REPUBLIC OF KENYA

MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING AND URBAN DEVELOPMENT

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REPORT (ESIA) PROJECT REPORT FOR

PROPOSED CONSTRUCTION OF KIHARA MARKET

Project **Ref No. Project Ref No. EHS-5240-522708-02**

Date: 30th October, 2017

SGS

CERTIFICATION

SGS Kenya Limited was commissioned by the Ministry of Transport, Infrastructure, Housing and Urban Development to undertake Environmental and Social Impact Assessment for the proposed development of Kihara Market, Kiambu County. The ESIA Report has been prepared in accordance with the Environmental Management and Coordination Act no. 8 of 1999 and The Environmental (Impact Assessment and Audit) Regulations, 2003 for submission to the National Environmental Management Authority (NEMA).

SGS Kenya Limited submits this Environmental and Social Impact Assessment Report, to NEMA Kenya. To the best of our knowledge, all the information in this report is true and correct.

Proponent: Ministry of Transport, Infrastructure, Housing and Urban Development

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ACRONYMS AND ABBREVIATIONS

CBD	Central Business District
CCTV	Close Circuit Television
DEC	District Environment Committee
DVR	Digital Video Recorder
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMCA	Environmental management and Coordination Act
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental/Social Management and Monitoring Plan
FAO	Food Agricultural Organization
GIS	Geographic Information System
GoK	Government of Kenya
HIV/AIDS	Human Immuno-Virus/ Acquired Immune-Deficiency Syndrome
IDA	International Development Association
IBRD	International Bank for Reconstruction and Development
ICT	Information Communication Technology
KCG	Kiambu County Government
LED	Light-Emitting Diode
LPG	Liquefied Petroleum Gas
MoTIHUD	Ministry of Transport, Infrastructure, Housing and Urban Development
MoT	Ministry of Transport
MRTS	Mass Rapid Transit System/ Mass Rapid Transit Study
NaMSIP	Nairobi Metropolitan Services Improvement Project
NASA	National Aeronautics and Space Administration
NEMA	National environment and Management Authority
NIUPLAN	Nairobi Integrated Urban Development Master Plan for the City of Nairobi
NMR	Nairobi Metropolitan Region
NMT	Non-Motorized Transport
OP	Operation procedures
RE	Resident Engineer
SPC	Spatial Planning Concept Development Plan
TOD	Transit Oriented Development
WRMA	Water Resources Management Authority
WB	World Bank

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EXECUTIVE SUMMARY

Project Description

The Ministry of Transport, Infrastructure, Housing and Urban Development through the Nairobi Metropolitan Services Improvement Project (NaMSIP) intends to upgrade 15 markets within the Nairobi Metropolitan Region. This initiative is financed by the World Bank with the objectives of providing an enabling physical space for organized markets; creating market linkages for products; fostering access to services so as to promote efficiency and quality of products and promoting reliable linkages with financial institutions. The goal is to enhance livelihoods especially for the urban poor who are operating as vendors in these select markets. Nairobi Metropolitan Services Improvement Project (NAMSIP) is an initiative that is in line with Nairobi Metro 2030 that was published by Ministry of Nairobi Metropolitan Development. The report proposed the upgrade of the existing markets and establishment of new markets within Nairobi Metropolitan region. Several markets were selected by Local Authority Development Action Plan team for upgrade or establishment.

The proposed market is strategically located within medium density residential area next to Kihara – Gachie –Karura Road near Gachie Bus stop. It is in close proximity to other support facilities such as shops and banks. It sits on an approximately 0.476 hectare piece of land owned by Kiambu County located between Latitude 1°13'7.81"South and Longitude 36°45'58.73"East. The land where the proposed improved Kihara Market will be constructed is owned by Kiambu County Government and serves as a public purpose facility but has no title deed. The facility is not fenced and the southern extent of the market has been encroached on by residential apartments/ Commercial activities

Market building description

The proposed market facility will be a two-story building comprising of green groceries stalls, offices, cold stores, loading bay on the ground floor and food stuff stalls on the first floor.

