidents or injuries from the transportation of demolition waste	N/D	M	L	S	D	R	3. Moderate	2. Moderate	6. Medium
<b>Health and Safety</b>	Impact on workers' safety (including from accidents) resulting from improper handling and storage of materials and waste, demolition activities and equipment	N/D	H	L	L	D	R/I	4. Major	3. High	12. High
	Impact on workers' safety resulting from improper handling and storage of chemicals and solid waste (including hazardous components) related to demolition activities	N/D	M	L	M	D	R	3. Moderate	3. High	9. Medium
	Impact on workers' health and safety resulting from exposure to occupational hazards (e.g., noise, air pollution, dust, fire hazards, etc.), communicable diseases, and potential for accidents	N/D	H	L	L	D	R/I	4. Major	3. High	12. High
	Impact on community health and safety from high noise levels, inadequate management of demolition waste, and inadequate safety measures	N/D	M	L	M	D	R	3. Moderate	2. Moderate	9. Medium
<b>Socio-economic</b>	Loss of livelihoods, economic decline and increased unemployment.	N/D	H	L	S	D	R	4. Major	3. High	12. High
	Risk of labor influx from other regions, child labor, forced labor, undesirable behavior such as theft, alcoholism, drug abuse, GBV and SH/SEA, and transmission of HIV/AIDS	N/I	H	L	M	C	R	4. Major	2. Moderate	8. Medium
	Relocation challenges to alternative market or finding alternative income generating activity	N/D	H	L	M	D	R	4. Major	3. High	12. High
	Social unrest and protests during the closure	N/D	M	L	S	D	R	3. Moderate	2. Moderate	6. Medium

## **6.5 IMPACT ASSESSMENT AT THE MAKENI RELOCATION SITE**

Based on the feasibility study, preliminary design and desk reviews, the environmental and social impacts of the relocation site preparation, operation and decommissioning are assessed and presented below.

### **6.5.1 Emissions**

#### **6.5.1.1 Air Quality**

- **During Construction**

Air emissions are expected during the construction phase due to transportation of materials, operation of equipment and machinery, and use of generators. Dust from these activities may contribute to air pollution in the surrounding area and can cause significant nuisances and pose health risks to workers and nearby residents, including respiratory complaints and diseases. Emissions from fuel combustion in equipment, generators and vehicles, including hydrocarbons, carbon dioxide, sulfur and nitrogen oxides, and particulate matter, could impact air quality but can be mitigated with appropriate measures.

In addition to on-site air quality impacts, indirect air quality impacts may arise offsite, primarily from quarrying activities associated with the extraction of aggregate materials. Particulate matter and gaseous emissions generated during the extraction, transport, and processing of aggregates can contribute to air pollution in surrounding areas, potentially affecting local communities, nearby receptors and the broader environment.

- **During Operation**

During operation, improper management of food storage and waste can affect air quality and odor emissions. In addition, air quality can be affected by emissions from vehicles, generators, potential burning of waste, motor grinding machines, and odors from full or improperly emptied septic tanks.

- **During Decommissioning**

Air quality is expected to be negatively impacted by demolition works (where applicable), debris transport and waste handling, which may exacerbate respiratory conditions in nearby communities. Dust and particulate matter will be generated during demolition works, dismantling works, and waste transport, while emissions from equipment and vehicles will further contribute to air pollution.

In case any waste resulting from waste disposal is burned, this might result in harmful air emissions (in addition to regular combustion emissions), depending on the components of the waste.

#### **6.5.1.2 Noise**

- **During Construction**

Construction noise will vary depending on equipment, activities, and proximity to sensitive receptors. The operation of pile drivers, and trucks transporting building materials will generate vibration and noise levels higher than ambient levels, potentially causing

disturbance to workers and nearby residents and nearby pedestrians. Noise from construction activities will be managed to minimize impacts, with works scheduled during daytime hours to avoid nighttime disturbances and idle equipment and machinery switched off while not in use. Mitigation measures will be implemented to manage high vibration levels and reduce noise impacts.

In addition to on-site impacts on noise, indirect noise impacts are expected to arise offsite, primarily from quarrying activities associated with the extraction of aggregate materials. Noise will be generated during the extraction, transport, and processing of aggregates, leading to impacts on surrounding areas, potentially affecting local communities, nearby receptors and the broader environment (mainly fauna that might be present nearby).

- **During Operation**

The operation at the relocation site will include several activities such as generators, vehicular movement, advertising setups and maintenance operations which may increase noise levels, in addition to trader to trader and customer to trader interactions. Proper mitigation measures will be implemented to manage noise and minimize the disturbances to traders, customers, and nearby communities.

Additionally, noise emanates from activities within the relocation site itself, such as Traders' interactions and customer transactions.

- **During Decommissioning**

During decommissioning, noise and vibration will be generated by heavy equipment, trucks, and demolition equipment. This noise pollution may cause discomfort and nuisance for workers, nearby traders and residents. Prolonged exposure could lead to hearing damage/loss for workers if no protective measures are adopted. Common impacts of high noise levels on receptors (including traders along roads adjacent to the market building, and nearby residents) include sleep disturbance, hearing loss, increases in blood pressure, heart rate and cardiac output, and interference with communication.

In case the structures are repurposed for another use instead of being demolished, noise impacts will not apply.

### 6.5.1.3 Wastewater Generation

- **During Construction**

The estimated domestic sewage generation from workers on site is estimated at around 48 liters per capita per day. However, the number of workers to be hired is not known at this stage and should be determined by the selected contractor at that stage. Construction workers and site staff will generate sewage that, if discharged without treatment, can contaminate soil, surface water, groundwater, and cause offensive odor generation. Moreover, wastewater may result from concrete pouring, curing and washing of mixers, and from cleaning and dust suppression on site. Such slurry has a high sediment content that could contaminate water bodies and resources.

If appropriate sanitary facilities for construction workers and site staff are not provided and no strict rules of hygiene are maintained, domestic wastewater may find its way into the

ground and groundwater. If septic tanks used for sanitary facilities are not leak proof and leakage occurs, pollution of groundwater is possible.

If vehicles are washed onsite and washdown water is not contained and allowed to drain over natural ground, then pollutants may find their way into the ground and groundwater.

- **During Operation**

The relocation site is expected to produce significant amounts of wastewater from sanitary facilities and from washing and cleaning activities, estimated at 110,736 liters per day from relocated traders, workers, and helpers. Without proper management for the mobile toilet facilities and tanks, the generated wastewater may lead to soil, surface and groundwater pollution, foul odors, public health risks, and negative impacts on the well-being of the community. Wastewater generated will be stored in a septic tank that will be emptied regularly in a nearby licensed wastewater treatment facility.

- **During Decommissioning**

During decommissioning, there is a potential for wastewater generation from site cleaning, dust suppression, equipment washdown, and temporary worker facilities (in the absence of a labor camp, such impacts will be lower than if a camp is established). If not managed properly, this wastewater could contribute to soil, surface and groundwater contamination, and generate odors.

#### 6.5.1.4 Solid Waste

- **During Construction**

Construction debris and solid waste materials including concrete, wood and metals, may be generated. Approximately 1,108 m<sup>3</sup> of excavation waste will be generated from the site's preparation. Improper management and disposal can lead to soil and water contamination and public health risks.

Domestic waste will be generated by the workers on site. The average domestic solid waste generated per capita in Sierra Leone is equivalent to 0.23 kg per person per day. However, the number of workers to be hired is not known at this stage. Improper management and disposal of these waste streams could affect the visual appeal of existing relocation site and its surroundings, could contaminate soil, water, and air quality, and could increase public health risks and diseases associated with elevated levels of chemicals and decaying pollutants.

- **During Operation**

The operation phase and increased activities in the relocation site will produce waste from packaging, food products, and human occupancy, estimated to be approximately 519 Kg/day from relocated traders, workers and helpers. Improper waste management will lead to potential littering, drainage blockages, soil and water contamination, and public health hazards.

Additionally, sludge is expected to be generated during the operation phase. Improper disposal/ management of sludge generated from wastewater storage in the septic tanks

may have potential negative impacts on air (including odor generation), soil and water quality.

- **During Decommissioning**

During decommissioning, demolition activities are expected to generate substantial quantities of solid waste, including timber, tiles, scrap metals, and stones in addition to domestic waste from workers. Improper management of this solid waste can lead to environmental degradation, including contamination of soil, water and air, soil compaction, aesthetic nuisance, and could increase public health risks and diseases associated with elevated levels of chemicals and pollutants.

#### 6.5.1.5 Accidental Releases

- **During Construction**

The potential sources of accidental spills at the relocation site include chemicals (paint, solvents), fuel and oils for generating sets as part of equipment operations and maintenance during the construction phase (including off-site at quarrying sites where construction materials will be extracted).

These spills may contain BTEX such as benzene and toluene and methyl tertiary butyl ether (MTBE). These monocyclic aromatic hydrocarbons tend to readily evaporate from surface spills and biodegrade under aerobic and anaerobic conditions given their relatively good solubility and volatility, particularly MTBE and benzene. Spills consisting of BTEX; Poly Aromatic Hydrocarbons (PAH), chlorinated hydrocarbons, as well as heavy metals such as Nickel, Copper, Chromium and Zinc persist in the receiving environment, and when mixed with soil, they tend to adhere and accumulate due to their low evaporation and biodegradability. There is a high risk of accidental spills during maintenance on site if no precautionary measures are in place, potentially contaminating soil, surface water and groundwater.

- **During Operation**

The main impact is from accidental spills during maintenance activities at the site, which will be limited in extent.

- **During Decommissioning**

During decommissioning, the use of fuel and oil for machinery operation and maintenance, as well as the potential use of chemicals, may result in leaks if not handled and managed properly. This can lead to soil and groundwater contamination.

#### 6.5.2 Depletion of Resources

##### 6.5.2.1 Energy Resources

- **During Construction**

During the construction phase, fuel consumption will be used for mobile power generation, vehicles and equipment operation on-site and off-site (for quarrying equipment). Electricity will be supplied from the National Electricity Distribution and Supply Authority and by a

generator. The impact on energy consumption during the construction phase is thus expected to be moderate.

- **During Operation**

The Electricity Distribution Supply Agency (EDSA) will be responsible for supplying electricity to the relocation site for the market's operation.

- **During Decommissioning**

Decommissioning may involve the use of heavy machinery and equipment that rely on fuel, resulting in increased energy demand and higher fuel consumption.

#### 6.5.2.2 Water Resources

- **During Construction**

The construction phase of the relocation site will necessitate water for construction purposes such as spraying for dust control, concrete curing and cement mixing, etc. and will require many workers on site along with the setup of temporary site facilities, which will lead to a higher demand for water by the workers. If water management is not implemented properly during the construction phase, increased pressure on the water supply and stressing the low yielding aquifer in the area may potentially occur.

In addition to the on-site water demands, indirect impacts may arise offsite, particularly from the increased extraction of aggregate materials, which may place pressure on local water resources in terms of water required for quarrying operations, potential impacts on water quality from runoff and sedimentation, and reduced soil permeability and rainwater infiltration – and thus groundwater recharge – from the loss of soil and vegetation cover.

- **During Operation**

Water will be required for the operation of the temporary relocation site, for washing, cleaning, and drinking water purposes. Many market users are expected, leading to a significant volume of water demand. Water consumption is estimated to be approximately 276,840 L/d from relocated traders, workers and helpers. Based on the preliminary design of the project, water will be supplied through a borehole with a solar powered pump, meeting the needs of both traders and visitors in the market.

If water management is not implemented properly during the operation phase, increased pressure on the water supply will take place leading to stress on groundwater aquifers.

- **During Decommissioning**

Water may be required for dust suppression during demolition, cleaning of equipment, in addition to domestic use (including potable water) by workers, potentially increasing demand on local water resources.

#### 6.5.2.3 Topography, Soil Erosion and Collapse from Grading, Trenching and Excavation

- **During Construction**

Site clearance, grading and excavation activities are expected to occur and impact surface drainage and ground permeability, thus potentially reducing groundwater infiltration. Thin surface soil and underlying bed rock are to be excavated. During heavy rainfall, this

would lead to increasing runoff and adding suspended solids to surface water, which will potentially increase the risk of flooding at the relocation site and create unfavorable working conditions.

Material stockpiles such as sand that are neither contained nor covered during rainfall can lead to erosion and transportation by runoff water.

The activities are only temporary in nature, but the main impact relates to lost soil and the paved areas from which stormwater runoff will increase and infiltration to groundwater will decrease, potentially increasing the risk of flooding.

In addition to the direct impacts from site activities, the sourcing of aggregate material for the project is associated with quarrying operations elsewhere in Sierra Leone, which can have offset indirect impact associated with construction activities at the Kenema Central Market. Quarrying activities, if not properly managed, may lead to land degradation and erosion, including the loss of topsoil and disruption of local habitats and ecosystems. These activities can also exacerbate the risk of erosion and further reduce land stability in surrounding areas, potentially affecting local topography and increasing the likelihood of further environmental degradation.

- **During Operation**

As stated above, the activities are only temporary in nature limited to the construction phase.

- **During Decommissioning**

The use of heavy machinery can disturb the topsoil, leading to erosion. Furthermore, the storage of heavy materials and equipment can compact the soil, reducing its fertility and altering the natural landscape. Soil contamination may occur from hazardous materials, such as metals or oils present in construction waste, rendering the land unsuitable for future uses like agriculture or development. After decommissioning, if the land is repurposed for different activities, this could result in land-use conflicts or modifications and limitations as a result of contamination.

#### 6.5.2.4 *Biological Resources*

- **During Construction**

Since the relocation site is located within area encompassing existing infrastructures, impacts on the loss of vegetation and biodiversity are anticipated to be low. The main construction activities having negative impacts on biodiversity are earth-moving activities, generation of noise, construction waste materials, and wastewater effluent discharges. Waste resulting from construction works and activities can harm biodiversity if it is dumped at or near sensitive receptors.

Moreover, indirect impacts on biodiversity and habitats may arise offsite from the extraction of aggregate materials, which may place pressure on fauna, flora and their habitats in terms of threatening already vulnerable, threatened or endangered species, loss of vegetation cover, ecosystems and habitats.

- **During Operation**

Given the limited existing biodiversity at the site, the project's operation activities are anticipated to cause minimal additional disruption to the ecological environment. The main potential impacts on biological resources during the operation phase could be associated with inadequate management of solid waste and wastewater, which could lead to negative effects on the limited site biodiversity or at disposal sites.

- **During Decommissioning**

Biodiversity around the relocation site is limited given the urban nature of the site. However, decommissioning could disturb the limited local flora and fauna, especially through increased noise, air pollution, and physical disturbances as small mammals and insects could lose their habitats/ have to relocate. Waste and wastewater resulting from demolition works and activities can harm biodiversity in case they are dumped at or near sensitive receptors instead of being safely disposed of.

### 6.5.3 Social Impacts

#### 6.5.3.1 Socio-economic

- **During Construction**

**Negative Impacts:**

The construction of the relocation site will have several impacts on the social and economic well-being of the community members. During construction, potential issues may arise from possible social unrest among residents if they are not hired for construction works and grievances related to construction activities may arise.

Disturbance (noise, dust, traffic congestion) to nearby residents and occupants and obstructed access to businesses and houses will also arise from the construction works. Existing traders at the relocation site may experience and complain from decreased business activity.

Without adequate labor conditions and contractual protection, workers at the relocation site may be at risk of receiving wages below the legally required minimum and could be pressured into agreements that disregard established work schedules and rest periods if contractors do not abide by local labor laws, Labor Management Procedures (LMP) developed for RUSLP and WB guidelines.

Additionally, there is a risk of labor influx from other regions, which may introduce risks and challenges such as child labor, forced labor, and undesirable behaviors like theft, alcoholism, drug abuse, gender-based violence (GBV), and sexual harassment/exploitation and abuse (SH/SEA). The transmission of HIV/AIDS could also be a concern in this context. An influx of workers may further strain existing communal utilities and services, such as water supply, waste and sewage management, and health facilities. Such labor may also compete with locals on job opportunities and increase unemployment rates, leading to social unrest and potential conflict.

In addition to the direct impacts from site activities, indirect impacts offsite, particularly from quarrying activities, could involve changes in local land use, aesthetic/ landscape deterioration, and nuisance from quarrying activities and associated traffic, particularly if the extraction sites are located near agricultural, residential, commercial or touristic areas.

These impacts will be managed through the mitigation measures detailed in section 8 of this report, along with the plans developed (LMP, GRM, GBV, GMS, etc.) to ensure the smooth and compliant implementation of the project across its phases.

**Positive Impacts:**

The construction of the relocation site will generate **employment opportunities** for local community members, both skilled and unskilled labor (the contractor is expected to employ approximately 12 technical staff, 30 skilled technicians and 50 unskilled labourers of which 30% should be women employees throughout the construction period). This can provide a source of income for those involved and contribute to the local economy.

The construction works may **stimulate the local economy** by creating demand for local goods and services, including materials, food, and accommodations for workers. The relocation site construction may **improve local infrastructure**, which can benefit the surrounding community in the long term.

- **During Operation**

**Positive Impacts:**

The relocation of traders to a temporary market during the upgrade of the Makeni central market will allow them to **sustain their business** activity whilst the upgrade works are ongoing at the central market. This ensures that traders have space to sell their goods and maintain their income levels, preventing the complete disruption of their livelihoods.

The RP developed for the project has set a **procedure for relocation traders** based on their current location in the existing market to control this procedure. The position of the traders' current location has already been recorded during the RP survey using the existing market zones and GPS coordinates; each trader's position at the relocation site will be marked-up on the ground using wooden pegs and spray paint (or other type of marker that will remain visible) using a unique reference number, so that traders and their workers can be directed to their exact location by MCC representatives. This aims to avoid a 'free for all' situation where traders compete for the best sites and compete for selling space, as this could result in conflict. The traders' selling space (recorded in square meters) will be used to ensure that they are provided with the same selling space at the relocation site, as a minimum. Traders are to be relocated from their existing zones as a group at the relocation site, where they choose to do so, to help retain social networks. This is because some of the traders have strong friendship and other connections to each other at their current position and also share childcare arrangements in some cases. If this procedure is followed and implemented as planned and agreed, few or no conflicts in the allocation of temporary selling spaces at the relocation site are expected. Effective management of the relocation process and implementation and monitoring of the RP are essential to keep the expected impacts to a minimum.

**Negative Impacts:**

Despite the measures in place, there is still a risk of conflict between the market traders and the City Council regarding the allocation of spaces at the relocation site. If the procedures are not properly followed or communicated, or if obstacles arise on the ground during the process, traders may feel unfairly treated, leading to disputes

The relocation of traders to the temporary site is likely to result in a slowdown of their businesses due to the partial loss of their regular customer base, and the time they will need to restore their livelihoods to pre-relocation levels. Moreover, the relocation will disrupt their livelihoods during the relocation from and back to the upgraded Makeni central market site. These impacts are addressed by the disturbance allowance proposed in the RP.

In addition, inadequate management, supervision and control of the relocation site operations could lead to social issues including complaints from the community and existing nearby traders, and conflicts over space allocation.

The operation of the traders at the relocation site may also be perceived to cause competition among existing traders at this site and create tension and conflict at the site. Additional crowding at the site may also be opposed by local communities.

These impacts will be managed through the mitigation measures detailed in section 8 of this report, along with the plans developed (LMP, GRM, GBV, GMS, etc.) to ensure the smooth and compliant implementation of the project across its phases.

- **During Decommissioning**

**Negative Impacts:**

Traders will return to the upgraded original market after their temporary relocation and may face an adjustment period to relocate and adapt to the new layout and facilities, which can affect their business operations. Re-establishing their customer base may take time, leading to a temporary decline in sales until regular customers adapt to the upgraded market and the new distribution of stalls and shops.

Decommissioning works may incur a risk of labor influx from other regions, which may introduce challenges such as child labor, forced labor, and undesirable behaviors like theft, alcoholism, drug abuse, gender-based violence (GBV), and sexual harassment/exploitation and abuse (SH/SEA). The transmission of HIV/AIDS could also be a concern in this context.

These impacts will be managed through the mitigation measures detailed in section 8 of this report, along with the plans developed (LMP, GRM, GBV, GMS, etc.) to ensure the smooth and compliant implementation of the project across its phases.

**Positive Impacts:**

The upgraded market will benefit the traders in the long run. **Improved infrastructures, utilities and amenities**, in addition to the **livelihood restoration measures** recommended in the RP, may lead to higher sales and **reduced operational costs**, and the market would potentially **attract more customers** and **enhance the trading environment**, which will eventually contribute to **long-term economic resilience of traders**.

The fact that traders will be offered compensation for all their lost private immovable assets, practical support to relocate their businesses in the form of a truck and laborers, free of charge, and a disturbance fee to sustain their livelihoods during the relocation from and back to the market (as recommended in the Resettlement Plan - RP) addresses this concern. Each Trader's position at the upgraded market site will be marked-up on the ground using wooden pegs and spray paint (or other type of marker that will remain visible) using a unique reference number, so that Traders and their Workers can be directed to their exact location by KCC representatives. This aims to avoid a 'free for all' situation where Traders compete for

the best sites and compete for selling space that could result in conflict. Therefore, traders will not face potential displacement or concerns that their original spaces may no longer be available, thus preventing tension among returning traders.

#### 6.5.3.2 *Health and Safety*

- **During Construction**

##### **Occupational Health and Safety:**

Construction activities present several health and safety risks to workers. Injuries, risks of falls and accidents may happen due to improper handling and storage of materials, as well as operating high-speed machinery. In addition, hazards may result from exposure to slippery surfaces, chemical elements and fire hazards from flammable substances.

Borehole drilling and electrical systems installation pose health concerns on workers' and the community. Workers may also face exposure to noise, air pollution, dust, and communicable diseases such as skin infections, sexually transmitted infections (including HIV/AIDS), and tuberculosis due to close personal contact.

##### **Community Health and Safety:**

The construction phase may also impact the health and safety of nearby communities and the public. Heavy vehicles emissions and accidents can affect air quality, noise and safety of commercial areas, respectively. In addition to the on-site health and safety hazards, indirect impacts may arise offsite, particularly from the extraction of aggregate materials. Quarrying operations pose health risks primarily to workers (dust and emissions, noise, accidents, etc.), and to surrounding communities (air and noise pollution, aesthetic nuisance, traffic, accidents, etc.) as well.

- **During Operation**

##### **Occupational Health and Safety:**

The relocation site will enhance safety and public health through improved infrastructure, sanitation and security. However, risks such as ineffective management of sanitary facilities, the lack of sanitary facilities, poor waste management, fire outbreaks, and security concerns can lead to health and safety issues and need to be managed. Additionally, improper routine maintenance or repairs and ineffective emergency response measures can compromise the safety of traders and visitors.

Vulnerable groups, including women and people with disabilities, may be at risk of harassment or discrimination and unequal treatment of women, including disparities in pay.

##### **Community Health and Safety:**

The operation of the relocation site can affect community health and safety through increased traffic and the risk of accidents, noise pollution, and air pollution from vehicles. Poor waste management can lead to unsanitary conditions, attracting pests and contributing to the spread of diseases. The relocation site may also attract petty crime activity, raising safety concerns for nearby residents. Additionally, the increased demand for local services, such as healthcare and sanitation, can strain community resources.

- **During Decommissioning**

### **Occupational Health and Safety:**

The decommissioning phase can pose significant health risks for workers that may be exposed to the inhalation of dust and particulate matter generated during demolition activities, which can lead to respiratory issues and other long-term health complications. Additionally, exposure to hazardous waste materials, such as chemicals and heavy metals, can further increase the risk of serious health problems. The loud noise generated by machinery and work can lead to hearing impairment over time, while the physical risks associated with working at heights or handling heavy materials can result in falls and injuries. Occupational accidents on site could lead to temporary or permanent physical injuries/impairment. Communicable diseases such as skin infections, Sexually Transmitted Diseases (STDs) (including HIV/AIDS), and tuberculosis could be transmitted due to close personal contact among workers.

### **Community Health and Safety:**

During the market decommissioning phase, community health and safety risks may arise from loud noise generated by heavy machinery and demolition activities which can disturb nearby traders and residents. Mismanagement of decommissioning waste, such as improper disposal or uncontrolled dumping, may lead to environmental contamination, health hazards and aesthetic nuisance. Additionally, the movement of heavy vehicles transporting waste increases the risk of accidents in the surrounding area as well as traffic and noise nuisance. Inadequate safety measures during this phase can also result in incidents of sexual harassment or accidents that may pose serious threats to the well-being of residents and pedestrians/ market customers.

#### 6.5.3.3 Cultural (Tangible) and Intangible Heritage

No impacts on cultural heritage are foreseen from the preparation or operation of relocation site since this site is already existing and involve minimal preparation activities. However, Campbell Street is close to a spot formally used as a society bush.

A chance find procedure, detailed in Appendix 9, has been developed in line with WB ESS8 to address the potential discovery of previously unknown heritage or archaeological resources encountered during project implementation.

#### 6.5.3.4 Traffic

- **During Construction**

The transportation of construction and waste materials to and from the relocation site may increase traffic along sections of the roads in Campbell Street that extend around the relocation site, where the stalls and structures for relocated traders will be constructed. Details on such impacts should be available in a Traffic Study conducted for the site. Increased traffic may cause congestion, traffic-related accidents or injuries and risks to workers, pedestrians and vehicles. The transportation process, if carried out by overloaded and uncovered trucks, can lead to increased risk of traffic accidents and risk to other vehicles and pedestrians. Dust and spillages from fine earth materials during transportation further contribute to deteriorating road conditions and air quality. Traders already selling at

the relocation site are particularly vulnerable to these impacts. Proper mitigation measures will be implemented to manage traffic impacts.

In addition to the on-site traffic impacts, indirect impacts may arise offsite, particularly from the extraction of aggregate materials where traffic circulation will increase for the loading and transportation of construction materials. This will lead to associated air and noise pollution, and potential accidents.

- **During Operation**

The transportation of goods and incoming customers may increase local traffic at the relocation site. Increased traffic from market operation may lead to accidents and air and noise pollution, which can be avoided through the implementation of the measures outlined in the mitigation table in section 8.

- **During Decommissioning**

The traffic from heavy trucks and machinery incoming to the site and transporting demolition debris may increase, resulting in road congestion around the market area. This heightened traffic can lead to delays, accidents, air and noise emissions, and conflicts with existing road users.

#### 6.5.4 *Summary of Impacts on the Makeni Relocation Site*

The Makeni relocation site impacts during construction, operation, and decommissioning are summarized in Table 6- 11, Table 6- 12, and Table 6- 13 respectively.

**Table 6-11 Impacts at the Makeni relocation site during the construction phase**

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Emissions</b>										
<b>Air Quality</b>	Dust from construction activities, transportation of materials and operation of machinery, and from quarrying	N/D	M	L	S	C	R	3. Moderate	3. High	9. Medium
	Emissions from generators, machinery, and equipment (including from quarrying offsite)	N/D	M	L	S	C	R	3. Moderate	3. High	9. Medium
<b>Noise</b>	Change in vibration and noise levels from general construction activities, mobilization and operation of equipment, and movement of vehicles on-site and offsite (at quarrying site)	N/D	M	L	S	C	R	3. Moderate	3. High	9. Medium
<b>Wastewater Generation</b>	Inadequate storage and disposal of domestic wastewater generated	N/D	H	L	M	C	R	4. Major	2. Moderate	8. Medium
<b>Solid Waste</b>	Construction solid waste disposal	N/D	M	L	M	C	R	3. Moderate	3. High	9. Medium
	Inadequate storage and disposal of Domestic solid waste	N/D	M	L	M	C	R	3. Moderate	3. High	9. Medium
<b>Accidental Releases</b>	Accidental spills of chemicals (paint, solvents), fuel and oils on-site and offsite (at quarrying site)	N/D	H	L	L	C	I	4. Major	2. Moderate	8. Medium
<b>Depletion of Resources</b>										
<b>Energy Resources</b>	Electricity and fuel consumption for mobile power generation, vehicles and equipment operation on-site and offsite (at quarrying site)	N/D	M	L	M	C	R	3. Moderate	3. High	9. Medium
<b>Water Resources</b>	Depletion of water resources	N/D	M	L	M	C	R	3. Moderate	3. High	6. Medium
	Water depletion and quality deterioration from water consumption, runoff and sedimentation, and reduced soil permeability at the quarrying site	N/I	H	L	L	C	I	4. Major	3. High	12. High
<b>Topography, Soil Erosion and Collapse from Grading,</b>	Alterations to the land surface, reduced ground permeability and water infiltration from site clearance, excavation and demolition activities, and sourcing of aggregate materials.	N/D	H	L	L	C	I	4. Major	3. High	12. High

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Trenching and Excavation</b>										
<b>Biological Resources</b>	Loss of vegetation, fauna, flora and habitats from clearance, excavation, quarrying and inadequate disposal of resulting waste and wastewater	N/D	L	L	L	C	R	2. Minor	1. Low	2. Low
<b>Social Impacts</b>										
<b>Socio-economic</b>	Possible social unrest among residents if they are not hired for the works	N/D	H	L	L	C	R	4. Major	3. High	12. High
	Grievances regarding construction activities from traders already present at the relocation site and nearby residents	N/D	M	L	L	C	R	3. Moderate	2. Moderate	6. Medium
	Risk of labor influx from other regions, child labor, forced labor, undesirable behavior such as theft, alcoholism, drug abuse, GBV and SH/SEA, and transmission of HIV/AIDS	N/I	H	L	M	C	R	4. Major	2. Moderate	8. Medium
	Job Opportunities for skilled and unskilled members of the community (the contract is expected to employ 12 technical staff, 30 skilled technicians and 50 unskilled labourers of which 30% should be women employees throughout the construction period),	P	-	-	-	C	-	Beneficial	3. High	Beneficial
<b>Health and Safety</b>	Impact on workers' safety (including from accidents) resulting from improper handling and storage of construction materials, construction equipment handling, construction activities, chemicals, etc.	N/D	H	L	L	C	R/I	4. Major	3. High	12. High
	Impact on workers' and community health and safety resulting from exposure to occupational/safety hazards (e.g., noise, air pollution, dust, fire hazards, etc.) and to sickness, diseases and injury due to close personal contact; disturbance to nearby community. Borehole drilling and electrical systems installation pose health concerns on workers' and the community.	N/D	H	L	L	C	R/I	4. Major	3. High	12. High

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
Traffic	Increase in traffic circulation from the transportation of construction materials and waste, traffic-related accidents or injuries, on-site and offsite (at quarrying site).	N/D	M	L	S	C	R	3. Moderate	2. Moderate	6. Medium

**Table 6- 12 Impacts at the Makeni relocation site during operation phase**

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Emissions</b>										
<b>Air Quality</b>	Odor emissions from wastewater discharge, waste and food storage	N/D	M	L	L	O	R	3. Moderate	2. Moderate	6. Medium
	Exhaust and GHG emissions and dust from vehicles and motor grinding machines and other fuel-powered equipment that might be used at the relocation site.	N/D	L	L	L	O	R	2. Minor	3. High	6. Medium
<b>Noise</b>	Noise emissions from the relocation site daily activities. Traffic, maintenance activities, advertising setups.	N/D	M	L	L	O	R	3. Moderate	3. High	9. Medium
<b>Wastewater Generation</b>	Domestic wastewater generation and groundwater contamination from unsanitary conditions and its inadequate disposal (in the absence of restrooms)	N/D	H	L	L	O	R	4. Major	3. High	12. High
<b>Solid Waste</b>	Solid waste storage and disposal resulting from operation activities	N/D	M	L	L	O	R	3. Moderate	2. High	6. Medium
<b>Accidental Releases</b>	Spills and leaks from maintenance activities	N/D	H	L	L	O	I	4. Major	1. Low	4. Medium
<b>Depletion of Resources</b>										
<b>Energy Resources</b>	Electricity consumption for market operation, fuel consumption for transportation of goods	N/D	M	L	L	O	R	3. Moderate	3. High	9. Medium
<b>Water Resources</b>	Water consumption for domestic purposes, washing and market cleaning	N/D	M	G	L	O	R	3. Moderate	3. High	9. Medium
<b>Biological Resources</b>	Loss of vegetation and biodiversity from inadequate management of solid waste and wastewater.	N/D	L	L	S	O	R	1. Negligible	1. Low	1. Low
<b>Social Impacts</b>										
<b>Socio-economic</b>	Inadequate management, supervision and control of market operations, leading to health and safety risks and grievances from the surrounding community	N/D	H	L	L	O	R	4. Major	2. Moderate	8. Medium
	Reduction/slow-down of business among traders from the loss of customers resulting from the relocation.	N/D	M	L	L	O	R	3. Moderate	3. High	9. Medium

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
	Maintenance of traders' livelihoods through RP implementation	P	-	-	-	O	-	Beneficial	3. High	Beneficial
Health and Safety	Potential impact on traders' and visitors' Health and Safety resulting from improper routine maintenance or repairs and lack of emergency preparedness	N/D	H	L	L	O	R/I	4. Major	2. Moderate	8. Medium
	Impact on traders', workers' and community's health resulting from poor waste management and sanitation practices	N/D	M	L	L	O	R	3. Moderate	2. Moderate	6. Medium
	Impact on traders', workers' Safety from risk of fire, inadequate management of security system, crimes, harassment and gender-based discrimination	N/D	H	L	L	O	R/I	4. Major	1. Low	4. Medium
Traffic	Transportation of goods and market customers leading to congestion and increasing the risk of accidents and pollution	N/D	M	L	L	O	R	3. Moderate	2. Moderate	6. Medium

**Table 6- 13 Impacts at the Makeni relocation site during decommissioning phase**

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Emissions</b>										
<b>Air Quality</b>	Airborne particles (dust) from demolition works, debris transport and waste handling	N/D	M	L	M	D	R	3. Moderate	3. High	9. Medium
	Emissions from machinery, vehicles and equipment	N/D	M	L	S	D	R	3. Moderate	2. Moderate	6. Medium
<b>Noise</b>	Increased noise and vibration levels from general demolition works, mobilization and operation of heavy equipment, and movement of vehicles	N/D	H	L	L	D	R	4. Major	3. High	12. High
<b>Wastewater Generation</b>	Site cleaning, washdown of equipment, and temporary worker facilities	N/D	H	L	L	D	R	4. Major	2. Moderate	8. Medium
<b>Solid Waste</b>	Demolition and domestic solid waste disposal from the site	N/D	H	L	L	D	R	4. Major	3. High	12. High
<b>Accidental Releases</b>	Accidental spills of fuel, oils and chemicals	N/D	H	L	L	D	I	4. Major	2. Moderate	8. Medium
<b>Depletion of Resources</b>										
<b>Energy Resources</b>	Fuel consumption for vehicles and equipment operation	N/D	M	L	S	D	R	3. Moderate	3. High	9. Medium
<b>Water Resources</b>	Increase demand on local water resources for dust suppression, site cleaning and equipment washing	N/D	M	L	M	D	R	3. Moderate	2. Moderate	6. Medium
<b>Soil Erosion and Collapse</b>	Soil erosion, compaction and contamination from demolition activities, from the use of heavy machinery, storage of heavy materials, and demolition activities	N/D	H	L	L	D	R	4. Major e	3. High	12. High
<b>Biological Resources</b>	Habitat loss for small mammals and insects, loss of biodiversity at sensitive receptors where waste and wastewater from decommissioning are dumped.	N/D	L	L	M	D	R	2. Minor	1. Low	2. Low
<b>Social Impacts</b>										

Receptor	Impacts	Nature	Magnitude	Extent	Duration	Timing	Reversibility	Consequence Rating	Likelihood Rating	Significance Before Mitigation
<b>Traffic</b>	Increase in traffic circulation and traffic-related accidents or injuries from the transportation of demolition waste	N/D	M	L	S	D	R	3. Moderate	2. Moderate	6. Medium
<b>Health and Safety</b>	Impact on workers' safety (including from accidents) resulting from improper handling and storage of materials, demolition activities and equipment	N/D	H	L	L	D	R/I	4. Major	3. High	12. High
	Impact on workers' safety resulting from improper handling and storage of chemicals and solid waste (including hazardous components) related to demolition activities	N/D	M	L	M	D	R	3. Moderate	3. High	9. Medium
	Impact on workers' health and safety resulting from exposure to occupational hazards (e.g., noise, air pollution, dust, fire hazards, etc.), communicable diseases, and potential for accidents	N/D	H	L	L	D	R/I	4. Major	3. High	12. High
	Community health and safety risks from loud noise disturbing nearby residents, mismanagement of decommissioning waste and inadequate safety measures.	N/D	M	L	M	D	R	3. Moderate	2. Moderate	9. Medium
<b>Socio-economic</b>	Challenges in readjusting to the upgraded market layout and facilities	N/D	M	L	S	D	R	3. Moderate	3. High	9. Medium
	Risk of labor influx from other regions, child labor, forced labor, undesirable behavior such as theft, alcoholism, drug abuse, GBV and SH/SEA, and transmission of HIV/AIDS	N/I	H	L	M	C	R	4. Major	2. Moderate	8. Medium
	Potential space displacement concerns and tension among traders	N/D	L	L	L	D	R	2. Minor	1. Low	2. Low
	More efficient trading and socio-economic benefits for traders	P	-	-	-	D	-	Beneficial	3. High	Beneficial

## 7 ANALYSIS OF ALTERNATIVES

Developing, comparing, and refining alternatives is a key element of the ESIA and allows decision-makers to determine how to achieve the project objectives at the greatest benefit and with minimal impacts. It basically asks, "Is this the best strategic action that we can get?".

This section describes, evaluates, and compares the following options for this project to determine the best way of achieving project objectives and to indicate the best practicable option from an environmental and socio-economic point of view:

- Zero or No-Project alternative
- Project Location Alternatives
- Project Alternative Designs and Materials.

### 7.1 "ZERO" OR "NO PROJECT" ALTERNATIVE

This alternative entails the business-as-usual case without the Project. As a result, the status would be maintained, and the Makeni central market site would be retained in its existing form.

The "No Project" option is the least preferred from the socio-economic and partly environmental perspective due to the following factors:

- The existing physical, infrastructural, socio-economic, and sanitary conditions at the site will remain in their existing poor conditions.
- The economic status of the direct and indirect users of the Makeni central market will remain unchanged.
- The poor infrastructure will remain unchanged and thus the flooding issues and other problems (such as storage).
- No Employment opportunities will be created for local citizens who will work in the Makeni central market upgrade project and in the upgraded market.
- Urban poverty will not be alleviated.
- Development of infrastructural facilities (water supply, sanitary facilities, ventilation, power, and associated infrastructure) will not be undertaken.

Based on the above, the implementation of Makeni central market upgrade will have far reaching benefits to the community and Sierra Leone as a whole, which would not be realized if the project were not to be implemented.

### 7.2 PROJECT LOCATION ALTERNATIVES

#### 7.2.1 *Alternatives to the Project Site*

Permanent relocation of the central market site to a different site is not an effective option as the project is intended, based on the feasibility study, to improve an already identified and existing Market in Bombali district. Traders also prefer to remain in their current Makeni central market location, even in its dilapidated state, rather than move to a new location regardless

of how modern the new market might be. Additionally, the City Council does not own suitable land of sufficient size to construct a completely new market.

### 7.2.2 Alternatives to the Relocation Site

The Makeni City Council was responsible for identifying the temporary relocation site. When selecting sites for relocating traders during the market upgrade project in Makeni, several factors were carefully considered to ensure a smooth transition and minimal disruption to their businesses. The criteria listed in Table 7-1 were adopted in the selection process. Additionally, it is worth noting that the choice of relocation site is limited to land owned by the City Council while being away from wetlands and flood prone areas.

**Table 7-1 Criteria adopted in the relocation site selection process**

Factors	Description
Proximity to the Main Upgrade Market Site	The relocation site should be close to the existing market location. Proximity is vital because traders and customers are accustomed to these areas. Moving to a distant location could lead to significant challenges, including potential loss of customer relationships and a decrease in business activity. A nearby site helps maintain the current customer base and supports the continuity of the traders' operations.
Familiarity and Community Usage	Choosing a relocation site within a familiar community is important for both traders and buyers. People prefer doing business in areas where they have established relationships and trust. Relocating to a completely new environment could cause a decline in business as traders and customers adjust to the new setting. Therefore, selecting a site within a known and frequented community is essential for minimizing disruptions.
Space Availability	The relocation site must have sufficient space to accommodate over 1,500 traders. Adequate space is necessary not only for the traders' stalls, but also for basic amenities. Ensuring enough room for all traders will help maintain the organization and functionality of the temporary market.
Cost-Effectiveness	The cost of relocation should be kept to a minimum to avoid overshadowing the main market upgrade project. This includes being economical with the selection of materials and infrastructure needed for the temporary site. A cost-effective approach ensures that the primary focus and resources remain dedicated to the main market upgrade.
Basic Amenities	The relocation site must provide essential amenities for the traders during the 18-month construction period. These include adequate sanitation facilities, water supply, and security measures. Ensuring these basics will help maintain a suitable environment for the traders to continue their business activities.
Accessibility	The site should be easily accessible for both traders and customers. Good transportation links and ease of access are crucial to ensuring that the relocated market continues to attract foot traffic and business activities.
Safety and Security	The safety and security of the relocation site are paramount. The site should be secure to prevent theft, vandalism, or any harm to the traders and their goods.
Environmental Impact	The potential environmental impact of the relocation site must be assessed. The site should not cause significant disruption to the local environment or community. Environmental sustainability practices should be implemented to minimize any negative effects.

Several relocation sites were considered and evaluated during project preparation. The first site considered was around 200 meters north from the current market; however, it was rejected by PMU and the WB it consisted of a wetland and lay on a flood plain. The Traders'

Union also offered a parcel of land that is equidistant southeast from the current market, but it had similar characteristics to the aforementioned one.

Hence, Campbell Street-Church Street, located 100 meters Southeast from the Makeni Clock Tower, less than 100 meters from the Makeni City Council and the main market itself, was proposed. It serves as a major thoroughfare to the city center and administrative area. Currently, parts of the street are utilized for street trading activities and approximately 70% of the upper section is occupied by temporary timber tables and structures, where traders sell goods such as food items, raw agricultural produce, and agro-based industrial products.

However, the available space at this site was deemed insufficient to accommodate all the traders requiring relocation from the main market. To address this, three additional temporary relocation sites—Teco Market, Sesay Street Market, and Turn Table Market—were initially identified to house the traders during the construction phase of the project.

At a later stage, all three of these sites were excluded due to space constraints and overcrowding. Ultimately, Campbell and Savage Streets were retained as the primary relocation site. However, discussions are ongoing between the Project Management Unit and the City Council to identify alternative locations for traders who cannot be accommodated at this site (around 300 traders). Feasibility and design studies are currently underway to prepare Campbell and Savage Streets to host traders during the central market upgrade works.

## **7.3 PROJECT ALTERNATIVE DESIGNS**

### *7.3.1 Design Options*

Several options or scenarios were considered in the design of the market upgrade, as presented in Table 7-2. The analysis and comparison of these options has led to the selection of Option 2-B described in the last row.