The existing market operates in deteriorating substandard structures and some from car booths and from Lorries. The vendors sell fresh produce (assorted fruits and vegetables), dry produce (assorted cereals), meat products (poultry, beef, etc.), household commodities (kitchenware) and personal products (clothes, shoes, etc.).

Detailed description of the proposed market is provided in Chapter One of this report. However, in summary, the market will consist of the following:

- Stalls -two levels of stalls; bigger stalls designed for products demanding larger space such as clothes which measure 3m by 3m and smaller stalls that will measure 3m by 1.5m;
- Infrastructure - a car park, access roads and internal passes and drainages.
- Water Supply and Reticulation - Water supply will be mainly from Kiambu Water and Sewerage Company and can be supplemented by a water tower. Check meters will be in place to monitor the water usage.
- Sanitary Facilities - toilet spacing will be 2.3m2 per 1000 market users.
- Fire Fighting - fire exits and hydrants.
- Garbage disposal -. Garbage collection cubicles for both recyclable and non-recyclable materials.
- Ventilation - The standard air changes will be used to determine extract fan and duct sizes. Natural ventilation will be the predominant way of ventilating the market.
- Power - A switch room with a meter board will be required for power distribution to the different stalls. There will be check meters for every stall for management purposes. Provisions for future expansion of the stalls operation will also be taken into consideration. Cabling to and from the switch room will be done by use of cable trays for efficient and neat cable management.
- Lighting - external lighting for security reasons, movement of security guards and to explore the possibilities of 24-hour market operation and internal lighting in the stalls.
- Telecommunication systems -. ICT infrastructure to support the service provider.
- Security - CCTV cameras located at strategic locations and the DVR and CCTV monitors located in security room.

Project Schedule and Cost

The proposed project construction period will be 9 months and defect liability of 3 months respectively. The proposed project construction costs and implementation of ESMMP are estimated at Kenya Shillings One Hundred and Seventy Nine Million, Nine Hundred and Six Thousand, Five Hundred and Eighty Nine (Ksh 179,906,589) and Nine Million, Five Hundred Thousand (Ksh 9,500,000), respectively.

ESIA Study and Objective

The main objective of the ESIA Study was to identify environmental and social impacts associated with the proposed construction of the proposed market and to recommend an appropriate environmental management strategy for the project. The core outcome of the Study is an Environmental and Social Management and Monitoring Plan (ESMMP), which will be used to enhance and mitigate any positive and negative impacts respectively for the project. Specific objectives included;

- Evaluation of the existing situation at the project proposed site,

- Appreciation of the project concepts through studying design documents, construction and intervention layout, feasibility study report of the project and other documents;
- Identification of potential impacts associated with the proposed project;
- Identification of suitable mitigation and preventive measures appropriate for the negative impacts;
- Development of a comprehensive environment and social management plan for integration into the project implementation.

ESIA Justification

In accordance with the EMCA, (Amendment) 2015, all new projects must undergo environmental impact assessment study so as to comply with the EIA Regulation, 2003. The proposed construction of Kihara market is expected to have an overall positive impact to the people and the environment. However, project construction phases and associated civil works are anticipated to have environmental and social impacts that will require to be mitigated. Construction related project including markets are listed in the second schedule of EMCA, (Amendment) 2015 as among project that should undergo EIA.

The magnitude of the proposed project further justifies the EIA study to provide an environmental management plan (EMP) for integration into project implementation process. In addition, the National Policy on building and construction as well as the building Act calls for environmental impact assessment on construction-related projects for long-term sustainability and acceptability by the beneficiaries.