**Table 7-2 Different Design Options Considered**

Option	Characteristics	Limitations/ Advantages
Option 0	<p>Cadastral area: 3,240 m<sup>2</sup> (only cadastral areas that already belong to the City Council).                      4,000 Traders                      3,895 market stalls of 2 m<sup>2</sup>                      15 stores of 80 m<sup>2</sup>                      Minimum sales space for traders where the trader stands in front of or next to the counter, then invades the buyer's space.                      The square meters of the services (which include facilities, roads, open spaces, residual spaces, etc.) are the same as those present in all the options and are always on the ground floor.                      An option 0a was proposed for 16 floors without shift between traders; and an option 0b was proposed for 10 floors with rotation on 2 shifts</p>	<p>This option (both sub-options 0a and 0b) requires both a high number of floors, that means more difficulties in execution and maintenance of the building, as well as low effectiveness for commercial purposes.</p>
Option 1	<p>Available area: 9,758 m<sup>2</sup> (uses Council cadastral areas and other available areas close to them).                      Big land's surface, to be completely filled with market structures.                      Number of traders: 4,000                      No rotation                      Number of floors: 2                      Output: basic modules for stalls and shops                      Market basic module: 2.8 m<sup>2</sup>.</p>	<p>The basic module for traders is smaller than in the previous solutions. The final built surface should be more than 16.000 m<sup>2</sup>, structured on 2 floors, that is a very wide surface requiring hard structural work.</p>
Option 2A	<p>Uses the whole available area, but designs building solutions able to create not only the built market spaces, but also a high good accessibility for traders and visitors, high standards of security and safety inside the buildings as well as along the roads, quality of the public spaces with a good relationship between the upgraded market structures and the context.                      This option has a core-building, hosting the main part of the stalls of the Makeni central market, but offers also 2 buildings with courtyards for events and people's meetings, spaces for loading and unloading, high visibilities for services and facilities.                      To free some space for these quality standards, it is necessary to reduce the covered surfaces: all buildings have 2 floors, but it is also necessary to provide one shift between traders.</p>	<p>Option 2 is the preferred solution:</p> <ul style="list-style-type: none"> <li>• it ensures a minimum comfort to traders and users</li> <li>• it complies with the minimum level of features requested by FAO (Planning and Designing Rural Markets)</li> <li>• it allows a balanced urban relationship with the context (number of floors, connecting roads, voids, etc.).</li> </ul> <p>However, it requires huge investments, which has led to a variation of this solution (next option).</p>

	<p>Available area: 9,758 m<sup>2</sup>                  Rotation on 2 shifts                  Number of traders: 3,985 / 2 shifts = 1,993 market stalls                  15 stores (no shifts)                  Number of floors: 2.                  The base module for stall, shops and stores offers livable spaces for traders and visitors.                  The volumes can also host facilities (security post, health center, daycare center); the open spaces can be used by people to meet and visit the place, as well as by truck and service vehicles to move the freight.</p>	
<p>Option 2B</p>	<p>This option maintains the same urban approach and the same design as the base-option B, but without second floor on the courtyard buildings, through the following:</p> <ul style="list-style-type: none"> <li>• an optimization of the available spaces, with a different distribution of the functions</li> <li>• a huge use of the courtyards to locate traders' stalls. Spaces for those stalls are designed with fixed furniture and shadow generated by trees and curtains connected to the structure of the stalls.</li> </ul> <p>The courtyard buildings require only a ground floor; this allows the use of different technological building solutions, with a double effect:</p> <ol style="list-style-type: none"> <li>1. an easier and quicker building process and the utilization of cheaper materials and local workers.</li> <li>2. a stronger opportunity to adopt techniques and finishing more related to the local and traditional context.</li> </ol>	<p>This solution reduces the costs and the complexity of construction and maintenance (e.g. through fewer built surfaces, and a lower need for ramps and stairs), but at the same time makes it possible to use the space in a more flexible way, and offers a variety of stalls typologies, able to meet the economic and commercial possibilities of different traders' targets, and a stronger opportunity to adopt techniques and finishing more related to the local and traditional context.</p> <p>At the same time, this solution makes a livable and vibrant space inside the city, in strong connection with the road and the traditional uses of the urban spaces.</p>
<p>Option 3Bis</p>	<p>This option was selected as the optimal design for the market, as it makes efficient use of the available area within the cadastral boundaries, accommodates the targeted number of traders, and stays within budget constraints.</p> <p>Key design details include:</p> <ul style="list-style-type: none"> <li>• Available area: 3,240 m<sup>2</sup></li> <li>• Stalls for traders: 1,572 stalls (expanded in the preliminary design to accommodate 1,724 traders as a maximum) with 5 m<sup>2</sup> allocated per stall</li> <li>• Stores for traders: 65m<sup>2</sup> allocated per store</li> <li>• 1 shift operation</li> <li>• 2 floors layout</li> </ul>	<p>This solution deviates slightly from FAO recommendations, particularly regarding aisle widths inside buildings and the dimensions of market stalls but does not compromise the market's functionality.</p>



### 7.3.2 Structural Alternatives

The project aims to guarantee a stable, safe and functional building to the users, finding the best technical solutions. Table 7-3 represents different structural options suggested and analyzed based on the type and the use of the building.

**Table 7-3 Different Structural Options Considered**

	Pros	Cons
<b>Concrete</b>	The structure boasts excellent fire resistance and seismic capacity. Its high flexibility enables future modifications to the layout, external facades, and openings, as well as potential vertical extensions. Additionally, the concrete design ensures durability and allows for easy anchoring of secondary structures, such as steel profiles, plates, canopies, or rooftops, without adversely affecting the main structure.	The material has low thermal insulation capabilities, requiring an additional insulation layer. Additionally, the construction process takes longer compared to other technologies due to the time needed for concrete to harden.
<b>Brick</b>	Brick is a cost-effective construction material, leading to lower overall building expenses. It offers good thermal insulation properties, although an additional insulation layer is still required, and it demonstrates good fire resistance.	The brick structure lacks flexibility, making future modifications challenging. It is limited to one or two levels and has low seismic capacity and weathering resistance due to its porous nature, which can lead to moisture-related issues. Additionally, reinforced concrete foundations and concrete corbels for steel rooftop anchoring are necessary.
<b>Steel</b>	Steel exhibit good seismic performance and high load-bearing capacity that optimizes the resistance-to-weight ratio and maximize interior space. They offer high flexibility for future modifications, including changes to layout, facades, openings, and vertical extensions. Additionally, steel structures are durable, and their components can be precast, significantly reducing construction time.	Steel is a more expensive material, and the structure has lower fire resistance, necessitating the application of intumescent paints or fire-resistant panels, or the use of oversized profiles for added protection. Moreover, reinforced concrete foundations are required to support the structure

Performance	Concrete	Brick	Steel
<b>Flexibility</b>	High	Low	High
<b>Durability</b>	Medium	Medium	High
<b>Seismic</b>	High	Low	High
<b>Fire</b>	High	Medium	Low
<b>Weather and Thermic</b>	High	Medium	Medium
<b>Time effective</b>	Low	Low	High
<b>Cost effective</b>	Medium	High	Low

Based on the considerations above, concrete and steel were selected as the primary materials for the market construction. In the preliminary design, concrete was selected for foundations, columns, beams, and load-bearing walls, while steel was used for reinforcement and for the rooftop structure.

### 7.3.3 Sanitation System Alternatives

The project aims at upgrading the sewage system, introducing feasible and environmentally sustainable solutions to enhance the overall quality of life for market users, and reducing the

market's environmental impact. The alternatives considered in the feasibility study consist of cesspits.

#### 7.3.3.1 Cesspit option

A cesspit is a watertight underground storage tank where wastewater is discharged and held in a pit. It does not perform any kind of treatment of the wastewater and has no outlet; it is only fitted with piping to vent accumulated gases in the tank. A cesspit requires regular emptying by a licensed waste disposal company and is therefore not considered as a suitable long-term solution. The emptied effluent and sludge should also be properly disposed of in an approved operational sewer system or wastewater treatment plant. The frequency of emptying differs depending on the size of the cesspit and the influent wastewater volume (that in turn depends on the size of the served population). Cesspits are usually used in locations that are not connected to a public sewage system and treatment plant, and where the discharge of effluent into the ground is not possible or recommended due to unsuitable soil conditions or potential for groundwater pollution. The proposed septic tanks will be constructed in line with the approved Ministry of Health and Sanitation standards. They will be built with sandcrete block walls and concrete slabs. These will be used only in the upgraded markets. During construction and the operations of the relocation sites workers or traders will be provided with mobile toilets which will be regularly emptied as they get full.

#### 7.3.3.2 Wastewater Treatment Lagoon

Wastewater from the cesspit will be evacuated and transported to a treatment lagoon facility operated by the Local Council situated at approximately 5Km from the Central Market.

#### 7.3.3.3 Solid Waste Management

Solid Waste Management during construction is the responsibility of the contractors, demolition waste will be disposed of in accordance with the Environment Protection Agency requirements in specified locations. The normal solid waste from packaging will be disposed of in the control dumpsite.

Waste management during operations of the relocation site and the completed market facility will be the responsibility of the Municipality.

Table 7-4.

## **8 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN**

### **8.1 INTRODUCTION**

Environmental and Social monitoring is an essential tool in relation to environmental and social management as it provides the basis for rational management decisions regarding impact control. The monitoring program for the project will be undertaken to meet the following objectives:

- To check whether mitigation measures have been adopted and are proving effective in practice.
- To provide a means whereby any impacts which were subject to uncertainty at the time of preparation of the ESIA, or which were unforeseen, can be identified, and to provide a basis for formulating appropriate additional impact control measures.
- To provide information on the actual nature and extent of key impacts and the effectiveness of mitigation measures which, through a feedback mechanism, can improve the planning and execution of future, similar projects.

Monitoring should take place during all phases of the project.

### **8.2 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN AT THE MAKENI MARKET SITE**

Table 8-1, Table 8-2, and Table 8-3 summarize the mitigation measures for the negative impacts identified in the impact analysis for the construction, operation, and decommissioning phases of the project, respectively. The mitigation plan shall be based on a source and sensitivity approach, allowing the identification and proposition of protective measures for tackling the problems facing each.

**Table 8-1 Environmental and Social Mitigation Plan for the Construction Phase at the Makeni Central Market Site**

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Emissions</b>							
<b>Air Emissions</b>	Airborne particles (dust) from soil disturbance and demolition works and from offsite quarrying	Med (9)	<ul style="list-style-type: none"> <li>Surround the construction areas with scaffolding nets or fencing to control demolition waste, debris &amp; dust from spreading beyond the construction site.</li> <li>Employ effective dust control measures throughout the demolition and excavation processes to minimize airborne particles (such as water spraying at emission sources, conducting filling and unloading operations without tossing, covering vehicles with tarpaulin during material transportation, and maintaining material humidity at 10%, installing dust shrouds on material stockpiles and concrete mixing equipment).</li> <li>Minimize dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house or cyclone) where applicable.</li> <li>Internal roads should be adequately compacted and periodically graded and maintained.</li> <li>Schedule deliveries of raw material and products efficiently and enforce appropriate</li> </ul>	Med (4)	No significant local air quality effects are predicted following the implementation of good construction practices, which incorporate the implementation of the identified mitigation measures.	Contractor and supervision consultant	As part of construction costs
	Fugitive emissions during construction works and odors from paving activities	Med (9)		Med (4)			
	Emissions from generators, machinery, and equipment (including from quarrying offsite)	Med (6)		Low (3)			

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	Potential Asbestos fibers dispersion from demolition and clearing of the existing structures	Med (8)	<p>speed limits.</p> <ul style="list-style-type: none"> <li>Ensure that the contractor sources construction materials from quarries, licensed by EPA, that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> <li>Exposed surfaces of stockpiled materials should be vegetated.</li> <li>Ensure the installation of adequate ventilation systems in enclosed construction areas where applicable to prevent the accumulation of pollutants.</li> <li>Adopt construction equipment with low emission levels to reduce air pollution during the construction phase, ensure proper engine fuel mixtures and regularly serviced exhaust emission systems, suitable engine tuning, and use of low sulfur content diesel; and limit vehicle and machinery idling times to reduce emissions.</li> <li>Ensure regular maintenance of machinery and equipment to minimize emissions from inefficient or malfunctioning engines.</li> <li>Inspect the presence of black smoke from vehicles and engines and undertake remedial maintenance when it is observed to improve engine efficiency.</li> <li>Maintain constant communication with communities surrounding the project area on construction timing, mitigation measures, and contact information for grievances.</li> <li>Prohibit open burning and enforce proper waste disposal methods to mitigate potential contributions to air pollution.</li> <li>Implement the Asbestos Management Plan (Appendix 7) and consider the following measures to reduce/eliminate the health risks of asbestos:                             <ul style="list-style-type: none"> <li>Assess the Asbestos level at the construction site.</li> <li>Post hazards signs at the regulated areas.</li> <li>Provide workers with protective outer clothing that can be removed and cleaned or discarded and proper personal protective equipment, including respirators, as appropriate.</li> <li>Prohibit smoking, eating, or drinking in areas where asbestos exposure is possible.</li> <li>Ensure that Infrastructures to be demolished and re-constructed are moistened.</li> <li>Avoid breaking up large pieces of asbestos waste and apply double packaging material around the waste.</li> <li>Ensure that workers are washing exposed parts of the body with soap and water and avoiding carrying asbestos fibers out of the worksite.</li> <li>Train workers who may be exposed to airborne concentrations of asbestos at or above Permissible Exposure Limit (PEL).</li> </ul> </li> <li>Provide medical surveillance to workers in accordance with OSHA's asbestos standards when they will be exposed to airborne concentrations of fibers of asbestos at or above OSHA's exposure limits for a combined total of 30 or more days per year; or when they perform work that disturbs asbestos-containing material (ACM) or presumed asbestos-containing material (PACM) for a combined total of 30 or more days per year; and/or for workers that wear negative-pressure respirators.</li> </ul>	Med (4)			
<b>Noise and Vibration</b>	Increase in vibration and noise levels from general demolition and construction activities, mobilization and operation of equipment and generators, and movement of vehicles onsite and offsite (at quarrying site).	High (12)	<ul style="list-style-type: none"> <li>Implement noise barriers and enclosures at the construction site to minimize the impact of construction-related noise.</li> <li>Fit all machinery and vehicles with effective exhaust silencers as applicable.</li> <li>Maintain all machinery and vehicles in good condition and avoid leaving equipment idling unnecessarily</li> <li>Schedule noisy activities during permissible hours to reduce disruptions to the surrounding community and maintain constant communication with communities surrounding the project area on construction timing, mitigation measures, and contact information for grievances.</li> <li>Avoid noisy activities on weekends and holidays.</li> <li>Provide soundproofing of the generators room to reduce disturbance to nearby</li> </ul>	Med (6)	For the proposed market project, noise generation is anticipated to be site-specific. No significant local noise levels are predicted following the implementation of good construction practices, which incorporate the implementation of the identified mitigation measures.	Contractor and supervision consultant	Part of construction activities cost.  The cost of noise monitoring is estimated at USD 800 per event.  Cost of noise protection equipment:

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
			receptors if noise levels exceed applicable standards and solicit complaints at nearby receptors <ul style="list-style-type: none"> <li>Provide workers with noise protection equipment when operating noisy equipment and enforce their use.</li> <li>Minimize transportation activities through community areas.</li> <li>Conduct regular noise monitoring at the nearest receptors to ensure that noise emissions are compliant with WB standards</li> <li>The use of electrically driven machines should be considered.</li> <li>Ensure that the contractor sources construction materials from quarries, licensed by EPA, that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures</li> </ul>				included under mitigation measures for health and safety impacts below.
<b>Wastewater Generation</b>	Inadequate storage and disposal of wastewater generated	Med (8)	<ul style="list-style-type: none"> <li>Workers will be provided with mobile toilets will be regularly emptied</li> <li>Regular inspection of septic/ holding tanks and regular maintenance to allow effective operation</li> <li>Ensure settlement of slurry resulting from concrete pouring, curing and washing of mixers before discharge to the septic tanks.</li> <li>Empty septic/ holding tanks frequently.</li> <li>Coordinate with the City Council to install septic tanks in areas of stable soils that are well drained and permeable with enough separation between the drain field and the groundwater.</li> <li>An authorized service provider should be commissioned to transport and discharge the wastewater and sludge to authorized sites/treatment facility.</li> <li>Vehicle washing should be allowed only in contained maintenance areas offsite or onsite with impermeable concrete pavement and proper drainage</li> <li>Prohibit onsite the discharge of wastewater into water bodies, soil or drainage systems.</li> <li>Conduct periodic monitoring of groundwater quality up-gradient and down-gradient from the site in line with the proposed monitoring plan to detect any potential contamination.</li> </ul>	Low (2)	No significant impacts on the local water environment are predicted with the implementation of the proposed mitigation measures.	Contractor, Supervision Consultant, City Council	Part of Contractor's scope of works and fees  Cost of water sample analysis: around USD 900 per sample
<b>Solid Waste</b>	Demolition and construction solid waste disposal	High (12)	<ul style="list-style-type: none"> <li>Implement a comprehensive waste management plan (refer to Appendix 8) focused on sorting and recycling to minimize the impact of solid waste.</li> <li>Segregate at source domestic waste, construction waste that can be reused, construction waste to be disposed of, etc.</li> <li>Reuse part of the excavation waste, which is clean and devoid of artificial material in backfilling; and dispose of the rest (if any) in a permitted construction and demolition waste dump designated by the City Council or relevant authority.</li> <li>Schedule the works for the dry season if possible.</li> <li>Ensure that standards of "good housekeeping" are maintained (i.e., avoid littering and prevent storage of putrescible waste for more than 24 hours to prevent attraction of pests and flies).</li> <li>Construction waste stockpiles shall be covered and contained to prevent them from being transported by wind and rain.</li> <li>Arrange with the City Council or third party for regular collection and ensure waste disposal complies with local regulations.</li> <li>Implement measures to minimize waste generation by optimizing construction processes, reducing material waste, and using materials efficiently.</li> <li>Explore opportunities for reusing materials from demolished structures to contribute to sustainable construction practices.</li> <li>Educate workers on waste management practices to encourage segregation, recycling and responsible disposal and to minimize waste generation.</li> </ul>	Med (6)	No significant impacts on the local water environment are predicted with the implementation of the proposed mitigation measures.	Contractor, Supervision Consultant, City Council, and Waste management company (if any)	No separate costs estimation – part of construction activities cost
	Inadequate storage and disposal of domestic solid waste	Med (9)		Med (4)			

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Accidental Releases</b>	Accidental spills of chemicals (paints, solvents) fuels and oils onsite and offsite (at quarrying site)	Med (8)	<ul style="list-style-type: none"> <li>Any type of chemical, oil, fuels and lubricants must be stored and handled within containment facilities (e.g. bounded areas, leak proof trays) designed to prevent the release of spills/leaks to the soil and surface water and groundwater environment.</li> <li>Maintenance schedules shall be put in place as part of the inspection procedures of all equipment/generators/machinery for risk minimization.</li> <li>Maintenance of machines and equipment shall take place off-site or onsite in a contained area with impermeable concrete pavement and drainage for vehicle washing and maintenance.</li> <li>Oil spill response kits shall be available wherever oils are being used/stored.</li> <li>Awareness among workers shall be promoted on how to handle oil/lubricants.</li> <li>Training of workers should be provided on how to clean up small scale spills.</li> <li>Good housekeeping practices should be maintained during construction.</li> <li>Drip trays should be used when re-fueling.</li> </ul>	Med (4)	No significant residual impacts from accidental spills are predicted following the implementation of good practices, which incorporate the implementation of the identified mitigation measures.	Contractor, Supervision consultant	Part of construction activities cost Cost of spill response kit: 80 USD Cost per drip tray: USD 60

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
			<ul style="list-style-type: none"> <li>A Spill Emergency Plan should be prepared specifically for the project.</li> <li>In case of a spill:                             <ul style="list-style-type: none"> <li>Stop the source of spill (close valve, seal pipe, seal hole or as appropriate).</li> <li>Immediately notify the EHS manager and construction manager who will in turn notify the project proponent in accordance with the Spill Emergency Plan.</li> <li>Check for hazards and flammable matters on site.</li> <li>Clean the spill by removing affected topsoil layer by trained employees (they should be wearing appropriate PPE);</li> <li>Treat the removed layer as hazardous waste and store them on impermeable and solvent resistant plastic sheets such as heavy gauge polyethylene plastic sheets before coordinating with the relevant party on the recommended disposal/treatment option; and</li> <li>Adopt as much as possible dry-cleaning techniques to decrease resulting wastewater, and to avoid flushing of spills to the underlying low yield aquifer.</li> </ul> </li> </ul>				
<b>Depletion of Resources</b>							
<b>Energy Resources</b>	Electricity consumption and fuel consumption for generators, vehicles and equipment operation onsite and offsite (at quarrying site)	High (12)	<ul style="list-style-type: none"> <li>Select energy-efficient machinery, generators, and vehicles to reduce electricity and diesel consumption and ensure regular maintenance.</li> <li>Implement practices such as optimizing generator use, turning off equipment when not in use, and managing electricity use efficiently.</li> <li>Develop a schedule for energy use onsite through:                             <ul style="list-style-type: none"> <li>Identifying energy needs for various equipment and activities.</li> <li>Organizing construction tasks into phases and creating a detailed schedule to align energy usage with project timelines; and</li> <li>Estimating the energy needs for each phase based on planned equipment and activities and managing them in an efficient way.</li> </ul> </li> <li>Educate workers and operators on energy-efficient practices and the importance of minimizing energy use and fuel consumption.</li> <li>Monitor and report energy and fuel consumption regularly to identify areas for improvement.</li> </ul>	Med (4)	No significant residual impacts from fuel and electricity consumption are predicted following the implementation of the identified mitigation measures.	Contractor, Supervision Consultant	No separate costs estimation – part of construction activities cost
<b>Water Resources</b>	Depletion of water resources	Med (6)	<ul style="list-style-type: none"> <li>Use rainwater for construction purposes (especially for concrete curing) where feasible.</li> <li>Develop and implement a drainage system to effectively redirect rainstorm water and decrease surface runoff.</li> </ul>	Low (2)	No significant impacts on local water consumption are predicted with the implementation of proposed mitigation measures.	Contractor, Supervision consultant	No separate costs estimation – part of construction activities cost
	Water depletion and quality deterioration from water consumption, runoff and sedimentation, and reduced soil permeability	High (12)	<ul style="list-style-type: none"> <li>Use water-efficient construction equipment and techniques to reduce water consumption</li> <li>Implement water-saving practices such as using water-efficient fixtures and fittings in construction activities.</li> <li>Ensure that drained rainwater undergoes sedimentation in designated tanks before discharge.</li> <li>Educate on-site workers and enforce a water conservation policy and procedures onsite.</li> <li>Ensure that the contractor sources construction materials from quarries, licensed by EPA, that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> </ul>	Med (6)			

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Topography, Soil Erosion and Collapsing from Grading, Trenching and Excavation</b>	Alterations to the land surface, reduced ground permeability and water infiltration from site clearance, excavation and demolition activities, and sourcing of aggregate materials	High (12)	<ul style="list-style-type: none"> <li>Ensure international standards are met during excavation works, compaction and grading activities, in order to minimize expected disturbance during the construction phase.</li> <li>Contain and cover all stockpiles to avoid runoff water transporting suspended solids as a result during precipitation events.</li> <li>Reuse excavated/cut low agricultural quality materials as general fill were considered suitable.</li> <li>Schedule construction activities to avoid heavy rainfall periods to the extent practical.</li> <li>Implement erosion control measures to reduce sediment runoff and prevent water pollution during construction activities.</li> <li>Design channels for post-construction flows.</li> <li>Centralize the storage of cement, sand, lime, and other building materials with rainproof measures.</li> <li>Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> </ul>	Med (9)	No significant impacts on land resources are predicted with the implementation of proposed mitigation measures. Potential impacts could include land degradation, soil contamination, visual and aesthetic impacts.	Contractor, Supervision consultant	No separate costs estimation– part of construction activities cost
<b>Biological Resources</b>	Loss of vegetation, fauna, flora and habitats from clearance, excavation, demolition, quarrying and inadequate disposal of resulting waste and wastewater	Low (2)	<ul style="list-style-type: none"> <li>Protect existing vegetation where applicable and possible. Mark out areas that should remain undisturbed and use barriers to prevent damage.</li> <li>Develop and implement a vegetation plan for the area affected by site clearance where no buildings will be erected. Use native plants to enhance local biodiversity.</li> <li>Train construction workers on best practices for minimizing environmental impacts, especially proper waste (ISWM) and wastewater management.</li> <li>Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> </ul>	Beneficial	No residual impacts on biological resources. Following the implementation of mitigation measures, the impact is expected to be beneficial.	Contractor, Supervision consultant	No separate cost estimation – part of construction activities cost
<b>Social Impacts</b>							
<b>Traffic</b>	Increase in traffic circulation from the transportation of construction materials and waste, traffic-related accidents or injuries onsite and offsite (at quarrying site)	Med (6)	<ul style="list-style-type: none"> <li>Develop and implement a traffic management plan for the traffic within the construction site and around it</li> <li>Delivery of materials should be planned at night when there is minimal traffic</li> <li>Limit speed on the construction site and adopt careful logistical and route planning.</li> <li>Display any necessary traffic diversion signs, reflective caution, and devices correctly to warn of hazards and provide directions.</li> <li>Coordinate with the City Council and traffic police with respect to the planned road blockages, and the scheduling of the construction works including material delivery, waste transfer, truck movement and other machinery operations to limit the disruption to the neighborhood from traffic inconveniences and traffic flow and to minimize noise and dust generation.</li> <li>Follow a specific schedule for transport to avoid interference with peak traffic hours and minimize disturbance.</li> <li>Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> <li>Access to active work areas should be properly and effectively monitored to prevent entry by unauthorized individuals</li> </ul>	Low (2)	Residual impacts on traffic are expected to be limited following implementation of the proposed mitigation measures.	Supervision consultant, City Council, and respective road authority	No separate costs estimation – included in contractor's scope of works and fees
<b>Health and Safety</b>	Impact on workers' safety (including from accidents) resulting from improper handling and storage of construction material, and construction and	High (12)	<ul style="list-style-type: none"> <li>Enforce strict safety regulations and procedures on-site.</li> <li>Conduct regular safety inspections and audits.</li> <li>Implement the Occupational and Community Health and Safety plans for the project (section 8.6).</li> <li>Train workers in working safely and identifying work hazards and associated risks.</li> <li>Provide appropriate PPEs that offer adequate protection to the workers (goggles, dust</li> </ul>	Med (6)	Residual impacts on health and safety will be considerably reduced to an acceptable level with the implementation of the proposed mitigation measures.	Contractor, Supervision consultant, City Council	<u>PPEs Prices/ person (~175 USD):</u> <ul style="list-style-type: none"> <li>• Overall ~12 USD</li> <li>• Boots ~100 USD</li> <li>• Helmet ~ 5 USD</li> </ul>

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	demolition activities Impact on workers' safety resulting from improper handling and storage of chemicals and solid waste generated related to demolition and construction activities Borehole drilling and electrical systems installation pose health concerns on workers' and the community.	Med (9)	<p>masks, helmets, hearing protection equipment, proper clothing and boots...), ensure their proper use and maintenance.</p> <ul style="list-style-type: none"> <li>Prohibit smoking and littering.</li> <li>Provide sufficient lighting and fencing around the construction area to prevent unauthorized access and protect the surrounding community from potential hazards.</li> <li>Post adequate signs throughout the Construction Area, especially at visible locations, indicating type of operation, potential hazards, and appropriate medical / emergency action response.</li> <li>Ensure that no employee is exposed to a noise level greater than 85 dB (A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 110 dB(A).</li> <li>Keep machinery and vehicle passages clear. Install clearly marked pedestrian walkways, barriers, and signage to ensure safe passage for pedestrians and residents around the</li> </ul>	Med (4)			<ul style="list-style-type: none"> <li>PVC Gloves ~2 USD</li> <li>Welding Gloves ~ 4 USD</li> <li>Goggles ~ 3 USD</li> <li>Reusable ear plugs ~1.5 USD</li> <li>Earmuffs ~28 USD</li> <li>FFP3/FMP3 Mask: ~ 8 USD</li> </ul> <p><u>First Aid Kit (for 100 workers) ~200 USD</u></p>

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	Impact on workers' and community health and safety resulting from exposure to occupational hazards (e.g., noise, air pollution, dust, fire hazards, etc.) and potential for occupational accidents/ accidents and pedestrians, and disturbance to the nearby community.	High (12)	<p>construction site.</p> <ul style="list-style-type: none"> <li>Provide Personal Protective Equipment for workers, provide hoarding and cordon off work areas to protect the community from exposure to such risks</li> <li>Ensure the availability of adequate loading and unloading space.</li> <li>Ensure adequate portable fire-fighting equipment is available and regularly maintained.</li> <li>Provide an emergency action plan (refer to Appendix 12) and fire hazard inspection procedures.</li> <li>Ensure that first aid can be always provided. Appropriately equipped first-aid stations should be easily accessible throughout the place of work.</li> <li>Implement procedures for the safe handling, storage, and disposal of chemicals and hazardous materials.</li> <li>Provide health monitoring and medical surveillance for workers exposed to hazardous conditions to detect any early signs of health issues.</li> <li>Implement the mitigation measures for air and noise emissions and waste management listed above to minimize impacts on workers and nearby residents/pedestrians and community.</li> <li>Ensure that the contractor sources construction materials from quarries, licensed by EPA, that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.                             <ul style="list-style-type: none"> <li>All workers should be given proper induction/orientation on safety in the work sites.</li> <li>The contractor will have a Health &amp; Safety Policy and systems and procedures to guide the activities</li> <li>The contractor will ensure all workers adhere to the Code of Conduct</li> <li>Cordoning off work site which including excavated areas and provide entrances to the barricade to allow access only to authorized persons</li> <li>Provide adequate reflecting safety signs at the staging area, project approach routes, excavated areas and perimeter barricade</li> <li>Install warning lights around the sites.</li> <li>Access to active work areas should be properly and effectively monitored to prevent entry by unauthorized individuals</li> <li>Workers and visitors alike must undergo safety briefing before worksite entry or work assignment.</li> <li>Proper incidents, near misses etc. must be tracked and recorded on the incident tracking dashboard.</li> <li>First aid boxes and medical emergency response kits provided on the project site must meet the international first aid kit requirements based on the number of the active workforce on site.</li> <li>Signages posted in the work areas should meet the international safety signs</li> </ul> </li> </ul>	Med (6)			Fire Extinguisher (Powder-6 kg): 55 USD
<b>Social</b>	Resettlement impacts from the relocation of traders and integration challenges for the relocated traders into new market environment at their relocation site	High (12)	<ul style="list-style-type: none"> <li>Develop and implement a pre-relocation communication strategy through workshops or meetings to explain the relocation plan.</li> <li>Relocate the market traders to the selected and prepared relocation site for the period of the market building upgrade.</li> <li>Ensure and monitor proper implementation of the RP prepared for the project covering resettlement assistance, transitional support, disturbance allowances, livelihoods restoration and compensation for lost assets for all PAPs, as well as assistance measures for vulnerable people tailored to their individual needs.</li> </ul>	Low (2)	The residual social impacts will be considerably reduced to an acceptable level with the implementation of the proposed mitigation measures.	Contractor, Supervision consultant, City Council, City Police	RP cost: USD 1,015,635
	Loss of livelihoods because of the planned interventions and relocation	Med (9)	<ul style="list-style-type: none"> <li>Provide livelihood restoration programs, including financial compensation, business development support (training), and access to new markets to help affected traders reestablish their businesses.</li> </ul>	Low (2)			

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	Loss of private assets (land, structures, etc.)	High (12)	<ul style="list-style-type: none"> <li>Ensure that the relocation market site is easily accessible to traders and buyers by improving transportation infrastructure and providing clear directions.</li> <li>Prioritize hiring local workers for construction and other project-related jobs to reduce potential labor influx, social unrest, and provide economic benefits to the community</li> <li>Provide and implement a grievance redress mechanism for the workers, PAPs and community (refer to Appendix 14); regularly raise awareness of the GRM among relevant stakeholders.</li> <li>Set up support centers or information kiosks where affected traders and residents can obtain information, access support services, and report grievances</li> <li>Support relocated PAPs in their integration into their relocation site through introducing them to traders present at the relocation site where applicable and providing the needed support (on case by case).</li> <li>Provide advanced notice of construction activities to affected businesses and residents.</li> <li>Ensure no children are employed on site in accordance with Sierra Leone Employment Act</li> <li>PMU and the contractor shall adopt a "Child Protection Code of Conduct" which sets stringent standards for personal behavior to avoid child exploitation and abuse (refer to Appendix 13)</li> <li>Implement a robust Code of Conduct for all workers and subcontractors to address potential issues such as theft, substance abuse, gender-based violence (GBV), sexual harassment, and exploitation (refer to Appendix 13, Appendix 15, and Appendix 16)</li> <li>Implement the labor management plan (refer to Appendix 13) to avoid conflicts. Adhere to local labor laws and the project's labor management plan to ensure fair and safe working conditions.</li> <li>Continuously monitor the implementation of mitigation measures and the Resettlement plan, and their effectiveness in addressing the social impacts of market construction and resettlement.</li> <li>Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> <li>Prohibit the consumption of alcohol or recreational drugs in the workplace.</li> <li>Implement measures to identify signs of alcohol or drug use, such as poor coordination, concentration, or visual disturbances.</li> <li>Conduct regular education and sensitization campaigns targeting workers and the surrounding community, providing information and educational materials on the prevention and management of HIV/AIDS and Sexually Transmitted Diseases (STDs), tailored to the project's socio-economic context.</li> <li>Ensure the availability and distribution of prevention resources such as condoms and informational materials and provide access to antiretroviral drugs (ARVs) and healthcare services for affected individuals, in collaboration with local health authorities.</li> </ul>	Low (2)			
	Possible social unrest among residents if they are not hired for the works	High (12)		Low (3)			
	Grievances regarding construction activities from nearby traders and residents, and regarding relocation impacts from PAPs. And risk of conflicts between the market traders and the City Council in the allocation of temporary selling spaces.	Med (6)		Low (2)			
	Risk of labor influx from other regions, child labor, forced labor, undesirable behavior such as theft, alcoholism, drug abuse, GBV and SH/SEA, and transmission of HIV/AIDS	Med (8)		Low (2)			
	Job Opportunities for skilled and unskilled members of the community, capacity building, skill development, and increased community participation	Beneficial		Beneficial			

**Table 8-2 Environmental and Social Mitigation Plan for the Operation Phase at the Makeni Central Market Site**

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Emissions</b>							
<b>Air Emissions</b>	Change in overall atmospheric pollutant emissions (odor emissions from septic tanks, waste and food storage)	Med (6)	<ul style="list-style-type: none"> <li>Ensure proper management of solid wastes, wastewater and sludge resulting from operation activities through the implementation of detailed management plans to prevent air emissions and odors.</li> <li>Ensure that waste collection bins are always kept closed.</li> <li>Ensure the rapid pick up and collection of waste from the market to avoid odor generation.</li> </ul>	Low (3)	No significant local air quality effects are predicted following the implementation of the identified mitigation measures.	Makeni Council City	Part of operation costs
	Change in air emissions and GHG emissions (exhaust emissions and dust from traffic, generators operation, and fuel-powered equipment that might be used in the market site)	Med (6)	<ul style="list-style-type: none"> <li>Implement a schedule for transporting goods to avoid unnecessary trips.</li> <li>Implement a traffic management strategy to minimize emissions from transportation.</li> <li>Use water suppression or spraying systems as needed on paved or unpaved road surfaces to minimize dust.</li> <li>Inspect and maintain the wastewater treatment system regularly.</li> <li>Transport the sludge from the septic tank in bowsers (closed tankers) to an adequate treatment facility (in agreement with MCC) to control the emission of Odors.</li> <li>Minimize the emptying time of the sludge holding tank to reduce odor emissions to the shortest period possible.</li> </ul>	Low (3)			
<b>Noise and Vibration</b>	Noise emissions from the market daily activities. Traffic, generators, maintenance activities	Med (9)	<ul style="list-style-type: none"> <li>Ensure regular maintenance of all noise emitting machinery/ equipment.</li> <li>Avoid conducting maintenance works on Sundays and holidays and limit them to daytime hours.</li> <li>Establish a grievance mechanism and implement timely and effective actions to minimize impacts from noise in the case of complaints from any of the inhabitants/ nearby receptors.</li> <li>Conduct noise monitoring near sensitive receptors to ensure that noise levels are compliant with WB standards.</li> </ul>	Med (4)	With the implementation of the proposed mitigation measures, noise impacts from the project operation should be acceptable and can be immediately remediated when grievances are raised.	Makeni Council City	The cost of noise monitoring is estimated at USD 800 per event.
<b>Wastewater Generation</b>	Treatment of domestic wastewater collected in septic tanks	Low (2)	<ul style="list-style-type: none"> <li>Inspect and maintain the wastewater treatment system regularly, which includes managing any potential issues like clogging or sediment buildup.</li> <li>Water quality monitoring – bacteriological and physico-chemical parameters (1 sample quarterly) of the treated effluent</li> </ul>	Low (1)	No significant impacts on the local soil and water environment are predicted with the implementation of proposed mitigation measures.	Makeni Council City	The cost per water sample is estimated at USD 900
	Potential leakage of the septic tank where wastewater will be collected prior to treatment in a wastewater treatment facility, or malfunction of the treatment system	Med (8)	<ul style="list-style-type: none"> <li>The septic tank should be fully impermeable.</li> <li>Septic systems should be properly designed and installed in accordance with local regulations and guidance to prevent any hazard to public health or contamination of land, surface or groundwater. (the design document shows that the septic tanks will be constructed with concrete base and slabs with access manholes and the walls will be done with sandcrete blocks rendered on both sides)</li> <li>Empty the septic tank frequently.</li> <li>Regularly inspect the septic tank.</li> <li>Commission an authorized service provider to transport and discharge the sludge in authorized sites.</li> <li>Stop the source of the leak as soon as possible if it happens.</li> <li>Contain spills and develop procedures for emergency cleanup in case of leakages.</li> </ul>	Low (3)		Makeni Council City	Part of operation costs
<b>Solid Waste</b>	Solid waste disposal resulting from operation activities including healthcare waste.	Med (6)	<p>The following mitigation measures are suggested in addition to Appendix 8</p> <ul style="list-style-type: none"> <li>Continuously monitor waste generation and adjust disposal methods accordingly to enhance efficiency.</li> <li>Minimize waste generation.</li> <li>Provide waste storage area with sorting and signs for the various types of waste.</li> </ul>	Low (3)	Residual impacts from solid waste and sludge management are expected to be low with the proper implementation of the proposed mitigation measures.	Makeni Council City	Cost of awareness campaign preparation and implementation, including

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	Improper disposal of sludge	Med (8)	<ul style="list-style-type: none"> <li>Promote awareness about integrated solid waste management, including sorting of waste at source (dry versus wet waste as a first step)</li> </ul>	Low (3)			personnel, supporting media,

<sup>15</sup> [https://www.researchgate.net/publication/355594797\\_Operation\\_and\\_Performance\\_of\\_Austrian\\_Wastewater\\_and\\_Sewage\\_Sludge\\_Treatment\\_as\\_a\\_Basis\\_for\\_Resource\\_Optimization#pf11](https://www.researchgate.net/publication/355594797_Operation_and_Performance_of_Austrian_Wastewater_and_Sewage_Sludge_Treatment_as_a_Basis_for_Resource_Optimization#pf11)

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
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<sup>15</sup> [https://www.researchgate.net/publication/355594797\\_Operation\\_and\\_Performance\\_of\\_Austrian\\_Wastewater\\_and\\_Sewage\\_Sludge\\_Treatment\\_as\\_a\\_Basis\\_for\\_Resource\\_Optimization#pf11](https://www.researchgate.net/publication/355594797_Operation_and_Performance_of_Austrian_Wastewater_and_Sewage_Sludge_Treatment_as_a_Basis_for_Resource_Optimization#pf11)

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
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<sup>15</sup> [https://www.researchgate.net/publication/355594797\\_Operation\\_and\\_Performance\\_of\\_Austrian\\_Wastewater\\_and\\_Sewage\\_Sludge\\_Treatment\\_as\\_a\\_Basis\\_for\\_Resource\\_Optimization#pf11](https://www.researchgate.net/publication/355594797_Operation_and_Performance_of_Austrian_Wastewater_and_Sewage_Sludge_Treatment_as_a_Basis_for_Resource_Optimization#pf11)

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
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<sup>15</sup> [https://www.researchgate.net/publication/355594797\\_Operation\\_and\\_Performance\\_of\\_Austrian\\_Wastewater\\_and\\_Sewage\\_Sludge\\_Treatment\\_as\\_a\\_Basis\\_for\\_Resource\\_Optimization#pf11](https://www.researchgate.net/publication/355594797_Operation_and_Performance_of_Austrian_Wastewater_and_Sewage_Sludge_Treatment_as_a_Basis_for_Resource_Optimization#pf11)

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
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<sup>15</sup> [https://www.researchgate.net/publication/355594797\\_Operation\\_and\\_Performance\\_of\\_Austrian\\_Wastewater\\_and\\_Sewage\\_Sludge\\_Treatment\\_as\\_a\\_Basis\\_for\\_Resource\\_Optimization#pf11](https://www.researchgate.net/publication/355594797_Operation_and_Performance_of_Austrian_Wastewater_and_Sewage_Sludge_Treatment_as_a_Basis_for_Resource_Optimization#pf11)

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	Waste generated from end-of-life solar panels and batteries	Med (8)	<p>waste diversion efforts.</p> <ul style="list-style-type: none"> <li>• Ensure that standards of "good housekeeping" are always maintained</li> <li>• Periodic training for staff on proper hazardous waste management, namely batteries from the solar photovoltaic system and healthcare waste.</li> <li>• Adopt sustainable measures at the healthcare center to prevent environmental contamination and public health hazards from healthcare waste:                             <ul style="list-style-type: none"> <li>- Use reusable items such as washable glass or ceramic cups and thermometer probes</li> <li>- Keep items that can be reused in good order and disinfected</li> <li>- Use clearly labeled, color-coded bins to separate infectious, hazardous and general waste</li> <li>- Store sharps such as needles in puncture-proof containers to prevent injuries.</li> <li>- Arrange for timely collection and avoid waste accumulation within the healthcare facility</li> <li>- Provide gloves, masks, and other PPE for workers handling healthcare waste</li> <li>- Engage an authorized waste management company to transport hazardous healthcare waste to approved treatment or disposal facilities.</li> <li>- Consider possible on-site disinfection and proper packaging before waste transportation.</li> <li>- Train healthcare workers on waste segregation, handling procedures, and infection control</li> <li>- Develop protocols for accidental hazardous exposure and train staff how to respond</li> <li>- Maintain logs of waste generation, collection, and disposal activities to ensure traceability.</li> </ul> </li> <li>• For the sludge, specific safety procedures for transportation and disposal of sludge from the septic tank shall be developed:                             <ul style="list-style-type: none"> <li>- Sludge needs to be properly collected in bowser tankers and disposed of (after aeration, dewatering, and stabilization) in designated facilities in agreement with MCC and the EPA.</li> <li>- The pH of the resulting sludge must be raised above 12 for 3 days and the sludge must be heated, i.e. its temperature should be maintained above 52 degrees for 12 hours.</li> <li>- The resulting sludge should be stabilized with lime and tested (leaching test) to check its suitability for landfilling. If landfilling is not possible, the sludge should be stored until a hazardous waste landfill is constructed and operated. Alternatively, the pre-treated sludge can be composted in a licensed nearby composting facility.</li> </ul> </li> <li>• For the batteries and solar panels:                             <ul style="list-style-type: none"> <li>- Set up designated collection points within the market for end-of-life solar panels and batteries. Ensure these points are easily accessible and well-marked and are protected/ secured by the City Council.</li> <li>- Create secure and weatherproof storage areas for waste solar panels and batteries, protecting them from damage, theft, or exposure to elements that could lead to leaks or other environmental hazards.</li> <li>- Engage with manufacturers or suppliers upon procurement of the system to implement a take-back policy whereby they are responsible for reclaiming expired panels and batteries for recycling and safe disposal. Spent batteries can alternatively be handed to a facility that is licensed to handle spent batteries in the country if/ when it exists.</li> <li>- Promote initiatives to repair or refurbish solar panels and batteries whenever possible, extending their useful life.</li> <li>- Ensure that expired batteries, especially those containing lithium or lead, are</li> </ul> </li> </ul>	Low (3)			<ul style="list-style-type: none"> <li>• Disposal: \$4 to \$110 per ton (wet mass); \$23 to \$620 per ton (dry mass)</li> <li>• Composting: \$65 to \$83 per ton (wet mass); \$255 to \$322 (dry mass).</li> </ul> <p>Cost of management of waste solar panels and batteries: to be determined in due time (in 5 years for batteries and 20-25 years for solar PV panels)..</p>