Approach and Methodology

The ultimate goal of this approach was to identify positive and negative impacts resulting from the construction of the proposed project. The systematic investigative and reporting methodology specified in the conduct of Project Report Studies (Legal Notice 101 of EMCA) was adopted in this Study. Baseline data on project design was generated through discussion with the client and review of project documentation. Opinions formed were revalidated through field work entailing site investigations and interviews with key primary stakeholders (e.g. traders, shoppers, market management) and secondary stakeholders (e.g. area residents, other traders and business persons operating in the neighborhood of the current market).

To identify, predict, analyze and evaluate potential impacts that may emanate from the project, diverse study methods and tools including use of scoping the area, questionnaires, stakeholder consultations, focus group discussions, and observations were employed. An Environmental and Social Management and Monitoring Plan comprising of an impact

mitigation plan and modalities for monitoring and evaluation were then developed to guide environmental management during all phases of project development.

Policy, Legal, and Regulatory Framework

This Project Report has been developed to ensure that the proposed construction of the market is in conformity with national policy aspirations towards securing sustainable development. Specifically, this report has been developed to ensure compliance with requirements of the Environmental Management and Coordination Act (EMCA) 2015 which is Kenya's supreme environmental law, the Constitution and World Bank's safeguard polices. Section 58 of EMCA requires that all proposed development in Kenya to be subjected to environmental impact assessment and to be conducted in line with the Second Schedule (of EMCA) and the Legal Notice 101 (Regulations for Environmental Assessment and Audit) of June 2003.

Anticipated Environment and Social Impacts

This ESIA study process used a systematic, evidence-based approach to evaluate and interpret the potential impacts of the proposed Kihara Market on sensitive physical, biological and human receptors during construction, operation and decommissioning phases. The Legal Notice No. 101 (Environmental Impact Assessment and Environmental Audit) Regulations 2003 requires that a developer should provide a "description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development." The potential environment and social impacts anticipated during the construction, operation and decommissioning phase include the following:

Anticipated Positive Project Impacts

Employment creation

This project is anticipated to create employment opportunities for people within the County. Direct Job creation will begin from the construction phase of the project whereby the locals will be employed to undertake both informal and formal jobs at the construction site. The socio-economic survey carried out for this project indicated that majority of the traders are in their youthful age. This shows that the market will attract more youth to venture into trade business and hence reduce the number of the unemployed population in the society.

Source of revenue to the government

The County government can source for revenue from the traders through collection of levies. This contribution enables the County government to maintain the market and carry out other developments within the County

Permanent business/ working location

Having the modern market will give traders an opportunity to have permanent and organized working locations. This will ensure security of tenure of the business premises to the traders and encourage stability in the business undertakings leading to more income generation and sustainability.

Economic growth

Construction of the market is likely to spur economic growth in the project area such as development of other business activities such as banking, insurance, warehousing, transportation and development of residential and commercial buildings among others.

Solid Waste Management

Solid waste management will be a shared responsibility among all the stakeholders who are the County government, traders who are the waste generators, shoppers, contracted and licensed waste handlers, owners and occupiers of premises. Traders will be provided with separate collection bins for biodegradable and non-biodegradable waste at the new facility. Waste from such bins shall be collected on daily basis by the County workers for proper disposal. Traders will also be provided with bins near their merchandising points to ensure waste generated is collected at garbage stations or transfer points and later disposed at the main collection points for further disposal by the County employees responsibly for this.

Shield against adverse weather conditions

The construction of a modern market will ensure traders carry out their businesses without worrying of extreme weather such as vulnerability to rainfall, cold and heat from the sun since the market will have a roof and wall around it and will be well ventilated to receive fresh air and natural light.

Anticipated Negative Impacts

Air Quality

The project construction activities are anticipated to impact on ambient air quality through generation of dust and combustion gases (SO2, NOx, CO, and particulates). Dust will be generated during the removal of existing temporary market stalls/structures, grading and

excavation; and increased traffic on unpaved roads. Fugitive dust will be greater during drier periods due to fine textured and dry soils.