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
			classified and segregated as hazardous waste.				
<b>Accidental Releases</b>	Spills and leaks from generators and maintenance activities	Med (8)	<ul style="list-style-type: none"> <li>If stored on-site, Lubricating Oils shall be contained in either a double skin tank over concrete floor or inside a concrete bund of at least 110% the capacity of the containment tank.</li> <li>Records for Lubrication oil shall be kept.</li> <li>A maintenance schedule and checklist shall be prepared and effectively followed.</li> <li>A Spill Response Plan shall be put in place prior to operation and adequate staff shall be assigned and regularly trained on it.</li> <li>A supply of suitable absorbent materials will be made available at the site for use in dealing with minor spills. If a leak or spill occurs during maintenance operations, the operations will be stopped and the spill will be contained, cleaned up and collected based on the Spill Response Plan.</li> <li>Install secondary containment (e.g., spill trays) under generators and fuel storage tanks.</li> <li>Regularly inspect and maintain generators and fuel storage tanks to prevent leaks.</li> <li>Stop the source of leak (close valve, seal pipe as appropriate) as soon as possible when it happens.</li> <li>Use drip trays or other containment methods during maintenance activities to catch any spills or leaks.</li> <li>Properly dispose of used oils, lubricants, and other maintenance-related waste materials.</li> </ul>	Low (3)	Residual impacts from potential accidental spills of chemicals, fuels and oils, are expected to be low with the proper implementation of the proposed mitigation measures.	Makeni City Council	Cost of spill response kit: 80 USD Cost per drip tray: USD 60
<b>Depletion of Resources</b>							
<b>Energy Resources</b>	Electricity consumption and backup power system for cold rooms and equipment; fuel consumption for generators and transportation of goods	Med (9)	<ul style="list-style-type: none"> <li>Select energy-efficient equipment (if applicable), generators, and vehicles to reduce electricity and fuel consumption and ensure regular maintenance.</li> <li>Implement practices such as optimizing generator use, turning off equipment when not in use, and managing electricity use efficiently.</li> <li>Regular maintenance of equipment/ appliances as applicable</li> <li>Monitor and report energy and fuel consumption regularly to identify areas for improvement.</li> <li>Implement energy conservation measures in building design and operation</li> <li>Ensure the installation of LED lights and energy saving equipment to minimize power needs.</li> <li>Promote awareness on energy conservation (e.g., turning off lights when not in use, using machines and equipment efficiently, etc.) and maximize the use of daylight.</li> </ul>	Med (4)	Residual impacts from electricity and fuel consumption are expected to be acceptable with the proper implementation of the proposed mitigation measures.	Design Engineers/ Makeni City Council	Part of operation costs
<b>Water Resources</b>	Water consumption for domestic purposes, washing and market cleaning	Med (9)	<ul style="list-style-type: none"> <li>Implement water recycling and reuse systems (in addition to the planned rainwater harvesting) to minimize reliance on freshwater sources.</li> <li>Promote water conservation measures within the market to reduce overall water consumption.</li> <li>Minimize and monitor water consumption and identify opportunities for water conservation initiatives to maintain efficient water management practices.</li> <li>Fit toilets with pressure-reducing valves and faucets aerators to reduce water consumption.</li> <li>Perform regular inspections and maintenance of faucets and pipes</li> </ul>	Low (3)	No significant impacts on local water consumption are predicted with the implementation of proposed mitigation measures.	Design engineers/ Makeni City Council	Part of operation costs
<b>Biological Resources</b>	Loss of vegetation and biodiversity from inadequate management of solid waste and wastewater, and the possibility of septic tank malfunctioning and wastewater leakage	Low (1)	<ul style="list-style-type: none"> <li>Train traders and workers on the importance of biological resources and environmental concerns (including SWM and wastewater management).</li> <li>Ensure the implementation of mitigation measures listed for solid waste, wastewater and accidental releases.</li> </ul>	Beneficial	No residual impacts on biological resources. Following the implementation of mitigation measures, the impact is expected to be beneficial.	Makeni City Council	No separate costs estimation - Included in operation costs

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Social Impacts</b>							
<b>Traffic</b>	Transportation of goods and market customers leading to congestion and increasing the risk of accidents	Med (8)	<ul style="list-style-type: none"> <li>Coordinate with the City Council and city police to prevent traffic jams.---</li> <li>Prohibit illegal parking in coordination with the local council.</li> <li>Ensure that the parking entrance is wide enough to allow fluent access/exit of cars and define a clear separation between the entrance and the exit parts of the parking lot.</li> <li>Place warning and direction signs on the road leading to the market, at the entrance and a few meters before.</li> </ul>	Low (2)	Residual impacts from traffic are expected to be low with the proper implementation of the proposed mitigation measures,	Makeni Council City	Part of operation costs
<b>Health and Safety</b>	Impact on traders and workers' Health and Safety resulting from improper routine maintenance or repairs and lack of emergency preparedness	Med (8)	<ul style="list-style-type: none"> <li>Implement routine safety training and awareness programs for market traders.</li> <li>Establish maintenance protocols to ensure the ongoing safety of infrastructure at the market.</li> <li>Ensure adherence to the proposed SWM system with waste reduction and sorting, recycling and composting, as well as Good Housekeeping Practices at all times.</li> <li>Ensure proper operation of the septic tanks, its regular inspection and maintenance.</li> <li>Provide appropriate safety equipment, firefighting equipment and first aid stations.</li> <li>Warning of traders about potential hazards during operation and maintenance.</li> <li>Place signs and posters on health and safety issues within the market</li> <li>Conduct regular safety inspections.</li> <li>Ensure adequate portable fire-fighting equipment is available and regularly maintained.</li> <li>Provide an emergency action plan and fire hazard inspection procedures.</li> <li>Ensure that first aid can always be provided. Appropriately equipped first-aid stations should be easily accessible throughout the market.</li> <li>Investigate fire and other accidents and keep relevant records.</li> <li>Regular maintenance of all systems (firefighting, WWTP, mechanical, electrical, etc.);</li> <li>Implement necessary security measures (CCTV, security patrol, etc.) as per the market design.</li> <li>Promote awareness of GBV, SEA/SH and associated grievance mechanism.</li> <li>Implement the mitigation measures for air and noise emissions and waste management listed above to minimize impacts on workers and nearby residents.</li> <li>Implement the community Health and Safety Plans (section 8.6).</li> </ul>	Med (4)	Residual health and safety impacts are expected to be acceptable with the proper implementation of the proposed mitigation measures,	Makeni City Council	Included in operation costs <u>Cost of First Aid Kit (for 100 persons)</u> ~200 USD <u>Cost of Fire Extinguisher (Powder-6 kg):</u> 55 USD
	Impact on traders, workers' and community's health resulting from poor waste management and sanitation practices.	Med (6)		Low (3)			
	Impact on traders' and workers' safety from risk of fire, inadequate management of security system, crimes, harassment and gender-based discrimination	Med (4)		Low (3)			
	Creation of a safer environment in market area	Beneficial		Beneficial			
	Improved community health and safety due to improved infrastructure and reduced exposure to pollutants	Beneficial		Beneficial			
<b>Social</b>	Inadequate management of market operations, leading to health and safety risks and grievances from the surrounding community	Med (8)	<ul style="list-style-type: none"> <li>Set up, implement and oversee a management plan for the market (covering daily and maintenance activities, health and safety, environmental aspects, security, etc.);</li> <li>Implement necessary security measures (CCTV, security patrol, etc.) as per the market design.</li> <li>Develop a GRM to record and respond to complaints received from traders and the surrounding community (refer to Appendix 14).</li> <li>Set up support centers or information kiosks where residents can obtain information, access support services, and report grievances.</li> <li>Ensure the spaces will be given to the traders that were affected and relocated due to the market upgrade.</li> <li>Monitor and evaluate proper implementation of the RP and livelihoods restoration and intervene where needed.</li> <li>Monitor and assess socio-economic impacts regularly, adjusting strategies as needed based on relevant records.</li> <li>Regularly monitor trader performance post-relocation to identify challenges and provide ongoing technical or business support.</li> </ul>	Low (3)	The potential residual impacts are low following implementation of the proposed mitigation measures.	Makeni Council City	No separate costs estimation, included in operation costs; Monitoring and evaluation of RP implementation part of the RP costs.
	Potential impact on safety due to lack of adequate supervision, monitoring, and control	Med (4)		Low (3)			
	Increased income, improved operating conditions for traders within the market and their suppliers, and more attractive market to customers leading to business	Beneficial		Beneficial			

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	stability Source of revenue to the City Council and potential for new job opportunities	Beneficial	<ul style="list-style-type: none"> <li>Organize opening events or promotional/ advertising and communication activities to inform customers and attract customers and boost initial sales.</li> </ul>	Beneficial			

**Table 8-3 Environmental and Social Mitigation Plan for the Decommissioning Phase at the Makeni Central Market Site**

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Emissions</b>							
<b>Air Emissions</b>	Airborne particles (dust) from demolition works, debris transport and waste handlings	Med (9)	<ul style="list-style-type: none"> <li>Surround the decommissioning areas with scaffolding nets or fencing to control demolition waste, debris &amp; dust from spreading beyond the decommissioning site.</li> <li>Employ effective dust control measures throughout the demolition process to minimize airborne particles (such as water spraying at emission sources, conducting filling and unloading operations without tossing, covering vehicles with tarpaulin during material transportation, and maintaining material humidity at 10%, installing dust shrouds on material stockpiles and concrete mixing equipment).</li> <li>Minimize dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house or cyclone) where applicable.</li> <li>Internal roads should be adequately compacted and periodically graded and maintained.</li> <li>Adopt demolition equipment with low emission levels to reduce air pollution, ensure proper engine fuel mixtures and regularly serviced exhaust emission systems, suitable engine tuning, and use of low sulfur content diesel; and limit vehicle and machinery idling times to reduce emissions.</li> <li>Ensure regular maintenance of generators, machinery and equipment to minimize emissions from inefficient or malfunctioning engines.</li> <li>Inspect the presence of black smoke from vehicles, generators and engines and undertake remedial maintenance when it is observed to improve engine efficiency.</li> <li>Maintain constant communication with communities surrounding the project area on demolition timing, mitigation measures, and contact information for grievances.</li> <li>Prohibit open burning and enforce proper waste disposal methods to mitigate potential contributions to air pollution.</li> </ul>	Med (4)	No significant local air quality effects are predicted following the implementation of good practices, which incorporate the implementation of the identified mitigation measures.	Contractor and supervision consultant	As part of decommissioning costs
	Emissions from generators, equipment and vehicles	Med (6)		Low (3)			
<b>Noise and Vibration</b>	Increase in vibration and noise levels from general demolition, mobilization and operation of equipment, and movement of vehicles.	High (12)	<ul style="list-style-type: none"> <li>Implement noise barriers and enclosures at the decommissioning site to minimize the impact of decommissioning-related noise.</li> <li>Fit all machinery and vehicles with effective exhaust silencers as applicable.</li> <li>Maintain all machinery and vehicles in good condition and avoid leaving equipment idling unnecessarily</li> <li>Schedule noisy activities during permissible hours to reduce disruptions to the surrounding community and maintain constant communication with communities surrounding the project area on decommissioning timing, mitigation measures, and contact information for grievances.</li> <li>Avoid noisy activities on weekends and holidays.</li> <li>Provide workers with noise protection equipment when operating noisy equipment/ conducting noisy activities and enforce their use.</li> <li>Minimize transportation activities through community areas.</li> <li>Conduct regular noise monitoring at the nearest receptors to ensure that noise emissions are compliant with WB standards</li> <li>The use of electrically driven machines should be considered.</li> </ul>	Med (6)	No significant local noise levels are predicted following the implementation of good practices, which incorporate the implementation of the identified mitigation measures.	Contractor and supervision consultant	Part of decommissioning activities cost.  The cost of noise monitoring is estimated at USD 800 per event. Cost of noise protection equipment: included under mitigation measures for health and safety impacts below.
<b>Wastewater Generation</b>	Site cleaning, washdown of equipment, and temporary worker facilities	Med (8)	<ul style="list-style-type: none"> <li>Provide temporary fully impermeable septic tanks to manage wastewater generated during the decommissioning phase, ensuring they are regularly emptied by authorized service providers and maintained to prevent leaks or overflow.</li> <li>Vehicle washing should be allowed only in contained maintenance areas offsite or onsite with impermeable concrete pavement and proper drainage</li> <li>Prohibit onsite the discharge of wastewater into water bodies, soil or drainage systems.</li> <li>Conduct periodic monitoring of groundwater quality up-gradient and down-gradient</li> </ul>	Low (2)	No significant impacts on the local water environment are predicted with the implementation of the proposed mitigation measures.	Contractor, Supervision Consultant, City Council	Part of Contractor's scope of works and fees  Cost of water sample analysis:

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
			from the site in line with the proposed monitoring plan to detect any potential contamination.				around USD 900 per sample
<b>Solid Waste</b>	Demolition waste, domestic solid waste disposal, solar panels and batteries from solar systems	High (12)	<ul style="list-style-type: none"> <li>Recommend repurposing the site or part of it for other purpose(s) to minimize demolition waste.</li> <li>Implement a comprehensive waste management plan (refer to Appendix 8) focused on sorting and recycling to minimize the impact of solid waste.</li> <li>Educate workers on waste management practices to encourage segregation, recycling and responsible disposal and to minimize waste generation.</li> <li>Schedule the works for the dry season if possible.</li> <li>Demolished waste stockpiles shall be covered and contained to prevent them from being transported by wind and rain.</li> <li>Explore opportunities for reusing (or recycling if reusing is not possible) materials from demolished structures to contribute to sustainable construction practices. Dispose of demolition waste in a permitted construction and demolition waste dump designated by the City Council or relevant authority.</li> <li>Engage with manufacturers or suppliers of solar photovoltaic panels and batteries upon procurement of the system to implement a take-back policy whereby they are responsible for reclaiming expired panels and batteries for recycling and safe disposal. Spent batteries can alternatively be handed to a licensed facility to handle spent batteries in the country if/ when it exists.</li> <li>Promote initiatives to repair or refurbish solar panels and batteries whenever possible, extending their useful life.</li> <li>Ensure that expired batteries, especially those containing lithium or lead, are classified and segregated as hazardous waste, and managed accordingly by licensed parties.</li> </ul>	Med (6)	No significant impacts on the local water environment are predicted with the implementation of the proposed mitigation measures.	Contractor, Supervision Consultant, City Council, and/or Waste management companies (if applicable)	No separate costs estimation – part of decommissioning activities cost
<b>Accidental Releases</b>	Accidental spills of chemicals, fuels and oils	Med (8)	<ul style="list-style-type: none"> <li>Any type of chemical, oil, fuels and lubricants must be stored and handled within containment facilities (e.g. bounded areas, leak proof trays) designed to prevent the release of spills/leaks to the soil and surface water and groundwater environment.</li> <li>Maintenance schedules shall be put in place as part of the inspection procedures of all equipment/generators/machinery for risk minimization.</li> <li>Maintenance of machines and equipment shall take place off-site or onsite in a contained area with impermeable concrete pavement and drainage for vehicle washing and maintenance.</li> <li>Oil spill response kits shall be available wherever oils are being used/stored.</li> <li>Awareness among workers shall be promoted on how to handle oil/lubricants.</li> <li>Training of workers should be provided on how to clean up small scale spills.</li> <li>Drip trays should be used when re-fueling.</li> <li>A Spill Emergency Plan should be prepared specifically for the project.</li> <li>In case of a spill: <ul style="list-style-type: none"> <li>Stop the source of spill (close valve, seal pipe, seal hole or as appropriate).</li> <li>Immediately notify the EHS manager who will in turn notify the project proponent in accordance with the Spill Emergency Plan.</li> <li>Check for hazards and flammable matters on site.</li> <li>Clean the spill by removing affected topsoil layer by trained employees (they should be wearing appropriate PPE);</li> <li>Treat the removed layer as hazardous waste and store them on impermeable and solvent resistant plastic sheets such as heavy gauge polyethylene plastic sheets before coordinating with the relevant party on the recommended disposal/treatment option; and</li> <li>Adopt as much as possible dry-cleaning techniques to decrease resulting wastewater, and to avoid flushing of spills to the underlying low yield aquifer.</li> </ul> </li> </ul>	Med (4)	No significant residual impacts from accidental spills are predicted following the implementation of good practices, which incorporate the implementation of the identified mitigation measures.	Contractor, Supervision consultant	Part of decommissioning activities cost Cost of spill response kit: 80 USD Cost per drip tray: USD 60

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Depletion of Resources</b>							
<b>Energy Resources</b>	Fuel consumption for vehicles and equipment operation Removal of electrical systems installations and renewable energy installations	High (12)	<ul style="list-style-type: none"> <li>Select energy-efficient machinery, generators, and vehicles to reduce electricity and diesel consumption and ensure regular maintenance.</li> <li>Implement practices such as optimizing generator use, turning off equipment when not in use, and managing electricity use efficiently.</li> <li>Develop a schedule for energy use onsite through:                             <ul style="list-style-type: none"> <li>Identifying energy needs for various equipment and activities.</li> <li>Organizing tasks into phases and creating a detailed schedule to align energy usage with project timelines; and</li> <li>Estimating the energy needs for each phase based on planned equipment and activities and managing them in an efficient way.</li> </ul> </li> <li>Educate workers and operators on energy-efficient practices and the importance of minimizing energy use and fuel consumption.</li> <li>Monitor and report energy and fuel consumption regularly to identify areas for improvement.</li> <li>If repurposing of removed electrical systems installations and renewable energy installations is feasible and possible, locate parties that would take them back. Otherwise, hand them to licensed parties for repurposing/ material recovery/ recycling/ treatment/ disposal.</li> </ul>	Med (4)	No significant residual impacts from fuel consumption are predicted following the implementation of the identified mitigation measures.	Contractor, Supervision Consultant	No separate costs estimation – part of decommissioning activities cost
<b>Water Resources</b>	Increase demand on local water resources for dust suppression, site cleaning and equipment washing	Med (6)	<ul style="list-style-type: none"> <li>Use rainwater for decommissioning purposes (e.g., site cleaning) where feasible.</li> <li>Develop and implement a drainage system to effectively redirect rainstorm water and decrease surface runoff.</li> <li>Use water-efficient equipment and techniques to reduce water consumption</li> <li>Implement water-saving practices such as using water-efficient fixtures and fittings in decommissioning activities.</li> <li>Ensure that drained rainwater undergoes sedimentation in designated tanks before discharge.</li> <li>Educate on-site workers and enforce a water conservation policy and procedures onsite.</li> </ul>	Low (2)	No significant impacts on local water consumption are predicted with the implementation of proposed mitigation measures.	Contractor, Supervision consultant	No separate costs estimation – part of decommissioning activities cost
<b>Topography. Soil Erosion and Collapsing from Grading, Trenching and Excavation</b>	Soil erosion, compaction and contamination from the use of heavy machinery, storage of heavy materials, and demolition activities	High (12)	<ul style="list-style-type: none"> <li>Recommend repurposing the site for another purpose(s) to minimize demolition works and disturbances.</li> <li>Remediate contaminated soils and avoid unnecessary soil disturbance by using appropriate equipment and methodologies.</li> <li>Contain and cover all stockpiles to avoid runoff water transporting suspended solids as a result during precipitation events.</li> <li>Schedule decommissioning activities to avoid heavy rainfall period to the extent practical.</li> <li>Implement erosion control measures to reduce sediment runoff and prevent water pollution during decommissioning activities.</li> <li>Centralize the storage of demolished materials/ waste with rainproof measures.</li> </ul>	Med (9)	No significant impacts on land resources are predicted with the implementation of proposed mitigation measures. Potential impacts could include soil contamination, visual and aesthetic impacts.	Contractor, Supervision consultant	No separate costs estimation– part of decommissioning activities cost
<b>Biological Resources</b>	Habitat loss for small mammals and insects, loss of biodiversity at sensitive receptors where waste and wastewater from decommissioning may be dumped.	Low (2)	<ul style="list-style-type: none"> <li>Protect existing vegetation where applicable and possible. Mark out areas that should remain undisturbed and use barriers to prevent damage.</li> <li>Develop and implement a vegetation plan for the site following decommissioning based on the planned use of the site. Use native plants to enhance local biodiversity.</li> <li>Train workers on best practices for minimizing environmental impacts, especially proper waste (ISWM) and wastewater management.</li> </ul>	Beneficial	No residual impacts on biological resources. Following the implementation of mitigation measures, the impact is expected to be beneficial.	Contractor, Supervision consultant	Part of decommissioning activities cost Revegetation costs depend on the future use of the site, the area to be planted with native trees, and the tree species to

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
							be used.
<b>Social Impacts</b>							
<b>Traffic</b>	Increase in traffic circulation and traffic-related accidents or injuries from the transportation of waste from demolished or dismantled structures	Med (6)	<ul style="list-style-type: none"> <li>Develop a traffic management plan for the decommissioning site and around it.</li> <li>Transport of demolition waste should be planned at night when there is minimal traffic</li> <li>Limit speed on the site and adopt careful logistical and route planning.</li> <li>Display any necessary traffic diversion signs, reflective caution signage, and devices correctly to warn of hazards and provide directions.</li> <li>Coordinate with the City Council and traffic police with respect to any planned road blockages, and the scheduling of the decommissioning works including waste transfer, truck movement and other machinery operations to limit the disruption to the neighborhood from traffic inconveniences and traffic flow and to minimize noise and dust generation.</li> </ul>	Low (2)	Residual impacts on traffic are expected to be limited following implementation of the proposed mitigation measures.	Supervision consultant, City Council, Sierra Leone Roads Safety Authority, and Sierra Leone Police Department	No separate costs estimation – included in contractor's scope of works and fees
<b>Health and Safety</b>	Impact on workers' safety (including from accidents) resulting from improper handling and storage of materials, demolition activities and equipment	High (12)	<ul style="list-style-type: none"> <li>Enforce strict safety regulations and procedures on-site.</li> <li>Conduct regular safety inspections and audits.</li> <li>Implement the Occupational and Community Health and Safety plans for the project (refer to section 8.6).</li> <li>Train workers in working safely and identifying work hazards and associated risks.</li> <li>Provide appropriate PPEs that offer adequate protection to the workers (goggles, dust masks, helmets, hearing protection equipment, proper clothing and boots...), ensure their proper use and maintenance.</li> <li>Prohibit smoking and littering.</li> <li>Provide sufficient lighting and fencing of the facility for more security and control.</li> <li>Post adequate signs throughout the affected area, especially at visible locations, indicating type of operation, potential hazards and relevant precautions, and appropriate medical / emergency action response.</li> <li>Keep machinery and vehicle passages clear.</li> <li>Ensure the availability of adequate loading and unloading space.</li> <li>Ensure that no employee is exposed to a noise level greater than 85 dB (A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 110 dB(A).</li> <li>Ensure adequate portable fire-fighting equipment is available and regularly maintained.</li> <li>Provide an emergency action plan (refer to Appendix 12) and fire hazard inspection procedures.</li> <li>Ensure that first aid can be always provided. Appropriately equipped first-aid stations should be easily accessible throughout the place of work.</li> <li>Implement procedures for the safe handling, storage, and disposal of chemicals and hazardous materials as applicable.</li> <li>Provide health monitoring and medical surveillance for workers exposed to hazardous conditions to detect any early signs of health issues.</li> <li>Implement the mitigation measures for air and noise emissions and waste management listed above to minimize impacts on workers and the nearby community.</li> </ul>	Med (6)	Residual impacts on health and safety will be considerably reduced to an acceptable level with the implementation of the proposed mitigation measures.	Contractor, Supervision consultant, City Council	<u>PPEs Prices/ person (~175 USD):</u> <ul style="list-style-type: none"> <li>Overall ~12 USD</li> <li>Boots ~100 USD</li> <li>Helmet ~ 5 USD</li> <li>PVC Gloves ~2 USD</li> <li>Welding Gloves ~ 4 USD</li> <li>Goggles ~ 3 USD</li> <li>Reusable ear plugs ~1.5 USD</li> <li>Earmuffs ~28 USD</li> <li>FFP3/FMP3 Mask: ~ 8 USD</li> </ul> <u>First Aid Kit (for 100 workers) ~200 USD</u> <u>Fire Extinguisher (Powder-6 kg): 55 USD</u>
	Impact on workers' safety resulting from improper handling and storage of chemicals and solid waste (including hazardous components) generated related to demolition activities	Med (9)		Med (4)			
	Impact on workers' health and safety resulting from exposure to occupational hazards (e.g., noise, air pollution, dust, fire hazards, etc.), communicable diseases, and potential for accidents	High (12)		Med (6)			
	Community health and safety risks from loud noise disturbing nearby residents, mismanagement of decommissioning waste and inadequate safety measures.	Med (9)		Med (4)			

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
Social	Loss of livelihoods, economic decline and increased unemployment.	High (12)	<ul style="list-style-type: none"> <li>Engage with local communities at an early stage, provide job transition programs and livelihood restoration measures, including financial compensation, business development support, and access to new markets to help affected traders reestablish their businesses. <b>A resettlement plan based on the fate of the market shall be prepared before decommissioning to base compensation measures upon.</b></li> <li>Prioritize hiring local workers for decommissioning and other project-related jobs to reduce potential labor influx, social unrest, and provide economic benefits to the community</li> <li>Provide and implement a grievance redress mechanism for the PAPs and community (refer to Appendix 14)</li> <li>Set up support centers or information kiosks where affected traders and residents can obtain information, access support services, and report grievances</li> <li>Provide advanced notice of decommissioning activities to affected businesses and residents and engage with them on possible options and decisions.</li> <li>Ensure no children are employed on site in accordance with Sierra Leone Employment Act</li> <li>PMU and the contractor shall adopt a "Child Protection Code of Conduct" which sets stringent standards for personal behavior to avoid child exploitation and abuse, following the labor management plan (refer to Appendix 13).</li> <li>Implement a robust Code of Conduct for all workers and subcontractors to address potential issues such as theft, substance abuse, gender-based violence (GBV), sexual harassment, and exploitation, and conduct relevant training and awareness efforts (refer to Appendix 13, Appendix 15, and Appendix 16)</li> <li>Conduct audits during decommissioning period to ensure policies related to child labor, GBV, SEA, and substance abuse are enforced and that any incidents are addressed promptly and transparently.</li> <li>Partner with local NGOs or services to provide support for potential victims of GBV or SEA.</li> <li>Conduct regular education and sensitization campaigns targeting workers and the surrounding community, providing information and educational materials on the prevention and management of HIV/AIDS and STDs, tailored to the project's socio-economic context.</li> <li>Ensure the availability and distribution of prevention resources such as condoms and informational materials and provide access to antiretroviral drugs (ARVs) and healthcare services for affected individuals, in collaboration with local health authorities.</li> </ul>	Low (2)	The residual social impacts will be considerably reduced to an acceptable level with the implementation of the proposed mitigation measures.	Contractor, Supervision consultant, City Council, City Police	Included in contractor's scope of works and fees. RP preparation cost: USD 80,000.
	Risk of labor influx from other regions, child labor, forced labor, undesirable behavior such as theft, alcoholism, drug abuse, GBV and SH/SEA, and transmission of HIV/AIDS	Med (8)		Low (2)			
	Relocation challenges to alternative market or finding alternative income generating activity	High (12)		Low (2)			
	Social unrest and protests during the closure	Med (6)		Low (2)			

### **8.3 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN AT THE RELOCATION SITE**

Table 8-4, Table 8-5, and Table 8-6 summarize the mitigation measures for the negative impacts identified in the impact analysis for the relocation site for the construction, operation, and decommissioning phases of the project, respectively. The mitigation plan shall be based on a source and sensitivity approach, allowing the identification and proposition of protective measures for tackling the problems facing each.

**Table 8-4 Environmental and Social Mitigation Plan for the Construction Phase at the Makeni Relocation Site**

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Emissions</b>							
<b>Air Emissions</b>	Dust from construction activities, transportation of materials and operation of machinery and from quarrying	Med (9)	<ul style="list-style-type: none"> <li>Surround the construction areas with scaffolding nets or fencing to control debris &amp; dust from spreading beyond the construction site.</li> <li>Employ effective dust control measures throughout the excavation processes to minimize airborne particles (such as water spraying at emission sources, conducting filling, and unloading operations without tossing, covering vehicles with tarpaulin during material transportation, and maintaining material humidity at 10%, installing dust shrouds on material stockpiles and concrete mixing equipment)</li> <li>Minimize dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house or cyclone) where applicable.</li> <li>Internal roads should be adequately compacted and periodically graded and maintained.</li> <li>Schedule deliveries of raw material and products efficiently and enforce appropriate speed limits.</li> <li>Exposed surfaces of stockpiled materials should be vegetated.</li> <li>Ensure the installation of adequate ventilation systems in enclosed construction areas where applicable to prevent the accumulation of pollutants.</li> <li>Adopt construction equipment with low emission levels to reduce air pollution during the construction phase, ensure proper engine fuel mixtures and regularly serviced exhaust emission systems, suitable engine tuning, and use of low sulfur content diesel; and limit vehicle and machinery idling times to reduce emissions.</li> <li>Ensure regular maintenance of machinery and equipment to minimize emissions from inefficient or malfunctioning engines.</li> <li>Inspect the presence of black smoke from vehicles and engines and undertake remedial maintenance when it is observed to improve engine efficiency.</li> <li>Maintain constant communication with communities surrounding the project area on construction timing, mitigation measures, and contact information for grievances.</li> <li>Prohibit open burning and enforce proper waste disposal methods to mitigate potential contributions to air pollution.</li> <li>Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> </ul>	Med (4)	No significant local air quality effects are predicted following the implementation of the identified mitigation measures.	Contractor and supervision consultant	As part of construction costs  The cost of air emissions monitoring is estimated at USD 3,000 per event.
	Emissions from generators, machinery, and equipment on-site and offsite (at quarrying site)	Med (9)		Low (3)			
<b>Noise and Vibration</b>	Change in vibration and noise levels from general construction activities, mobilization and operation of equipment, and movement of vehicles, on-site and offsite (at quarrying site).	Med (9)	<ul style="list-style-type: none"> <li>Implement noise barriers and enclosures at the construction site to minimize the impact of construction-related noise.</li> <li>Fit all machinery and vehicles with effective exhaust silencers as applicable.</li> <li>Maintain all machinery and vehicles in good condition and avoid leaving equipment idling unnecessarily</li> <li>Schedule noisy activities during permissible hours to reduce disruptions to the surrounding community and maintain constant communication with communities surrounding the project area on construction timing, mitigation measures, and contact information for grievances.</li> <li>Avoid noisy activities on weekends and holidays.</li> <li>Provide soundproofing of the generators room to reduce disturbance to nearby receptors if noise levels exceed applicable standards and solicit complaints at nearby receptors</li> <li>Provide workers with noise protection equipment when operating noisy equipment and enforce their use.</li> <li>Minimize project transportation through community areas.</li> <li>Conduct regular noise monitoring at the nearest receptors to ensure that noise emissions are compliant with WB standards</li> <li>The use of electrically driven machines should be considered.</li> <li>Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and</li> </ul>	Med (6)	For the proposed market project, noise generation is anticipated to be site-specific.  No significant local noise levels are predicted following the implementation of good construction practices, which incorporate the implementation of the identified mitigation measures.	Contractor and supervision consultant	Part of the construction activities cost.  The cost of noise monitoring is estimated at USD 800 per event.  Cost of noise protection equipment: included under mitigation measures for health and safety impacts below.

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
			social mitigation and monitoring measures.				
<b>Wastewater Generation</b>	Inadequate storage and disposal of domestic and construction wastewater generated	Med (8)	<ul style="list-style-type: none"> <li>Provide fully impermeable septic tanks.</li> <li>Septic systems should be properly designed and installed in accordance with local regulations and guidance to prevent any hazard to public health or contamination of land, surface or groundwater.</li> <li>Regular inspection of septic/ holding tanks and regular maintenance to allow effective operation.</li> <li>Ensure settlement of slurry resulting from concrete pouring, curing and washing of mixers before discharge to the septic tanks.</li> <li>Empty septic/ holding tanks frequently.</li> <li>Coordinate with the City Council to install the septic tanks in areas of stable soils that are well drained and permeable with enough separation between the drain field and the groundwater.</li> <li>An authorized service provider should be commissioned to transport and discharge the wastewater and sludge in authorized sites.</li> <li>Vehicle washing should be allowed only in contained maintenance areas offsite or onsite with impermeable concrete pavement and proper drainage</li> <li>Prohibit onsite the discharge of wastewater into water bodies, soil or drainage systems</li> </ul>	Low (2)	No significant impacts on the local water environment are predicted with the implementation of the proposed mitigation measures.	Contractor, Supervision Consultant, City council	No separate costs estimation - Included in Contractor's scope of works and fees
<b>Solid Waste</b>	Construction solid waste disposal	Med (9)	<p>The following mitigation measures are recommended in addition to Appendix 8</p> <ul style="list-style-type: none"> <li>Segregate at source domestic waste, construction waste that can be reused, construction waste to be disposed of, etc.</li> <li>Reuse part of the excavation waste, which is clean and devoid of artificial material in backfilling; and dispose of the rest (if any) in a permitted construction and demolition waste dump designated by the city council or relevant authority.</li> </ul>	Med (6)	Residual impacts of solid waste generation and management are expected to be limited following implementation of the proposed mitigation measures.	Contractor, Supervision Consultant, City Council, and/or Waste management company	No separate costs estimation – part of construction activities cost
	Inadequate storage and disposal of domestic solid waste	Med (9)	<ul style="list-style-type: none"> <li>Schedule the works for the dry season if possible.</li> <li>Ensure that standards of "good housekeeping" are maintained (i.e., avoid littering and prevent storage of putrescible waste for more than 24 hours to prevent attraction of pests and flies).</li> <li>Construction waste stockpiles shall be covered and contained to prevent them from being transported by wind and rain.</li> <li>Arrange with the City Council or third party for regular collection and ensure waste disposal complies with local regulations.</li> <li>Implement measures to minimize waste generation by optimizing construction processes, reducing material waste and using materials efficiently.</li> <li>Educate workers on waste management practices to encourage segregation, recycling and responsible disposal and to minimize waste generation.</li> </ul>	Med (4)			
<b>Accidental Releases</b>	Accidental spills of chemicals (paints, solvents) fuels and oils on-site and offsite (at quarrying site)	Med (8)	<ul style="list-style-type: none"> <li>Any type of chemical, oil, fuels and lubricants must be stored and handled within containment facilities (e.g. bounded areas, leak proof trays) designed to prevent the release of spills/leaks to the soil and surface water and groundwater environment.</li> <li>Maintenance schedules shall be put in place as part of the inspection procedures of all equipment/generators/machinery for risk minimization.</li> <li>Maintenance of machines and equipment shall take place off-site or onsite in a contained area with impermeable concrete pavement and drainage for vehicle washing and maintenance.</li> <li>Oil spill response kits shall be available wherever oils are being used/stored.</li> <li>Awareness among workers shall be promoted on how to handle oil/lubricants.</li> <li>Training of workers should be provided on how to clean up small scale spills.</li> <li>Good housekeeping practices should be maintained during construction.</li> <li>Drip trays should be used when re-fueling.</li> <li>A Spill Emergency Plan should be prepared specifically for the project.</li> <li>In case of a spill: <ul style="list-style-type: none"> <li>Stop the source of spill (close valve, seal pipe, seal hole or as appropriate).</li> <li>Immediately notify the EHS manager and construction manager who will in turn notify the project proponent in accordance with the Spill Emergency Plan.</li> </ul> </li> </ul>	Med (4)	Residual impacts from accidental spills of chemicals, fuels and oils, even with mitigation measures in place, can include soil contamination, groundwater pollution, health risks, and economic costs for environmental restoration. However, their significance should be acceptable if the proposed mitigation measures are applied.	Contractor, Supervision consultant	Part of the construction activities cost. Cost of spill response kit: 80 USD Cost per drip tray: USD 60

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
			<ul style="list-style-type: none"> <li>➤ Check for hazards and flammable matters on site.</li> <li>➤ Clean the spill by removing affected topsoil layer by trained employees (they should be wearing appropriate PPE).</li> <li>➤ Treat the removed layer as hazardous waste and store them on impermeable and solvent resistant plastic sheets such as heavy gauge polyethylene plastic sheets before coordinating with the relevant party on the recommended disposal/treatment option.</li> <li>➤ Adopt as much as possible dry-cleaning techniques to decrease resulting wastewater, and to avoid flushing of spills to the underlying soil and potential aquifer.</li> </ul>				
<b>Depletion of Resources</b>							
<b>Energy Resources</b>	Electricity and fuel consumption for mobile power generation, vehicles and equipment operation on-site and offsite (at quarrying site)	Med (9)	<ul style="list-style-type: none"> <li>• Select energy-efficient machinery, generators, and vehicles to reduce electricity and fuel consumption and ensure regular maintenance.</li> <li>• Implement practices such as optimizing generator use, turning off equipment when not in use, and managing electricity use efficiently.</li> <li>• Develop a schedule for energy use onsite.</li> <li>• Educate workers and operators on energy-efficient practices and the importance of minimizing energy use and fuel consumption.</li> <li>• Monitor and report energy and fuel consumption regularly to identify areas for improvement.</li> </ul>	Med (4)	Continued use of diesel and electricity contribute to the depletion of fuel resources. However, the proposed mitigation measures limit this impact.	Contractor, Supervision Consultant	No separate costs estimation – part of construction activities cost
<b>Water Resources</b>	Depletion of water resources	Med (6)	<ul style="list-style-type: none"> <li>• Use rainwater for construction purposes (especially for concrete curing) where feasible.</li> <li>• Develop and implement a drainage system to effectively redirect rainstorm water and decrease surface runoff.</li> </ul>	Low (2)	No significant impacts on the local water environment are predicted with the implementation of proposed mitigation measures.	Contractor, Supervision consultant	No separate costs estimation – part of construction activities cost
	Water depletion and quality deterioration from water consumption, runoff and sedimentation, and reduced soil permeability	High (12)	<ul style="list-style-type: none"> <li>• Use water-efficient construction equipment and techniques to reduce water consumption</li> <li>• Implement water-saving practices such as using water-efficient fixtures and fittings in construction activities.</li> <li>• Ensure that drained rainwater undergoes sedimentation in designated tanks before discharge.</li> <li>• Educate on-site workers and enforce a water conservation policy and procedures onsite.</li> <li>• Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> </ul>	Med (6)			
<b>Topography, Soil Erosion, Grading, Trenching and Excavation</b>	Alterations to the land surface, reduced ground permeability and water infiltration from site clearance, excavation and demolition activities, and sourcing of aggregate materials.	High (12)	<ul style="list-style-type: none"> <li>• Ensure international standards are met during excavation works, compaction and grading activities, in order to minimize expected disturbance during the construction phase.</li> <li>• Contain and cover all stockpiles to avoid runoff water transporting suspended solids as a result during precipitation events.</li> <li>• Reuse excavated/cut low agricultural quality materials as general fill where they're considered suitable.</li> <li>• Schedule construction activities to avoid heavy rainfall periods to the extent practical.</li> <li>• Construct and maintain proper drainage systems at and around the relocation site, to prevent water from pooling and flooding during construction activities.</li> <li>• Ensure regular clearing of drainage systems during construction to avoid clogging and minimize flood risks.</li> <li>• Implement erosion control measures such as the installation of sediment traps and silt fences around construction areas, to reduce sediment runoff and prevent water pollution during construction activities.</li> <li>• Design channels for post-construction flows.</li> <li>• Centralize the storage of cement, sand, lime, and other building materials with rainproof measures</li> <li>• Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> </ul>	Low (2)	No significant impacts on land resources are predicted with the implementation of proposed mitigation measures. Potential impacts could include soil contamination, visual and aesthetic impact.	Contractor, Supervision consultant	No separate costs estimation – part of construction activities cost

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Biological Resources</b>	Loss of vegetation, fauna, flora and habitats from clearance, excavation, quarrying and inadequate disposal of resulting waste and wastewater	Low (2)	<ul style="list-style-type: none"> <li>Protect existing vegetation where applicable and possible. Mark out areas that should remain undisturbed and use barriers to prevent damage.</li> <li>Develop and implement a vegetation plan for the area affected by site clearance where no buildings or other structures will be erected. Use native plants to enhance local biodiversity.</li> <li>Train construction workers on best practices for minimizing environmental impacts, especially proper waste (ISWM) and wastewater management.</li> <li>Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> </ul>	Beneficial	No residual impacts on biological resources. Following the implementation of mitigation measures, the impact is expected to be beneficial.	Contractor, Supervision consultant	No separate cost estimation - part of construction activities cost
<b>Social Impacts</b>							
<b>Traffic</b>	Increase in traffic circulation from the transportation of construction materials and waste, traffic-related accidents or injuries, onsite and offsite (at quarrying site)	Med (6)	<ul style="list-style-type: none"> <li>Develop a traffic management plan for the traffic within the construction site and around it</li> <li>Delivery of materials should be planned at night when there is minimal traffic</li> <li>Limit speed on the construction site and adopt careful logistical and route planning.</li> <li>Display any necessary traffic diversion signs, reflective caution signage, and devices correctly to warn of hazards and provide directions.</li> <li>Coordinate with the City Council with respect to the planned road blockages, and the scheduling of the construction works including material delivery, waste transfer, truck movement and other machinery operations to limit the disruption to the neighborhood from traffic inconveniences and traffic flow and to minimize noise and dust generation.</li> <li>Follow a specific schedule for transport to avoid interference with peak traffic hours and minimize disturbance.</li> <li>Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> </ul>	Low (2)	Residual impacts on traffic are expected to be limited following implementation of the proposed mitigation measures.	Supervision consultant, City Council, Sierra Leone Roads Safety Authority, and Sierra Leone Police Department	No separate costs estimation – included in contractor's scope of works and fees
<b>Health and Safety</b>	Impact on workers' safety (including from accidents) resulting from improper handling and storage of construction materials, construction equipment handling, construction activities, chemicals, etc.	High (12)	<ul style="list-style-type: none"> <li>Enforce strict safety regulations and procedures on-site.</li> <li>Conduct regular safety inspections and audits.</li> <li>Implement the Occupational and Community Health and Safety plans (refer to section 8.6) for the project.</li> <li>Train workers on working safely and on identifying work hazards and associated risks.</li> <li>Provide appropriate PPEs that offer adequate protection to the workers (goggles, dust masks, helmets, hearing protection equipment, proper clothing...), ensure their proper use and maintenance.</li> <li>Prohibit smoking and littering.</li> </ul>	Med (6)	Residual impacts on health and safety will be considerably reduced to an acceptable level with the implementation of the proposed mitigation measures.	Contractor, Supervision consultant, City Council	<u>PPEs Prices/ person (~175 USD):</u> <ul style="list-style-type: none"> <li>Overall ~12 USD</li> <li>Boots ~100 USD</li> <li>Helmet ~ 5 USD</li> <li>PVC Gloves ~2 USD</li> <li>Welding Gloves ~ 4 USD</li> </ul>

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	Impact on workers' and community health and safety resulting from exposure to occupational hazards (e.g., noise, air pollution, dust, fire hazards, etc.) and to sickness, diseases and injury due to close personal contact; as well as potential for occupational accidents/accidents among pedestrians, and disturbance to the nearby community. Borehole drilling and electrical systems installation pose health concerns on workers' and the community.	High (12)	<ul style="list-style-type: none"> <li>• Provide sufficient lighting and fencing around the construction area to prevent unauthorized access and protect the surrounding community from potential hazards.</li> <li>• Post adequate signs throughout the Construction Area, especially at visible locations, indicating type of operation, potential hazards, and appropriate medical / emergency action response.</li> <li>• Install clearly marked pedestrian walkways, barriers, and signage to ensure safe passage for pedestrians around the construction site.</li> <li>• Ensure that no employee is exposed to a noise level greater than 85 dB (A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 110 dB(A).</li> <li>• Ensure the availability of adequate loading and unloading space.</li> <li>• Ensure adequate portable fire-fighting equipment is available and regularly maintained.</li> <li>• Provide an emergency action plan (refer to Appendix 12) and fire hazard inspection procedures.</li> <li>• Ensure that first aid can be always provided. Appropriately equipped first-aid stations should be easily accessible throughout the place of work.</li> <li>• Implement procedures for the safe handling, storage, and disposal of chemicals and hazardous materials.</li> <li>• Provide health monitoring and medical surveillance for workers exposed to hazardous conditions to detect any early signs of health issues.</li> <li>• Implement the mitigation measures for air and noise emissions and waste management listed above to minimize impacts on workers and nearby residents.</li> <li>• Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> <li>• Provide Personal Protective Equipment for workers, provide hoarding and cordon off work areas to protect the community from exposure to such risks</li> </ul>	Med (6)			<ul style="list-style-type: none"> <li>• Goggles ~ 3 USD</li> <li>• Reusable ear plugs ~1.5 USD</li> <li>• Earmuffs ~28 USD</li> <li>• FFP3/FMP3 Mask: ~ 8 USD</li> </ul> <p>First Aid Kit (for 100 workers) ~200 USD</p> <p>Fire Extinguisher (Powder-6 kg): 55 USD</p>
Social	Possible social unrest among residents if they are not hired for the works	High (12)	<ul style="list-style-type: none"> <li>• Prioritize hiring local workers for construction and other project-related jobs to reduce potential labor influx, social unrest, and provide economic benefits to the community at the project site.</li> <li>• Provide and implement a grievance redress mechanism for the workers, traders at the site, and community (refer to Appendix 14); regularly raise awareness of the GRM among relevant groups.</li> </ul>	Low (3)	The residual social impacts will be considerably reduced to an acceptable level with the implementation of the proposed mitigation measures.	Contractor, Supervision consultant, City Council, City Police	No separate cost estimation - part of construction activities cost
	Grievances regarding construction activities from traders already present at the relocation site and nearby residents	Med (6)	<ul style="list-style-type: none"> <li>• Set up support centers or information kiosks where affected traders and residents can obtain information, access support services, and report grievances</li> <li>• Provide advanced notice of construction activities to affected businesses and residents.</li> <li>• Ensure that the contractor sources construction materials from quarries licensed by EPA that have conducted an ESIA and are implementing the recommended and approved environmental and social mitigation and monitoring measures.</li> </ul>	Low (3)			
	Risk of labor influx from other regions, child labor, forced labor, undesirable behavior such as theft, alcoholism, drug abuse, GBV and SH/SEA, and transmission of HIV/AIDS	Med (8)	<ul style="list-style-type: none"> <li>• Ensure no children are employed in site on accordance with Sierra Leone Employment Act</li> <li>• The client and the contractor shall adopt a "Child Protection Code of Conduct" which sets stringent standards for personal behavior to avoid child exploitation and abuse.</li> <li>• Implement a robust Code of Conduct for all workers and subcontractors to address potential issues such as theft, substance abuse, gender-based violence (GBV), sexual harassment, and exploitation (refer to Appendix 14 and Appendix 15)</li> <li>• Partner with local NGOs or services to provide support for potential victims of GBV or SEA.</li> </ul>	Low (2)			

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	Job Opportunities for skilled and unskilled members of the community (as relevant and appropriate to the skill demand of project works)	Beneficial	<ul style="list-style-type: none"> <li>Implement the labor management plan to avoid conflicts (refer to Appendix 13) to avoid conflicts. Adhere to local labor laws and the project's labor management plan to ensure fair and safe working conditions.</li> <li>Prohibit the consumption of alcohol or recreational drugs in the workplace.</li> <li>Implement measures to identify signs of alcohol or drug use, such as poor coordination, concentration, or visual disturbances.</li> <li>Conduct regular education and sensitization campaigns targeting workers and the surrounding community, providing information and educational materials on the prevention and management of HIV/AIDS and STDs, tailored to the project's socio-economic context.</li> <li>Ensure the availability and distribution of prevention resources such as condoms and informational materials, and provide access to antiretroviral drugs (ARVs) and healthcare services for affected individuals, in collaboration with local health authorities</li> </ul>	Beneficial			

**Table 8-5 Environmental Mitigation Plan for the Operation Phase at the Makeni Relocation Site**

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Emissions</b>							
<b>Air Emissions</b>	Odor emissions from septic tanks, waste and food storage	Med (6)	<ul style="list-style-type: none"> <li>Ensure proper management of solid waste, wastewater and sludge resulting from operation activities through the implementation of detailed management plans to prevent air emissions and odors.</li> <li>Ensure that waste collection bins are always kept closed.</li> <li>Ensure the rapid pick up and collection of waste from the market to avoid odor generation.</li> <li>Implement a schedule for transporting goods to avoid unnecessary trips.</li> <li>Implement a traffic management strategy to minimize emissions from transportation.</li> <li>Use water suppression or spraying systems as needed on paved or unpaved road surfaces to minimize dust.</li> </ul>	Low (3)	No significant local air quality effects are predicted following the implementation of the identified mitigation measures.	Makeni City Council	Part of operation costs.
	Exhaust and GHG emissions and dust from vehicles, motor grinding machines, and other fuel-powered equipment that might be used at the relocation site.	Med (6)	<ul style="list-style-type: none"> <li>Inspect and maintain the septic tank regularly.</li> <li>Transport the sludge in bowlers (closed tankers) to an adequate treatment facility (in agreement with MCC) to control the emission of odors.</li> <li>Minimize the emptying time of the sludge holding tank to reduce odor emissions to the shortest period possible.</li> </ul>	Low (3)			
<b>Noise and Vibration</b>	Noise emissions from the daily market activities. Traffic, generators, maintenance activities	Med (9)	<ul style="list-style-type: none"> <li>Ensure regular maintenance of all noise emitting machinery/ equipment.</li> <li>Avoid conducting maintenance works on Sundays and holidays and limit them to daytime hours.</li> <li>Establish a grievance mechanism and implement timely and effective actions to minimize impacts from noise in the case of complaints from any of the inhabitants/ nearby receptors.</li> <li>Conduct noise monitoring near sensitive receptors to ensure that noise levels are compliant with WB standards.</li> </ul>	Med (4)	With the implementation of the proposed mitigation measures, noise impacts from the project operation should be acceptable and can be immediately remediated when grievances are raised.	Makeni City Council	The cost of noise monitoring is estimated at USD 800 per event.
<b>Wastewater Generation</b>	Domestic wastewater generation and groundwater contamination from unsanitary conditions and its inadequate disposal	High (12)	<ul style="list-style-type: none"> <li>Septic tanks should be fully impermeable.</li> <li>Empty septic/holding tanks frequently.</li> <li>Regular inspect septic/holding tanks.</li> <li>Commission an authorized service provider to transport and discharge the wastewater and sludge in authorized sites.</li> <li>Stopping the source of the leak as soon as possible if it happens.</li> <li>Contain spills and develop procedures for emergency cleanup in case of leakages</li> <li>Educate market traders and users on how to reduce unsanitary practices</li> </ul>	Low (3)	No significant impacts on the local water environment are predicted with the implementation of proposed mitigation measures.	Makeni City Council	Part of operation costs
<b>Solid Waste</b>	Solid waste storage and disposal resulting from operation activities	Med (6)	<p>The following mitigation measures are recommended in addition to Appendix 8.</p> <ul style="list-style-type: none"> <li>Continuously monitor waste generation and adjust disposal methods accordingly to enhance efficiency.</li> <li>Minimize waste generation.</li> <li>Provide the waste storage area with sorting bins and signs for the various types of waste.</li> <li>Establish partnerships with local recycling facilities to start promoting waste diversion efforts.</li> <li>Ensure that standards of "good housekeeping" are always maintained</li> </ul>	Low (3)	Residual impacts from solid waste are expected to be low with the proper implementation of the proposed mitigation measures.	Makeni City Council	No separate cost estimation

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Accidental Releases</b>	Spills and leaks from maintenance activities	Med (4)	<ul style="list-style-type: none"> <li>A maintenance schedule and checklist shall be prepared and effectively followed.</li> <li>A Spill Response Plan shall be put in place prior to operation and adequate staff shall be assigned and regularly trained on it.</li> <li>A supply of suitable absorbent materials will be made available at the site for use in dealing with minor spills. If a leak or spill occurs during maintenance operations, the operations will be stopped and the spill will be contained, cleaned up and collected based on the Spill Response Plan.</li> <li>Use drip trays or other containment methods during maintenance activities to catch any spills or leaks.</li> <li>Properly dispose of used oils, lubricants, and other maintenance-related waste materials.</li> </ul>	Low (2)	Residual impacts from accidental spills of chemicals, fuels and oils, even with mitigation measures in place, can include localized soil contamination, groundwater pollution, health risks, and increased maintenance cost.	Makeni City Council	No separate costs estimation
<b>Depletion of Resources</b>							
<b>Energy Resources</b>	Electricity consumption for market operation and fuel consumption for transportation of goods	Med (9)	<ul style="list-style-type: none"> <li>Select energy-efficient equipment (e.g., upon replacement), generators, and vehicles to reduce electricity and fuel consumption and ensure regular maintenance.</li> <li>Implement practices such as turning off equipment when not in use, and managing electricity use efficiently.</li> <li>Regular maintenance of equipment/ appliances</li> <li>Monitor and report energy and fuel consumption regularly to identify areas for improvement.</li> <li>Implement energy conservation measures during operation</li> <li>Ensure the installation of LED lights and energy saving equipment to minimize power needs.</li> <li>Promote awareness on energy conservation (e.g., turning off lights when not in use, using machines and equipment efficiently, etc.) and maximize the use of daylight.</li> </ul>	Med (4)	Residual impacts from electricity and fuel consumption are expected to be acceptable with the proper implementation of the proposed mitigation measures.	Design Engineers/ Makeni City Council	Part of operation costs
<b>Water Resources</b>	Water consumption for domestic purposes, washing and market cleaning	Med (9)	<ul style="list-style-type: none"> <li>Provide water supply to the relocation site in coordination with the City Council and SALAWCO company (in addition to the water supplied by the solar power borehole, if needed).</li> <li>Implement water recycling and reuse systems to minimize reliance on freshwater sources.</li> <li>Promote water conservation measures within the market to reduce overall water consumption.</li> <li>Minimize and monitor water consumption and identify opportunities for water conservation initiatives to maintain efficient water management practices.</li> </ul>	Low (3)	No significant impacts on local water consumption are predicted with the implementation of proposed mitigation measures.	Design engineers/ Makeni City Council	Part of operation costs
<b>Biological Resources</b>	Loss of vegetation and biodiversity from inadequate management of solid waste and wastewater, and the possibility of septic tank malfunctioning and wastewater leakage	Low (1)	<ul style="list-style-type: none"> <li>Train traders and workers on the importance of biological resources and environmental concerns.</li> <li>Ensure the implementation of mitigation measures listed for solid waste, wastewater and accidental releases.</li> </ul>	Beneficial	No residual impacts on biological resources. Following the implementation of mitigation measures, the impact is expected to be beneficial.	Makeni City Council	Part of operation costs
<b>Social Impacts</b>							
<b>Traffic</b>	Transportation of goods and market customers leading to congestion and increasing the risk of accidents	Med (6)	<ul style="list-style-type: none"> <li>Coordinate with the city council and city police to prevent traffic jams.</li> <li>Prohibit illegal parking in coordination with the local council.</li> <li>Ensure that the parking entrance is wide enough to allow fluent access/exit of cars and define a clear separation between the entrance and the exit parts of the parking lot.</li> <li>Place warning and direction signs on the road leading to the relocation site, at the entrance and a few meters before.</li> </ul>	Low (2)	Residual impacts from traffic are expected to be low with the proper implementation of the proposed mitigation measures	Makeni City Council	Part of operation costs
<b>Health and Safety</b>	Potential impact on traders' and visitors' Health and Safety resulting from improper routine maintenance or repairs and lack of emergency	Med (8)	<ul style="list-style-type: none"> <li>Implement routine safety training and awareness programs for market traders.</li> <li>Establish maintenance protocols to ensure the safety of infrastructure at the market.</li> <li>The working areas should be well ventilated and provided with adequate lighting to avoid accidents.</li> <li>Provide appropriate safety equipment as needed, firefighting equipment and first aid stations.</li> </ul>	Med (4)	Residual health and safety impacts are expected to be acceptable with the proper implementation of the	Makeni City Council	First Aid Kit (for 100 workers) ~200 USD Fire Extinguisher

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	preparedness		<ul style="list-style-type: none"> <li>Warning of traders about potential hazards during operation and maintenance.</li> <li>An emergency response plan must be available on site.</li> <li>Place signs and posters about health and safety issues within the market</li> </ul>		proposed mitigation measures,		<p>(Powder-6 kg): 55 USD</p>
	Impact on traders' and community's health resulting from poor waste management and sanitation practices	Med (6)	<ul style="list-style-type: none"> <li>Ensure adequate portable fire-fighting equipment is available and regularly maintained.</li> <li>Provide an emergency action plan and fire hazard inspection procedures.</li> <li>Ensure that first aid can always be provided. Appropriately equipped first-aid stations should be easily accessible throughout the market.</li> <li>Investigate fire and other accidents and keep relevant records.</li> </ul>	Low (3)			
	Impact on traders' safety from risk of fire, inadequate management of security system, crimes, harassment and gender-based discrimination	Med (4)	<ul style="list-style-type: none"> <li>Regular maintenance of all systems (firefighting, septic tank, mechanical, electrical, etc.);</li> <li>Implement necessary security measures (CCTV, security patrol, etc.) as per the market design.</li> <li>Promote awareness of GBV, SEA/SH and associated grievance mechanism.</li> <li>Implement the mitigation measures for air and noise emissions and waste management listed above to minimize impacts on traders and nearby community.</li> <li>Implement the Community Health and Safety Plans (refer to section 8.6)</li> </ul>	Low (3)			
Social	Inadequate management, supervision and control of relocation site operations, leading to health and safety risks and grievances from the surrounding community	Med (8)	<ul style="list-style-type: none"> <li>Set up, implement and oversee a management plan for the relocation site (covering daily and maintenance activities, health and safety, environmental aspects, security, etc.);</li> <li>Implement necessary security measures (CCTV, security patrol, etc.) as per the relocation site design.</li> <li>Develop a GRM to record and respond to complaints received from traders and the surrounding community (refer to Appendix 14).</li> </ul>	Low (3)	The potential residual impacts are expected to be acceptable following implementation of the proposed mitigation measures.	Makeni City Council	No separate cost estimation, included in operation costs. Monitoring and evaluation of RP implementation part of the RP costs.
	Reduction/ slow-down of business among traders from the loss of customers resulting from the relocation.	Med (9)	<ul style="list-style-type: none"> <li>Partner with local NGOs or services to provide support for potential victims of GBV or SEA.</li> <li>Set up support centers or information kiosks where affected traders and residents can obtain information, access support services, and report grievances.</li> <li>Ensure the spaces will be given to the traders that were affected and relocated by the market upgrade.</li> </ul>	Med (6)			
	Maintenance of traders' livelihoods through RP implementation	Beneficial	<ul style="list-style-type: none"> <li>Monitor proper implementation of the RP to ensure livelihood restoration for PAPs and intervene where needed.</li> <li>Monitor and assess socio-economic impacts regularly, adjusting strategies as needed.</li> </ul>	Beneficial			

Table 8-6 Environmental and Social Mitigation Plan for the decommissioning phase at the Makeni relocation site

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Emissions</b>							
Air Emissions	Airborne particles (dust) from demolition works (where applicable), dismantling works, debris transport and waste handlings	Med (9)	<ul style="list-style-type: none"> <li>Surround the decommissioning areas with scaffolding nets or fencing to control demolition waste where demolition works are needed, debris &amp; dust from spreading beyond the decommissioning site.</li> <li>Employ effective dust control measures throughout the demolition and dismantling process to minimize airborne particles (such as water spraying at emission sources, conducting filling and unloading operations without tossing, covering vehicles with tarpaulin during material transportation, and maintaining material humidity at 10%, installing dust shrouds on material stockpiles and concrete mixing equipment).</li> <li>Minimize dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house or cyclone) where applicable.</li> <li>Internal roads should be adequately compacted and periodically graded and maintained.</li> <li>Adopt needed equipment with low emission levels to reduce air pollution, ensure proper engine fuel mixtures and regularly serviced exhaust emission systems, suitable engine tuning, and use of low sulfur content diesel; and limit vehicle and machinery idling times to reduce emissions.</li> <li>Ensure regular maintenance of generators, machinery and equipment to minimize emissions from inefficient or malfunctioning engines.</li> <li>Inspect the presence of black smoke from vehicles, generators and engines and undertake remedial maintenance when it is observed to improve engine efficiency.</li> <li>Maintain constant communication with communities surrounding the project area on demolition timing, mitigation measures, and contact information for grievances.</li> <li>Prohibit open burning and enforce proper waste disposal methods to mitigate potential contributions to air pollution.</li> </ul>	Med (4)	No significant local air quality effects are predicted following the implementation of good practices, which incorporate the implementation of the identified mitigation measures.	Contractor and supervision consultant	As part of decommissioning costs
	Emissions from generators, equipment and vehicles	Med (6)		Low (3)			
Noise and Vibration	Increased noise and vibration levels from general demolition (where applicable) or dismantling works, mobilization and operation of equipment, and movement of vehicles.	High (12)	<ul style="list-style-type: none"> <li>Implement noise barriers and enclosures at the decommissioning site to minimize the impact of decommissioning-related noise.</li> <li>Fit all machinery and vehicles with effective exhaust silencers as applicable.</li> <li>Maintain all machinery and vehicles in good condition and avoid leaving equipment idling unnecessarily</li> <li>Schedule noisy activities during permissible hours to reduce disruptions to the surrounding community and maintain constant communication with communities surrounding the project area on decommissioning timing, mitigation measures, and contact information for grievances.</li> <li>Avoid noisy activities on weekends and holidays.</li> <li>Provide workers with noise protection equipment when operating noisy equipment/ conducting noisy activities and enforce their use.</li> <li>Minimize transportation activities through community areas.</li> <li>Conduct regular noise monitoring at the nearest receptors to ensure that noise emissions are compliant with WB standards</li> <li>The use of electrically driven machines should be considered.</li> </ul>	Med (6)	No significant local noise levels are predicted following the implementation of good practices, which incorporate the implementation of the identified mitigation measures.	Contractor and supervision consultant	Part of decommissioning activities cost.  The cost of noise monitoring is estimated at USD 800 per event. Cost of noise protection equipment: included under mitigation measures for health and safety impacts below.
Wastewater Generation	Site cleaning, washdown of equipment, and temporary worker facilities	Med (8)	<ul style="list-style-type: none"> <li>Provide temporary fully impermeable septic tanks to manage wastewater generated during the decommissioning phase, ensuring they are regularly emptied by authorized service providers and maintained to prevent leaks or overflow.</li> <li>Vehicle washing should be allowed only in contained maintenance areas offsite or onsite with impermeable concrete pavement and proper drainage</li> <li>Prohibit onsite the discharge of wastewater into water bodies, soil or drainage systems.</li> <li>Conduct periodic monitoring of groundwater quality up-gradient and down-gradient from the site in line with the proposed monitoring plan to detect any potential contamination.</li> </ul>	Low (2)	No significant impacts on the local water environment are predicted with the implementation of the proposed mitigation measures.	Contractor, Supervision Consultant, City Council	Part of Contractor's scope of works and fees  Cost of water sample analysis: around USD 900 per sample

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Solid Waste</b>	Demolition and domestic solid waste disposal from the site	High (12)	<ul style="list-style-type: none"> <li>Recommend repurposing the site or part of it for other purposes to minimize demolition waste.</li> <li>Implement a comprehensive waste management plan focused on sorting and recycling to minimize the impact of solid waste.</li> <li>Educate workers on waste management practices to encourage segregation, recycling and responsible disposal and to minimize waste generation.</li> <li>Schedule the works for the dry season if possible.</li> <li>Demolished waste stockpiles shall be covered and contained to prevent them from being transported by wind and rain.</li> <li>Explore opportunities for reusing (or recycling if reusing is not possible) materials from demolished structures to contribute to sustainable construction practices. Dispose of the rest (if any) in a permitted construction and demolition waste dump designated by the City Council or relevant authority.</li> </ul>	Med (6)	No significant local impacts from waste management are predicted following the implementation of good practices, which incorporate the implementation of the identified mitigation measures.	Contractor, Supervision Consultant, City Council, and/or Waste management companies (if applicable)	No separate costs estimation – part of decommissioning activities cost
<b>Accidental Releases</b>	Accidental spills of chemicals, fuels and oils	Med (8)	<ul style="list-style-type: none"> <li>Any type of chemical, oil, fuels and lubricants must be stored and handled within containment facilities (e.g. bounded areas, leak proof trays) designed to prevent the release of spills/leaks to the soil and surface water and groundwater environment.</li> <li>Maintenance schedules shall be put in place as part of the inspection procedures of all equipment/generators/machinery for risk minimization.</li> <li>Maintenance of machines and equipment shall take place off-site or onsite in a contained area with impermeable concrete pavement and drainage for vehicle washing and maintenance.</li> <li>Oil spill response kits shall be available wherever oils are being used/stored.</li> <li>Awareness among workers shall be promoted on how to handle oil/lubricants.</li> <li>Training of workers should be provided on how to clean up small scale spills.</li> <li>Drip trays should be used when re-fueling.</li> <li>A Spill Emergency Plan should be prepared specifically for the project.</li> <li>In case of a spill: <ul style="list-style-type: none"> <li>Stop the source of spill (close valve, seal pipe, seal hole or as appropriate).</li> <li>Immediately notify the EHS manager who will in turn notify the project proponent in accordance with the Spill Emergency Plan.</li> <li>Check for hazards and flammable matters on site.</li> <li>Clean the spill by removing affected topsoil layer by trained employees (they should be wearing appropriate PPE);</li> <li>Treat the removed layer as hazardous waste and store them on impermeable and solvent resistant plastic sheets such as heavy gauge polyethylene plastic sheets before coordinating with the relevant party on the recommended disposal/treatment option; and</li> <li>Adopt as much as possible dry-cleaning techniques to decrease resulting wastewater, and to avoid flushing of spills to the underlying low yield aquifer.</li> </ul> </li> </ul>	Med (4)	No significant residual impacts from accidental spills are predicted following the implementation of good practices, which incorporate the implementation of the identified mitigation measures.	Contractor, Supervision consultant	Part of decommissioning activities cost Cost of spill response kit: 80 USD Cost per drip tray: USD 60
<b>Depletion of Resources</b>							
<b>Energy Resources</b>	Fuel consumption for vehicles and equipment operation	Med (9)	<ul style="list-style-type: none"> <li>Select energy-efficient machinery, generators, and vehicles to reduce electricity and diesel consumption and ensure regular maintenance.</li> <li>Implement practices such as optimizing generator use, turning off equipment when not in use, and managing electricity use efficiently.</li> <li>Develop a schedule for energy use onsite through: <ul style="list-style-type: none"> <li>Identifying energy needs for various equipment and activities.</li> <li>Organizing tasks into phases and creating a detailed schedule to align energy usage with project timelines; and</li> <li>Estimating the energy needs for each phase based on planned equipment and activities and managing them in an efficient way.</li> </ul> </li> <li>Educate workers and operators on energy-efficient practices and the importance of minimizing energy use and fuel consumption.</li> <li>Monitor and report energy and fuel consumption regularly to identify areas for improvement.</li> </ul>	Med (4)	No significant residual impacts from fuel consumption are predicted following the implementation of the identified mitigation measures.	Contractor, Supervision Consultant	No separate costs estimation – part of decommissioning activities cost

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
<b>Water Resources</b>	Increase demand on local water resources for dust suppression, site cleaning and equipment washing	Med (6)	<ul style="list-style-type: none"> <li>Use rainwater for decommissioning purposes (e.g., site cleaning) where feasible.</li> <li>Develop and implement a drainage system to effectively redirect rainstorm water and decrease surface runoff.</li> <li>Use water-efficient equipment and techniques to reduce water consumption</li> <li>Implement water-saving practices such as using water-efficient fixtures and fittings in decommissioning activities.</li> <li>Ensure that drained rainwater undergoes sedimentation in designated tanks before discharge.</li> <li>Educate on-site workers and enforce a water conservation policy and procedures onsite.</li> </ul>	Low (2)	No significant impacts on local water consumption are predicted with the implementation of proposed mitigation measures.	Contractor, Supervision consultant	No separate costs estimation – part of decommissioning activities cost
<b>Topography. Soil Erosion and Collapsing from Grading, Trenching and Excavation</b>	Soil erosion, compaction and contamination from the use of heavy machinery, storage of heavy materials, and demolition/dismantling activities	Med (6)	<ul style="list-style-type: none"> <li>Recommend repurposing the site for another purpose(s) to minimize demolition works and disturbances.</li> <li>Remediate contaminated soils and avoid unnecessary soil disturbance by using appropriate equipment and methodologies.</li> <li>Contain and cover all stockpiles to avoid runoff water transporting suspended solids as a result during precipitation events.</li> <li>Schedule decommissioning activities to avoid heavy rainfall periods to the extent practical.</li> <li>Implement erosion control measures to reduce sediment runoff and prevent water pollution during decommissioning activities.</li> <li>Centralize the storage of demolished materials/ waste with rainproof measures.</li> </ul>	Med (4)	No significant impacts on land resources are predicted with the implementation of proposed mitigation measures. Potential impacts could include soil contamination, visual and aesthetic impacts.	Contractor, Supervision consultant	No separate costs estimation– part of decommissioning activities cost
<b>Biological Resources</b>	Habitat loss for small mammals and insects, loss of biodiversity at sensitive receptors where waste and wastewater from decommissioning are dumped.	Low (2)	<ul style="list-style-type: none"> <li>Protect existing vegetation where applicable and possible. Mark out areas that should remain undisturbed and use barriers to prevent damage.</li> <li>Develop and implement a vegetation plan for the site following decommissioning based on the planned use of the site. Use native plants to enhance local biodiversity.</li> <li>Train workers on best practices for minimizing environmental impacts, especially proper waste and wastewater management.</li> </ul>	Beneficial	No residual impacts on biological resources. Following the implementation of mitigation measures, the impact is expected to be beneficial.	Contractor, Supervision consultant	Part of decommissioning activities cost. Revegetation cost depends on the future use of the site, the area to be planted with native trees, and the tree species to be used.
<b>Social Impacts</b>							
<b>Traffic</b>	Increase in traffic circulation and traffic-related accidents or injuries from the transportation of waste from demolished or dismantled structures	Med (6)	<ul style="list-style-type: none"> <li>Develop a traffic management plan for the decommissioning site and around it.</li> <li>Transport of demolition waste should be planned at night when there is minimal traffic</li> <li>Limit speed on the site and adopt careful logistical and route planning.</li> <li>Display any necessary traffic diversion signs, reflective caution signage, and devices correctly to warn of hazards and provide directions.</li> <li>Coordinate with the City Council and traffic police with respect to any planned road blockages, and the scheduling of the decommissioning works including waste transfer, truck movement and other machinery operations to limit the disruption to the neighborhood from traffic inconveniences and traffic flow, and to minimize noise and dust generation.</li> </ul>	Low (2)	Residual impacts on traffic are expected to be limited following implementation of the proposed mitigation measures.	Supervision consultant, City Council, traffic police and SLRA	No separate costs estimation – included in contractor's scope of works and fees
<b>Health and Safety</b>	Impact on workers' safety (including from accidents) resulting from improper handling and storage of waste materials, demolition activities and equipment operation	High (12)	<ul style="list-style-type: none"> <li>Enforce strict safety regulations and procedures on-site.</li> <li>Conduct regular safety inspections and audits.</li> <li>Implement the Occupational and Community Health and Safety plans for the project (refer to section 8.6).</li> <li>Train workers in working safely and identifying work hazards and associated risks.</li> <li>Provide appropriate PPEs that offer adequate protection to the workers (goggles, dust masks, helmets, hearing protection equipment, proper clothing and boots...), ensure their proper use and maintenance.</li> </ul>	Med (6)	Residual impacts on health and safety will be considerably reduced to an acceptable level with the implementation of the proposed mitigation measures.	Contractor, Supervision consultant, City Council	<u>PPEs Prices/ person (~175 USD):</u> <ul style="list-style-type: none"> <li>Overall ~12 USD</li> <li>Boots ~100 USD</li> <li>Helmet ~ 5 USD</li> <li>PVC Gloves ~2 USD</li> <li>Welding Gloves ~ 4 USD</li> <li>Goggles ~ 3 USD</li> <li>Reusable ear plugs</li> </ul>
	Impact on workers' safety resulting from improper	Med (9)	<ul style="list-style-type: none"> <li>Prohibit smoking and littering.</li> <li>Provide sufficient lighting and fencing of the facility for more security and control.</li> <li>Post adequate signs throughout the affected area, especially at visible locations,</li> </ul>	Med (4)			

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation	
	handling and storage of chemicals and solid waste (including hazardous components) generated related to demolition/dismantling activities		indicating type of operation, potential hazards and relevant precautions, and appropriate medical / emergency action response. <ul style="list-style-type: none"> <li>• Keep machinery and vehicle passages clear.</li> <li>• Ensure the availability of adequate loading and unloading space.</li> <li>• Ensure that no employee is exposed to a noise level greater than 85 dB (A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 110 dB(A).</li> <li>• Ensure adequate portable fire-fighting equipment is available and regularly maintained.</li> <li>• Provide an emergency action plan (refer to Appendix 12) and fire hazard inspection procedures.</li> <li>• Ensure that first aid can be always provided. Appropriately equipped first-aid stations should be easily accessible throughout the place of work.</li> <li>• Implement procedures for the safe handling, storage, and disposal of chemicals and hazardous materials as applicable.</li> <li>• Provide health monitoring and medical surveillance for workers exposed to hazardous conditions to detect any early signs of health issues.</li> <li>• Implement the mitigation measures for air and noise emissions and waste management listed above to minimize impact on workers and nearby community.</li> </ul>				~1.5 USD • Earmuffs ~28 USD • FFP3/FMP3 Mask: ~ 8 USD  First Aid Kit (for 100 workers) ~200 USD Fire Extinguisher (Powder-6 kg): 55 USD	
	Impact on workers' health and safety resulting from exposure to occupational hazards (e.g., noise, air pollution, dust, fire hazards, etc.), communicable diseases, and potential for accidents	High (12)		Med (6)				
	Community health and safety risks from loud noise disturbing nearby residents, mismanagement of decommissioning waste and inadequate safety measures.	Med (9)		Med (4)				
Social	Challenges in readjusting to the upgraded market layout and facilities	Med (9)	<ul style="list-style-type: none"> <li>• Provide relocation support to traders as recommended in the RP to transport their goods and to assist and familiarize traders with the new market layout and facilities before reopening.</li> <li>• Keep traders who were selling close to each also similarly located in the upgraded market to sustain their social networks and ties, as recommended in the RP.</li> <li>• Set up support centers or information kiosks where affected traders and residents can obtain information, access support services, raise concerns, and report grievances</li> <li>• Provide advanced notice of decommissioning activities and relocation period to affected businesses and nearby residents/ traders.</li> <li>• Prioritize hiring local workers for decommissioning and other project-related jobs to reduce potential labor influx and social unrest and provide economic benefits to the community</li> <li>• Provide the livelihood improvement measures recommended in the RP to the extent feasible (e.g., training sessions on financial literacy and others) to help traders leverage new opportunities.</li> <li>• Organize opening events or promotional/ advertising and communication activities to inform customers and attract customers and boost initial sales.</li> <li>• Implement strict no-child-labor and no-forced labor policies, requiring contractors to follow the labor management plan (Appendix 13).</li> <li>• Implement the grievance redress mechanism accessible to workers and community where concerns can be raised (refer to Appendix 14)</li> </ul>	Low (2)	The residual social impacts will be considerably reduced to an acceptable level with the implementation of the proposed mitigation measures.	Contractor, Supervision consultant, City Council, City Police	No separate costs estimation – included in contractor's scope of works and fees and in the RP budget.	
		Risk of labor influx from other regions, child labor, forced labor, undesirable behavior such as theft, alcoholism, drug abuse, GBV and SH/SEA, and transmission of HIV/AIDS		Med (8)				Low (2)
		Potential tension/ conflict among traders on space allocation within the upgraded market, or protests contesting the maintenance of similar clustering of traders as in the current market		Low (2)				Low (2)

Source of Impact	Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation	Residual Impacts	Institutional Responsibility	Cost Estimation
	<p>More efficient trading and socio-economic benefits for traders at the upgraded market site following complete settlement and restoration of activity to pre-displacement levels.</p>	<p>Beneficial</p>	<ul style="list-style-type: none"> <li>• Implement a robust Code of Conduct for all workers of contractors/ subcontractors to address potential issues such as theft, substance abuse, gender-based violence (GBV), sexual harassment, and exploitation (refer to Appendix 13 and Appendix 15)</li> <li>• Conduct audits during decommissioning period to ensure policies related to child labor, GBV, SEA, and substance abuse are enforced and that any incidents are addressed promptly and transparently (refer to Appendix 14, Appendix 15, and Appendix 16)</li> <li>• Partner with local NGOs or services to provide support for potential victims of GBV or SEA.</li> <li>• Conduct regular education and sensitization campaigns targeting workers and the surrounding community, providing information and educational materials on the prevention and management of HIV/AIDS and STDs, tailored to the project's socio-economic context.</li> <li>• Ensure the availability and distribution of prevention resources such as condoms and informational materials and provide access to antiretroviral drugs (ARVs) and healthcare services for affected individuals, in collaboration with local health authorities.</li> </ul>	<p>Beneficial</p>			

## 8.4 IMPLEMENTATION OF THE ESMP

Implementation of the ESMP requires a clear distribution of roles among concerned stakeholders, as well as an environmental monitoring plan to verify the effectiveness of mitigation measures, a capacity building plan and a well-defined auditing and reporting scheme.

### 8.4.1 Roles and Responsibilities

Roles and responsibilities of the different institutions involved in the construction and operation of the Project and the implementation of the ESMP are shown in Table 8-7.

**Table 8-7 ESMP Implementation Plan**

Institution/Body	Roles And Responsibilities
Project Proponent (MoF/PMU)	<p>Overall responsibility for the project feasibility and design studies approval, supervision of actual project execution and ESMP Implementation during construction:</p> <ul style="list-style-type: none"> <li>- Ultimately approves feasibility and design studies, ESIA, ESMP and RP reports.</li> <li>- Conducts site inspections as needed to check implementation of the construction phase ESMP (CESMP).</li> <li>- Inform the Consultants in case of additional environmental requirements.</li> <li>- There are E&amp;S staff (including a Gender and GBV specialist) in the PMU. In addition, the PMU recruited a specialized NGO to design and support the operationalization and implementation of a GBV action plan, the NGO has also developed a GM for GBV/SEA/SH grievances which has been merged with the project GM. The NGO is contracted to provide service until the end of the project period.</li> </ul>
Market Operator (MCC)	<p>The MCC is the market operator, and it is responsible for the operation of the market and implementation of the ESMP measures during operation (Operations Environmental and Social Management Plan - OESMP). The MCC should prepare an OESMP to be approved by EPA/ MoF and implemented during the operation phase, taking into consideration the overall ESMP prepared for the project and conditions at the start of Operation. It is also responsible for controlling infractions during both project phases.</p>
Management of contractors	<ul style="list-style-type: none"> <li>• contractors shall provide monthly monitoring reports to the RUSLP PMU. Such reports will be consolidated and submitted to the Bank as part of the project's semi-annual reports. However, upon request, such monthly reports would be submitted to the Bank</li> <li>• Immediately report to the Supervision Consultant in case of accidents, spills or other events which have health, safety or environmental implications.</li> <li>• Manage contractors and subcontractors through ESHS specification into contracts and thereafter, supervise compliance. These shall include but not limited to: <ul style="list-style-type: none"> <li>• Relevant requirements are included in contracts and subcontracts (reflecting ESSs and ESCP);</li> <li>• Codes of conduct (CoC) are required of contractors and subcontractors and their workers to prohibit sexual harassment and exploitation and training of workers on their obligations under the CoC.</li> <li>• Preparation of a contractor ESMP (C-ESMP) that is costed, with</li> </ul> </li> </ul>

Institution/Body	Roles And Responsibilities
	<p>sufficient budget to mitigate E&amp;S risks</p> <ul style="list-style-type: none"> <li>• Monitor Contractor commitment and compliance</li> <li>• Ensure contractors provide details on the contractor's oversight on environmental, social, health and safety (ESHS) performance</li> <li>• Contractor to develop a grievance redress mechanism to handle concerns of their employees</li> <li>• The project has developed a Labor Management Procedure Which Contractors shall update into a plan and comply with during Implementation.</li> </ul>
Contractor(s)	<ul style="list-style-type: none"> <li>• Ensure all subcontractors meet the requirements of the ESMP.</li> <li>• Provide field EHS experts to ensure implementation of the CESMP.</li> <li>• Liaise with the Consultant and regularly report on implementation of CESMP.</li> <li>• Establish, maintain, and operate a grievance mechanism for Project workers, as described in the LMP and consistent with ESS2.</li> <li>• The contractor should prepare an LMP will include as part of the contract prior to contract signing and monitored through the contract period.</li> <li>• Recruit and maintain labour/workforce in line with the requirements of the project LMP (the contractor is expected to employ approximately 12 technical staff, 30 skilled technicians and 50 unskilled labourers of which 30% are women employees throughout the construction period)</li> <li>• In case of incidents, the contractor should fill an incident records form, including how the incident was addressed.</li> <li>• During construction, maintain traffic safety along access roads, with special emphasis on high traffic areas</li> <li>• Carry out waste management and adequate waste disposal in line with recommendations in the ESIA/ESMP</li> <li>• Prepare and maintain records and all required reporting data as stipulated by the ESMP, for submission to the Supervising Engineer Consultant</li> </ul>
Engineering Consultant(s)	<ul style="list-style-type: none"> <li>• Ensure ESIA findings and ESMP considerations are properly taken into consideration in the detailed engineering design and properly integrated in the tender documents for contractors.</li> <li>• Contractor's contract to have a provision for penalties in case the CESMP is not implemented; preferably, CESMP implementation should have a cost item in the Bill of Quantities (BOQ).</li> </ul>
Supervision consultant(s)	<ul style="list-style-type: none"> <li>• Review and approve CESMP prepared by Contractor.</li> <li>• Prepare a checklist to be used to supervise the contractor's work.</li> <li>• Supervise the contractor's implementation of CESMP.</li> <li>• Ensure that all contractors and consultants involved in the project follow and implement the CESMP.</li> <li>• Coordinate closely with different parties on all site EHS issues.</li> </ul>

Institution/Body	Roles And Responsibilities
	<ul style="list-style-type: none"> <li>• Coordinate with MoF and EPA to ensure appropriate reporting of CESMP implementation.</li> <li>• Identify training needs of concerned parties to ensure CESMP requirements are well-understood and can be implemented.</li> </ul>

## 8.4.2 Capacity Building Needs

### 8.4.2.1 Training Needs during Construction Phase

To ensure a proper and effective implementation of the ESMP, it is particularly important to undertake a training program for the contractor's staff regarding CESMP preparation and implementation. Training sessions for the contractor should be conducted prior to the commencement of the construction works and shall focus on the following topics:

- General environmental and health awareness for all employees.
- ESIA study key findings and recommendations.
- Implementation of the proposed CESMP.
- Air pollution control.
- Control of leakages.
- Spill response.
- Wastewater management.
- Water consumption.
- Solid waste management and good housekeeping.
- Hazardous waste management.
- Occupational health and safety issues.
- Principles and procedures in Stakeholder identification and Engagement
  
- Emergency plan.
- Training and awareness raising on GBV/SH issues
- 

### 8.4.2.2 Training Needs during Operation Phase

It is recommended to train the Makeni City Council members and their employees concerned on the following:

- Training to ensure that the OESMP is well understood.
- Inspection for the implementation of the ESMP during operation.
- Solid waste management, operation and maintenance of the wastewater treatment technology to be constructed.
- Sampling, record keeping, and reporting procedures.
- Spill response.
- Health and safety issues.
- Emergency plan.

- GRM for project operation.

**Table 8-7-1 – Capacity Building Needs Implementation Plan**

Proposed Topics	Target Audience	Duration	When to conduct the Training	Organization Responsible for Training	Budget (\$USD)
General environmental and health awareness for all employees. ESIA study key findings and recommendations. Implementation of the proposed CESMP.	Contractor/subcontractor's workforce	1 day	Before the commencement of the subproject/works	PMU  Contractor EHS experts	1000
OHS principles and Procedures. OHS issues related to project	Contractor's E&S and OHS Specialists'/Subcontractors/ Supervision consultants, relevant Government agencies	½ day	Before the commencement of the subproject/works	Consultant	1000
Principles and procedures in Stakeholder engagement  Gender and Gender Based Violence	Contractor's E&S and OHS Specialists'/subcontractors/ Supervision consultants,	2 days	Before the commencement of the subproject/works	PMU and GBV/SH Consultant	2000
Waste management principles and procedures (Solid Waste and wastewater)	Contractor's E&S and OHS Specialists'/subcontractors/ Supervision consultants, relevant Government agencies	½ day	Before the commencement of the subproject/works	Consultant	1000
Traffic Management/Emergency preparedness and response	Contractor's E&S and OHS Specialists/Subcontractors/ Supervision consultants, relevant Government agencies	½ day	Before the commencement of the subproject/works	Consultant	1000
Water consumption Air pollution control.  Control of leakages.  Spill response.	Contractor's and subcontractor's workforce	4 days	Before and during work activities	Consultant	2000

E&S monitoring and reporting	Contractor's E&S and OHS Specialists/subcontractors/ Supervision consultants, relevant Government agencies/Local Council officials/Traders' Union officials	½ day	Before the commencement of the subproject/works	Consultant	1000
Total					9000

## 8.5 ENVIRONMENTAL AND SOCIAL MONITORING PLAN

Compliance monitoring should be conducted to ensure the environmental soundness of the project and the proper implementation of mitigation measures. It shall be the responsibility of the designated site EHS officer during the construction and decommissioning phases, and the MCC during the operation phase. The proposed monitoring plan for the project is summarized in Table 8-8.