The combustion emissions will be generated by diesel powered construction equipment: excavators, wheel loaders, trucks, motor graders and compactors.

Considering the Project dust controls (watering; stabilizing disturbed areas) and the fact that the fugitive dust and combustion emissions will be short-term and localized, air quality impacts from the construction activities are expected to be of low significance at the site and negligible at the closest settlements/and business area, respectively.

Soil erosion Impacts

The project is anticipated to cause soil erosion during construction and decommissioning phases. Construction and decommissioning phase activities especially excavation and demolition of structures, respectively are likely to cause soil erosion at the construction site and surrounding areas. However, the impacts are expected to be short term and of low significance.

Loss of vegetation

The development of the proposed Market is expected to impact on both flora and fauna currently inhabiting the site. The flora to be affected include grass, herbaceous plants and some trees (there are four mature Nandi Flame (Spathodea campanulata) trees within the market perimeter that provide a good shade for the market users on sunny days which the project should seek to preserve). The fauna include: butterflies, birds of different species and crawling animals such as lizards and rats. Both flora and fauna at the site are not on IUCN Red list of threatened species.

There will be no effect on the terrestrial ecology both during operation and decommissioning phases. During the operation phase, the site would be covered by the proposed development while for decommissioning phase; the site would be restored and rehabilitated to the natural contours.

Impact on Water Resources

During construction phase, potential water contamination could arise from disturbance of soil and associated soil erosion, spillage of fuels, lubricants and other toxic materials at the construction site, discharge of silt laden run off from the construction site, and disposal of waste and wastewater from sanitary convenient facilities provided to construction workers.

During construction and operation phases, solid and liquid waste generated from the Market if not managed appropriately can be washed away by storm water into Karuri and Rui Rwa

Maingi rivers located at approximately a kilometer north and south from the project site respectively.

During the decommissioning phase, the potential negative impacts to water resources are likely to be very similar to those considered during the construction and operation phases of the Project, and the appropriate mitigation measures should be employed to reduce impact on sensitive water receptors.

The potential risk of water pollution from proposed project can be reduced by: adopting protective measures to prevent oil and fuel spills; putting in place suitable oil and spill response plans; managing solid wastes appropriately; and controlling soil erosion. With these good practices, the risk of water pollution from the project should be low.

Noise and Vibration

The ambient noise quality of the project site is characteristic of an urban setting. During construction phase, noise and vibration sources will include, earth movers doing ground clearance and excavation, piling, concreting and equipment installation.

During operation phase, the primary noise sources at the site will include vehicles delivering the supplies to the market; customer's vehicles, and market activities including playing of loud music or use of sound amplifiers to attract customers, a characteristic behaviour in most markets in Kenya. During decommissioning phase, sources of noise will include; hammering to remove structures during demolition works and vehicles carting away salvage materials.

Landscape and Visual Impacts

During the construction phase, sources of landscape and visual effects include:-

- Site access and haulage routes.
- Materials stockpiles and construction compounds.
- Construction equipment and plant.
- Utilities, including lighting.
- installation of site compound and security posts

Taking into consideration the character of the neighborhood, the inherent low sensitivity of the receiving landscape, absence of any landscape and visual designations it is considered that the construction impacts are most likely to be of ***low medium negative*** significance with regard to visual impacts in the absence of mitigation measures.

The proposed market is not anticipated to alter the existing visual landscape of the area once it is developed. Instead, it will blend in with the surroundings buildings.

Decommissioning will reduce the visual intrusion of the market infrastructure because much of the infrastructure will be demolished. However, there will be short term landscape and visual

impacts from activities on the site including: stockpiling of wastes/rubbles generated from demolition activities.

Traders' dissatisfaction due to perceived inequities in allocation of market stalls

The development of the market as well as allocation of space for doing business has been discussed with the traders through public consultation. Against the background of this knowledge and expectation, there is a risk of dissatisfaction if procedures of allocation of stalls or space are not adequately applied, or if they are seen to be applied in an inequitable manner. There is therefore need to adhere to the market policy in allocation of stalls or space to traders; and implement grievance resolution mechanism which is part of the RAP for the market prepared separately from this report.