**Table 8-8 Proposed Environmental Monitoring Plan at the Makeni Market site and Relocation Site**

Impacts	Parameters to Monitor	Frequency <sup>16</sup>	Monitoring Location <sup>17</sup>	Standards/Guidelines National/International <sup>18</sup>	Institutional Responsibility	Reference	Cost Estimation
<b>Construction Phase</b>							
<b>Emissions</b>							
<b>Air Emissions</b>	<ul style="list-style-type: none"> <li>Ambient levels of PM<sub>2.5</sub> and PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>2</sub>, CO</li> <li>Emissions from the generator and heavy machinery during operation (NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>)</li> </ul>	<ul style="list-style-type: none"> <li>2 times per week during demolition and excavation works</li> <li>Once per week during construction works</li> </ul>	Inside construction site, at nearest receptors, and 1 m from the generator	<p style="text-align: center;"><u>Ambient air quality levels</u></p> <ul style="list-style-type: none"> <li>PM<sub>2.5</sub> - 25µg/m<sup>3</sup> (24-hour)</li> <li>PM<sub>10</sub> - 50 µg/m<sup>3</sup> (24-hour)</li> <li>SO<sub>2</sub> – IT (Interim Target)-1: 125 µg/m<sup>3</sup>, IT-2: 50 µg/m<sup>3</sup>, Guideline: 20 µg/m<sup>3</sup> (24-hour)</li> <li>NO<sub>2</sub> – 200 µg /m<sup>3</sup> (1-hour); 40 (1-year)</li> <li>Ozone – IT-1: 160 µg /m<sup>3</sup>, Guideline: 100 µg /m<sup>3</sup> (8-hour)</li> </ul> <p style="text-align: center;"><u>Small combustion emissions levels (Liquid engine)</u></p> <ul style="list-style-type: none"> <li>PM: 50 or up to 100 mg/Nm<sup>3</sup></li> <li>SO<sub>2</sub>: 1.5% up to 3% Sulfur</li> <li>NO<sub>x</sub>: 1,460 mg/Nm<sup>3</sup> (bore size diameter &lt; 400), 1,850mg/Nm<sup>3</sup> (bore size diameter ≥ 400)</li> </ul> <p>World Bank Environmental, Health, and Safety Guidelines</p>	Site EHS officer, Supervision consultant Designated health center	The Environment Protection Agency Act, 2022	Ambient Air Quality measurement cost: around USD 3,000 per event.
	<ul style="list-style-type: none"> <li>Recorded respiratory problems among workers</li> </ul>	Monthly	Within the Market construction site	<ul style="list-style-type: none"> <li>Occupational Noise Limits for Various Working Environments during construction: Heavy Industry: 85 dBA (8-hours); Max 110 dBA Light Industry: 50-65 dBA (8-hours); Max 110 dBA</li> <li>Commercial Noise Limits: 70 dBA</li> </ul> <p>World Bank EHS Guidelines (Appendix 2)</p>	Site EHS officer, Supervision consultant	The Environment Protection Agency Act, 2022	Noise monitoring cost: around USD 800 per event.
<b>Noise</b>	<ul style="list-style-type: none"> <li>Noise levels (dB) Leq, Lmax, Lmin, L90</li> </ul>	<ul style="list-style-type: none"> <li>Three times daily during demolition, grading and excavation</li> <li>Once daily during concrete pouring, walls construction and exterior wall finishing</li> <li>Once every 6 months during generator operation</li> <li>In case of complaints from nearby receptors</li> </ul>	Nearest sensitive receptors and 1 meter from generator	<ul style="list-style-type: none"> <li>Occupational Noise Limits for Various Working Environments during construction: Heavy Industry: 85 dBA (8-hours); Max 110 dBA Light Industry: 50-65 dBA (8-hours); Max 110 dBA</li> <li>Commercial Noise Limits: 70 dBA</li> </ul> <p>World Bank EHS Guidelines (Appendix 2)</p>	Site EHS officer, Supervision consultant	The Environment Protection Agency Act, 2022	Noise monitoring cost: around USD 800 per event.
<b>Wastewater Generation</b>	<ul style="list-style-type: none"> <li>Volume of Wastewater Generated</li> <li>Visual inspection of proper emptying of septic tank as recommended</li> </ul>	Weekly	Septic tank designated for the construction phase, discharge location, and drainage pipes	-	Contractor, Site EHS Officer, supervision consultant	The National Water and Sanitation Policy, 2011	No cost
<b>Waste Generation</b>	<ul style="list-style-type: none"> <li>Visual inspection of proper waste storage and disposal</li> <li>Waste Generation Types and Quantities (Kg/day)</li> <li>Collection/Disposal Schedules</li> <li>Quantities of waste transported for offsite reuse/recycle</li> <li>Quantities of waste disposed of</li> <li>Methods of management/disposal of different streams</li> </ul>	Daily  Weekly (quantities)	Within the Market construction site	-	Contractor, Site EHS Officer, Supervision consultant	The Environment Protection Agency Act, 2022 National Policy Roadmap on Integrated Waste Management, 2015	No cost
<b>Depletion of Resources</b>							
<b>Energy Resources</b>	<ul style="list-style-type: none"> <li>Energy consumption (kWh), fuel usage (liters).</li> </ul>	Monthly	Within the Market construction site	WB EHS Guidelines for Energy conservation (refer to Appendix 2)	Contractor, EHS officer	Sierra Leone Local Content Agency Act, 2016	No cost

<sup>16</sup> Frequency of monitoring can be Daily/ Weekly/ Monthly/ Quarterly/ etc.

<sup>17</sup> Monitoring location is where testing/ sampling will take place; linked directly with most sensitive receptors with highest impact

<sup>18</sup> Standard/ Guidelines: for each mitigation measure, criteria and targets must be identified to indicate acceptable levels/ conditions e.g. ambient air and water guidelines, emission limit values, energy consumption limit values, etc.

Impacts	Parameters to Monitor	Frequency <sup>16</sup>	Monitoring Location <sup>17</sup>	Standards/Guidelines National/International <sup>18</sup>	Institutional Responsibility	Reference	Cost Estimation
<b>Water Resources</b>	<ul style="list-style-type: none"> <li>Water consumption (m<sup>3</sup>)</li> <li>Groundwater sampling up-gradient and down-gradient from the site and analysis for physico-chemical and microbiological parameters</li> </ul>	<ul style="list-style-type: none"> <li>Monthly</li> <li>Prior to project construction, midway during the construction phase, and after completion of all construction works</li> </ul>	Within the Market construction site up-gradient and down-gradient from the site	WB Guideline on Water Quality and Availability (refer to Appendix 2)	Contractors, EHS officer, Project Engineers	National Water and Sanitation Policy, 2011 The National Water Resources Management Agency regulations, 2021	Cost of water sampling: USD 900 per sample
<b>Biological Resources</b>	<ul style="list-style-type: none"> <li>Visual inspection for existing vegetation</li> <li>Number of trees cut down/replanted</li> </ul>	Weekly	Within the project footprint area	-	Contractor, EHS officer, Supervision consultant	National Environmental Policy, 2013 National Biodiversity Strategy and Action Plan 2003	No cost
<b>Social Impacts</b>							
<b>Traffic</b>	<ul style="list-style-type: none"> <li>Visual inspection of the market roads/ roads around the relocation site</li> <li>Transportation times and schedules, roads congestion</li> </ul>	Daily	Roads connected to the Market	Traffic Safety (Appendix 2 - WB EHS Guidelines)	EHS officer, City Council/ Traffic Police	Roads Safety Authority Act, 2016	No cost
<b>Socio-Economic</b>	<ul style="list-style-type: none"> <li>Number and status of registered grievances</li> <li>Number of relocated traders and workers</li> <li>Number/percentage of local workers and children employed</li> </ul>	Weekly Weekly Monthly	Within the market/relocation site	ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement Project RP approved by WB	PMU, Social Safeguards Team, City Council	National Development Induced Resettlement Act, 2023 Customary Land Act, 2022 Sierra Leone National Action Plan, 2018 The Child Rights Act, 2007 Employer and Employed Act, 1960	No cost
<b>Health and Safety Hazards</b>	<ul style="list-style-type: none"> <li>PPE Availability and proper use</li> <li>First Aid Kits Availability</li> <li>Number of accidents, injuries, safety violations and measures taken</li> </ul>	Daily Biweekly Twice a month (records and meetings)	Within the Market site	ESS4: Community Health and Safety WB EHS Guidelines on Structural Safety of Project Infrastructure, Physical Hazards, Chemical Hazards, Personal Protective Equipment (Appendix 2)	Contractor, EHS Team/EHS Officer	National Action Plan for Health Security, 2018	No cost
<b>Operation Phase</b>							
<b>Emissions</b>							

Impacts	Parameters to Monitor	Frequency <sup>16</sup>	Monitoring Location <sup>17</sup>	Standards/Guidelines National/International <sup>18</sup>	Institutional Responsibility	Reference	Cost Estimation
<b>Air Emissions</b>	<ul style="list-style-type: none"> <li>Emissions from the generator during operation (NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>)</li> <li>Ambient air quality around the market and at nearest receptors (NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>)</li> <li>Number of Grievances based on grievance mechanism and their status.</li> <li>Emissions and Odors from the septic tank or waste storage (qualitative)</li> </ul>	Annually or based on complaints received	Generator emissions: 1 m from the generator Within and around the market site, at nearest sensitive receptors	<p><u>Ambient air quality levels</u></p> <ul style="list-style-type: none"> <li>PM<sub>2.5</sub> - 25µg/m<sup>3</sup> (24-hour)</li> <li>PM<sub>10</sub> - 50 µg/m<sup>3</sup> (24-hour)</li> <li>SO<sub>2</sub> – IT (Interim Target)-1: 125 µg/m<sup>3</sup>, IT-2: 50 µg/m<sup>3</sup>, Guideline: 20 µg/m<sup>3</sup> (24-hour)</li> <li>NO<sub>2</sub> – 200 µg /m<sup>3</sup> (1-hour); 40 (1-year)</li> <li>Ozone – IT-1: 160 µg /m<sup>3</sup>, Guideline: 100 µg /m<sup>3</sup> (8-hour)</li> </ul> <p><u>Small combustion emissions levels (Liquid engine)</u></p> <ul style="list-style-type: none"> <li>PM – 50 or up to 100 mg/Nm<sup>3</sup></li> <li>SO<sub>2</sub>: 1.5% up to 3% Sulfur</li> <li>NO<sub>x</sub> – 1,460 mg/Nm<sup>3</sup> (bore size diameter &lt; 400), 1,850mg/Nm<sup>3</sup> (bore size diameter ≥ 400)</li> </ul> <p>World Bank EHS Guidelines (Appendix 2)</p>	MCC	The Environment Protection Agency Act, 2022	<p>Ambient Air Quality measurement cost: around USD 3,000 per event.</p> <p>Air emission measurement: around USD 3,000 per event</p>
<b>Noise</b>	<ul style="list-style-type: none"> <li>Noise levels (dB), (Leq, Lmax, Lmin, L90)</li> </ul>	Upon receipt of noise complaints	At the reported source and at nearest sensitive receptors	<p>One-hour L<sub>Aeq</sub> - industrial, commercial: 70 dBA (daytime and nighttime)</p> <p>World Bank EHS Guidelines (Appendix 2)</p>	MCC	The Environment Protection Agency Act, 2022	Noise monitoring cost: around USD 800 per event
<b>Wastewater Generation</b>	<ul style="list-style-type: none"> <li>Volume of Sludge Generated</li> <li>Treated sewage quality tests (temperature, pH, NH<sub>4</sub>-N, TDS, TSS, Flow, Total Nitrogen, Total Phosphorus, BODs, COD, total coliforms, fecal coliforms)</li> </ul>	Monthly	Market effluent treated in the proposed Phyto deuration system	Indicative values for treated sanitary sewage discharges (Appendix 2 - World Bank general EHS guidelines)	MCC	National Water and Sanitation Policy, 2011	Cost of wastewater analysis per sample: USD 1,000
<b>Waste Generation</b>	<ul style="list-style-type: none"> <li>Visual inspection of proper waste storage and disposal</li> <li>Waste Generation Quantities by stream (Kg/day)</li> <li>Collection/Disposal Schedules</li> <li>Quantities of waste transported for offsite reuse/recycle</li> <li>Quantities of waste disposed of</li> <li>Quantities of biodegradable waste composted or digested</li> <li>Quantities of waste otherwise managed</li> </ul>	Daily (visual inspection)  Weekly (quantities)	Within the market site and the waste collection points	-	MCC	The Environment Protection Agency Act, 2022  National Policy Roadmap on integrated waste management, 2015	No cost
<b>Depletion of Resources</b>							
<b>Energy Resources</b>	<ul style="list-style-type: none"> <li>Maintain established energy consumption targets.</li> <li>Follow up on fuel quantities (L) and electricity (kWh) consumption</li> </ul>	Monthly	Market facilities	WB EHS Guidelines for Energy conservation (refer to Appendix 2)	MCC	Sierra Leone Local Content Agency Act, 2016	No cost
<b>Water Resources</b>	<ul style="list-style-type: none"> <li>Follow up on water consumption (m<sup>3</sup>)</li> <li>Water quality (physical, chemical and microbiological)</li> <li>Inspection and maintenance of water fixtures and pipes</li> </ul>	Monthly  Every 6 months and upon public complaint  Monthly	Within the market site (at source)	EHS Guidelines on Water Availability (Appendix 2)	MCC	National Water and Sanitation Policy, 2011  The National Water Resources Management Agency regulations, 2021	Water sample analysis: \$900/sample
<b>Biological Resources</b>	<ul style="list-style-type: none"> <li>Visual inspection</li> </ul>	Yearly	Within the market	-	MCC	National	No cost

Impacts	Parameters to Monitor	Frequency <sup>16</sup>	Monitoring Location <sup>17</sup>	Standards/Guidelines National/International <sup>18</sup>	Institutional Responsibility	Reference	Cost Estimation
			boundaries			Environmental policy, 2013 National Biodiversity Strategy and Action Plan 2003	
<b>Social Impacts</b>							
<b>Traffic</b>	<ul style="list-style-type: none"> <li>Visual inspection of roads</li> <li>Road's congestion</li> </ul>	Daily	Roads connected to the market	Traffic Safety (WB EHS Guidelines)	EHS site officer, MCC Police	Roads Safety Authority Act, 2016	No cost
<b>Socio-Economic</b>	<ul style="list-style-type: none"> <li>GRM records: complaints received, how they are resolved and within what time frame</li> <li>Income and livelihoods of traders</li> <li>Number of children employed</li> </ul>	Monthly through the resettlement Process Monthly during operation	Market GRM records Quick surveys of income and livelihoods among concerned traders and workers Age of workers from Council registry	ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement Project RP approved by WB	MCC	National Development Induced Resettlement Act, 2023 Customary Land Act, 2022 The Child Right Act, 2007 Employer and Employed Act, 1960	Included in operational budget Survey cost (livelihoods): USD 1,000 per survey
<b>Health, Safety and Security Hazards</b>	<ul style="list-style-type: none"> <li>Visual inspection of hazards on site</li> <li>Register the number/ cause of accidents and measures undertaken</li> <li>Number of crimes/ months</li> </ul>	Weekly (hazards inspection) Monthly (accidents and crimes)	Within the market/ relocation site	ESS4: Community Health and Safety World Bank EHS Guidelines on Structural Safety of Project Infrastructure, and Physical Hazards (Appendix 2)	MCC	National Action Plan for Health Security, 2018 Public Health Amendment Act, 2004 Public Health Ordinance, 1960	Included in operation budget
<b>Decommissioning Phase</b>							
<b>Emissions</b>							
<b>Air Emissions</b>	<ul style="list-style-type: none"> <li>Ambient levels of PM<sub>2.5</sub> and PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>2</sub>, CO</li> <li>Emissions from the generator and heavy machinery during operation (NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>)</li> <li>Recorded respiratory problems among workers</li> </ul>	<ul style="list-style-type: none"> <li>2 times per week during demolition and disassembling works</li> <li>Once per week during site restoration works</li> <li>Monthly</li> </ul>	Within decommissioning area, at nearest receptors, and 1 m from the generator  Within the decommissioning area	<p style="text-align: center;"><u>Ambient air quality levels</u></p> <ul style="list-style-type: none"> <li>PM<sub>2.5</sub> - 25µg/m<sup>3</sup> (24-hour)</li> <li>PM<sub>10</sub> - 50 µg/m<sup>3</sup> (24-hour)</li> <li>SO<sub>2</sub> – IT (Interim Target)-1: 125 µg/m<sup>3</sup>, IT-2: 50 µg/m<sup>3</sup>, Guideline: 20 µg/m<sup>3</sup> (24-hour)</li> <li>NO<sub>2</sub> – 200 µg /m<sup>3</sup> (1-hour); 40 (1-year)</li> <li>Ozone – IT-1: 160 µg /m<sup>3</sup>, Guideline: 100 µg /m<sup>3</sup> (8-hour)</li> <li>Small combustion emissions levels (Liquid engine)</li> <li>PM: 50 or up to 100 mg/Nm<sup>3</sup></li> <li>SO<sub>2</sub>: 1.5% up to 3% Sulfur</li> <li>NO<sub>x</sub>: 1,460 mg/Nm<sup>3</sup> (bore size diameter &lt; 400), 1,850mg/Nm<sup>3</sup> (bore size diameter ≥ 400)</li> </ul> <p style="text-align: center;">World Bank Environmental, Health, and Safety Guidelines</p>	Site EHS officer, Supervision consultant Designated health center	The Environment Protection Agency Act, 2022	Ambient Air Quality measurement cost: around USD 3,000 per event.
<b>Noise</b>	<ul style="list-style-type: none"> <li>Noise levels (dB) Leq, Lmax, Lmin, L90</li> </ul>	Three times daily during demolition, dismantling, and disassembling activities	Nearest sensitive receptors and 1 meter from generator	<ul style="list-style-type: none"> <li>Occupational Noise Limits for Various Working Environments during construction: Heavy Industry: 85 dBA (8-hours); Max 110 dBA Light Industry: 50-65 dBA (8-hours); Max 110 dBA</li> </ul>	Site EHS officer, Supervision consultant	The Environment Protection Agency Act, 2022	Noise monitoring cost: around USD 800 per event.

Impacts	Parameters to Monitor	Frequency <sup>16</sup>	Monitoring Location <sup>17</sup>	Standards/Guidelines National/International <sup>18</sup>	Institutional Responsibility	Reference	Cost Estimation
				<ul style="list-style-type: none"> <li>Commercial Noise Limits: 70 dBA</li> </ul> World Bank EHS Guidelines			
<b>Wastewater Generation</b>	<ul style="list-style-type: none"> <li>Volume of Wastewater Generated</li> <li>Visual inspection of proper emptying of septic tank as recommended</li> </ul>	Weekly	Septic tank designated for the decommissioning phase, discharge location, and drainage pipes	-	Contractor, Site EHS Officer, supervision consultant	The National Water and Sanitation Policy, 2011	No cost
<b>Waste Generation</b>	<ul style="list-style-type: none"> <li>Visual inspection of proper waste storage and disposal</li> <li>Collection/Disposal Schedules</li> <li>Quantities of waste transported for offsite reuse/recycle</li> <li>Quantities of waste disposed of</li> <li>Methods of management/disposal of construction and demolished waste</li> </ul>	Daily Weekly (quantities)	Within the decommissioning area	-	Contractor, Site EHS Officer, Supervision consultant	The Environment Protection Agency Act, 2022 National Policy Roadmap on Integrated Waste Management, 2015	No cost
<b>Depletion of Resources</b>							
<b>Energy Resources</b>	<ul style="list-style-type: none"> <li>Energy consumption (kWh), fuel usage (liters).</li> </ul>	Monthly	Within the decommissioning area	WB EHS Guidelines for Energy conservation (refer to Appendix 2)	Contractor, EHS officer	Sierra Leone Local Content Agency Act, 2016	No cost
<b>Water Resources</b>	<ul style="list-style-type: none"> <li>Water consumption (m<sup>3</sup>)</li> <li>Groundwater sampling up-gradient and down-gradient from the site and analysis for physico-chemical and microbiological parameters</li> </ul>	Monthly	Within the decommissioning site up-gradient and down-gradient from the site	WB Guideline on Water Quality and Availability (refer to Appendix 2)	Contractors, EHS officer, Project Engineers	National Water and Sanitation Policy, 2011 The National Water Resources Management Agency regulations, 2021	Cost of water sampling: USD 900 per sample
<b>Biological Resources</b>	<ul style="list-style-type: none"> <li>Visual inspection for existing vegetation</li> <li>Number of trees cut down/replanted</li> </ul>	Weekly	Within the decommissioning area	-	Contractor, EHS officer, Supervision consultant	National Environmental Policy, 2013 National Biodiversity Strategy and Action Plan 2003	No cost
<b>Social Impacts</b>							
<b>Traffic</b>	<ul style="list-style-type: none"> <li>Visual inspection of the roads around the site</li> <li>Transportation times and schedules, roads congestion</li> </ul>	Daily	Roads connected to the decommissioning area	Traffic Safety (Appendix 2 - WB EHS Guidelines)	Contractor, EHS officer, City Council/ Traffic Police	Roads Safety Authority Act, 2016	No cost
<b>Socio-Economic</b>	<ul style="list-style-type: none"> <li>Number and status of registered grievances</li> <li>Number of affected traders and workers by market decommissioning</li> <li>Number/percentage of local workers and children employed</li> </ul>	Weekly Weekly Monthly	Within the decommissioning area	ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement Project RP approved by WB	PMU, Social Safeguards Team, Contractors, City Council	National Development Induced Resettlement Act, 2023 Customary Land Act, 2022 Sierra Leone	No cost

Impacts	Parameters to Monitor	Frequency <sup>16</sup>	Monitoring Location <sup>17</sup>	Standards/Guidelines National/International <sup>18</sup>	Institutional Responsibility	Reference	Cost Estimation
						National Action Plan, 2018 The Child Rights Act, 2007 Employer and Employed Act, 1960	
<b>Health and Safety Hazards</b>	<ul style="list-style-type: none"> <li>• PPE Availability and proper use</li> <li>• First Aid Kits Availability</li> <li>• Number of accidents, injuries, safety violations and measures taken</li> </ul>	Daily Biweekly Twice a month (records and meetings)	Within the decommissioning area	ESS4: Community Health and Safety WB EHS Guidelines on Structural Safety of Project Infrastructure, Physical Hazards, Chemical Hazards, Personal Protective Equipment (Appendix 2)	Contractor, EHS Team/EHS Officer	National Action Plan for Health Security, 2018	No cost

## 8.6 COST OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS

### 8.6.1 Makeni Central Market Site

The budget covers the mitigation, monitoring measures and capacity building plan for the proposed activities identified in each of the implementation phases of the project.

The estimated total cost of the environmental and social mitigation and monitoring plans at the Makeni Central Market site is summarized in Table 8-9.

The cost breakdown has been developed based on the following unit prices:

- Air quality monitoring test cost: USD 3,000/event
- Noise Monitoring test cost: USD 800/event
- Wastewater sampling test cost: USD 1,000/event
- Water sampling test cost: USD 900/event
- PPE cost: USD 175/worker
- First Aid Kit cost: USD 200/kit
- Fire extinguisher cost: USD 55 per 6Kg powder extinguisher
- Spill response kit cost: USD 80/unit; and drip tray cost: USD 60/tray.

Notes:

- The RP costs have been calculated separately and are detailed in the RP report with a total cost of USD 1,015,635.
- The cost for sludge management cannot be determined at this stage. It will depend on the volume of sludge generated.
- The waste bins and trucks for collecting market waste can be procured during the construction phase, used at the relocation site during the main market upgrade, and then moved to the main market site when it is ready.
- The necessary funds for implementing the ESMMP will be allocated from the RUSLP project budget, specifically under Subcomponent 2C (which covers Market Upgrading).

### 8.6.2 Makeni Relocation Site

The estimated total cost of the environment and social mitigation and monitoring plans at the Makeni relocation site is summarized in Table 8-10.

**Table 8-9 Estimated Total Cost of Mitigation and Monitoring Plans at the Makeni Central Market Site**

Plans	Items	USD					
		During Construction <sup>19</sup>		During Operation (average/year)		During Decommissioning <sup>20</sup>	
		Number/Frequency	Cost	Number/Frequency	Cost	Number/Frequency	Cost
Mitigation	Cost of Asbestos Assessment	1	50,000	0	-	0	-
	Cost of spill response kits	5	400	2	160	2	160
	Cost of drip trays	5	300	2	120	2	120
	PPEs Prices	150	26,250 <sup>21</sup>	30	5,250	50	8,750
	Cost of First Aid Kits	15	3,000	15	3,000	5	1,000
	Cost of Fire Extinguishers	20	1,100	30	1,650	20	1,100
	Cost of Waste Bins and Waste trucks for sorting at source	60 bins and 3 trucks	346,000	-	-	0	-
	Cost of Training and Awareness Campaign	0	-	4	9,000	0	-
	<b>Total</b>	-	<b>427,050</b>	-	<b>14,180</b>	-	<b>11,130</b>
Monitoring	Cost of Ambient Air Quality Monitoring	84	252,000	1	3,000	18	54,000
	Cost of Noise Monitoring	369	295,200	1	800	91	72,800
	Cost of Water Sampling	3	2,700	2	1,800	3	2,700
	Cost of Wastewater sampling	0	-	12	12,000	-	-
	<b>Total</b>	-	<b>549,900</b>	-	<b>17,600</b>	-	<b>129,500</b>
<b>Total Cost of Mitigation and Monitoring Plans</b>		-	<b>976,950</b>	-	<b>36,780</b>	-	<b>140,630</b>

<sup>19</sup> Construction at the Market site is expected to last 18 months.

<sup>20</sup> The Decommissioning phase is anticipated to last around 3 months.

<sup>21</sup> It is estimated that 150 workers will be involved in the construction works.

Table 8- 10 Estimated Cost of Mitigation and Monitoring Plans at the Makeni Relocation site

Plans	Items	USD					
		During Construction <sup>22</sup>		During Operation (average/year)		During Decommissioning <sup>23</sup>	
		Number/Frequency	Cost	Number/Frequency	Cost	Number/Frequency	Cost
Mitigation	Cost of Asbestos Assessment	0	-	0	-	0	-
	Cost of spill response kits	5	400	0	-	2	160
	Cost of drip trays	5	300	0	-	2	120
	PPEs Prices	50	8,750 <sup>24</sup>	10	1,750	50	8,750
	Cost of First Aid Kits	5	1,000	10	2,000	5	1,000
	Cost of Fire Extinguishers	10	550	20	1,100	10	550
	<b>Total</b>	-	<b>11,000</b>	-	<b>4,850</b>	-	<b>10,580</b>
Monitoring	Cost of Ambient Air Quality Monitoring	24	72,000	1	3,000	4	12,000
	Cost of Noise Monitoring	180	144,000	1	800	30	24,800
	Cost of Water Sampling	2	1,800	2	1,800	1	900
	Cost of Wastewater sampling	0	-	12	12,000	0	-
	<b>Total</b>	-	<b>217,800</b>	-	<b>17,600</b>	-	<b>36,900</b>
<b>Total Cost of Mitigation and Monitoring Plans</b>		-	<b>228,800</b>	-	<b>22,450</b>	-	<b>47,480</b>

<sup>22</sup> Construction at the Relocation site is expected to last 6 months.

<sup>23</sup> The Decommissioning phase is anticipated to last 1 month.

<sup>24</sup> It is estimated that 50 workers will be involved in the construction works.

## 9 HEALTH AND SAFETY PLAN

This section outlines OHS and CHS commitments for maintaining health, safety, and environmental standards in the market workplace. The project's contractors and the Makeni City Council shall continuously support improvements of the market workplace health and safety, during construction and operation, by adopting the following commitments:

1. Compliance with OHS and CHS plans from the contractors and MCC.
2. Documentation, Implementation, and Communication for the OHS and CHS plans between contractors and all workers and communities involved in the project area.
3. Hazard identification and risk management aiming to manage risks to the lowest feasible level.
4. Engagement of traders, workers and nearby communities in health, well-being and safety management through consultation and participation, ensuring continual performance improvement.
5. Foster a safety conscious culture by raising awareness among all employees and nearby communities regarding safety hazards in the market area and beyond.

### 9.1 OCCUPATIONAL HEALTH AND SAFETY

The Occupational Health, and Safety (OHS) plan has been formulated for the market upgrade project to fulfill the requirements outlined in the RUSLP general project standards and World Bank guidelines under ESS2. It identifies the principles, approach, procedures and methods that shall be used to control and minimize all occupational health and safety impacts associated with project activities. It is developed based on the results of the ESIA assessment in which site-specific variables, such as host communities, construction worker safety and other factors, are considered.

#### 9.1.1 Objective

The primary objective of the OHS plan is to protect the well-being of all workers and personnel (including subcontractors' personnel) engaged in project activities, spanning construction, operation, and decommissioning phases and mitigate risks associated with work-related activities. The overarching purpose of this OHS plan is to:

- Define the plan's scope and identify relevant management interfaces.
- Specify roles and responsibilities within the framework of the plan.
- Outline the Project Standards that are pertinent to this specific plan.
- Define measures aimed at safeguarding workers from injury, illness, or impacts associated with workplace hazards.
- Establish monitoring and reporting procedures, including the use of Key Performance Indicators.
- Specify training requirements for personnel involved in the Project.
- Provide references for supporting materials and information.
- Assess and mitigate or eliminate OHS risks and impacts on all employees throughout the construction and operation phases.

- Promote continuous improvement of OHS practices at the Project site.

### 9.1.2 Responsibilities

The project's contractors shall support the health, safety, and welfare of the employees including temporary workers and visitors by adopting the World Bank general EHS guidelines, illustrated in Appendix 11 (Table 12-13), that aim to create a safe and secure work environment for all employees and workers involved in the market upgrade project.

OHS responsibilities assigned to various roles are presented in Appendix 11 (Table 12-14), highlighting the importance of communication throughout the project's lifecycle. Regular communication and consultation among project personnel, including employees, contractors, and visitors, ensure that everyone is well-informed about safety measures, potential risks, and emergency procedures. This collaborative approach fosters a culture of shared responsibility for safety, encouraging active participation in risk identification and mitigation.

### 9.1.3 Mitigation Measures

During construction, the contractor shall comply with safety rules and regulations in accordance with international safety standards such as Occupational Safety and Health Administration (OSHA) and the provisions of the International Occupational Safety and Health (IOSH) regulations. Below are the main responsibilities and actions required by the contractor to ensure health and safety during the construction project:

- Appoint an EHS Expert and officer(s) before construction starts, for the duration of the project.
- Prepare an OHS plan aligned with the project's ESMP.
- Include coordinated emergency response procedures.
- Identify potential risks and hazards and propose procedures to address them.
- Assess hazards and risks during the design phase to ensure health and safety during construction and operation.
- Implement design changes to eliminate risks; if impossible, minimize risks at the source.
- Ensure the workforce is equipped with PPE: hard hats, reflective vests, safety boots/shoes.
- Correct unsafe conditions promptly.
- Report accidents to project management within 24 hours, including details and preventive measures.
- Provide first aid equipment and facilities with qualified personnel on-site.
- Attend monthly Site Safety Meetings with subcontractors.
- Protect and store equipment, vehicles, and personnel safely throughout the project phases.
- Ensure subcontractors adhere to safety regulations.
- Conduct daily toolbox talks to train personnel on risks, safe tool usage, and the importance of PPE.
- Take precautions against fire outbreaks, especially for storing hazardous materials.
- Prepare a fire hazard risk assessment and maintain firefighting equipment with trained personnel.
- Protect public property and users, providing support to safeguard structures and facilities during construction.

- Specify applicable safety regulations and guidance in the safety plan.

Additionally, the recommendations provided by the International Finance Corporation (IFC) on OHS during construction related activities, summarized in Appendix 11 (Table 12-5), could be considered.

#### 9.1.4 *Training and Communication*

Effective communication systems are critical to minimizing risks and taking a proactive lead in the event of an emergency. The contractor will be responsible for ensuring that arrangements are made to ensure all construction workers and involved personnel are suitably aware of OHS matters in carrying out their various activities. A comprehensive training program should be implemented to ensure that all personnel, including contractors, subcontractors, and visitors, receive the necessary induction on health and safety matters covering general OHS awareness, job-specific requirements, and emergency procedures relevant to the construction site. Special attention will be given to site-specific hazards, and communication codes will be provided to all personnel.

All staff should be asked to sign a code of conduct for the project and an induction register should be maintained to track staff inductions. Additionally, toolbox talks should be conducted periodically with site staff to cover topics such as emergency response procedures, spill prevention and clean-up kits, feedback on performance and actions taken, learning points to prevent injuries, etc.

#### 9.1.5 *Monitoring and Reporting*

Regular monitoring ensures that safety standards are maintained, risks are identified, and corrective actions are promptly taken to prevent accidents and injuries. The key performance indicators and monitoring activities, summarized in Appendix 11 (Table 12-6), will play a pivotal role in assessing the effectiveness of the OHS management system. The contractor should be monitored by PMU and the Supervision consultant who will develop and implement an auditing program to monitor, evaluate and report on environmental, operational and community health and safety performance and compliance.

Comprehensive records encompassing audits, inspections, complaints, training activities, and incidents should be diligently managed. The systematic recording of these elements facilitates compliance monitoring and contributes to ongoing improvements in occupational health and safety practices.

## **9.2 COMMUNITY HEALTH AND SAFETY PLAN**

The Community Health and Safety (CHS) Plan is developed in accordance to WB ESS4 that recognizes that project activities, equipment and infrastructure can increase community exposure to health, safety and security risks and impacts. It provides direction to avoid or minimize such risks and impacts with particular attention to vulnerable people.

### 9.2.1 Objective

The plan aims to promote the health, safety, and well-being of the surrounding community and ensure the smooth functioning of the market with limited negative impacts on the community. The purpose of the CHS plan is to provide a clear set of actions and responsibilities for the control of impacts affecting the health and safety of the communities within the project's area of influence. The main objectives of the CHS plan include:

- Avoid adverse impacts on the health and safety of project-affected communities during project life cycle from project activities.
- Promote quality and safety considerations in infrastructure design and construction.
- Avoid community exposure to project-related traffic and road safety risks, diseases and hazardous materials, and have in place effective measures to address emergency events.
- Ensure that safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.

### 9.2.2 Responsibilities

The overall accountability and responsibility for implementing the CHS and the appropriate mitigation measures will rest with the contractor and subcontractors during the construction phase, and with the Makeni City Council during the operational phase of the market. Both parties will ensure that all activities are conducted in accordance with the requirements of this plan, following its approval by the PMU.

### 9.2.3 Mitigation Measures

The overall mitigation measures for the community health and safety are illustrated in Table 9-1.

**Table 9-1 Overall impact to the community and mitigation measures**

Topic	Risk / Impact to the community	Mitigation Measures
Traffic and Road safety	Increased movement of vehicles and construction materials and/or market activities may lead to congestion and accidents.	Coordinate with road authorities and Sierra Leone police to regulate vehicle movements and ensure pedestrian safety. Use signage to direct pedestrian flow and prevent overcrowding. Designate parking areas and work with local authorities to regulate traffic.
Environmental Nuisance	Dust, noise, odors, vibrations, and waste may be disturbing nearby residents.	Follow safety standards and protocols, Use barriers, limit construction hours, and spray water to reduce dust Ensure regular waste collection and provide adequate bins. Reuse waste where possible. Segregate and dispose them safely
Public Access Risks	Unauthorized entry into construction zones could lead to injuries.	Fence the construction site and install signs to prevent unauthorized access.
Community-Contractor Conflict	Potential disputes over job opportunities or perceived disruptions.	Inform the community about the project schedule, potential impacts, and mitigation measures. Conduct regular consultation and stakeholder

Topic	Risk / Impact to the community	Mitigation Measures
		engagement activities, as defined in the RUSLP SEP.
Public Health and Safety Issues	Poor waste management, food safety concerns, or waterborne diseases could affect the community. Borehole drilling and electrical systems installation pose health concerns on workers' and the community	Educate traders on hygiene and food safety practices.  Provide Personal Protective Equipment for workers, provide hoarding and cordon off work areas to protect community from exposure to such risks
Crime and Social Unrest	The market could attract risk of theft, petty crimes or disputes among traders	Install CCTV cameras and collaborate with police for regular patrols.
Gender-based Violence	Influx of male workers may increase risks of sexual harassment or exploitation for women and girls in the area. Market activities might expose women and young traders to harassment or gender-based violence from traders, workers, or visitors.	Develop and enforce a Code of Conduct for workers that prohibit sexual harassment or exploitation. Provide gender-sensitive training to workers on appropriate behavior. Establish a grievance mechanism specifically for reporting harassment or violence. Ensure the presence of personnel of the specialized GBV/SH NGO (recruited by the PMU) on site at all times to continuously raise awareness and sensitize workers on GBV/SH issues. Provide security personnel trained in gender-sensitive response to monitor the market. Ensure lighting in public areas and pathways to improve safety for women during evening hours. Implement the SEA/SH Prevention and Response Action Plan developed for the Project.
Emergency Preparedness and Response Plan	Accidents, fire and hazardous spills	Emergency Procedures: Prepare for accidents, fires, and hazardous spills with defined protocols. First Aid and Medical Support: Ensure first-aid kits are available and personnel are trained in basic medical care. Evacuation Plan: Develop evacuation routes for traders and residents in case of emergencies. Coordination with Authorities: Work with local emergency services to ensure rapid response to incidents.

#### 9.2.4 Engagement and Communication

To ensure effective engagement with the community, the following will be implemented:

- Consultations: Regularly engage with traders, residents, and women's organizations to address safety concerns and gather feedback.
- Information Sharing: Utilize posters, public meetings, and social media platforms to disseminate information and keep the community informed about project developments and safety measures.
- Grievance Mechanism: Implement a confidential reporting system to enable community members to voice complaints related to harassment, safety, or health concerns, ensuring their issues are addressed promptly and sensitively

### 9.2.5 Monitoring and Reporting

Monitoring programs will be developed for community health, safety and security impacts to help ensure the project proactively manages risks to the community and maintains a positive relationship with stakeholders. These programs may include:

- Regular surveys to assess health trends among residents near the project site.
- Regular testing of drinking water sources for contamination.
- Regular testing of air quality to track pollutants and assess compliance with international standards.
- Regular inspections to ensure safe handling, storage and disposal of solid and hazardous waste.
- Regular measurements of noise levels to ensure compliance with noise regulations and mitigate disturbances.
- Establish a system to log community accidents and safety incidents related to project activities.
- Track traffic flow, accidents, and adherence to speed limits in project-affected areas to manage road safety risks.
- Monitor interactions between traders and market security personnel and the community to ensure respectful engagement and prevent conflicts.
- Track any increase in crime rates, gender-based violence, or security incidents associated with labor influx into the community.

Progress regarding the implementation and efficiency of monitoring programs will be reported to PMU at least quarterly, to enable issues and responses to be assessed in a timely manner. Responses to any grievances from local communities will be addressed in accordance with the GRM.

## 10 CONCLUSION AND RECOMMENDATIONS

The ESIA/ESMP for the Makeni central market upgrade has examined the potential impacts of the proposed project on the environment and local communities and provided appropriate mitigation measures. This assessment has considered the construction, operation, and decommissioning phases at the Makeni central market (initial market) and the Makeni relocation site (temporary site), and the implications of associated resettlement. The assessment concludes that the implementation of the market upgrade project in Makeni is a positive development that, if managed properly, will bring significant benefits to the community. The project is expected to enhance market infrastructure and local economy and improve living conditions and livelihoods in the area.

The ESIA/ESMP study has been prepared at the Feasibility and Preliminary Design stages of the Makeni central market and relocation site. The ESIA/ESMP has been conducted against broad design elements which, however, provided key information for the assessment of the project's physical, natural and social footprint along with mitigation and monitoring plans for the risks and impacts identified.

The project's environmental impact is primarily associated with increased water consumption, waste generation, and potential pollution from sewage generation and accidental spills. The upgrade will significantly enhance the Makeni central market's infrastructure, including sanitary conditions, the installation of a solar-powered borehole, access to energy, cold storage, waste management, etc.

The social impact analysis reveals significant concerns related to the relocation of traders and their helpers and workers, and potential loss of livelihoods. The project will result in the displacement of traders within both the Makeni central market initial building and the construction boundaries, necessitating robust resettlement planning and support mechanisms. The risk of social unrest and grievances is recognized, and proactive engagement with affected communities' traders envisaged. The project must prioritize transparent communication, grievance redress mechanism operation and monitoring, efforts to minimize disruptions to business activities, besides preparing a resettlement plan to provide resettlement assistance, compensation at full replacement cost of lost assets, and livelihood restoration for project affected persons. With these measures in place (in line with the RP developed for the upgrade project), the upgraded market is expected to improve economic conditions for the community, contributing to the overall development of Makeni.

The main recommendations involve:

- **Implementation of Mitigation and Monitoring Measures:** To ensure that the project's potential negative impacts are minimized, it is imperative that all proposed mitigation measures are fully implemented. This includes continuous monitoring of environmental and social parameters, regular maintenance of infrastructure, and adherence to best practices in waste management.
- **Stakeholder Engagement:** Ongoing engagement with stakeholders, including affected traders, workers, and the broader community nearby residents, is essential throughout the project phases. The project should maintain open channels of

communication and provide support to those impacted by the development, particularly in terms of resettlement assistance and livelihood restoration.

- Sustainability Considerations: considering the deployment of solar energy, adopting integrated solid waste management, proper wastewater treatment, and applying the environmental and social management and monitoring plan.
- Environmental and Social Management Plans (ESMP) Compliance: Ensuring the integration of gender mainstreaming strategies in all project phases to promote inclusivity and prevent GBV risks; securing that GRM procedures are easily accessible and responsive to the needs of stakeholders, especially vulnerable groups; conducting regular capacity-building and implementing robust reporting mechanisms to track progress and ensure compliance with environmental and social standards.

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## Appendix 1: ESIA Process

The Environmental and Social Impact Assessment (ESIA) is a decision-making tool to systematically identify the environmental and social impacts of new projects. It aims to identify, evaluate, prevent, and mitigate any adverse impacts that are likely to be generated by a project while maximizing its benefits.

According to the Sierra Leone Environment Protection Agency's requirements, the consultant and proponent who wish to invest in any activity that is enlisted in the first schedule of the EPA act 2008/2010/2022 is required to prepare an ESIA document, that includes an ESMP, in compliance with laws and regulations of the Republic of Sierra Leone, as listed in the first schedule of the Sierra Leone Environment Protection Agency Act (SLEPAA) 2008/2022 and the EIA Supplementary Acts 2010, and 2022, as well as in line with the requirements of the RUSLP's ESMF and the World Bank's ESF and ESSs and relevant WB's EHS regulations.

The ESIA process comprises of screening, scoping, baseline study and impact analysis, mitigation, reporting, review, decision making, follow up and public involvement. The Sierra Leone ESIA process<sup>25</sup> is summarized as follow:

- The client first applies to the local regulatory body, the Environment Protection Agency Sierra Leone (EPA-SL) for an EIA license.
- EPA-SL requires that a screening form be filled in and submitted with the application letter, after which they will decide on the category of the project.
- The EPA will undertake a ground truthing exercise to confirm the information in the screening form; this is followed by a scoping report.
- EPA-SL will then decide on the terms of reference (TOR) to be drafted by the project proponent, or an independent consultant hired by the proponent. Upon approval by EPA-SL, the consultant will establish the existing baseline of the proposed site and carry out an assessment of the environmental and social impacts of their planned operations in the project area. A report is prepared at the end of the study and submitted to EPA-SL for review.
- If approved, the proponent will then be requested to conduct public disclosure meetings with relevant stakeholders on the findings and recommendations of the study, and incorporate comments and suggestions made during those meetings into a public consultation and disclosure report.
- Finally, all reports pertaining to the ESIA study are forwarded to the Board of EPA-SL for a decision to be made on the issuance of the license.
- The EPA reviews the submitted ESIA report and informs the proponent of its decision within 6 to 12 weeks, based on project complexity. If the project is approved, the EPA issues an EIA license with specific terms and conditions. The proponent must pay license and monitoring fees, and compliance with these terms will be regularly monitored.
- The EPA must conduct quarterly monitoring and annual environmental audits to ensure the project complies with environmental standards. Licenses must be renewed

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<sup>25</sup> <https://www.epa.gov.sl/wp-content/uploads/2021/10/EPASL-Service-Charter.pdf>

before expiration, with renewal applications submitted 3 months prior. Continuous compliance with environmental conditions is essential for renewal approval.

In parallel to this approval and licensing process, the ESIA report will be reviewed by the World Bank to provide clearance of the report to move on with the project.