Inconvenience and danger to proximate residents through increased road traffic and dust, and reduced access to worksites

The project is not anticipated to impact on traffic on the Kihara – Gachie –Karura Road where there is the Gachie Bus stop, traffic around the site will increase considerably. However, construction and decommissioning phase (demolition) activities on site and road traffic will produce dust and noise, and will pose healthy and safety hazards to road users. The impacts will be of short duration (the construction and decommissioning periods) and are low significance.

During operation phase, the market can generate light traffic from vehicles of suppliers delivering products to the market as well as of customers accessing the market to buy merchandise. When distributed over the wider road network, the impacts will be low. However, during construction, the relative increase in traffic around the site will be slightly significant, with associated implications for access and safety.

Increased demand of construction materials, energy and water

Increased demand of construction materials, energy and water is bound to happen during construction activities. An elaborate waste material reduction strategy is important to save on high demand for construction materials from the environment. Water storage and conservation measures should be adhered to save on water volume used and discharged.

During operation phase, water will be required for cleaning and maintaining hygiene in the market especially at the sanitary facilities. Demand for energy and water is not anticipated during decommissioning phase as energy and water supply infrastructure will also be removed from the site.

Public Consultation, Participation and Disclosure

Apart from the gathering of quantitative data through a socio-economic survey of the proposed project area of influence and a preliminary survey of project affected people, consultation sessions (qualitative) were held with the affected persons and other local community stakeholders to share the information about the project and record their concerns/ feedback associated with this project. The consultation was in two stages namely scoping and stakeholder's consultation. Consultative sessions discussed the topics related to land acquisition and resettlement issues, employment and livelihoods of communities, gender and women issues, Contractor's camp and access to existing routes and environmental issues.

The section on stakeholder consultations provides details of outcomes of consultations and covers issues and concerns showed by the stakeholders regarding land acquisition and resettlement. To address the issues and concerns raised by the stakeholders, mitigation measures have been developed and incorporated into the ESIA. Overall, the stakeholders generally supported the project and anticipated numerous benefits as a result of the proposed project

Environmental and Social Management Plan

Social safeguards and environmental protection is very important in any development. Therefore, the detailed Environmental and Social Management Plan (ESMP) has been proposed to be followed during the implementation of the project. The ESMP details the important steps available to mitigate the impact that arise during all phases of the project. The Proponent and the Contractor are the responsible parties in the implementation and monitoring of the ESMP.

Conclusion

The objective of the proposed project is to develop a market with modern facilities and atmosphere to increase trade and bring economic benefits to the project beneficiaries and the country as well. The environmental and social assessment of the Project ascertains that the Project is likely to cause some few and not significant adverse environmental and social impacts. However, the adverse impacts identified can be readily addressed by some embedded control measures in the engineering design of the Project as well as additional mitigation measures as suggested in the Environmental and Social Management Plan. The Project received favourable support from the traders, local communities and other stakeholders during consultations and they anticipated numerous benefits as a result of the proposed project.

Kihara market is currently in operation and hence its development will cause the temporary displacement of 271 vendors/traders so as to pave way for the putting up of new structures. The proposed project will not be located near any protected areas or sensitive receptors. No archaeological or protected monuments are located in the proposed project vicinity.

The Project will have both positive and negative impacts on the physical and social environment. The positive impacts include: construction of modern facilities that will provide shelter to shield against adverse weather conditions to the traders, rapid economic growth of the traders, creation of direct and indirect employment during construction and operations, increase of revenue collection by the Kiambu County Government, provision of permanent business/ working locations to the traders and organized, sustained Solid Waste Management.