**Appendix 2: World Bank General EHS Guidelines**

**Table 12-1 World Bank general EHS guidelines<sup>26</sup>**

Environmental			Occupational Health and Safety	Community Health and Safety																																																
<p>Air Emissions and Ambient Air Quality                      Emissions of air pollutants can occur from a wide variety of activities during the construction, operation, and decommissioning phases of a project. The guidelines provide recommendations to tackle ambient air quality, point sources, fugitive sources, mobile sources, greenhouse gases and monitoring. The market upgrade project shall be in line with these recommendations wherever applicable and shall respect the Ambient air quality standards represented in the following table.</p>			<p>General Facility Design and Operation                      Preventive and protective measures provided should be considered for the design and operation. The guideline tackles the integrity of workplace structures, severe weather and facility shutdown, workspace and exit, fire precautions, lavatories and showers, potable water supply, clean eating area, lighting, safe access, first aid, air supply, and work environment temperature.                      These measures have been considered during the design of the market upgrade project and preventive measures are highlighted in this report and will be implemented during the market operation.</p>	<p>Water Quality and Availability                      Drinking water sources should at all times be protected and meet applicable national standards or WHO guidelines for drinking water quality<sup>27</sup></p>																																																
<p><b>WHO Ambient Air Quality Guidelines</b></p> <table border="1"> <thead> <tr> <th></th> <th>Averaging Period</th> <th>Value in µg/m<sup>3</sup></th> </tr> </thead> <tbody> <tr> <td rowspan="2">SO<sub>2</sub></td> <td>24-hour</td> <td>125 (Interim target-1) 50 (Interim target-2) 20 (guideline)</td> </tr> <tr> <td>10 min</td> <td>500 (guideline)</td> </tr> <tr> <td rowspan="2">NO<sub>2</sub></td> <td>1 year</td> <td>40 (guideline)</td> </tr> <tr> <td>1 hour</td> <td>200 (guideline)</td> </tr> <tr> <td rowspan="2">PM<sub>10</sub></td> <td>1 year</td> <td>70 (Interim target-1) 50 (Interim target-2) 30 (Interim target-3) 20 (guideline)</td> </tr> <tr> <td>24-hour</td> <td>150 (Interim target-1) 100 (Interim target-2) 75 (Interim target-3) 50 (guideline)</td> </tr> <tr> <td>PM<sub>2.5</sub></td> <td>1 year</td> <td>35 (Interim target-1)</td> </tr> </tbody> </table>						Averaging Period	Value in µg/m <sup>3</sup>	SO <sub>2</sub>	24-hour	125 (Interim target-1) 50 (Interim target-2) 20 (guideline)	10 min	500 (guideline)	NO <sub>2</sub>	1 year	40 (guideline)	1 hour	200 (guideline)	PM <sub>10</sub>	1 year	70 (Interim target-1) 50 (Interim target-2) 30 (Interim target-3) 20 (guideline)	24-hour	150 (Interim target-1) 100 (Interim target-2) 75 (Interim target-3) 50 (guideline)	PM <sub>2.5</sub>	1 year	35 (Interim target-1)	<p><b>Guideline values for some chemicals that are of health significance in drinking water<sup>28</sup></b></p> <table border="1"> <thead> <tr> <th>Chemical</th> <th>mg/l</th> </tr> </thead> <tbody> <tr> <td>Arsenic</td> <td>0.01</td> </tr> <tr> <td>Benzene</td> <td>0.01</td> </tr> <tr> <td>Cadmium</td> <td>0.003</td> </tr> <tr> <td>Carbon tetrachloride</td> <td>0.004</td> </tr> <tr> <td>Chlorine</td> <td>5</td> </tr> <tr> <td>Copper</td> <td>2</td> </tr> <tr> <td>Fluoride</td> <td>1.5</td> </tr> <tr> <td>Lead</td> <td>0.01</td> </tr> <tr> <td>Mercury</td> <td>0.0006</td> </tr> <tr> <td>Nickel</td> <td>0.07</td> </tr> <tr> <td>Nitrate</td> <td>50</td> </tr> <tr> <td>Nitrite</td> <td>3</td> </tr> <tr> <td>Trichloro acetate</td> <td>0.2</td> </tr> </tbody> </table> <p>The potential effect of groundwater or surface water abstraction for project activities should be properly assessed. Project activities should not compromise the availability of water for personal hygiene needs and should take account of potential future increases in demand. The overall target should be the availability of 100 liters per person per day although lower levels may be used to meet</p>	Chemical	mg/l	Arsenic	0.01	Benzene	0.01	Cadmium	0.003	Carbon tetrachloride	0.004	Chlorine	5	Copper	2	Fluoride	1.5	Lead	0.01	Mercury	0.0006	Nickel	0.07	Nitrate	50	Nitrite	3
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<sup>27</sup> [https://www.epd.gov.hk/eia/register/report/eiareport/eia\\_2242014/EIA/app/app02.02.pdf](https://www.epd.gov.hk/eia/register/report/eiareport/eia_2242014/EIA/app/app02.02.pdf)

<sup>28</sup> [https://cdn.who.int/media/docs/default-source/wash-documents/water-safety-and-quality/dwq-guidelines-4/gdwq4-with-add1-annex3.pdf?sfvrsn=f5f6be22\\_3](https://cdn.who.int/media/docs/default-source/wash-documents/water-safety-and-quality/dwq-guidelines-4/gdwq4-with-add1-annex3.pdf?sfvrsn=f5f6be22_3)

Environmental			Occupational Health and Safety	Community Health and Safety
	24-hour	25 (Interim target-2) 15 (Interim target-3) 10 (guideline) 75 (Interim target-1) 50 (Interim target-2) 37.5 (Interim target-3) 25 (guideline)		basic health requirements. The market upgrade project will comply with WB requirements for water quality and availability.
Ozone	8-hour maximum	daily 160 (Interim target-1) 100 (guideline)		
<p>Emissions Guidelines for small combustion facilities between 3 MWh and 50 MWh shall be respected as provided in the WB General EHS guidelines – Section 1, Subsection 1.1, Table 1.1.2.</p> <p>Energy Conservation                      This guideline applies to facilities or projects that consume energy in process heating and cooling; process and auxiliary systems, such as motors, pumps, and fans; compressed air systems and heating, ventilation and air conditioning systems (HVAC); and lighting systems.                      The recommended opportunities for energy management and energy efficiency should be considered in the market upgrade project wherever is applicable for process heating, process cooling and compressed air systems.</p>			<p>Communication and Training                      The guideline provides recommendations for the OHS training, Visitor Orientation, New task employee and contractor training, Area signage, and communication of hazards during the market upgrade.</p>	<p>Structural Safety of Project Infrastructure                      International codes, such as those compiled by the International Code Council (ICC) are intended to regulate the design, construction and maintenance of a built environment and contain detailed guidance on all aspects of the building safety, encompassing methodology, best practices and documenting compliance.</p>
<p>Wastewater and Ambient Water Quality                      The guideline applies to projects that have either direct or indirect discharge of process wastewater from utility operations or stormwater to the environment. Projects with the potential to generate process wastewater, sanitary (domestic) sewage, or stormwater should incorporate the necessary precautions to avoid, minimize, and control adverse impacts to human health, safety, or the environment. The guideline tackles the general liquid effluent quality</p>			<p>Physical Hazards                      The guideline recommends protective measures from moving equipment, noise, vibration, electrical devices, eye hazards, welding/hot work, site traffic, working environment temperature, manual handling, working at heights, and illumination.                      Limits and standards shall be respected during the market upgrade, construction and operation as applicable.</p>	<p>Life and Fire Safety                      All new buildings accessible to the public should be designed, constructed, and operated in full compliance with local building codes, local fire department regulations, local legal/insurance requirements, and in accordance with an internationally accepted life and fire safety standard.                      The specific requirements for new buildings, such as fire prevention, means of egress, detection and alarm systems, fire suppression and control, emergency response plan and</p>
			<b>Noise limits for various working environments</b>	

Environmental	Occupational Health and Safety			Community Health and Safety																																																			
<p>and wastewater management.</p> <table border="1"> <thead> <tr> <th colspan="3">Indicative values for treated sanitary sewage discharges</th> </tr> <tr> <th>Pollutants</th> <th>Units</th> <th>Guideline Value</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>pH</td> <td>6-9</td> </tr> <tr> <td>BOD</td> <td>mg/l</td> <td>30</td> </tr> <tr> <td>COD</td> <td>mg/l</td> <td>125</td> </tr> <tr> <td>Total nitrogen</td> <td>mg/l</td> <td>10</td> </tr> <tr> <td>Total phosphorus</td> <td>mg/l</td> <td>2</td> </tr> <tr> <td>Oil and grease</td> <td>mg/l</td> <td>10</td> </tr> <tr> <td>Total Suspended solids</td> <td>mg/l</td> <td>50</td> </tr> <tr> <td>Total coliform bacteria</td> <td>MPN/100 ml</td> <td>400</td> </tr> </tbody> </table>	Indicative values for treated sanitary sewage discharges			Pollutants	Units	Guideline Value	pH	pH	6-9	BOD	mg/l	30	COD	mg/l	125	Total nitrogen	mg/l	10	Total phosphorus	mg/l	2	Oil and grease	mg/l	10	Total Suspended solids	mg/l	50	Total coliform bacteria	MPN/100 ml	400	<table border="1"> <thead> <tr> <th>Location</th> <th>Equivalent level LA<sub>eq</sub>, 8h</th> <th>Maximum LA<sub>max</sub>, fast</th> </tr> </thead> <tbody> <tr> <td>Heavy industry</td> <td>85 dB (A)</td> <td>110 dB (A)</td> </tr> <tr> <td>Light industry</td> <td>50-65 dB (A)</td> <td>110 dB (A)</td> </tr> <tr> <td>Open offices, control rooms</td> <td>45-50 dB (A)</td> <td>-</td> </tr> <tr> <td>Individual offices</td> <td>40-45 dB (A)</td> <td>-</td> </tr> <tr> <td>Classrooms</td> <td>35-40 dB (A)</td> <td>-</td> </tr> <tr> <td>Hospitals</td> <td>30 -35 dB (A)</td> <td>40 dB (A)</td> </tr> </tbody> </table>			Location	Equivalent level LA <sub>eq</sub> , 8h	Maximum LA <sub>max</sub> , fast	Heavy industry	85 dB (A)	110 dB (A)	Light industry	50-65 dB (A)	110 dB (A)	Open offices, control rooms	45-50 dB (A)	-	Individual offices	40-45 dB (A)	-	Classrooms	35-40 dB (A)	-	Hospitals	30 -35 dB (A)	40 dB (A)	<p>operation and maintenance, are considered in the market upgrade project new buildings.</p>
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<p>Water Conservation</p> <p>Water conservation programs should be implemented commensurate with the magnitude and cost of water use. The guidelines provide opportunities for water monitoring and management, water reuse and recycling, building facility operations, cooling and heating systems.</p> <p>The recommended opportunities will be considered wherever applicable in the market upgrade project.</p>	<p>Chemical Hazards</p> <p>Chemical hazards represent potential for illness or injury due to single acute exposure or chronic repetitive exposure to toxic, corrosive, sensitizing or oxidative substances.</p> <p>Recommended measures will be considered during the market upgrade, when it applies, for chemical hazards from Air quality, Fire and Explosions, Corrosive, oxidizing and reactive chemicals and Asbestos Containing Materials.</p>			<p>Traffic Safety</p> <p>Traffic safety should be promoted by all project personnel during displacement to and from the workplace, and during operation of project equipment on private or public roads. Prevention and control of traffic related injuries and fatalities should include the adoption of safety measures that are protective of project workers and of road users, including those who are most vulnerable to road traffic accidents.</p> <p>WB recommended measures will be considered during the construction and operation phases of the market upgrade project.</p>																																																			
<p>Hazardous Materials Management</p> <p>These guidelines apply to projects that use, store, or handle any quantity of hazardous materials (Hazmats), defined as materials that represent a risk to human health, property, or the environment due to their physical or chemical characteristics. Not applicable for this project.</p>	<p>Biological Hazards</p> <p>Biological agents represent potential for illness or injury due to single acute exposure or chronic repetitive exposure.</p> <p>Not applicable to this project</p>			<p>Transport of Hazardous Materials</p> <p>Projects should have procedures in place that ensure compliance with local laws and international requirements applicable to the transport of hazardous materials. It should include proper labeling of containers, providing a shipping document, ensuring packaging and containers used for transport are appropriate, ensuring adequate transport, using labelling, proving emergency response.</p>																																																			

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<p>Waste Management                      Facilities that generate waste should characterize their waste according to composition, sources, types of waste produced, generation rates, or according to local regulatory requirements. The guidelines provide strategies for general and hazardous waste management for prevention, recycling and reuse, transportation, treatment and disposal, and monitoring.</p>	<p>Radiological Hazards                      Radiation exposure can lead to potential discomfort, injury or serious illness to workers.                      Not applicable to this project</p>	<p>Disease Prevention                      Communicable diseases: The most common concern during the construction phase due to labor mobility are sexually transmitted diseases (STDs) such as HIV/AIDS.                      Vector-Borne diseases: mosquito and other arthropod-borne diseases.                      The market upgrade project will consider the recommended measures for the communicable diseases, especially during the construction phase.</p>												
<p>Noise                      Noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility or operations exceed the applicable noise level guideline at the most sensitive point of reception.                      Noise should not exceed the levels presented in the table or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.</p> <table border="1"> <thead> <tr> <th></th> <th colspan="2">One Hour LAeg(dBA)</th> </tr> <tr> <th>Receptor</th> <th>Daytime 7:00 – 22:00</th> <th>Nighttime 22:00 – 7:00</th> </tr> </thead> <tbody> <tr> <td>Residential, institutional</td> <td>55</td> <td>45</td> </tr> <tr> <td>Industrial, Commercial</td> <td>70</td> <td>70</td> </tr> </tbody> </table>		One Hour LAeg(dBA)		Receptor	Daytime 7:00 – 22:00	Nighttime 22:00 – 7:00	Residential, institutional	55	45	Industrial, Commercial	70	70	<p>Personal Protective Equipment                      PPE is a last resort that is above and beyond the other facility controls and provides the worker with an extra level of personal protection.                      The market upgrade project should consider the recommended measures for the use of PPE suggested as follow: safety glasses with side-shields, plastic helmets with top and side impact protection, hearing protectors, safety shoes and boots, gloves made of rubber or synthetic materials, facemasks with appropriate filters for dust removal and air purification, on-site rescue equipment, insulating clothing.</p>	<p>Emergency Preparedness and Response                      All projects should have an emergency preparedness and response plan that is commensurate with the risks of the facility and that includes the following basic elements:                      Administration (policy, purpose, distribution, definitions, etc.)                      Organization of emergency areas (command centers, medical stations, etc.)                      Roles and responsibilities                      Communication systems                      Emergency response procedures                      Emergency resources (finance and emergency funds, fire services, medical services, availability of resources, mutual aid, contact list)                      Training and updating                      Checklists (role and action list and equipment checklist)                      Business Continuity and Contingency                      The market upgrade project has prepared an emergency response plan that is highlighted in this ESIA/ESMP report.</p>
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<p>Contaminated Land                      Land is considered contaminated when it contains hazardous materials or oil concentrations above background or naturally occurring levels. To determine whether risk management actions are warranted, an assessment approach should be applied to establish whether the 3 risk factors of “contaminants, receptors and exposure pathways” co-exist, or are likely to co-exist, at the project site.</p>	<p>Special Hazard Environment                      Special hazard environments are work situations where all of the previously described hazards may exist under unique or especially hazardous circumstances. Accordingly, extra precautions or rigor in application of precautions is required.</p> <p>Monitoring                      OHS monitoring programs should verify the</p>													

Environmental	Occupational Health and Safety	Community Health and Safety															
<p>When the 3 risk factors are present under current or foreseeable future conditions, these steps should be followed: risk screening, interim risk management, detailed quantitative risk assessment and permanent risk reduction measures.</p> <p>Not applicable to the market upgrade project. Recommended measures will be implemented to avoid any contamination.</p>	<p>effectiveness of prevention and control strategies and should include safety inspection, testing and calibration, surveillance of working environment, surveillance of workers health and training. Occupational accidents and diseases should be monitored, recorded, classified and reported as per the below table</p> <table border="1"> <thead> <tr> <th colspan="3">Occupational Accident Reporting</th> </tr> <tr> <th>Fatalities (number)</th> <th>Non-fatal injuries (number)</th> <th>Total time lost non-fatal injuries</th> </tr> </thead> <tbody> <tr> <td>a.1 Immediate</td> <td>b.1 Less than 1 day</td> <td>-</td> </tr> <tr> <td>a.2 Within a month</td> <td>b.2 Up to 3 days</td> <td>c.1 Category b.2</td> </tr> <tr> <td>a.3 Within a year</td> <td>b.3 More than 3 days</td> <td>c.2 Category b.3</td> </tr> </tbody> </table>	Occupational Accident Reporting			Fatalities (number)	Non-fatal injuries (number)	Total time lost non-fatal injuries	a.1 Immediate	b.1 Less than 1 day	-	a.2 Within a month	b.2 Up to 3 days	c.1 Category b.2	a.3 Within a year	b.3 More than 3 days	c.2 Category b.3	
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**Appendix 3: Makeni Water Test Results**



National Water Resources Management Agency  
 20 Ong Hemen Road, Freetown, Sierra Leone  
 Email: waterresources@nwrma.org.sl  
 Phone: +220(0)79481184 / +220(0)775208

**Water Quality Testing Report Sheet**

Water Authority: National Water Resources Management Agency

Company Name: Liberty (Ltd) Trading

District: Bueda

Town: Makeni Date: 4/11/2023

Sample ID: Canal Street Bridge Type of Source: Surface Water

Time: 9:15am

Longitude: 11.74117 Latitude: 5.3827

Parameter	Canal Street Bridge	WHO recommended Permissible Limits
1. Water Temperature (°C)	27.4	No. Value
2. pH	7.12	6.5 - 8.5
3. Turbidity (NTU)	41	5
4. Conductivity (µS/cm)	304	500
5. Dissolved Oxygen (mg/L)	4.8	5
6. Total Dissolved Solids (mg/L)	248	<500
7. Total Suspended Solids (mg/L)	213	<500
8. Solidity (ppt)	0.33	<0.4
9. Residual Chlorine (mg/L)	0.05	0.2-0.5 after 30min disinfection
10. Ammonia (mg/L)	0.05	<0.5
11. Arsenic (mg/L)	0.03	No. Value
12. Calcium Hardness (mg/L)	35	<250
13. Copper (mg/L)	0.029	<0.8
14. Iron (mg/L)	1	<0.5
15. Nitrite (mg/L)	0.13	3.0
16. Nitrate (mg/L) NR	0.04	<10
17. Phosphate (mg/L)	12	<0.05
18. orthophosphate (mg/L) LR	0.029	<10
19. Sulphate (mg/L)	2.5	<400
20. Chloride (mg/L)	25	<250
21. Chlorides	0.97	<0.5
22. Free Chlorine (Total)	0.10	0.2
23. Free Chlorine	0.10	0.2

**RECOMMENDATION/COMMENTS:**

Most of the parameters tested for the sample 'Canal Street Bridge' met the WHO standards for good water quality, except for Turbidity, Electrical Conductivity (EC), Dissolved Oxygen (DO), Total Suspended Solids (TSS), Phosphate, Free Chlorine and Non-Fecal Coliforms did not meet the recommended values.

Total Suspended Solids and turbidity are related parameters. The high level of turbidity and Total Suspended Solids can be caused by siltation and runoff, and it can be reduced through the application of filtration method.

DO has slightly lower value and it can be caused through organic matter especially in poor storage systems which may cause health risks to humans by allowing some harmful bacteria to thrive in the water. The dissolved oxygen content of water can be improved by aeration flow movement in water.

The presence of high phosphate in water is caused by anthropogenic activities such as farming, and its widespread use can have adverse effects on human health. It can be reduced using iron exchange or reverse osmosis.

The presence of iron in the water is caused by the geology of the environment and it can pose adverse health risk and it can be reduced through aeration, filtration and oxidizing filter.

The high presence of Free Coliforms bacteria indicates contamination of the water caused by feces from humans or animals. It is the primary indicator of water quality problems such as disease (like cholera). The water should be chlorinated with free residual chlorine at a level of 0.2-0.5 mg/L after thirty (30) minutes of disinfection.

Non-Fecal Coliforms in the water are also caused by enterogenic activities and can pose adverse health risks to humans. They can be reduced by pasteurization, proper environmental control or chlorination (low mg/L) and filtration methods.

Signature: \_\_\_\_\_ (Hydro-Technician) \_\_\_\_\_ (Manager)

Date: 9/11/2023 9/11/2023



National Water Resources Management Agency  
 25 King Maithani Road, Nairobi, Kenya  
 Email: water@nwrma.or.ke; nwrma@gmail.com  
 Phone: +254(0)20271801 +254(0)20271808

**Water Quality Testing Report Sheet**

Water Authority: National Water Resources Management Agency  
 Company Name: H&H Utility Trading Company  
 District: Nairobi  
 Town: Makini Date: 4/11/2023  
 Sample ID: Makini Market Type of Source: Ground Water  
 Time: 10:30am  
 Longitude: 37.02130 Latitude: 4.89924

Parameters	Makini Market	WHO recommended Provisional Limits
1. Water Temperature (°C)	28.6	No Value
2. pH	6.35	6.5 - 8.5
3. Turbidity (NTU)	3	5
4. Conductivity (µS/cm)	228	500
5. Dissolved oxygen (mg/l)	7.1	> 6
6. Total Dissolved Solids (mg/l)	204	< 500
7. Salinity (ppt)	0.25	< 0.4
8. Hardness (CaCO <sub>3</sub> ) (mg/l)	0.15	0.3-0.5 after 100°C disinfection
9. Aluminium (mg/l)	0.006	< 0.2
10. Arsenic (µg/l)	0.27	No Value
11. Calcium Hardness (mg/l)	21	< 250
12. Copper (mg/l)	0.10	< 1.0
13. Iron (mg/l)	0.08	< 0.5

14. Nitrite (mg/l)	0.03	5.0
15. Nitrate (mg/l) <b>HR</b>	< 10	< 10
16. Potassium (mg/l)	12	< 50
17. orthophosphate (mg/l) <b>HR</b>	0.56	< 10
18. Sulphate (mg/l)	34	< 500µm
19. Chloride (mg/l)	23	< 250
20. Chromium	0.64	< 0.05
21. Fecal Coliform (cfu/ml)	> 10	2000
22. Non-Fecal Coliform	> 10	< 10

**RECOMMENDATION/COMMENTS:**

Most of the parameters tested for the sample 'Makini Market' met the WHO standards for good water quality, except for pH, Dissolved Oxygen (DO), Potassium, Nitrate, Fecal Coliform and Non-fecal Coliform that did not meet the recommended values. Low pH, however, is a common characteristic of ground water in Sierra Leone due to the acidity of some rocks.

DO has a slightly lower value and can be because of stagnant water especially in pipe storage system which can pose health risks to humans by allowing some harmful bacteria to thrive in the water, the dissolved oxygen content of water can be improved by creating free flow of the water.

High Nitrate in the water can be caused by anthropogenic activities, such as agricultural runoff or fertilizer and can pose serious health risks to humans. It can be treated by ion exchange process or reverse osmosis.

The presence of high potassium in the water is caused by anthropogenic activities such as farming, and excessive potassium can have adverse effects on human health. It can be reduced using ion exchange or reverse osmosis.

The high presence of Fecal Coliform bacteria indicates contamination of the water source by feces from animals or humans. It has the potential to cause health problems such as diarrhea like diseases. The water should be chlorinated with residual chlorine at a level of 0.1 - 0.5 mg/l after 30 minutes of disinfection.

Non-Fecal Coliforms in the water are also caused by anthropogenic activities and can pose minor health risks to humans. They can be reduced by putting in place proper environmental controls at the facility (sanitary and drainage system).

Signature: (Hydro Technicians) (Manager)

Date: 9/11/23 7/11/2023

**Appendix 4: Minutes of Meeting Report**



Focus group  
meetings report\_Make

**Appendix 5: TOR for the ESIA**



TOR ESIA-ESMF-RAP  
for Makeni & Kenema

## Appendix 6: Stakeholder Engagement Plan

**Table 12-2 Role and Impact of all relevant stakeholders before, during and after the implementation of the project**

Stakeholder	Role and Impact		
	Before	During	After
Market Current users, merchants, and vendors	Preparing for temporary relocation and potential changes in customer behavior.	Managing the temporary move and adapting to changes in market dynamics.	Returning to the upgraded market and adjusting to new market conditions.
Market executives	Planning and coordinating the relocation process and market upgrade.	Overseeing the temporary move and addressing any issues; overseeing the upgrade works.	Ensuring the smooth transition back to the upgraded market.
Market and Relocation site stakeholders	Participating in planning discussions and decision-making processes.	Collaborating on the relocation process and addressing concerns.	Ensuring the interests of stakeholders are considered in the upgraded market.
Buyers' representative	Anticipating changes in market access and dynamics.	Representing buyers' interests during the relocation.	Assessing the impact on buyers and providing feedback on the upgraded market
Police	Preparing for potential changes in law enforcement requirements.	Managing security considerations during construction and relocation.	Adapting to changes in the security landscape post-construction.
Parliament/Ministries	Reviewing and potentially approving project plans and funding.	Oversight of project implementation and addressing any legislative issues.	Assessing the overall impact of the project on the community.
Sierra Leone Roads Authority	Assessing potential impacts on existing roads and transportation routes.	Coordinating with construction activities and parties in charge of relocation to manage traffic and transportation.	Monitoring road conditions and addressing any post-construction issues.
Electricity Distribution and Supply Agency	Assessing potential impacts on existing electrical infrastructure.	Coordinating with construction activities and parties in charge of relocation to manage electrical supply.	Monitoring and potentially upgrading electrical infrastructure post-construction.
National Fire Force	Assessing potential fire safety impacts during construction.	Providing fire safety measures during construction and at relocation site.	Ensuring ongoing fire safety in the upgraded market.
ESIA/ESMP/RP consultants	Providing cost estimates and financial planning for the project, as well impact assessment and ESMMP.	Monitoring project costs and potential adjustments; monitoring the implementation of the ESMMP.	Assessing the overall financial impact and cost-effectiveness of the project.

Stakeholder	Role and Impact		
Contractors	Participating in project planning and coordination.	Executing construction activities in accordance with contracts.	Potentially involved in post-construction maintenance and adjustments.
Community-based organization	Participating in community discussions and decision-making.	Collaborating on aspects of the project that impact the community.	Contributing to community development and integration post-construction.
Women	Assessing potential gender-related impacts of the project.	Implementing measures to address the specific needs of women during relocation.	Monitoring and supporting the integration and empowerment of women into the upgraded market.
Children	Assessing potential impacts on children, including education and safety.	Implementing measures to address the specific needs of children during relocation.	Supporting the well-being and education of children in the post-construction phase.
Elderly Persons	Assessing potential impacts on the elderly, including access and well-being.	Implementing measures to address the specific needs of the elderly during relocation.	Supporting the well-being and integration of the elderly into the upgraded market.
Illiterate people	Assessing potential impacts on illiterate individuals, including access to information.	Implementing measures to provide accessible information during relocation.	Ensuring ongoing access to information and support for illiterate individuals.
Persons with disability	Assessing potential impacts on persons with disabilities, including accessibility.	Implementing measures to address the specific needs of persons with disabilities during relocation.	Supporting the integration and accessibility for persons with disabilities in the upgraded market.

Source: GoSL, 2021

The Project Management Unit (PMU) will provide oversight and supervision in implementing the SEP. The PMU will also ensure the hiring of the required personnel to implement and monitor the project including the roll out of activities related to SEP. In addition, the PMU will ensure that the required funds are allocated and disbursed for the implementation of the SEP.

## Appendix 7: Asbestos Management Plan

This Asbestos Management Plan is principles-based and will be revised during implementation with the assistance of an asbestos expert to provide more specific guidance on management of asbestos-containing materials (ACM) encountered under the project. The management plan draws on good international industry practice with the objective of protecting worker and community health.

### 1. Problem Background

Asbestos is a group of naturally occurring fibrous minerals with historical commercial usefulness due to their extraordinary tensile strength, poor heat conduction, and relative resistance to chemical attack (WHO). The properties that make asbestos fibers so valuable to industry are its high-tensile strength, flexibility, heat and chemical resistance, and good frictional properties.

Old structures at the Kenema Central Market site that should be demolished, which are part of the market construction and upgrade, may contain asbestos. The generated asbestos wastes need to be disposed of in a safe and environment-friendly manner.

### 2. Regulatory Environment

Asbestos fibers are primarily an inhalation hazard resulting in carcinogenic effect. Asbestos-containing material shall be handled and disposed of as per the following regulations:

#### 2.1. World Bank (WB)

The WB provides a Good Practice Note for Asbestos Occupational and Community Health issues. The note provides a list of resources on international good practices available to minimize these risks and presents an overview of some of the available product alternatives on the market. It also highlights considerations and possible operational requirements for working with asbestos materials in existing structures.

In all cases, the Bank expects borrowers and other clients of World Bank funding to use alternative materials wherever feasible. ACM should be avoided in new construction, including construction for disaster relief. In reconstruction, demolition, and removal of damaged infrastructure, asbestos hazards should be identified, and a risk management plan adopted that includes disposal techniques and end-of-life sites.

#### 2.2. International Labor Organization (ILO)

The International Labor Conference at its 95<sup>th</sup> Session in 2006 adopted a resolution noting that all forms of asbestos are classified as human carcinogens by the International Agency for Research on Cancer, and expressing its concern that workers continue to face serious risks from asbestos exposure, particularly in asbestos removal, demolition, building maintenance, ship breaking and waste handling activities. The resolution calls for the elimination of the future use of asbestos and the identification and proper management of asbestos currently in place as the most effective means to protect workers from asbestos exposure and to prevent future asbestos-related diseases and deaths.

The ILO Asbestos Convention, 1986 (No. 162), is one of the primary international regulations for the safe management of asbestos. This convention establishes the need for member countries to:

- Minimize exposure to asbestos in the workplace.

- Provide workers with adequate protective equipment.
- Ensure proper training for workers involved in asbestos-related work.
- Conduct regular medical examinations for workers exposed to asbestos.
- Set up a national policy for controlling asbestos-related risks.

### 2.3. *World Health Organization (WHO)*

The WHO has issued guidelines urging countries to prioritize eliminating the use of asbestos due to its carcinogenic properties. These guidelines focus on:

- Prohibiting the use of asbestos where feasible.
- Ensuring proper handling of asbestos during removal.
- Protecting workers through controlled procedures and PPE.

### 2.4. *Occupational Safety and Health Administration (OSHA) Standards*

OSHA sets the standards for asbestos handling and removal in workplaces. OSHA Standard 29 CFR 1926.1101 outlines the requirements for construction sites, including removal, handling, and disposal of asbestos. The standard includes:

- Detailed requirements for the use of engineering controls (e.g., ventilation).
- Regular air monitoring and clearance testing.
- PPE like respirators, protective clothing, and gloves.
- Safe waste disposal procedures, including the proper labeling of asbestos waste containers.

EPA Standards (40 CFR 61) also cover asbestos removal and disposal, particularly in relation to demolition and renovation of buildings containing ACMs. Asbestos-containing waste must be sealed in impermeable containers, clearly marked, and disposed of at designated landfills licensed to handle asbestos.

### 2.5. *Australian's Regulatory Framework for Asbestos*

Australia implemented a total ban on the mining, manufacture and use of asbestos on 31 December 2003. In response to asbestos-related issues, the country developed a national strategic plan to address these concerns across communities and established a comprehensive set of regulations and guidelines aimed at protecting public health, workplace safety, and the environment. The key asbestos standards and regulations include:

- The Work Health and Safety Regulations 2011: these regulations manage workplace health and safety, including the handling of asbestos. Key provisions include:
  - Asbestos removal must be carried out by licensed professionals;
  - Employers are required to assess and manage asbestos exposure risks, including identifying asbestos-containing materials (ACMs) in the workplace; and
  - Effective control measures, such as proper ventilation, containment, and PPE, must be implemented when working with asbestos.
- The Code of Practice for the Management and Control of Asbestos in the Workplace (Safe Work Australia): this code provides detailed guidance on the management of asbestos risks in workplaces.

Additionally, Australia has set standards for the safe demolition of structures containing asbestos, outlining methods for handling and removing asbestos safely during demolition activities. Regulations for the management and disposal of asbestos waste are also in place to ensure safe practices in these areas.

### 3. Asbestos Removal Procedures

The following is a list of requirements for asbestos removal activities derived from the Safe Work Australia (2018) Code of Practice: How to safely remove asbestos.

- **Supervision:** All asbestos removal activities must be supervised by a trained expert. For this project the supervision team will comprise the asbestos specialist/ consultant and the contractor EHS expert.
- **Training:** A training program will need to be developed for the contractor's workers that will be involved in the removal, packaging, transport, and disposal of ACM. The training program must be appropriate for the activity, undertaken prior to the commencement removal activities, and include the following elements:
  - Nature of the hazards and Risks;
  - How asbestos can affect a person's health and the risks arising from exposure to airborne asbestos;
  - The control measures in place and maintenance of the asbestos removal control plan for that job;
  - The methods and equipment that will be used to do the job properly;
  - Choosing, using and caring for PPE and Respiratory Protective Equipment (RPE);
  - Decontamination procedures;
  - Waste disposal procedures;
  - Emergency Procedures.

Two levels of training are proposed under the Safety Instruction on Asbestos Handling:

1. Supervisor (40 hours) – focused on planning and organizing asbestos removal and handling activities;
2. Worker (8 hours) – focused on hazard awareness, PPE and following the asbestos management plan.

- **Asbestos Removal Control Plan:** An Asbestos Removal Control Plan is a document that identifies the specific control measures to be used to ensure workers and other people are not at risk when asbestos removal work is being conducted. It is focused on the specific control measures necessary to minimize any risk from exposure to asbestos. The plan must include details on the asbestos to be removed (location, type, conditions) and the asbestos removal process (method, tools, equipment, PPE to be used).

Each contractor will be required to prepare their own Control Plan which will need to specify the PPE that will be provided to workers, and also the budget provision in its bill of quantities (BoQ).

- **Access Control:** Signs are to be erected at each removal site to indicate where the asbestos removal work is being carried out and barricades erected to delineate the asbestos removal area. Access to the removal area must be limited to workers who

are engaged in the removal work; people who are associated with the removal work; and people who are allowed under the Regulations to be in the asbestos removal area (for example inspectors, emergency service workers).

- **Decontamination:** Decontamination for the work area, workers, PPE and tools used in asbestos removal work is an important process in eliminating or minimizing exposure to airborne asbestos fibers, particularly to people outside the asbestos removal work area. The risks of each individual asbestos removal job should be assessed to determine the appropriate decontamination procedure. Decontamination facilities must be available to decontaminate the asbestos removal work area, any equipment/ tools/ PPE used in that area, workers carrying out the asbestos removal work, and other persons who have access to the asbestos removal area because they are associated with the asbestos removal work.
- **Waste Containment and Disposal:** Proper disposal of ACM is important not only to protect the community and environment, but also to prevent scavenging and reuse of removed material. ACM should be transported in leak-tight containers to a secure landfill operated in a manner that precludes air contamination that could result from ruptured containers (World Bank, 2009). The removal contractor must ensure that asbestos waste is contained and labelled before it is removed from the asbestos removal area. Waste must be disposed of as soon as is practicable at a site authorized to accept asbestos waste. The disposal site and method for disposal and containment will be determined in consultation with the Kenema City Council and MOECC.

#### 4. Personal Protective Equipment

As asbestos removal is a high hazard activity, appropriate PPE must be worn regardless of other health and safety control measures in place. PPE must be selected to minimize the risk to health and safety by ensuring it is:

- Suitable for the nature of the work and any hazard associated with the work;
- A suitable size and fit and reasonably comfortable for the person wearing it;
- Maintained, repaired or replaced so it continues to minimize the risk, including ensuring that the PPE is clean, hygienic and in good working order; and
- Used or worn by the worker, so far as is reasonably practicable.

Workers must be provided with information, training and instruction in the proper use and wearing of PPE; and its storage and maintenance. A worker must, so far as reasonably able, wear the PPE in accordance with any information, training or reasonable instruction. The effectiveness of PPE relies heavily on workers following instructions and procedures correctly, as well as fit, maintenance and cleaning. If PPE must be used for long periods, if dexterity and clear vision are needed for the task, or if workers have not been adequately trained on how to fit and use PPE properly, workers might avoid using it.

PPE includes the following items:

- Coveralls - ideally disposable coveralls should be provided which are of a suitable standard to prevent tearing or penetration of asbestos fibers; one size bigger, as this will help prevent ripping at the seams; and fitted with hood and cuffs to

prevent entry of asbestos fibers; Gloves - gloves should be worn when conducting asbestos removal work. If significant quantities of asbestos fibers may be present, single-use disposable nitrile gloves should be worn. Gloves used for asbestos removal work should be disposed of as asbestos waste; Safety footwear - safety footwear (for example steel-capped, rubber-soled work shoes or gumboots) should be provided for all workers removing asbestos. Safety footwear should be lace less, as laces and eyelets can be contaminated and are difficult to clean. The footwear should remain inside the asbestos removal area for the duration of the asbestos removal work and should not be shared for hygiene reasons;

- Respiratory Protective Equipment (RPE) - all workers engaged in asbestos removal work must wear RPE conforming to the appropriate international standard. The selection of suitable RPE depends on the nature of the asbestos removal work, the probable maximum concentrations of asbestos fibers expected and any personal characteristics of the wearer that may affect the facial fit of the respirator (for example facial hair and glasses).

## 5. Asbestos Removal based on Approved methods

The following approved removal methods must be followed for asbestos removal:

- Wet methods, and promptly placing the material in impermeable containers.
- Final clean up with decontamination facilities.
- Disposal of the removed ACM and contaminated materials in an approved landfill.
- Avoid or minimize breaking the Asbestos Cement.
- If fasteners hold the sheets in place, dampen and remove them, and place them in the waste container.
- If the sheets are bolted in place, dampen and cut the bolts while avoiding contact with the Asbestos cement.
- Remove the bolts or fixings carefully and place them in the waste container.
- Unbolt, or use cutters to release gutters, drain pipes, ridge caps, etc.
- Lower large pieces to the ground. Do not drop them or use rubble chutes. Stack sheets carefully.
- Where there are several Asbestos Cement sheets and other large items, place them in a lockable skip. Place small pieces in the asbestos waste container and avoid crushing debris on the ground.
- Double-wrap large pieces in 1000-gauge polythene sheeting. Seal with duct tape.
- Clean the equipment and the area with damp rags.

## 6. Waste Transport and Disposal

When developing a waste transport and disposal plan, the following should be taken into account:

- The containment of waste so as to eliminate the release of airborne asbestos fibers
- Details of any asbestos or ACM to be left in situ.
- The location and security of waste storage on site.
- The waste transport is within the site and off-site.

- The location of the waste disposal site.
- Approval needed from the relevant local and/or central disposal authority
- Any local/ central disposal authority requirements that may apply to the amount and dimensions of asbestos waste.

Loose asbestos waste must not accumulate within the asbestos removal work area. The loose asbestos waste should be placed in labelled asbestos waste bags or wrapped in heavy-duty polyethylene sheeting and labelled. Once the labelled asbestos waste has been removed from the asbestos removal area, it should either be placed in a solid waste drum, bin or skip; or removed immediately from the site by an approved/licensed carrier for disposal.

## Appendix 8: Waste Management Plan

The Waste Management Plan (WMP) describes the proposed measures to be used to protect affected environmental and social receptors from adverse impacts associated with the generation of Project waste. The WMP considers:

- Proposed handling, storage and disposal methods, and
- Equipment and staff.

### 1. Objectives of the Waste Management Plan

The WMP aims to provide guidelines on waste reduction, segregation, collection, treatment and disposal practices in accordance with international best practices, to avoid deterioration of the natural environment and negative impacts on the health and safety of communities in the Project area. The objectives of the WMP are to:

- Identify all potential sources of waste;
- Generate the least possible amount of waste through reduction, reuse and recycling practices, and review / approve all orders for materials, chemicals, and supplies to limit the environmental impact thereof;
- Protect the health and safety of workers and communities;
- Avoid or mitigate any potential negative impacts on all elements of the environment including, but not limited to, people, flora, fauna, air, soils, surface and groundwater resources;
- Monitor waste generation, handling and disposal to assess whether waste management is being carried out as per the WMP and its associated directives;
- Avoid costly clean-up through prevention; and
- Ensure a logical and efficient plan for waste collection, sorting and disposal that reduces the number of times the waste is handled.

### 2. Waste Management Options – Waste Hierarchy

The waste hierarchy presents waste management stages commencing with the most preferable option to the least preferable option. Waste prevention is the most preferred option, followed by reuse, recycling, recovery including energy recovery and as the last option safe disposal.

- Prevention: Contractor and Market traders should be required to strictly manage purchasing of raw materials in order to ensure there is minimal wastage. Contractors and Market traders should be committed to avoiding the generation of waste and not using hazardous materials. Where the use of hazardous materials is unavoidable, efforts should be made to identify replacement materials that are non-hazardous through continued research and development.
- Re-Use: Contractor and Market traders should be required to prepare a Maintenance Management Plan which seeks to ensure that all equipment is regularly checked, maintained and repaired. In addition, traders should seek to sell and buy used items or exchange them.
- Recycling: Contractors and Market operator should collaborate with KCC and seek to turn waste into a new substance or product such as composting of organic wastes to a standard that meets relevant quality controls; or investigate external markets for recycling such as used tires, old machinery, etc.

- Recovery: Recovery of waste is usually most successful when done in bulk. Therefore, a centralized recovery facility is preferable. Forms of recovery include anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat and power) and materials (biochar, bio-oil, syngas) from waste.
- Disposal: Disposal is deemed the last resort and must occur in an environmentally responsible manner. When waste must go for disposal, this must occur at a suitably designed sanitary waste disposal site.

### 3. Waste Categories Generated by the Market

Waste streams likely to be generated during project construction, operation and decommissioning phases include the following:

1. Construction wastes;
2. Earthworks waste (spoils);
3. Domestic (non-hazardous) solid wastes;
4. Hazardous wastes;
5. Liquid wastes;
6. Sewage.

#### 3.1. Construction waste

Construction waste includes unwanted materials produced during construction activities. This category of waste could include materials such as: concrete; wood; packaging (cement bags, plastic, cardboard); waste steel; nails, etc.

Handling these wastes will start at the pre-construction stage where bills of materials quantities will be calculated. Calculations will be made in such a way as to limit the generation of scrap or unwanted materials.

Material re-use will also be enforced where possible to ensure that maximum use of available materials is made and limit the materials which would have to be disposed of as best as possible.

Segregation of wastes at source will be enforced through the provision of labelled waste bins, which will be stationed around active construction areas. These waste bins will be specifically for the disposal of solid, non-hazardous construction waste.

#### 3.2. Earthworks Waste (Spoils)

Spoils are unwanted and unusable rock or soil materials generated from earthworks. Spoils management will include the following options:

- Minimization of spoils generation through design and management;
- Reuse of spoils within the Project where practicable;
- Beneficial reuse of spoils outside the project for environmental and community works;
- Backfilling of any borrow pits with spoils materials, and
- Disposal of spoils outside the Project through landfilling.

Spoils generated will be temporarily stored at identified spoil sites until a decision of the final method of re-use or disposal is decided on. Spoils will not be stored in areas that are sloping or where surface runoff can easily wash away the materials.

### 3.3. Domestic (non-hazardous) Solid Wastes

A variety of solid/domestic waste materials will be generated during the construction, operation and decommissioning phases of the project which may include, but not be limited to the following:

- Aluminum, Glass, Plastic, Paper, Cardboard, etc.;
- Food and food packaging;
- Hoses and rubber; and
- Fabrics.

Solid waste during construction, operation, and decommissioning will be collected in waste bins specifically assigned to this type of waste. Biodegradable waste such as food and kitchen waste will be disposed of in separate bins from non-biodegradable waste including plastics, glass, rubber, etc. All bins will be appropriately labelled for ease of disposal.

Workers will be required to consider re-use of materials where possible e.g. re-use of plastics, fabrics, etc.

Labelled waste bins will be installed in proximity to the work areas for the disposal of domestic waste.

### 3.4. Hazardous Wastes

Hazardous waste materials are considered reactive, flammable, liable to spontaneous combustion, oxidizing, radioactive, explosive, corrosive and/or toxic. The use of these materials will be limited to the extent possible. If use of these materials is unavoidable, procedures will be established for documentation and labelling as well as the safe storage, handling, and disposal of these materials.

Hazardous waste will be stored in designated areas with proper safeguards to minimize the risk of accidental releases into the air, soil, and water, through the following actions:

- Closed containers are stored away from direct sunlight, wind and rain. Secondary containment systems should be constructed with materials appropriate for the waste being contained and adequate to prevent loss of the environment.
- Adequate ventilation is provided where volatile waste is stored.
- Readily available information is provided on chemical compatibility to employees, including labelling each container to identify its contents.
- Access to hazardous waste storage areas is limited to employees who have received proper training and wear appropriate PPE.
- Periodic inspections of waste storage areas are conducted, and the findings are documented.
- Spill response and emergency plans are prepared and implemented to address their accidental release.

Hazardous waste will be disposed of in the assigned hazardous waste bins. They will be packaged and labelled so that the appropriate final disposal method can be applied.

Hazardous waste will be generated during the construction, operation, and decommissioning phases of the project. These may include the following:

### 3.4.1. Fuel and Oil Filters

Fuel and oil filters from machinery, equipment and generators will be generated throughout the construction (mainly), operation and decommissioning phases of the project.

Waste fuel and oil filters from machinery, equipment and generators will be disposed of by:

- Puncturing the filters and allowing them to drain for 8 hours; collecting the drained fuel or waste oil
- Placing waste oil in the waste oil storage tank
- Properly storing the storage tank for later removal from the site.