During the construction phase of the Project, the key potential negative impacts includes; noise and dust generation, disruption of public utilities, loss of vegetation, and contamination of water sources. There is also a risk of soil erosion as result of removal of soil cover, excavation and movement of heavy construction vehicles and equipment. Contamination of soil, groundwater could occur also result from accidental spills and leaks of hazardous materials (e.g. oil and fuel) during handling, transportation and storage at the site.
The adverse impacts identified are generally manageable through good housekeeping and a diligent implementation of the ESMP by the Contractor and its supervision by the Proponent. The nearest air quality, noise and water sensitive receptors will be a focus for monitoring of any impact arising due to the construction, operation and decommissioning activities.

Other possible negative impacts include conflicts and social concerns such as: traders' dissatisfaction due to perceived inequities in allocation of the new market stalls; inconvenience and danger to proximate residents through increased road traffic and dust, increased demand for energy and water resources in the area, potential occupational health and safety of the workers, and increase in HIV and AIDS prevalence. However, these impacts can be mitigated with appropriate mitigation measures built in as part of the Project planning process.

It was established that the Project activities will trigger World Bank Operation Policy (OP 4.01) on Environmental Assessment due to environmental and social impacts arising from the Project as presented in this report and OP 4.12 due to relocation of PAPs occupying the land temporarily. However, none of the other Operational Policies will be triggered by the project.

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Based on the analysis conducted in this ESIA, it is concluded that overall the Project will result in positive socio-economic benefits and the negative environmental impacts that have been identified are not significant, and can be minimized adequately through good design, appropriate application of mitigation measures and continuous supervision by the project Proponent.

Recommendation

Environmental monitoring is essential to track and sustain the effectiveness of the mitigation measures proposed in this report. An environmental monitoring plan has been prepared as part of the ESMP. The focus areas of monitoring cover air, noise, traffic management, water and energy resources, occupational health and safety, as well as local employment and economic impact of the project during construction and operations. The burden of mitigation measures largely lies with the Project Contractor under supervision by the Proponent. Key observations are that most adverse impacts are short-term and will disappear once civil works ends. The Contract for the proposed project should bear relevant clauses binding the Contractor to institute environmental mitigation as recommended in this study. The core monitoring strategy for this project will be through site meetings, in which case, it is recommended that the County Environmental Officers be invited to such meetings. Other stakeholders such as the County Labour Officer should also attend such meetings to ascertain that measures towards securing the health and safety of workers have been put in place.

It is the duty of the Kiambu County Government to carry out annual environmental audits once the market has been commissioned. This will be in compliance with the Environmental Management and Coordination Act, EMCA of 1999 and the Environmental Impact Assessment and Audit Regulations, Legal Notice No. 101 of 2003.

The following are recommended for effective implementation of the mitigation measures for the project;

- All mitigation measures need to be specified in tender and contract documents, and must be included in the Engineering Drawings, Specifications and Bills of Quantities.
- Diligence on the part of the Contractor and proper supervision by the Project Engineer during construction and the initial operation phase is crucial for mitigating impacts.
- Periodic environmental and social monitoring is required by the project Proponent to ensure that mitigation measures have been implemented in order to prevent or avert any negative impacts of the project.
- The implementing agency should set up proper and applicable Grievance Redress Mechanism (GRM) for the project to deal with grievances and issues on the project.
- Reporting of the implementation of safeguards should be incorporated in the monthly reporting of the project

The Contractor will prepare a Construction Environment Management Plan (CEMP) which shall be approved by the Proponent before beginning of works.

CHAPTER ONE

1 INTRODUCTION

The Government of Kenya is improving its economy and decentralizing development to County Governments by utilizing funds received from international organizations like World Bank and other foreign institutions to undertake major development projects at the County levels. Nairobi Metro 2030 is part of the overall national development agenda for Kenya which is encapsulated in Kenya Vision 2030. Following this effort, the Nairobi Metropolitan Region (NMR) through the National Government and respective County Governments intends to upgrade its dilapidated infrastructure, inclusive of markets, to achieve an economically, socially and environmentally sustainable modern urban centres.

Under Kenya Vision 2030 one of the key objectives is to bring overall development and poverty eradication by building regional trade and business service hubs. These hubs include the establishment of metropolitan markets and stalls for trade in the region. The benefits of these new markets will be felt by the residents and traders of the metropolitan regions and farmers around the republic. The market hub will encourage commercial farming and entrepreneurial culture in Kenya.

Nairobi Metropolitan Services Improvement Project (NaMSIP) is a World Bank Funded Project under the State Department of Nairobi Metropolitan Region in the Ministry of Transport, Infrastructure, Housing and Urban Development. NaMSIP's mandate is to strengthen service delivery in the Nairobi Metropolitan Region (NMR) on various selected projects by investing in local infrastructure (markets, roads, street lighting, bicycle and pedestrian pathways, drainage, among others) and in providing large-scale metropolitan infrastructure in the areas of trade, solid waste management, transport, sewerage services, among others. NAMSIP has the following four major components;

- Institutional Reform and Planning;
- Local Government Infrastructure and Services;
- Metropolitan Infrastructure and Services;
- Project Management, Monitoring and Evaluation

Among the projects earmarked for improvement are fifteen (15) existing and new markets within NMR which fall under Component 2 (Local Government Infrastructure and Services) of the NaMSIP Project.

Although population density in the markets has created opportunities due to concentrated demand for goods and services and provided income sources through trade and employment, it has also created concentrated problems such pollution, congestion, encroachment to road reserves and general sanitary problems within the NMR markets. Kihara market is among the 15 markets in the Nairobi Metropolitan Region set for construction among others as shown in the Table 1-1 below.

Table 1-1: Proposed Markets and Location

Market	Location	Location (County)
Jogoo Road	Nairobi city along Jogoo road	Nairobi
Karandini	Nairobi city near Dagoretti Corner on the western side of the intersection of Ngong Road and Naivasha Road	
Mwariro	Nairobi near Kariakor	
Muthurwa	Nairobi City, Off Haile Selassie Avenue	
Thika (Madaraka)	Thika, Makongeni area along Garissa Road	Kiambu
Juja	Juja Town near Jomo Kenyatta University of Science and Technology	
Ruiru	Along Kamiti road in Ruiru Town	
Githurai	Githurai town along the Thika Super Highway next to Githurai Bus stop	
Kiambu	Kiambu town along Biashara Road	
Kihara	In Kihara town, along Kihara - Gachie– Karura Road	
Kikuyu	Kikuyu town, near Kikuyu-Nairobi bus park	
Kitengela	Off Nairobi Namanga Road in Kitengela town behind the Kobil petrol station	Kajiado
Ngong	Ngong Town near Ngong bus terminus	
Ongata Rongai (Ole Kasasi)	Ole Kasasi, Rongai area near Maasai Lodge, Off the main Magadi Road	
Tala	Tala Town	Machakos

1.1 Proposed Project Location

The Market is located in Kihara area, Kiambaa Sub County, Kiambu County on GPS location (-1.218935, 36.766225) to the North of Kihara- Gachie-Karura Road as shown in figure 1 below. It is in close proximity to other support facilities such as shops and banks. It sits on an approximately 0.476-hectare piece of land owned by Kiambu County Government and serves as a public purpose facility but has no title deed. The facility is not fenced and the southern extent of the market has been encroached on by residential apartments/ Commercial activities.