Once puncturing and draining of the filter itself is completed, it will be disposed of in the hazardous waste storage container.

### 3.4.2. Waste Oils, Fuels and Solvents

Waste oils and spent solvents will be generated by maintenance activities performed on various machinery during construction, operation and decommissioning phases. Waste oils and solvents will be stored in collection containers which are not punctured and are properly secured to prevent accidental release into the environment.

Different kinds of used oils will be stored separately where necessary, to ensure that the best disposal option can be applied. Used oils may be sold or donated to companies who can use them in their processes in a responsible manner.

The potential for release of petroleum-based products, such as lubricants, hydraulic fluids, or fuels may occur during their storage, transfer, or use in equipment (including changing engine oil). The IFC guidelines include techniques for prevention, minimization, and control of these impacts as follows:

- Providing adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubrication oils and hydraulic fluids.
- Using impervious surfaces and trays for refueling and other fluid transfer areas.
- Training workers in the correct transfer and handling of fuels and the response to spills.
- Providing portable spill containment and cleanup equipment on site and training in the equipment deployment.

Soil contamination may occur and actions necessary to manage risk from contaminated land will be taken depending on factors such as the level and location of contamination, the type and risk of the contaminated media. The IFC guidelines require that contaminated media is managed with the objective of protecting the safety and health of occupants of the site, the surrounding community, and the environment post construction. Soils contaminated with oil will be removed from the spill location and bagged and labelled for proper disposal.

The contractor's Environment, Health and Safety Officer will be responsible for the re-use and disposal of waste oils and solvents and for the following:

- Identify the manpower and equipment needed to inspect and maintain the waste oil and storage tanks and surrounding areas in good working order
- Explain procedures on proper management, handling, and disposal of waste oils and solvents

- Explain what is and is not acceptable disposal of waste oils and solvents.

#### 3.4.3. Petroleum-Contaminated Soils

Petroleum-contaminated soils, if they occur, will be removed and placed in hazardous waste storage. Treatment of the spill area will involve mopping the spill with saw dust, and the contaminated saw dust will be stored in the hazardous waste storage area for collection by the contracted waste collector.

#### 3.4.4. Aerosol Cans

Aerosol cans containing paints, cleaning agents and other sprays will be mainly generated from the construction phase of the project. Aerosol cans should be properly depressurized before being disposed of to prevent harm to area personnel. The empty cans will be disposed of in the following ways:

- Crushing/puncturing the cans under non-hazardous conditions prior to disposal;
- Draining any excess contents in the cans into a collection system that should be collected and treated by a certified waste contractor such as MASADA Waste.

#### 3.4.5. Batteries and Solar Panels

Batteries and solar panels will be generated mainly during the operation and decommissioning phases of the project. Used end of life batteries will be accumulated and stored in an area that has a concrete floor sheltered from the weather. The Environment, Health and Safety Officer will be responsible for investigating the availability of off-site reuse options and safe disposal options for batteries and solar panels.

#### 3.4.6. Medical Wastes

The onsite first aid station handles minor accidents or emergencies, in the process generating waste which would need to be disposed of effectively. Items which may be generated and need to be disposed of include the following:

- Needles and syringes
- Cotton Wool
- Gauze and Plasters
- Empty bottles and vials
- Gloves and masks
- Test kits.

This waste will be carefully bagged, labelled and put in the hazardous waste storage area, for collection by a certified Waste Management Company. If the generation of hazardous waste cannot be prevented, its management should focus on the prevention of harm to health, safety, and the environment, according to the following additional principles:

- Understanding potential impacts and risks associated with the management of any generated hazardous waste during its complete lifecycle in line with International best practice.
- Ensuring that contractors handling, treating, and disposing of hazardous waste are reputable and legitimate enterprises, licensed by the relevant regulatory agencies and following good international industry practice for the waste being handled

- Hazardous waste storage activities should also be subject to special management actions, conducted by employees who have received specific training in handling and storage of hazardous wastes.

### 3.5. *Liquid Wastes*

Liquid Waste/wastewater will be produced mainly during construction activities, such as concrete wastewater (slurry). The construction contractor will be responsible for treating concrete liquid waste if needed (i.e. settling of solids, neutralizing high pH), before releasing the clean water into the environment.

### 3.6. *Sewage*

During construction and decommissioning, provision will be made for sanitation facilities for workers, which will likely be connected to underground septic tanks for management of resulting sewage.

## **4. Waste Storage, Handling, and Disposal**

All wastes will be stored in an environmentally responsible manner. At a minimum, the following should be achieved/ensured:

- Labels and signage to indicate any dangerous or hazardous waste stored.
- Waste storage areas will be located away from sensitive environments, drains or waterways.
- Waste will be covered to prevent dust, odors or rainwater ingress wherever possible.
- Wastes will be segregated where possible to allow for reuse / recover opportunities. Hazardous and domestic waste shall be kept always separate; and
- Bins and other receptacles will be located such that there is adequate access and a maneuvering area for collecting vehicles.

The safety requirements for the storage facilities of dangerous wastes should fulfil the following conditions:

- Signaled and fenced area.
- Covered space.
- Isolated ground (concrete slabbing).
- Safety bucket to collect potential spills or leaks.
- Firefighting system.
- Containers labelling.

Facilities must be provided for the controlled collection of hazardous waste and the temporary deposit until their removal by an authorized agent. These facilities will have an adequate provision of containers, bins and other items for the classification and separate storage of hazardous waste, facilitating insofar as possible their discharge and removal by the agent, so that this deposit is at all times easily controlled and the wastes stored are protected from the action of sun and rain.

The following handling procedures, developed based on IFC's guidelines for Waste Management Facilities (2007), will be adopted as part of the Project's waste management program. Waste collection, handling, and transport guidelines include, but are not necessarily limited to, the following:

- A routine schedule will be established for domestic waste collection and disposal;
- Waste generators will be provided with appropriate waste disposal containers;
- Waste will be segregated at source in order to simplify the collection and management process, using color-coded and labelled bins;
- Enclosed refuse vehicles or vehicles equipped with traps will be used for the domestic waste collection;
- Waste handling will be minimized during operations;
- Waste containment will be maximized during operations.

Odors will be monitored, evaluated, and reduced at all waste areas. Fugitive refuse (for example, plastic bags and paper) around the waste facility will be picked up, disposed of in the waste facility, and properly covered.

## 5. Monitoring

All contractors and market traders shall be sensitized in waste management methods. Monitoring activities associated with the management of waste should include:

- Regular visual inspection of all waste storage, collection and storage areas for evidence of accidental releases and to verify that waste properly labelled and stored. When significant quantities of hazardous waste are generated and stored on site, monitoring activities should include:
  - Inspection of containers for leaks, drips or other indications of loss
  - Identification of cracks, corrosion, or damage to tanks, protective equipment, or floors
  - Documenting any changes to the storage facility, and any significant changes in the quantity of materials in storage.
- Regular audits of waste segregation and collection practices
- Tracking waste generation trends by type and amount of waste generated, characterizing waste at the beginning of generation of a new waste stream, and periodically documenting the characteristics and proper management of the waste, especially hazardous wastes; keeping manifests or other records that document the amount of waste generated and its destination/fate
- Regular monitoring of groundwater quality in cases of Hazardous Waste on site storage and/or pre-treatment and disposal
- Monitoring records for hazardous waste stored will include:
  - Name and identification number of the material(s) composing the hazardous waste
  - Physical state (i.e., solid, liquid, gaseous or a combination of one or more of these)
  - Quantity (e.g., kilograms or liters, number of containers, etc.)
  - Method and date of storing, repacking, treating, or disposing at the facility, cross-referenced to specific manifest document numbers applicable to the hazardous waste
  - Location of hazardous waste storage area

## **Appendix 9: Chance Find Procedure**

The chance find procedure 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.

### **Scope of the chance find procedure**

This procedure is applicable to all activities conducted by the personnel, including contractors, that have the potential to uncover a heritage item. The procedure details the actions to be taken when a previously unidentified and potential heritage item is found during construction activities.

### **Chance-find procedure**

Project Contractors will be responsible for familiarizing themselves with the "Chance Find" Procedure presented below in case a cultural heritage resource is uncovered during excavation and other aspects of the civil works.

If any person discovers a physical cultural resource, such as (but not limited to) archeological items, remains and objects, or a cemetery and individual graves, the following steps shall be taken:

5. Stop working in the zone immediately following the discovery of material cultural, archeological, historical, paleontological or other cultural significance.
6. Notify immediately the construction manager, the environment manager or the supervising Consultant and take photos of the find.
7. The managers and/or supervising consultants shall verify the item or resource and notify the relevant authorities such as EPA, the Ministry of Tourism and Cultural Affairs, and Monuments and Relics Commission about the find.
8. Delineate the discovered area, secure the site to prevent loss of removable objects. In case the find is removable antiquities or sensitive remains, a night guard shall be arranged until the relevant authorities take over.
9. Relevant authorities must evaluate and assess the find through a specialized personnel/archeologist. Based on this assessment, an appropriate strategy can be implemented. 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, etc.
10. The Contractor shall re-start work in the area only upon approval by EPA and/or the appropriate authorities.

One of the main requirements of the procedure is record keeping. All finds must be registered.

### **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.

## Appendix 10: C-ESMP Outline

A C-ESMP should be developed by the contractor to ensure that all construction activities comply with the Sierra Leone standards, and the mitigation measures and plans outlined in the ESIA/ESMP report. The PMU should approve this plan prior to construction activities. The following C-ESMP outline should be considered while developing the plan.

C-ESMP Content:

### Table of Contents

Executive Summary: The executive summary should provide a brief overview of the key elements of the plan, the purpose of the document, potential environmental and social impacts, and the main strategies to mitigate these impacts. This section should highlight the key objectives and outcomes of the C-ESMP.

3. Introduction and Objectives: the plan should provide the purpose of the CESMP and its objectives in managing construction impacts in line with the ESMP and should provide the project scope and activities that require environmental and social management.
4. Roles and Responsibilities: the plan should define the role of the contractor's EHS team, the responsibilities for monitoring, reporting, and the mechanisms with the project EHS team and stakeholders.
5. Hazards Identification and Risk Analysis Methodology: This section should outline the approach used to identify and assess environmental and social risks, including any potential impacts during the construction phase.
6. Environmental, Social, Health and Safety Risks and Mitigation Measures: This section should clearly define how the identified risks will be mitigated. For each impact, the plan should include:
  - Summary of mitigation measures as related to the work and the ESMP
  - Additional mitigation measures need to be implemented specifically in relation to identified offsite locations.
  - Monitoring programs with trigger values for corrective actions.
  - Corrective actions and non-compliance reporting.
  - Environmental schedules.
11. Auditing and Reporting: The C-ESMP should include a schedule for auditing the implementation and effectiveness of the plan, both internal and external audit requirements, and a designation of responsible parties for conducting audits and reporting results. The contractor will report regularly to the project proponent and environmental consultant.
12. Training: The plan should specify training programs for all personnel involved in construction activities (contractors, subcontractors, and visitors). The training should focus on environmental, health, and safety responsibilities and be tailored to the roles of the individuals. Records of all training should be maintained and reported.
13. Emergency Preparedness and Response: The C-ESMP should establish procedures for managing environmental emergencies. This should include identifying key emergency

contacts and ensuring that emergency procedures are implemented and maintained throughout the construction phase.

14. C-ESMP Budget: The plan should outline the budget for environmental monitoring and mitigation, including costs for compliance with the C-ESMP, training, emergency response, and other relevant activities.

**Appendix 11: Health and Safety Plan Tables**

**Table 12-3 WB EHS Guidelines for Workers**

Topic of Interest	Guideline
Access	Employees must avoid running on work sites and use designated paths. Report any unsafe or inadequate access ways to the manager or immediate supervisor promptly.
Housekeeping	Maintain a tidy work area to prevent accidents, inefficiencies, and hazards. Keep work areas clear of clutter, spills, and equipment to avoid slips, trips, and falls. Employees are responsible for keeping workplaces and amenities clean and tidy.
Manual Handling and Lifting	Identify, assess, and control risks associated with manual handling. Follow proper lifting techniques, including securing a safe grip, balancing, and using body weight. Use team lifts for heavy, long, or awkward loads, avoiding repetitive lifts and twisting movements.
Drugs and Alcohol Consumption	Prohibit the consumption of alcohol or recreational drugs in the workplace. Implement measures to identify signs of alcohol or drug use, such as poor coordination, concentration, or visual disturbances.
Electrical Safety	Confirm that the project poses no electrical safety risks.
Clothing and PPE	Provide PPE in accordance with specific tasks within the project.
Machinery and Power Tools	Ensure that the project excludes or minimizes the use of dangerous machinery or power tools.
Environmental Factors	The project activities do not pose risks related to high temperatures, humidity, or low air movement.
Heat-Related Illness	Ensure that the project activities do not pose risks of heat-related illnesses.
Hazardous Substances	Ensure that the project activities do not involve potential physical or toxic hazards.

Source: Adapted from WB/IFC, 2007

**Table 12-4 OHS responsibilities among various market roles**

Roles	Responsibilities
1. Construction Manager / Project Manager	<ul style="list-style-type: none"> <li>Approval of this Plan and allocation of necessary resources for its implementation.</li> <li>Ensuring the Plan's implementation throughout the construction phase.</li> <li>Overseeing incident investigations and reporting studies.</li> </ul>
2. EHS Expert	<ul style="list-style-type: none"> <li>Creates, reviews and updates the project's OHS plan</li> <li>Conducts OHS on-site inspections</li> <li>Identifies OHS issues, recommends solutions and provides corrective actions</li> <li>Liaises with the Site Officer and Project Manager to maintain compliant OHS plan implementation</li> <li>Conducts OHS induction training and toolbox talks</li> <li>Supervises and guides the EHS site Officer</li> <li>Investigates employee complaints regarding exposure to hazardous materials</li> <li>Oversees and contributes to all OHS record keeping activities, and contributes related findings to monthly reports submitted by the contractor</li> </ul>
3. EHS Officer	<ul style="list-style-type: none"> <li>Liaises with the Project Manager's to ensure variations to the scope or timing of the work that may impact on the OHS are discussed, and be point of contact for all daily OHS aspects and reporting</li> <li>Liaises with the EHS expert to inform them of any incidents on-site</li> <li>Ensures that all site staff are informed of any OHS requirements and changes to the OHS plan</li> <li>Controls and monitors actions required by the OHS plan</li> </ul>

<b>Roles</b>	<b>Responsibilities</b>
4. Site Engineers	<ul style="list-style-type: none"> <li>• Conducts audits and inspections as required by the OHS plan at work sites</li> <li>• Liaise with the EHS expert in addition to the EHS officer to ensure OHS safeguards and management measures are being implemented across the contract site.</li> <li>• Report any notice issue to the EHS expert and to the site officer</li> <li>• Monitor subcontractor behavior on work sites</li> <li>• Communicate instructions or information to staff on site</li> </ul>
5. Construction Workers	<ul style="list-style-type: none"> <li>• Obligated to follow OHS precautions and rules set by the Project Manager and EHS Expert.</li> </ul>
6. Employee Representatives	<ul style="list-style-type: none"> <li>• Sharing the same responsibilities as general construction workers.</li> <li>• Receiving and conveying information between workers and management.</li> <li>• Attending specific training and informing management about risks.</li> </ul>
7. Subcontractors	<ul style="list-style-type: none"> <li>• Complying with the OHS Management Plan during construction.</li> </ul>
8. Visitors	<ul style="list-style-type: none"> <li>• Complying with safety directions provided by the OHS plan.</li> <li>• Taking reasonable care for their own safety and the safety of others.</li> <li>• Reporting all incidents to the construction personnel.</li> </ul>

**Table 12-5 Recommendations for the OHS hazards during construction**

<b>Potential Hazards</b>	<b>Recommendations for prevention and control</b>
Over-exertion, and ergonomic injuries and illnesses,	<ul style="list-style-type: none"> <li>• Train workers in proper lifting and materials handling techniques.</li> <li>• Set weight limits for manual handling, requiring mechanical assistance or two-person lifts for heavier items.</li> <li>• Plan the layout to reduce the need for manual transfer of heavy loads.</li> <li>• Select tools and design workstations that minimize force requirements and improve posture.</li> <li>• Utilize user-adjustable workstations where applicable.</li> <li>• Implement job rotations, and schedule rest or stretch breaks to alleviate strain and fatigue.</li> </ul>
Slips and Falls	<ul style="list-style-type: none"> <li>• Sort and store loose construction materials and debris in designated areas away from footpaths to prevent hazards.</li> <li>• Regularly clean up excessive waste, debris, and liquid spills to maintain a safe work environment.</li> <li>• Position electrical cords and ropes in common areas to avoid tripping hazards.</li> <li>• Use slip-retardant footwear to reduce the risk of slips and falls.</li> </ul>
Working at Heights	<ul style="list-style-type: none"> <li>• Use devices such as rails or barriers that can support at least 200 pounds when working at heights of two meters or more, or at any height where there is a risk of falling into machinery, liquids, hazardous substances, or openings.</li> <li>• Train workers using full-body harnesses and energy-absorbing lanyards able to support 5,000 pounds, as well as fall rescue procedures to deal with workers whose fall has been successfully arrested. The tie-in point of the fall arresting system should also be able to support 5,000 pounds.</li> <li>• Establish control zones and use safety monitoring systems to alert workers to the proximity of fall hazards.</li> <li>• Secure, mark, and label covers for openings in floors, roofs, or walking surfaces to prevent falls.</li> </ul>
Being Struck by Objects	<ul style="list-style-type: none"> <li>• Utilize designated and restricted waste drop zones or chutes for safely moving waste from upper to lower levels.</li> <li>• Conduct sawing, cutting, grinding, sanding, chipping, or chiseling with appropriate</li> </ul>

Potential Hazards	Recommendations for prevention and control
	<ul style="list-style-type: none"> <li>guards and anchoring to ensure safety.</li> <li>• Maintain clear pathways to prevent heavy equipment from driving over loose scrap.</li> <li>• Implement temporary fall protection measures, such as handrails and toe boards, on scaffolds and elevated work surfaces to prevent materials from falling.</li> <li>• Wear appropriate PPE, including safety glasses with side shields, face shields, hard hats, and safety shoes, to protect against potential hazards.</li> </ul>
Moving Machinery	<ul style="list-style-type: none"> <li>• Plan and segregate vehicle traffic, machine operation, and walking areas.</li> <li>• Use one-way traffic routes and establish speed limits to control vehicle movement.</li> <li>• Employ trained flag-people in high-visibility vests to direct traffic.</li> <li>• Ensure workers wear high-visibility vests when in areas with heavy equipment.</li> <li>• Train workers make eye contact with equipment operators before approaching vehicles.</li> <li>• Equip moving machinery with audible back-up alarms to alert nearby personnel.</li> </ul>
Dust	<ul style="list-style-type: none"> <li>• Dust suppression techniques should be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements</li> <li>• PPE, such as dusk masks, should be used where dust levels are excessive</li> </ul>

Source: Adapted from WB/IFC, 2007

**Table 12-6 KPIs and Monitoring Activities**

Key Monitoring Activities	Key Performance Indicators
<ul style="list-style-type: none"> <li>• Regular Safety Inspections, testing and calibration: Conduct routine inspections of the project site to identify potential hazards and ensure compliance with safety standards.</li> <li>• Surveillance of the working environment: employers should document compliance using appropriate sampling and monitoring instruments.</li> <li>• Surveillance of workers' health: provide protective measures and relevant health surveillance prior to dangerous exposure.</li> <li>• Training: Periodically audit training records to verify that all personnel have completed the required OHS training.</li> <li>• Incident Investigations and reporting: Investigate all incidents thoroughly to determine root causes and implement corrective actions.</li> <li>• Emergency Response Drills: Conduct regular drills to evaluate the effectiveness of emergency response procedures.</li> <li>• Safety Committee Meetings: Hold regular safety committee meetings to discuss OHS issues, review incident reports, and propose preventive measures</li> </ul>	<ul style="list-style-type: none"> <li>• Incident Rate: Measure the number of workplace incidents per hour worked.</li> <li>• Near-Miss Reporting Rate: Evaluate the frequency of reported near-miss incidents to identify potential hazards.</li> <li>• Training Compliance: Monitor the percentage of employees who have completed mandatory OHS training.</li> <li>• Emergency Response Time: Assess the efficiency of emergency response by measuring the time taken to address incidents.</li> <li>• Safety Inspection Results: Regularly review the outcomes of safety inspections to identify areas for improvement.</li> </ul>

Source: Adapted from WB/IFC, 2007

## Appendix 12: Emergency Response Plan

Emergency situations may arise from various activities and conditions which may occur during project implementation. These could have potentially severe consequences for the project if no Emergency Response Plan (ERP) has been put in place.

### 1. Objective

The ERP is designed to enable all relevant parties associated with the project to act quickly, decisively and cooperatively in any crisis or emergency. This ensures an appropriately measured level of response and recovery actions, depending on the nature, location and potential gravity of any given incident.

To be effective, the ERP will be clearly communicated to all contractors through the following process:

- Review the ERP with the construction contractors and their employees to ensure that it adequately covers their activities
- Review the ERP on a regular basis to address new hazards or significant changes in site conditions, and incorporate lessons learned from previous incidents and exercises
- Post the procedures in a location easily accessible to workers
- Ensure personnel are competent and understand their roles and responsibilities during an emergency response situation.

### 2. Hazard Identification

The ability to identify hazards will go a long way towards preventing the occurrence of emergencies. Construction workers will be trained in hazard identification. To identify and assess hazards, contractors should be able to:

- Collect and review information about the hazards present or likely to be present at the project site.
- Conduct initial and periodic workplace inspections to identify new or recurring hazards
- Investigate injuries, illnesses, incidents, and close calls / near misses to identify the hazards, understand their causes, and find any weaknesses in the OHS program.
- Determine the severity and likelihood of incidents that could result in each hazard identification and use this information to prioritize corrective actions.

### 3. Incident Classification

Typical emergency types and severity that characterize construction projects are highlighted in Table 12-7.

**Table 12-7 Severity of some incidents that characterize construction projects**

Level I Minor Incident	Level II Moderate Incident	Level III Major Incident
Accidents, cuts and abrasions	Release of flammable or toxic substance into air, land or sea  Natural Disaster  Road Accidents  Civil Unrest/Disturbances  Medical Health Cases	Fire or explosion  Falling from heights

Source: WB/SLMoF, 2020

#### 4. Emergency Response Procedure

Emergencies that can occur during the construction of the new market are illustrated within the response procedures in Table 12-8. The following steps should generally be followed in addressing any emergency:

- **Stay calm** - prevent panic and thereby aid the emergency response.
- **Assess the situation** - Assess what has happened to whom and what will continue to happen if no action is taken. Identify the cause that must be controlled to eliminate immediate, ongoing, or further danger.
- **Take command** – Contact the required person(s), internal or external depending on the crisis and protocol and explain the situation. Take any action that can be safely taken to eliminate or reduce the potential severity of the incident until professional help arrives.
- **Provide protection** - Protect victims, equipment, materials, environment, and accident scene from continuing damage or further hazards. Divert traffic, suppress fire, prevent objects from falling, shut down equipment or utilities, and take other necessary measures.
- **Aid and manage** – Provide or arrange for the provision of first aid. Organize the workforce for both a headcount and emergency assignments. Direct all workers to a safe location or command post. This makes it easier to identify the missing, control panic, and assign people to emergency duties.
- **Maintain contacts** – Keep emergency services and the project management unit informed of the situation.
- **Guide emergency services** – Meet services on site. Lead them to an emergency scene. Explain ongoing and potential hazards and cause(s), if known.

Following an emergency, detailed activities must be undertaken:

- Report incident information to statutory authorities.
- Conduct an incident investigation.
- Assess damage incurred.
- Implement rescue, de-contamination, clean-up, and restoration processes.
- Compile a comprehensive report detailing the entire incident experience, including restoration efforts, limitations, and lessons learned.

**Table 12-8 Common Emergencies and Response Procedures during the Project Implementation**

Emergency	Response Procedures
Fuel/Oil Spillage	<ul style="list-style-type: none"> <li>• Avoid danger to yourself and others (i.e. stop working, shut off power sources and any moving machinery and equipment, alert others in danger).</li> <li>• Stay upwind of the emergency scene.</li> <li>• Identify the product that has been spilled, as well as immediate potential hazards.</li> <li>• If the identification of the substance cannot be determined, assistance should be requested, and the identification of the substance should be determined by qualified personnel.</li> <li>• Assess spill quantity and characteristics.</li> <li>• Notify the EHS Officer (during construction and decommissioning) / MCC (during operation) with as much information as possible.</li> <li>• Arrange for a timely clean-up of spilled material by contacting the EHS Officer / MCC.</li> </ul>
Fire / Explosion	<ul style="list-style-type: none"> <li>• Assess the location and severity of the situation.</li> <li>• Extinguish the fire if it can be accomplished without being exposed to potential hazard.</li> <li>• Restrict access to the area.</li> <li>• Do not take health or safety risks by entering unstable or fire engulfed areas.</li> <li>• Notify the EHS Officer/MCC.</li> </ul>
Natural Disaster (Land Slide, Flooding)	<p>During a regional / national level natural disaster, information on nature, scale, location or direction of the emergency will be obtained from national disaster management services either through public media or direct communication. Emergency response teams under the supervision of the EHS Officer/MCC will organize headcounts and evacuation as may be necessary</p>
Road Accidents	<ul style="list-style-type: none"> <li>• The EHS Officer/MCC will be contacted immediately with details of the location and nature of the incident.</li> <li>• SL Police will be contacted immediately with details of the location and nature of the incident.</li> <li>• Vehicles/machinery involved in the accident are not to be moved until the police arrive.</li> <li>• Victims will be moved to a government hospital if required.</li> <li>• If members of the public are involved in a project-related road accident, the injured person(s) will be assessed, administered with first aid and taken to the Government Hospital for treatment, depending on their injuries.</li> <li>• Details of the accident including how it was caused, the number of people involved, police reports, etc. will be recorded by the EHS Officer.</li> </ul>
Falling from Heights (mainly during construction)	<p>Falls from heights may occur where workers are involved in the construction of the new market and other project features involving working at heights. Where necessary, rescue from heights procedures will be followed to retrieve the person. Fall victims will be treated with first aid in the location of their fall until possible injuries are identified and safely moved to the Government Hospital for further treatment.</p>
Minor accidents (scrapes, cuts, abrasions etc.)	<ul style="list-style-type: none"> <li>• Minor accidents will be treated through first aid.</li> <li>• Small injuries like cuts and abrasions may become worse if they are exposed to external elements such as dust, oil, fuel, heat, etc. and may become infected leading to bigger health problems.</li> <li>• First aid boxes will be provided in all work areas.</li> </ul>
Medical Health Cases	<p>First medical attention to accidents or emergency health cases will be provided through first aid. Where advanced medical attention is required, the victim will be transferred to the Government Hospital for further treatment. In the event of a medical emergency or fatality, the following procedures will be followed:</p> <ul style="list-style-type: none"> <li>• The EHS expert/MCC will be informed of the incident resulting in the medical emergency.</li> <li>• The location and severity of the situation will be assessed.</li> </ul>

Emergency	Response Procedures
	<ul style="list-style-type: none"> <li>• Further health or safety risks like entering a dangerous or unstable area will be prevented.</li> <li>• The victim will be accompanied by another worker to the Government Hospital to give pertinent information about the incident.</li> <li>• In the event of death, only a qualified medical professional can confirm the death. Immediate notification of PMU is required after the death of any worker from a project-related incident.</li> </ul>
Civil Unrest and Disturbance	<p>A Stakeholder Engagement and Disclosure Process has been developed that includes procedures for dissemination of information to the public and project stakeholders.</p> <p>Despite this proactive approach, social unrest could occur for several reasons outside of the Project management's control. Subversive activities by workers or non-workers could develop and may result in violent or non-violent protests, attacks on Project personnel, property damage, etc.</p> <p>PMU is to be notified immediately by contractors/MCC of any social unrest that may present a threat to themselves and/or the project</p>

## 5. Resources and Responsibilities

Resources for the emergency control systems within the project site must be maintained and clearly identified and should include:

- Fire detection system
- Fire protection and firefighting system
- In-house ambulance facility or an on-call service if not available on-site
- Rescue facilities and PPEs
- First aid facilities
- In-house or nearby hospital/health center for medical assistance
- Internal and external communication facilities with an alerting system
- Designated assembly points
- Clearly marked escape routes and evacuation zones

The EHS expert and MCC will maintain internal and external emergency contact numbers for police, fire stations, hospitals, etc. and will ensure that contractors and workers are well-versed in emergency response procedures. This includes familiarizing them with the use of emergency equipment and response methods such as firefighting, spill control, first aid, and basic personnel rescue techniques.

In the event of an incident, the EHS officer during construction and decommissioning phases and MCC during operation, will handle all communications with the public. This includes describing the event, identifying affected populations, detailing any injuries and the status of those involved, outlining existing hazards, and explaining the precautions and mitigation measures taken to prevent future risks. Contact information will also be provided.

## Appendix 13: Labor Management Procedures

The Labor Management Procedures (LMP) for the market upgrade project, specifically focusing on the construction phase, are developed in alignment with the RUSLP project requirements to ensure the well-being and fair treatment of workers involved in the respective subcomponent (construction works at the market and relocation site).

Aligned with the requirements of the World Bank's ESS2 on Labor and Working Conditions, the LMP serves as a crucial tool to identify and address the main labor requirements and associated risks within the project. It facilitates a clear understanding among various project-related stakeholders, including the project implementing unit staff, contractors, sub-contractors, and project workers, regarding specific labor-related expectations.

### 1. Objectives

The LMP aims to:

- Ensure clear understanding of labor rights and working conditions among employees.
- Facilitate employees in exercising their rights to freedom of association and collective bargaining.
- Guarantee compliance with all pertinent national employment and labor laws and regulations.
- Establish accessible avenues for project workers to voice concerns, seek redress, and receive timely feedback along with corrective measures.
- Champion equal opportunities for all workers, preventing discrimination based on factors such as race, nationality, social origin, birth, religion, disability, gender, age, sexual orientation, union membership, and political opinions.
- Handle disciplinary practices and grievances in a manner that upholds the dignity and respect of affected individuals, free from threats, abuse, or ill-treatment.
- Prohibit the use of child, forced, or compulsory labor in all project activities.
- Prevent instances of Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH), and GBV that may arise during the implementation of activities or sub-projects under the Sierra Leone Markets Upgrade Project.

### 2. Overview of Labor Use

The labor requirements for the project during the construction phase at the market and relocation site will involve a diverse workforce, including direct hires, contractor personnel, suppliers, primary workers, and community labor.

Direct Workers: The total number of PMU staff in charge of coordination, financial management, procurement safeguards, M&E, reporting, etc. is 12. The staff is responsible for the day-to-day management and monitoring of the project and sub-projects, will hire consultants, contractors, and support staff under contractual agreements compliant with the National Labor Law. These individuals will be engaged for specific tasks in design, studies, and construction supervision, with clearly defined roles.

Contracted Workers: The PMU will engage contracting firms, specializing in engineering and environmental consulting, to recruit skilled workers based on project needs. Small works contracts will be initiated for tasks such as maintenance, flood control, and cleaning.

Consultants and/or workers engaged for short-term periods will have their labor requirements, time schedules, and deliverables clearly outlined in their respective contracts.

Primary Supply Workers: Suppliers will recruit primary supply workers as per project needs, with strict monitoring by the PMU to prevent child labor and forced labor practices. The PMU will take corrective action if any deviations from standards are identified. These workers will be engaged based on specific project needs.

Migrant Workers: While foreign migrants are not anticipated for civil work, international consultants may be hired for specialized services if local expertise is lacking. Sub-project contractors may source skilled labor from various locations or outside project communities as needed. They will be engaged based on specific project needs.

### 3. Key Potential Labor Risks

The common potential labor risks associated with the execution of the market upgrade and relocation site preparation activities are outlined below in Table 12-9.

**Table 12-9 Common Potential Labor Risks**

Potential Risks	Risk Description
Risks Related to Hazardous Work	<ul style="list-style-type: none"> <li>• Manual tasks such as lifting, lowering, pushing, pulling, and carrying involve sudden force application, repetitive movements, and awkward postures.</li> <li>• Additional tasks, such as handling cement, sand, and other construction materials, concrete mixing, and lifting heavy equipment like generators, doors, and windows, may subject site workers to undue stress on the waist, central spine, and other body parts.</li> <li>• Workers utilizing heavy hammers and power drillers might also face hazards (noise and vibration) due to the repeated and prolonged execution of their tasks.</li> <li>• Specific roles like sprayers, painters, laborers, and steel benders at the construction and rehabilitation sites may encounter exposure to emissions, dust, and open oxy-acetylene flames during wood treatment, painting, and cutting and welding activities for the project facilities.</li> <li>• The mixing and carting of concrete and masonry pose risks of concrete splashing into workers' eyes during these activities, potentially causing immediate or long-term visual impairment and even blindness.</li> </ul>
Work-Related Incidents and OHS Risks	Common accidents in civil and rehabilitation works include burns, cuts, slips, and falls, often resulting from inadequate housekeeping, poor signage on-site, and improper operation of equipment. Work-related accidents can also stem from non-compliance with equipment manufacturers' specifications and the neglect of using PPE.
Challenges in Conditions of Service	Unfair and discriminatory recruitment practices such as gender-based or other forms of discrimination may contribute to poor conditions of service. This includes practices like paying wages below the national minimum wage, compelling workers to perform unpaid overtime, denying maternity leave and corresponding allowances for women, and engaging individuals without formal contracts.
Risk of Child and Forced Labor	Measures will be implemented to prohibit the employment of individuals below 18 years of age. Verification of age will involve scrutinizing national identification cards, birth certificates, or other relevant documents. In cases where these documents are unavailable, community verification processes will be conducted to establish age. Regular awareness sessions will be organized to educate and sensitize stakeholders about the prohibition and negative impacts of children and forced labor. Signed written employment contracts from all workers hired by sub-project contractors will be requested to ensure consents to the terms and conditions of employment before commencing work.

Potential Risks	Risk Description
Incidence of GBV / SH / SEA	SEA/SH could occur during construction work or other project-related activities. The project has conducted a comprehensive SEA/SH risk assessment and developed a GBV Action Plan. The action plan includes service provider mapping, GBV-sensitive channels in the GRM, a contractor code of conduct, worker training, community sensitization, and an Accountability and Response Framework.
Accidents involving Contractors and Suppliers' Trucks and Equipment	Haulage trucks and equipment belonging to Project Suppliers, Sub-Project Contractors, and Sub-Contractors may be involved in accidents leading to the loss of life and property, injuries, and spillage of materials within project communities and along haulage routes.
Other Risks	<p>The project will face potential risks associated with labor influx, especially if there is a need to bring in foreign workers due to specific skill requirements. This influx may introduce challenges related to managing a diverse workforce, ensuring fair treatment, and preventing any adverse impacts on the local labor market. Additionally, exposure to infectious diseases becomes a heightened concern due to the increased movement of people. The project also faces risks related to unclear or unfair contract terms, irregular salary payments, and the absence of a robust grievance mechanism (GM). These risks underscore the importance of implementing tailored measures to address unique circumstances, safeguard the well-being of the workforce, and mitigate the potential negative impacts associated with labor influx.</p> <p>Women may be excluded from the workforce or being recruited on a conditional basis such as sex for work etc.</p>

#### 4. Responsibility for the LMP

Effective management of labor is crucial to the success of the market upgrade project, ensuring the well-being and safety of workers, preventing child and forced labor, and upholding occupational health standards. The responsibilities assigned to various stakeholders involved in the project are presented in Table 12-10. Additionally, the plan emphasizes the importance of monitoring and reporting potential risks, reinforcing the commitment to responsible labor practices throughout the project's duration.

**Table 12-10 Responsibilities Distribution Among Relevant Parties**

Responsible Party	Responsibilities
Contractors	<ul style="list-style-type: none"> <li>Developing and implementing project-specific labor management procedures and occupational health and safety plans</li> <li>Employing or appointing a qualified EHS expert and officer</li> <li>Supervising subcontractors' implementation of labor management procedures and occupational health and safety plans</li> <li>Maintaining records of recruitment and employment processes</li> <li>Communicating job descriptions and employment conditions to workers</li> <li>Developing and implementing workers' grievance mechanisms</li> <li>Regular review and reporting on labor and OHS performance</li> <li>Delivering regular induction and OHS training to employees</li> <li>Ensuring understanding and signing of the Code of Conduct by all workers prior to commencement of works.</li> </ul>
Construction/Project Manager	<ul style="list-style-type: none"> <li>Overall management of project workers and subcontractors</li> <li>Conducting training on the Code of Conduct with assistance from the Safeguards Officer</li> </ul>
EHS expert	<ul style="list-style-type: none"> <li>Responsibility for OHS including training and monitoring</li> <li>Development and implementation of a Code of Conduct for workers</li> </ul>

Responsible Party	Responsibilities
EHS Officer	<ul style="list-style-type: none"> <li>• Engagement and management of sub-contractors</li> <li>• Liaising with sub-contractors OHS representatives for capacity building</li> <li>• Training workers in environmental and social standards and OHS</li> <li>• Overseeing risks involving child labor, forced labor, and safety for primary supply workers.</li> <li>• Reporting labor and safety performance, promptly notifying the PMU of any project-related fatality or serious accident.</li> </ul>
Project Management Unit (PMU)	<ul style="list-style-type: none"> <li>• Direct supervision on behalf of the World Bank</li> <li>• Overseeing implementation of labor management procedures</li> <li>• Monitoring contractors' implementation of labor management procedures</li> <li>• Coordinating awareness campaigns and capacity building</li> <li>• Establishing and implementing the project grievance redress mechanism</li> <li>• Responding to monitoring visits and inspections</li> <li>• Monitoring the implementation of the Worker Code of Conduct</li> </ul>
Supervision Consultant	<ul style="list-style-type: none"> <li>• Ensuring compliance with labor management procedures and occupational health and safety plans</li> <li>• Monitoring contractors' implementation of LMP and OHS standards</li> <li>• Implementing training on LMP and OHS for contractors and subcontractors</li> <li>• Monitoring the establishment and implementation of the grievance redress mechanism</li> <li>• Monitoring and reporting on labor and OHS performance</li> <li>• Oversight of daily labor and safety performance on behalf of PMU</li> </ul>

## 5. Policies and Procedures

### 5.1. General Principles

Decisions regarding the engagement and terms of employment for project workers in the market upgrade project will be made solely based on job-related criteria, without any discrimination based on personal characteristics unrelated to the job requirements. The project is committed to ensuring equal opportunities and fair treatment for all workers throughout their employment, encompassing aspects such as recruitment, compensation, working conditions, training, job assignments, promotions, termination, and disciplinary practices. Contractual arrangements with each project worker will be clearly defined in accordance with national and international laws and the World Bank Guidelines.

### 5.2. Contractor Responsibility for Labor Management

Contractors will bear primary responsibility for addressing labor-related impacts resulting from activities within their control. Standardized labor clauses will be integrated into tender and contract documents to inform potential bidders about project expectations, foster awareness of labor requirements, and hold contractors accountable for compliance. Bidders must demonstrate their capacity to meet these requirements in their proposals and commit to implementing these clauses throughout the contract's duration. The World Bank will enforce compliance with these clauses, ensuring that all documentation related to labor management is accessible for inspection at any time. Similar obligations will be imposed on third-party labor suppliers, and all labor-related requirements will be clearly stipulated in bidding documents and contracts.

### 5.3. No Forced, Bonded Labor and conditional employment

The market upgrade project prohibits forced and child labor, encompassing practices such as bonded labor, restriction of freedom of movement, imposition of unreasonable notice periods, retention of identity documents or personal belongings, recruitment or employment fees, wage-related hindrances, fines, physical punishment, or any coercive measures compelling involuntary work, in addition, the project will ensure that at least 30% of women are employed without any conditions (such as sex for work etc.) . Robust implementation and monitoring mechanisms, in collaboration with the City Council, will identify and report any instances of child and forced labor. Grievances related to labor conditions will be monitored through the Workers' GRM.

#### 5.4. *Labor and Working Conditions*

Contractors are mandated to maintain meticulous records as outlined in the LMP. The World Bank reserves the right to request records from contractors to ensure adherence to labor conditions, conducting periodic reviews against actuals and requiring prompt corrective actions when necessary. Quarterly reports submitted to the World Bank will include a summary of identified issues and remedial actions taken to address them.

#### 5.5. *Code of Conduct*

The Code of Conduct (CoC) places a crucial obligation on all individuals involved to uphold acceptable standards of behavior. It is vital that the CoC includes measures for non-compliance, specifying repercussions for violations of policies addressing gender-based violence, sexual exploitation, and sexual harassment, potentially leading to termination. During the induction process, the CoC is explained, and workers acknowledge that compliance is a mandatory condition of employment. Furthermore, they understand that breaches may result in severe consequences, including dismissal or referral to legal authorities.

#### 5.6. *Age of Employment*

To ensure the avoidance of hiring underage labor (child labor), contractual agreements with work contractors must incorporate provisions mandating compliance with minimum age requirements, accompanied by penalties and sanctions for any breaches. This commitment will be effectively communicated to all relevant stakeholders, including the local community from which the unskilled workforce is recruited. It is imperative for the contractor to establish and uphold a comprehensive labor registry for all contracted workers, inclusive of age-related information. The framework outlined below encompasses the minimum age for labor, restrictions on hazardous work based on age, methods for age verification, and the necessary corrective measures in case of non-compliance.

In adherence to the Sierra Leone Employment Act of 2023, laborers for market construction must meet a minimum age requirement of 18 years for hiring. The legislation explicitly prohibits the employment of children below this age threshold. Moreover, specific occupations deemed hazardous to the health, safety, or well-being of a child, such as sea-related work, mining, quarrying, and portage, are strictly prohibited. Additionally, the minimum age for engaging in lighter work during operation is set at 14 years<sup>29</sup> within the country.

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<sup>29</sup><https://manoreporters.com/special-reports/sierra-leone-child-labour-hinders-childrens-education/#:-:text=In%20Sierra%20Leone%2C%20all%20jobs,remains%20rampant%20in%20the%20country.>

Before engaging a laborer, the project will conduct age verification and maintain documented evidence, such as birth certificates or citizenship documents, to demonstrate the age and other details of the laborer. The Project authority is advised to keep logbooks at working sites, containing information like name, gender, age, attendance, and worked hours, to facilitate age verification. Contractors will be responsible for providing necessary evidence, ensuring compliance with legal obligations.

## **6. Terms and Conditions**

### *6.1. Contracts*

The labor and employment terms and conditions within this project adhere to the Sierra Leone Employment Act, 2023, and World Bank requirements. Contractors are obligated to furnish their employees with written contracts, as mandated by the Act, ensuring both parties' signatures. Compliance with government-regulated wage regulations, including minimum wage, is imperative, and contractors must provide documentation reflecting key terms and conditions such as working hours, overtime pay, leave entitlements, travel and subsistence allowances, and the provision of protective gear and clothing.

The standard work week is set at 40 hours, with a maximum of 48 hours per week as per the Sierra Leone Employment Act, 2023. According to this Act, contractors seeking public contracts must certify in writing that their wages align with the latest regulations. Failure to comply may result in contract termination. Contractors must submit copies of employment contracts for all workforce members to the Office of the Project Director before deployment to the project site.

As part of monitoring mechanisms, contractors should only receive payment upon providing a certificate with their payment claim, affirming that employee wages are up to date, and all employment conditions are being met. Worker's Organization

The Employment Act, 2023, effectively enforces collective bargaining, enabling workers to collectively negotiate the terms and conditions of their employment. In alignment with this legislation, project workers reserve the right to establish and join organizations dedicated to labor representation, empowering them to advocate for favorable terms and conditions. It is crucial to note that while workers have the freedom to form or join such organizations, any attempts to intimidate or disrupt employers' business during collective agreement negotiations constitute unfair labor practices, leading to potential legal consequences, including fines equivalent to not less than six months of the national minimum wage.

The contractors should provide for severance payments, sick leave, maternity leave for workers. They should also practice non-discrimination and health and safety measures in the contractors LMP. The contractors should attach the codes of conduct and workers' GRM should be attached to the LMP.

### *6.2. Provisions on Termination*

In accordance with project regulations, project workers are entitled to receive written notice of employment termination, outlining the details of severance payments promptly. All earned wages, social security benefits, pension contributions, and any other entitlements must be disbursed on or before the termination of the employment relationship. Payments will be made directly to the project workers or, when applicable, for their benefit. In cases where

payments are directed to the benefit of project workers, proper documentation will be provided as evidence of these transactions.

### 6.3. *Injuries and Death*

Ensuring the safety and well-being of all workers, including temporary and daily laborers, is the responsibility of both contractors and subcontractors. Adequate insurance coverage against injuries and fatalities must be in place to protect the workforce, with a commitment to promptly address and report any incidents that may occur.

### **Code of Conduct for Contractor's Personnel**

We are the Contractor, [enter name of Contractor]. We have signed a contract with [enter name of Employer] for [enter description of the Works]. These Works will be carried out at [enter the Site and other locations where the Works will be carried out]. Our contract requires us to implement measures to address environmental and social risks related to the Works, including the risks of sexual exploitation, sexual abuse and sexual harassment.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Works. It applies to all our staff, laborers and other employees at the Works Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Works. All such persons are referred to as "Contractor's Personnel" and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior that we require from all Contractor's Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

#### REQUIRED CONDUCT

Contractor's Personnel shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
3. maintain a safe working environment including by:
  - a. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
  - b. wearing required personal protective equipment;
  - c. using appropriate measures relating to chemical, physical and biological substances and agents; and
  - d. following applicable emergency operating procedures.

4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
6. not engage in Sexual Harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;
7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;
8. not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
10. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, and Sexual Exploitation, and Abuse (SEA) and Sexual Harassment (SH);
11. report violations of this Code of Conduct; and
12. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the grievance mechanism for Contractor's Personnel or the project's Grievance Redress Mechanism.

#### RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [enter name of the Contractor's Social Expert with relevant experience in handling gender-based violence, or if such person is not required under the Contract, another individual designated by the Contractor to handle these matters] in writing at this address [ ] or by telephone at [ ] or in person at [ ]; or
2. Call [ ] to reach the Contractor's hotline (if any) and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

## CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

### FOR CONTRACTOR'S PERSONNEL:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [enter name of Contractor's contact person with relevant experience] requesting an explanation.

Name of Contractor's Personnel: [insert name]

Signature: \_\_\_\_\_

Date: (day month year): \_\_\_\_\_

Countersignature of authorized representative of the Contractor:

Signature: \_\_\_\_\_

**Date: (day month year):** \_\_\_\_\_

## Appendix 14: Grievance Redress Mechanism

This plan covers a grievance mechanism for PAPs and surrounding communities, and a grievance mechanism for workers.

### 1. GRM Objective

A robust Grievance Redress Mechanism (GRM) is an integral component of the Sierra Leone Markets Upgrade Project under the RUSLP. This mechanism is designed to address the diverse concerns, queries, and complaints of stakeholders during the temporary relocation and subsequent upgrade of the market. The primary goal of the GRM is to provide a structured platform for stakeholders to voice their grievances and seek resolution in a fair, effective, and efficient manner.

The Grievance Redress Mechanism is a comprehensive framework that seeks to achieve:

- Identification and implementation of appropriate, mutually acceptable redress actions to the satisfaction of complainants.
- Prevention of resorting to judicial proceedings as the primary means of seeking redress.
- Provision of accessible avenues for affected individuals to voice complaints and resolve disputes arising during project implementation.

The GRM will be coordinated at the PMU level, ensuring a centralized and systematic approach to grievance resolution. The PMU will serve as the focal point for multi-channel grievance uptake, offering various avenues through which project-related grievances can be received and resolved. In adherence to principles of transparency and confidentiality, the GRM will provide anonymous reporting channels, safeguarding the identity of complainants and fostering an environment conducive to raising concerns without fear of victimization. Grievances will be recorded at various levels, including communities and project sites. A dedicated focal person within the PMU will be assigned to coordinate grievances, manage the call/documentation center, and ensure the timely escalation of issues to the appropriate resolving officers.

The GRM is designed to ensure that concerns and grievances arising from the temporary relocation and upgrade of the market are thoroughly investigated, and appropriate measures are taken to achieve fair and equitable resolutions. The scope of the GRM encompasses a diverse range of stakeholders, both directly and indirectly impacted by the project, with a focus on facilitating communication, resolution, and feedback throughout different project phases, as shown in Table 12- 11.

**Table 12- 11 Potential Stakeholders impacted directly or indirectly by the project**

Before Project Implementation	During Project Implementation	After Project Completion
<p>People are potentially losing land and other assets: for those affected by major infrastructure development (including demolition of existing market building).</p> <p>Small and Medium businesses engaged in project-related activities.</p>	<p>Workers at construction sites: ensuring the welfare and safety of on-site workers.</p> <p>Traders/ Market women: actively engaged in or impacted by market operations during the upgrade.</p> <p>Transport operators and commuters: involved in</p>	<p>Displaced communities: those who experienced displacement during the project.</p> <p>Municipal waste collection and disposal workers: individuals involved in waste management post-upgrade.</p> <p>Community leaders: Continuing</p>

Before Project Implementation	During Project Implementation	After Project Completion
<p>Community leaders: Key figures representing community interests.</p> <p>Disability associations: advocating for the concerns of individuals with disabilities.</p> <p>Women and girls-centered groups: Addressing gender-specific considerations in project impacts.</p> <p>Officers working at city councils: relevant officials overseeing municipal matters.</p>	<p>transportation within project areas.</p> <p>Water supply companies - SALAWCO: Managing water supply infrastructure impacted by the project; private suppliers.</p> <p>Private business owners: those with businesses affected by the market upgrade.</p> <p>youth groups and individuals involved in waste collection and management in project areas.</p>	<p>to represent community interests' post-upgrade.</p> <p>Persons affected by or involved in project-supported activities: those engaged in activities supported by the completed project (market upgrade).</p>

Source: GoSL, 2021

The GRM will actively inform and engage these stakeholders about its existence, providing necessary support to ensure accessibility. It aims to offer a platform for submitting questions, concerns, complaints, comments, and suggestions while facilitating timely resolution and feedback. This inclusive approach aligns with the project's commitment to transparency, accountability, and community participation throughout the entire project lifecycle.

## 2. Implementation Steps

The following sub-sections summarize the main steps in the implementation of the project's GRM.

### Establishing the Grievance Redress Committee

- a) Formation of a dedicated Grievance Redress Committee to promptly and effectively resolve grievances arising from project activities.
- b) Coordination responsibilities rest with the Social Safeguards Specialist, GBV Specialist, Community Outreach Specialist, and focal persons in affected communities, City Council, contractors, supervising teams, and service providers (for SEA/SH complaints).

### Channels for Registering Grievances

- a) Utilization of multiple accessible channels for registering complaints, including phone calls, text messages, emails, voice mail, letters, verbal narration, reports during field visits, media reports, and suggestion boxes at all project sites and communities.
- b) Toll-free call/report centers with customized digital platforms as centralized points for receiving and sorting complaints.

### Forwarding Complaints

Upon receipt at any level, complaints will be forwarded to the call or report centers for sorting. The GRM Committee or appropriate bodies, persons, or pillar leads will oversee the resolution and tracking of the resolution process.

### Responsibilities of the GRM Committee

- a) Investigate grievances and recommend measures to prevent or minimize adverse impacts of interventions.
- b) Ensure compliance with existing safeguard procedures and policies during the resolution process.
- c) Enhance the capacity of focal persons in effective community engagement, grievance handling, negotiation, and conflict resolution.
- d) Foster trust and maintain rapport by providing adequate information to affected persons and the wider public on the project and its GRM procedures.
- e) Follow up with the GRM committee on the status of investigations and resolution of grievances and communicate outcomes with complainants.
- f) Maintain an up-to-date complaints and grievances register.
- g) Regularly report on GRM results to project proponents and the World Bank.

### 3. GRM Stages

Recognizing the unique context of each city in Sierra Leone, distinct GRM systems will be established to refine and improve grievance resolution processes, addressing the specific needs and concerns of affected stakeholders in the concerned city.

The RUSLP project uses a Grievance Redress Mechanism in which every grievance request assigns a unique ticket number which can be used to track the progress and responses online. The grievance resolution process includes 5 key stages illustrated in Figure 12- 1.



**Figure 12-1 GRM 5 key stages**

Source: [www.ruslp.org](http://www.ruslp.org)

#### 3.1. Grievance Submission

Stakeholders in the market will articulate their grievances through various channels, directing them to specifically designated focal persons in the respective city. The Social Safeguards Specialist/Gender and Gender-Based Violence Specialist will accept and register the complaints in a complaint registration form. The tiered system for grievance processing will involve city-specific committees, district-level, PMU, and Project Steering Committee, ensuring efficient and localized handling of complaints. The complaint register will include all relevant data on the complainant and complaint.

#### 3.2. Sorting and Review of Complaints

Dedicated report centers in the city will efficiently categorize and sort received complaints. The PMU will oversee a customized digital platform for registering complaints, accessible by

GRM focal persons in both cities. The city-specific Grievance Redress Committee (GRC) in the city concerned will conduct thorough reviews and assessments of each complaint, proposing measures to address adverse impacts or routing the grievances to the appropriate agency. The initial review will take place within one day after receipt by focal persons, followed by a comprehensive assessment within two weeks by the Committee.

There shall be a central/ PMU-level GRC and a Community/ Site-level GRC. The central/ PMU-level GRC consists of the Project Director and Manager, PFMU Team Lead, social safeguards, GBV and communications and community engagement specialists, representatives of civil society and Freetown City Council, and representatives of the aggrieved person as appropriate. The Community/ Site-level GRC will comprise of selected traditional local authorities, religious leaders, local government employees/ members, service providers, Sierra Leone Police/Family Support Units (FSU), CBOs, and NGOs.

### 3.3. *Initiation of the Resolution Process*

Focal persons in the market will initiate the resolution process within two working days, ensuring strict adherence to safeguard procedures and policies. The GRC will investigate the details of and grounds for grievance depending on the category of complaints, with assistance from the PMU. GBV cases shall be referred by the GBV Specialist to the appropriate service provider as appropriate. The GRC shall meet on a weekly basis to ensure timely resolution of all complaints received. Investigations such as site visits and meetings might be needed to determine the scale and impact of grievance and available options for appropriate responses or resolutions. Upon completion of the assessment/investigation, the social safeguards/focal person in each city will formulate a response, communicating the acceptance or rejection of the grievance to the complainant, providing reasons, and outlining the next steps.

### 3.4. *Settling the Issue and Dissemination of Information*

The GRM Committee in the city will take appropriate measures to resolve the cause of grievance, initiating a monitoring process to assess further impacts. If additional time for investigation and meetings is needed, the complainant will be informed. If the issue is easily resolved, the responsible parties should endeavor to address the issue directly on site. If grievance does not have merit and is resolved at any stage, and the complainant is not satisfied, the committee can advise the complainant to seek external redress. Once settled, the social safeguards specialist and focal person in each city will record the complaint as 'resolved,' informing the complainant of the outcome. Unsatisfied complainants will be informed about the appeal process. The records shall be kept and filed into the grievance database managed by the PMU. Efforts will continue to disseminate information in each city, raising awareness of the GRM procedures.

### 3.5. *Follow-up and Communication*

Regular follow-ups will be conducted with the city-specific GRM committee on investigation status, resolution progress, and communication of outcomes to complainants. The PMU will monitor the grievance redress process in the city, ensuring timely and efficient redress. Regular reports will be provided to the World Bank, detailing progress, timelines, and documentation procedures for the city.

### 3.6. *Record-Keeping*

Separate and up-to-date registers for the market in the respective city will be maintained, containing all complaints and grievances received. The GRM System will be updated upon resolution in each city, and complainants will be contacted for satisfaction evaluation.

### 3.7. Reporting Mechanism

Periodic reporting on GRM results for each city will be submitted to project proponents (PMU at MoF) and the World Bank, promoting transparency and accountability in the market.

### 3.8. Key Stakeholders' Responsibilities

The main project actors/ stakeholders and their roles and responsibilities with respect to the GRM are presented in Table 12- 12.

**Table 12- 12 Relevant Major Actors along with their Associated Roles**

Actor	Role
Ministry of Finance (MoF)	Provides implementation oversight of the Government of Sierra Leone and other donor partners on the RUSLP funding, ensuring financial management aligns with the goals of the market upgrade project. Hosts the central-level GRC and the grievance database managed and monitored by the PMU.
Project Management Unit (PMU)	Serves as a trustee between the Government of Sierra Leone and the World Bank, ensuring fiduciary responsibilities are managed effectively for the market upgrade project. Manages project-related aspects, including social and environmental issues, during the market upgrade project, ensuring effective implementation aligned with the unique contexts of each city. Manages and oversees/monitors the GRM platform and process to ensure proper, effective and efficient GRM operation.
GRM Report Centre	General platform responsible for receiving, recording, logging, screening, and referring all market related complaints to appropriate channels for thorough investigation and resolution.
GRM Focal Person	Responsible for detecting, investigating, and resolving any complaints related to the market upgrade project, coordinating with the Project Steering Committee (PSC) and GRC (central and local levels) to address specific issues affecting the project execution.
Ministry of Local Government and Rural Development- Decentralization Secretariat	Provides supervisory role on local councils' cooperation on the market upgrade project, helping in giving directives on relevant sector policies to guide project implementation and GRM resolution.
Makeni City Council	Assume responsibility for community mobilization, facilitate community planning, and support community-level grievance uptake and other initiatives to enhance community capacity in support of the market upgrade project.
Makeni City Police	Functions as the appropriate police/judiciary body with the capacity to receive, record, log, reinvestigate, and resolve all the market related complaints if resolution fails at the initial level.
Supervising Consultants	Obligated through contractual clauses to establish a GRM for workplace and community complaints in the context of the market upgrade project. The PMU ensures its implementation and availability of project GRM channels at the site level. Maintains on-site staff for managing community complaints with

Actor	Role
	connections to the project report/call center for documentation and tracking.

Source: Adapted from WB, 2020

#### 4. Workers Grievance Mechanism

The objective of this mechanism is to settle the grievance between employer and worker or between workers bilaterally before the intervention of the formal court, except in cases where the grievance constitutes a criminal offense that requires notification of the law enforcement agencies.

The purpose of the grievance policy is to ensure that affected workers are afforded both the rights and the means whereby grievances can be formally raised, lodged and resolved.

The GRM allows affected workers to formally discuss and resolve any complaint that they may have and to provide a channel for the equitable settlement of complaints and grievances.

This mechanism aligns with World Bank ESF guidelines, ensuring transparency, inclusivity, and accountability in handling worker grievances; and with the RUSLP GRM.

##### 4.1. Scope of Work

This GRM will cover grievances related to:

- Occupational health and safety concerns.
- Working conditions, including wages, hours, and leave policies.
- Contractual agreements and entitlements.
- Discrimination, harassment, and abuse.
- Environmental and social impacts on workers.
- Any other work-related issues

##### 4.2. Procedure

###### Step 1: Submission of Grievance

Channels for Submitting Grievances:

- Verbal complaints to supervisors or GRM Officers.
- Written complaints using grievance forms available in English and local languages.
- Digital submission via email or SMS to designated project contacts.
- Suggestion boxes placed in accessible locations on-site.
- Anonymous Reporting: Workers can submit grievances anonymously if they fear retaliation.

###### Step 2: Acknowledgment

- Upon receipt of a grievance, the GRM Officer will acknowledge it within 2 working days.
- A unique case number will be assigned for tracking.

###### Step 3: Assessment and Categorization

- Grievances will be categorized based on their nature (e.g., health & safety, contract issues).
- The GRM Officer will assess whether the complaint is related to project activities.
- Grievances categorized as urgent (e.g., safety concerns) will be addressed immediately.

#### Step 4: Investigation and Resolution

- A designated Grievance Committee will investigate non-urgent grievances within 10 working days. The investigation may involve interviews with the complainant, witnesses, and review of documentation.
- In cases involving sensitive issues (e.g., harassment), female (for female aggrieved workers) or neutral representatives will handle the investigation.
- The committee will propose a resolution, which will be communicated to the complainant within 3 working days after the investigation.

#### Step 5: Appeal Process

- If the complainant is dissatisfied with the resolution, they can appeal to a higher-level committee within 7 days.
- An independent appeals committee will review the case and provide a final decision within 14 days.

#### Step 6: Closure and Documentation

- Once a resolution is agreed upon, the grievance will be marked as closed.
- All grievance cases, including anonymous ones, will be logged and documented, with outcomes reported to the World Bank in project progress reports.

#### 4.3. Confidentiality and Non-Retaliation Policy

All grievances will be treated confidentially, and measures will be in place to prevent any form of retaliation. Workers submitting grievances will be protected under the project's labor policy aligned with the World Bank ESS 2.

#### 4.4. Communication and Awareness

- Induction sessions: New workers will receive training on the GRM process during onboarding.
- Posters and leaflets: Information about the GRM will be displayed on noticeboards and distributed on-site.
- Regular workshops: Periodic refresher training will ensure workers are aware of their rights and the GRM process.

#### 4.5. Monitoring, Reporting, and Continuous Improvement

- A Grievance Logbook will be maintained to track the status of all grievances, resolutions, and time taken to resolve them.
- Monthly reports will be submitted to project management and included in progress reports to the World Bank.

- Annual reviews will be conducted to assess the effectiveness of the GRM and identify areas for improvement.

#### 4.6. Supportive Documents

##### A. GRM Form

Reference No:

#### Details of Complaints

*Note: You can remain anonymous if you prefer or request not to disclose your identity to the third parties without your consent*

I wish to raise my grievance anonymously

I request not to disclose my identity without my consent

- Full Name:
- Contact Information (Email, Telephone, or in person):
- Gender of Complainant:
- Age of complainant:
- Preferred communication language: Local Language, English
- Grievance Date:

One time incident/grievance date:

Happened more than once (how many times):

On-going (currently experiencing problem)

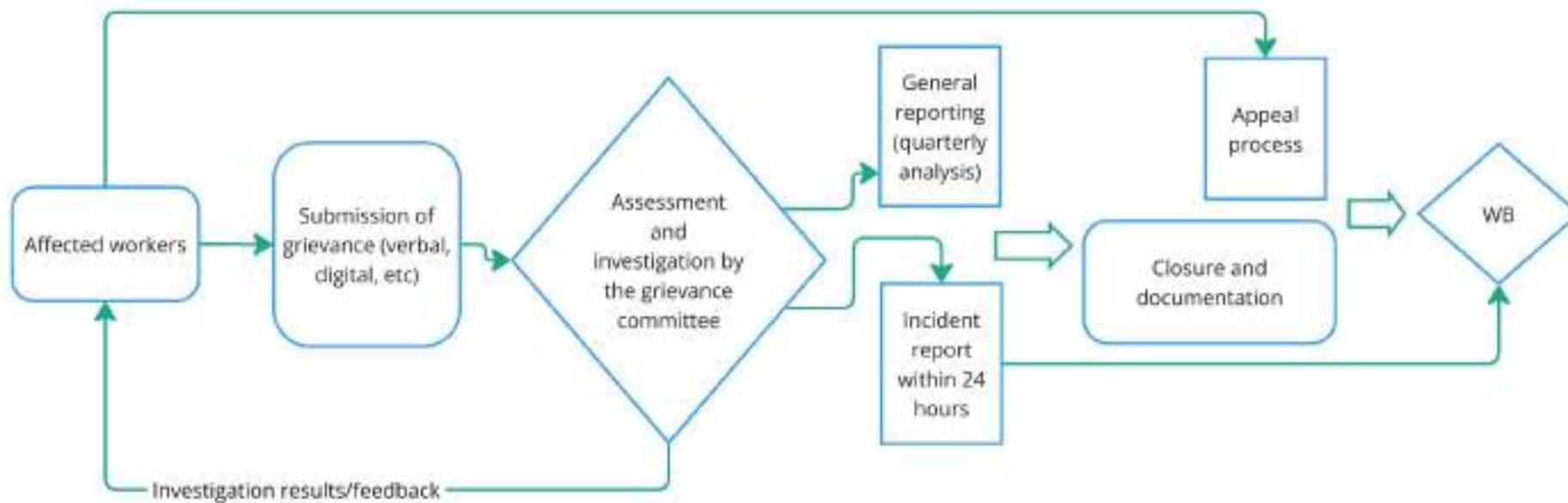
- Location of grievance:
- What happened? Where did it happen to? What is the result of the problem?
- What would you like to see happen to resolve the problem?

##### B. Grievance Register

Type of Information	Response
Complaint/ Log number	
Reference document(s)	
Date complaint made	
Date complaint received	
Category of Grievance	
Method of Logging: Direct Communication; Suggestion Box; Toll-free Line;	
Complaint name (state if anonymous)	
Location in which complained action took place (district, village)	

Caller contacts for follow up	
Gender	
Age	
Parties against whom complaint is made (Unit/ contractor/ Agency etc.)	
Nature of Complaint ["SEA/GBV"; "Timing of Payment"; "Amount of Payment"; "Inclusion or Issue regarding Project benefits" (or create standard categories based on complaint type)]	
Description of Complaint	
Nature of feedback (describe) [In case issue type is GBV/SEA, immediate referral to the GBV referral system]	
Verification and investigation (describe)	
Recommended action(s) (describe)	
Timeline of Initial feedback (within 5 days) [investigate the claim within 5 working days, and share findings/ feedback with relevant stakeholder]	
Status update (and justification if it is not expected to be resolved within the timeframe set out)	
Date Resolved	
Indicate if a spot check has been conducted (you can include then in the narrative reports: "spot checks for resolutions of x number of complaints have been conducted")	

### C. Grievance Redress Mechanisms Flowchart



### D. Incident Classification Guide

World Bank Incident Classification Guide

<b>Indicative</b>
<ul style="list-style-type: none"> <li>• Relatively minor and small-scale localized incident that negatively impacts a small geographical areas or small number of people</li> <li>• Does not result in significant or irreparable harm</li> <li>• Failure to implement agreed E&amp;S measures with limited immediate impacts</li> </ul>
<b>Serious</b>
<ul style="list-style-type: none"> <li>• An incident that caused or may potentially cause significant harm to the environment, workers, communities, or natural or cultural resources</li> <li>• Failure to implement E&amp;S measures with significant impacts or repeated non-compliance with E&amp;S policies incidents</li> <li>• Failure to remedy Indicative non-compliance that may potentially cause significant impacts</li> <li>• Is complex and/or costly to reverse</li> <li>• May result in some level of lasting damage or injury</li> <li>• Requires an urgent response</li> <li>• Could pose a significant reputational risk for the Bank.</li> </ul>
<b>Severe</b>
<ul style="list-style-type: none"> <li>• Any fatality</li> <li>• Incidents that caused or may cause great harm to to the environment, workers, communities, or natural or cultural resources</li> <li>• Failure to remedy serious non-compliance that may potentially cause significant impacts that cannot be reversed</li> <li>• Failure to remedy Serious non-compliance that may potentially cause severe impacts is complex and/or costly to reverse</li> <li>• May result in high levels of lasting damage or injury</li> <li>• Requires an urgent and immediate response</li> <li>• Poses a significant reputational risk to the Bank.</li> </ul>

### E. Incident Report Form

An incident report should contain the following information:

Please report any incident within 24 hours to the Grievance Committee

<b>Implementing Party</b>	
Subproject / Activity	
Report Date	
Reported By (Name and Title) {unless anonymity is preferred}	
<b>Details of Incident</b>	
<b>Incident Date</b>	
Incident Time	
Incident Place	

**Identification of Type of Incident and Immediate Cause**

Select the type of incident from the list below. An incident can be classified at the same time as H&S/environmental/social.

Type of Incident: (and incident can cover more than one type):

Type of Incident – Health & Safety		Type of Incident – Social	Type of Incident - Environmental
Moving Machinery/vehicles at project site	Dust, Fumes, Vapors that impact the population and/or environment	Misuse of Government/ WB property	Chemical/ Oil Spill with impact on population and/or environment
Powered Hand tools	Noise	Damage to Cultural Heritage	Improper Disposal of Waste
Hand Tools	Temperature or heat	Occurrence of infringement of labor rights	Disasters (Earthquake, Flood, etc.)
Animals or insects	Overexertion	Occurrence of infringement of human rights	Water Pollution/ Sedimentation
Fire or Explosion at project site	Structural Failure	Strike, demonstration	Damage to ecosystems (e.g. damage to flora/fauna/ habitats)
Trips & smaller falls	Chemical/biological	GBV/SEA or Child Risks	Odor, air Emissions
Drowning	Stress	Other (please specify):	Dust, Fumes, Vapors, Air pollution with impact on population and/or environment
Borrow-pit Management	Other (please specify):		Other (please specify):

For each type of incident, select the relevant descriptor(s) from the list. You can select up to 5 descriptors for each type of incident. If a descriptor is not listed below, please type in short descriptor in "Other". Add more rows as necessary.

Incident Type	Descriptor 1	Descriptor 2	Descriptor 3	Descriptor 4	Descriptor 5	Other
H&S						
Social						
Environmental						

Provide a description of the immediate cause of the incident:

- i. Description of the Incident: Record all facts prior to and including the incident, if it was a planned activity, describe/list material, ecosystem and property damaged, etc.:
- ii. Root Cause Analysis: Select the root cause(s) of the incident from the list below. If 'Other', please specify:

Root Cause	Yes	No
Improper Planning		
Poor Maintenance		
Poor Supervision		
Poor Quality of Equipment		
No rules, standards, or procedures		
Lack of knowledge or skills		
Improper motivation or attitude		
Failure to comply with rules		
Other, please specify:		

Additional Questions:

- Is the incident still ongoing or is it contained?
- Is loss of life or severe harm involved?
- What measures have been or are being implemented by the Implementers?

**F. GBV/SEA/SH Case registration Form**

GBV/SEA/SH Case Registration Form	
Administrative Information	
Grievance ID	
Code of Survivor (Employ a coding system to ensure that client names are not easily connected with case information)	
Date of grievance registration	
Date of Incident	
Reported by survivor or an escort of the survivor, in the presence of the survivor	
Reported by someone other than the survivor without survivor present	
Survivor Information	
Gender / age	
Location / Residence	
Current civil/ marital status	
Occupation	
Is the survivor a person with mental or physical disabilities?	
Is the survivor an unaccompanied or separated child?	
Was the perpetrator related to the project?	
Has informed consent been provided? yes/no	
Has the case been reported elsewhere (including police/ lawyer/ health services/ psychosocial counseling, other)?	

**Sub-Section for Child Survivor**

If the survivor is a child (less than 18 years), does he or she live alone?	
If the survivor lives with someone, what is the relation between her/him and the caretaker? (parent/guardian; relative; spouse; other)	
What is the caretaker's current marital status?	

**Details of the Incident (in survivor's words)**

Details of the incident	
Incident location and time	
Were money, goods, benefits and/or services exchanged in relation to the incident?	

**Alleged Perpetrator Information**

Number of alleged perpetrators	
Sex of alleged perpetrators	
Age group of alleged perpetrators)	
Indicate relationship between perpetrator(s) and survivor	
Main occupation of the alleged perpetrator(s)	
Employer of the alleged perpetrator(s)	

**Planned Actions / Actions Taken**

Was the survivor referred by anyone?	
Was the survivor referred to a safe house/ shelter?	
Which services does the survivor wish to be referred to? <ul style="list-style-type: none"> <li>- Psychosocial services</li> <li>- Legal services</li> <li>- Police</li> <li>- Health services</li> <li>- Livelihood program</li> </ul>	
What actions were taken to ensure the survivor's safety?	
Describe the emotional state of the survivor at the beginning of the report	
Other relevant information	

## Appendix 15: Gender-Based Violence Plan

The Gender-Based Violence (GBV) plan provides a focused framework to systematically address the GBV challenges. It outlines parameters, objectives, and strategies for preventive measures and response mechanisms tailored to the project's unique dynamics.

### 1. GBV Objective

The primary goals of the GBV plan for the markets upgrade project are to assess, prevent, and respond to GBV, with a specific focus on SEA/SH risks linked to construction labor. The plan aims to enhance existing mechanisms, foster community engagement, and ensure support service provision. Proactively addressing these potential challenges, the project seeks to contribute to a safer and more secure environment, aligning with the broader objectives of the RUSLP.

### 2. GBV Risks

The project has the potential to elevate the risk of various forms of GBV, especially Sexual Exploitation and Abuse (SEA/SH) by involving interactions between community members and project workers, or even among project workers themselves, inherently carries an escalated risk of SEA/SH. The construction workers will introduce specific risks, especially if there's a need for an influx of non-local workers without established social ties to the community. This will impact vulnerable groups, especially women and girls existing in the market surrounding areas.

### 3. GBV Action Plan

The action plan (Table 12- 13) integrates specific procedures within its grievance mechanism to prevent and minimize GBV/SEA/SH risks. Training programs emphasize prevention measures, ensuring that all project-related staff comprehend codes of conduct and sanctions against SEA/SH. Information campaigns play a crucial role in educating stakeholders about risks and preventive measures, fostering a community-wide understanding of GBV prevention.

The project commits to comprehensive SEA/SH prevention, risk mitigation, and response measures to proactively address the identified risks. These measures are outlined to be implemented in alignment with the project's commitment to the well-being and safety of all stakeholders.

**Table 12- 13 GBV Action Plan during the Project Implementation**

Pillar	Objective	Activities	Responsibility
1. Support for Victims, Survivors, and Families	Provide comprehensive support services for victims, survivors, and families affected by GBV.	<ul style="list-style-type: none"> <li>- Establish codes of conduct for project staff and workers.</li> <li>- Conduct awareness-raising training programs.</li> <li>- Implement grievance mechanisms tailored for vulnerable groups.</li> <li>- Develop response protocols and referrals to local GBV service providers.</li> <li>- Organize information campaigns in project areas.</li> </ul>	Contractor, MCC and PMU

Pillar	Objective	Activities	Responsibility
2. Prevention Guideline	Implement preventive measures to address persistent gender gaps in Sierra Leone.	<ul style="list-style-type: none"> <li>- Bridge gaps in access to skills and training.</li> <li>- Enhance childcare for market traders.</li> <li>- Provide short-term job opportunities for women.</li> <li>- Incorporate specific procedures in the grievance mechanism for prevention.</li> <li>- Conduct training programs emphasize prevention measures.</li> <li>- Organize information campaigns to raise awareness.</li> </ul>	Contractor, MCC and PMU
3. Justice System	Ensure the implementation of justice-related components in the GBV plan.	<ul style="list-style-type: none"> <li>- Collaborate with legal service providers.</li> <li>- Adhere to the Project Contractor code of conduct.</li> <li>- Include justice frameworks within the Action Plan.</li> <li>- Incorporate procedures for complaint verification and management within grievance mechanisms.</li> <li>- Collaborate with local GBV service providers for comprehensive support.</li> </ul>	MCC and PMU
4. Implementing Indigenous-Led Approaches	Align the GBV plan with the unique dynamics of local communities in Sierra Leone.	<ul style="list-style-type: none"> <li>- Employ local hiring practices.</li> <li>- Engage in community outreach and targeted awareness campaigns.</li> <li>- Collaborate with local GBV-specialized NGOs.</li> <li>- Map GBV service providers for a referral pathway.</li> </ul>	Contractor, MCC and PMU
5. Social Infrastructure and Enabling Environment	Create a secure and inclusive environment by considering broader social infrastructure.	<ul style="list-style-type: none"> <li>- Assess social inclusion and disability risks.</li> <li>- Collaborate with various stakeholders.</li> <li>- Strategically positioned service points for accessibility.</li> <li>- Establish detailed measures within the Action Plan for risk prevention.</li> <li>- Focus on potential risks associated with specific project interventions.</li> </ul>	Contractor, MCC and PMU

Source: Adapted from GC, 2023

#### 4. Reporting Mechanism

The establishment of a reporting mechanism is crucial for addressing Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) within the market upgrade project. The World Bank has developed a robust SEA/SH reporting protocol, ensuring the timely and secure reporting of incidents related to SEA/SH concerning RUSLP.

Any designated GRM entry point or person receiving information on alleged SEA/SH incidents must report to the designated NGO within 12 hours. This protocol will be adopted and promoted by the updated market. The city council will recruit a local NGO specialized in GBV, acting as the focal point for GBV and SEA/SH grievances (first level). The NGO will coordinate with external service providers, such as community/council representatives, police, health services, psychosocial service providers, traditional/religious/community leaders, and the Magistrate Court, to ensure survivors access timely services. The NGO is

responsible for reporting to the City Council. In case the grievance is not resolved at this first level, both the NGO and the City Council will escalate the matter to the PMU Grievance Redress Committee (GRC) and its Social Development Specialist SDS (second level).

The City Council is responsible for reporting to the World Bank as part of the reporting requirements.

## Appendix 16: Gender Mainstreaming Strategy

### 1. GMS Objective

Gender mainstreaming is a strategic approach designed to advance gender equality by integrating gender perspective and promoting equitable treatment across all phases of project lifecycles. To align with national and international gender legislations, the market upgrade project has formulated a comprehensive Gender Mainstreaming Strategy (GMS) aiming to integrate gender considerations across the project, to enhance the project's overall effectiveness and to maximize its impact on global environmental benefits. The development of this gender mainstreaming policy follows guidance provided by the World Bank, ensuring a strategic and compliant approach to gender integration within the project.

The GMS will ensure equal opportunities for both men and women to participate in and benefit from the new market. It will prevent, minimize, and mitigate any gender-related adverse impacts within the project. The plan outlines specific actions to be undertaken during the project's duration through three key parts:

- Preparation of the organizational structure and necessary tools.
- Implementation across the market upgrade project.
- Monitoring & Evaluation and dissemination of lessons learned.

To align with these objectives, the market upgrade project should mandate executing entities to design and implement projects in a manner that ensures both women and men:

- Receive culturally compatible social and economic benefits.
- Do not suffer adverse effects during the development process.
- Receive full respect for their dignity and human rights.

### 2. Implementation measures

The project recognizes the disproportionate impacts of construction projects on women compared to men, and it places a significant focus on gender inclusion. Despite the strong commitment to gender equality by the Government of Sierra Leone (GoSL), women and men in the country experience urban areas differently due to gender-based roles, structural inequality, and high rates of GBV. Social norms restricting women's leadership roles can hinder their voices in decision-making processes. While legal progress has been made, such as the Local Government Act of 2004 requiring a gender balance in Ward committees, practical challenges often limit women's effective participation in planning and policymaking.

Within the Sierra Leonean economy, women engage in the labor force at a comparable rate to men. However, their involvement is often informal, and they are less likely to receive wages compared to men (4.5 percent of women versus 15.5 percent of men). Additionally, women tend to earn significantly less than men in both self-employment and wage-employment, with men earning two to three times more. This economic disparity underscores the need for targeted interventions to address gender-based economic challenges in Sierra Leone.

In general, following the RUSLP requirements, the project will take the following actions on gender inclusion:

- Conducting a comprehensive gender analysis to inform project planning: The initial step involved conducting a gender analysis during the early stages of project preparation. This aims to identify the distinct roles, needs, and knowledge of both women and men, establishing a baseline for subsequent actions. The outcomes of this analysis will inform the development of a gender-responsive project design, encompassing the allocation of an appropriate budget and delineation of roles and responsibilities.
- Integrating gender perspectives in the preparation, design, and development of the project: Leveraging the gender analysis conducted in the initial step, a gender-responsive intervention is crafted by identifying key gender goals and specific entry points for gender considerations across the purpose, goal, activities, target groups, and outputs of the intervention. A significant focus is placed on the active involvement of women, who will receive comprehensive training to enhance their skills, enabling full and meaningful participation in the project through awareness raising sessions.
- Implementing gender-responsive budgeting to address specific needs and challenges.
- Incorporating gender considerations in the implementation phase to ensure inclusivity.
- Establishing mechanisms for monitoring and reporting, with a focus on gender-related impacts and outcomes.

The market upgrade falls within Component 2 as Subcomponent 2c, it aligns with gender indicators provided by the World Bank for this component, as outlined in the following Table 12-14.

**Table 12-14 Gender Indicators Data for the Market Upgrade**

	Indicators
Component 2: Resilient Municipal Infrastructure and Urban Greening	Traders using upgraded markets – Female (Number)
	Average citizen satisfaction rate with at least 1 subproject provided under Component 2 (percentage) – Female (Percentage)
	<ul style="list-style-type: none"> <li>• Women completing the SWM livelihood support program under the project (number)</li> <li>• Formal jobs in SWM (waste sorting and processing) created by the project – of which female (percentage)</li> </ul>

Source: WB IDA, 2021

In the context of subcomponent 2c (Market Upgrading in Selected Secondary Cities), discussions took place by utilizing Focus Group Discussions (FGDs) involving women engaged in market trading, constituting 80-90 percent of this demographic. The aim is to prioritize enhancements based on the needs identified by these women, focusing on areas like childcare and safety/security from GBV, concerns that have already been highlighted.

### 3. Gender Action Plan

To properly address the project's gender risks, it is necessary to determine how the project will put in place the necessary protocols and mechanism to address the gender risks and incidents that may arise. The gender action plan will include specific arrangements for the project to address gender risks, as illustrated in Table 12- 15. It should include the following:

- Address Gaps in Access to skills and Training
- Address Gaps in women voice and agency
- Address Gaps in women ownerships right

**Table 12- 15 GMS Action Plan during the Project Implementation**

Activity	Indicator	Responsibility
Develop and implement skill development programs tailored for women in management related to market construction.	Number of women participating in training programs.	PMU
Enhance childcare facilities for female market traders involved in the market construction phase.	Improved childcare facilities at the construction site.	Contractors (Project Manager/EHS expert), PMU
Create short-term job opportunities for women during the construction phase, emphasizing roles in the upgrading process.	Number of women employed in construction-related activities.	Contractors (Project Manager/EHS expert), PMU
Conduct capacity-building programs to empower women in leadership roles	Percentage increase in women's participation and engagement	PMU
Ensure functionality and adherence to statutory gender representation requirements during the construction phase.	Number of functional tasks with balanced gender representation.	Local Government Authorities, MoF, MSWGCA, PMU
Promote and encourage leadership roles for women in decision-making related to market construction.	Number of women leading or participating in construction project decisions.	Local Government Authorities, MoF, MSWGCA, PMU
Include questions on women's property ownership in tax administration survey questionnaires related to the market area.	Inclusion of women-specific property ownership questions in relevant surveys.	Project Research and Data Collection Team.
Analyze and report survey data on women's land rights within the market construction zone.	Comprehensive report on women's land rights in the construction area.	Gender Research and Analysis Team.

Source: Adapted from WB IDA, 2021

#### 4. Reporting and Accountability

In the context of the market upgrade project, the implementation of gender mainstreaming is dedicated to support the gender capacities of project staff, partners, and stakeholders. The capacity-building initiatives will concentrate on essential areas, including identifying gender-specific needs, monitoring relevant parameters, effective reporting, and integrating gender-responsive activities like comprehensive gender analysis and the monitoring and reporting of disaggregated data.

The vigilance and reporting of gender-sensitive targets and indicators, covering both qualitative and quantitative dimensions, are acknowledged as vital components for ensuring

the effectiveness of these processes. During the initial project design stage, gender-responsive indicators are carefully crafted, utilizing baseline data as a foundation. These indicators are strategically designed to methodically track the impacts and progress related to the established gender goals and targets. Their seamless integration into the overarching monitoring plan serves the purpose of identifying commendable practices and deriving lessons learned that actively contribute to gender equality and the empowerment of women. Furthermore, the monitoring and reporting mechanisms are equipped with remedial actions to promptly address any gender inequalities that may surface during the implementation of the market construction project.

**Annex 17**

**STATUS OF GBV IN THE PROJECT AREAS WITH REFERENCE TO RAINBO INITIATIVE**

**Prevalence & Trends**

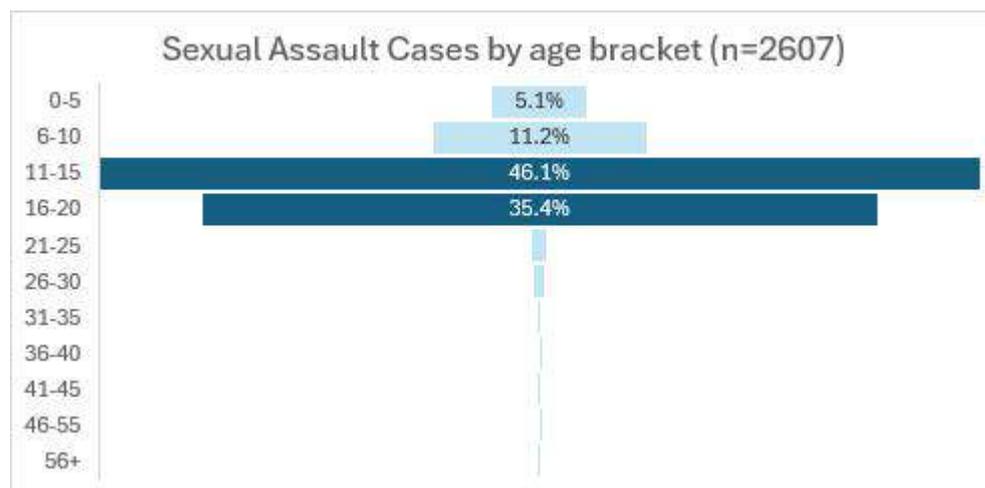
<b>Sexual assault cases by Rainbo centre</b>		
<b>Center Name</b>	<b># of survivors per center</b>	<b>% of survivors per center</b>
<i>Freetown</i>	866	33.2%
<i>Freetown Satellite</i>	263	10.1%
<i>Kenema</i>	381	14.6%
<i>Kono</i>	289	11.1%
<i>Makeni</i>	318	12.2%
<i>Bo</i>	378	14.5%
<i>Kambia</i>	112	4.3%
<b>Total</b>	<b>2607</b>	<b>100%</b>

*Source: Rainbo database 2024*

- Cases are common in the project communities
- Cases are increasing
- Women and girl groups are more affected

<b>Physical assault cases by Rainbo centre</b>		
<b>Name of Centre</b>	<b># of survivors per center</b>	<b>% of survivors per center</b>
<i>Freetown</i>	0	0.0%
<i>Freetown Satellite</i>	0	0.0%
<i>Kenema</i>	16	9.8%
<i>Kono</i>	70	42.7%
<i>Makeni</i>	20	12.2%
<i>Bo</i>	4	2.4%
<i>Kambia</i>	54	32.9%
<b>Total</b>	<b>164</b>	<b>100%</b>

*Source: Rainbo database 2024*



Source: Rainbo database 2024

### Community Awareness & Attitudes

- Community people are aware of GBV and its consequences through awareness raising campaigns
- Common cultural norms include belching at food table -considered rude, women and girls standing while passing through a crowd, standing while giving food/drink to an elder, girls showing their nakedness on street etc.
- *What cultural or social norms influence GBV?*
- There is stigma around reporting GBV especially among older women who think doing so is demeaning and threatens their marriage

### Available Services & Response

- *Are there shelters, legal support, or medical services for survivors?*

There are medical services and counselling services in Rainbo districts. In non Rainbo districts, there are One Stop Centres to support survivors

- *How effective are local police and justice systems in handling GBV cases?*

FSU lacks adequate logistics to support their Work. Justice systems are improving as there is the Sexual Offences court in Freetown, another in Moyamba and Bo. Other areas are yet to have SO courts though there are magistrate courts that deal with all case: criminal and GBV

- *What support exists for survivors (counselling, rehabilitation, financial aid)?*

Counselling and medical treatment support exists. Minimal rehabilitation maybe available and long-term financial support systems are yet to be put in place for survivors

### Challenges & Gaps

- Survivors face barriers such as traveling from far distances to access nearby health facilities, lack of transportation, frequent adjournment of cases in court and delays in the justice system
- Sexual Offence (SO) court sits in limited locations
- Some service providers are not adequately trained to respond to comprehensive survivor needs

### Ongoing or Proposed Interventions

- Awareness campaigns are ongoing and legal reforms though slow are being carried out.

- Community involvement in GBV activities includes engagement meetings, stakeholder consultations, GBV focal point establishment and trainings for community members.