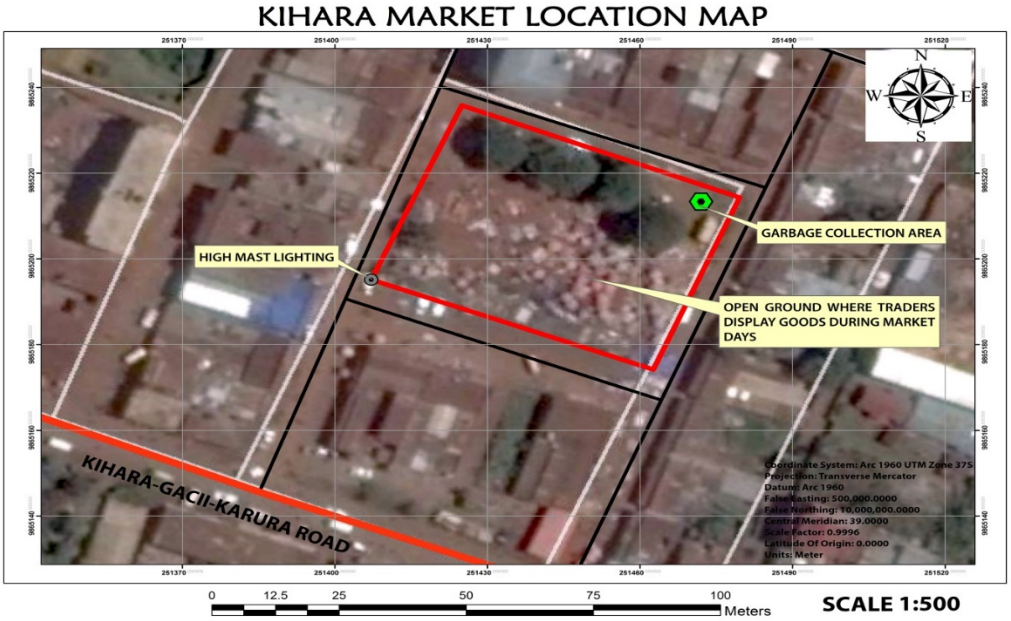

Figure 1: Kihara Market location

Source: Google Earth /SGS

1.2 Rational for Improvement of Kihara Market

The Kenya Markets' 2015 Economic Survey showed that the informal sector employed 82.7% of the total employed persons in Kenya by the year 2014 (KNBS, 2015 pg. 2). This thus underpins the significance of this sector in the local economy as a developing country. The report further indicated that the State has fallen short of providing jobs and the private sector is left to take up the biggest share of this role. However, the private sector has been unable to absorb the growing numbers of jobseekers, and thus the informal sector has stepped in to fill the gap. Mostly, persons in the informal sector work in small and often unregulated businesses.

Traders operating in the markets that are proposed for redevelopment comprise a visible part of the informal sector.

The planned market developments in their areas of operations will go a long way in encouraging entrepreneurship within a hospitable and dignified environment.

The factors contributing to rationale for improvement of Kihara market include:

- Pressures for change, both within and outside the marketing system;
- Changing operational practices within markets – e.g. Changes in user space requirements
- Changing organizational structure of commerce – e.g. Increasing volumes of produce handled; alterations to commercial practices and trading patterns, such as the private sector taking over markets;
- Demographic factors – e.g. Overall increase in population of the urban and semi urban centres and population shifts within these centres and surrounding cities;
- Changing transportation patterns – e.g. Increased traffic growth and resulting congestion; shifts in transport mode (i.e. the proportion of different types of vehicles); changes in the capacity and size of delivery and distribution trucks;
- To make use of the current asset more effectively, e.g. collection of rental charges from traders;
- To provide traders and consumers with a modern market with modern facilities and amenities and increase space;
- To comply with statutory requirements (such as public health, safety and environmental standards).

1.3 Current Market Profile

Kihara Market is an open air market that currently has 271 registered traders and is the main market serving Kitusuru, Gachie, Karura, Runda, Nyari and other adjacent areas. The traders are well organized and have a market management committee, comprising of the traders only. The market sits on approximately 0.476 ha of land. It is both a wholesale and retail market and operates all days of the week but the major market day is on Sunday. On Sunday the number of traders increases and spills on to the streets of the adjacent roads all around the market. There are four mature Nandi Flame (Spathodea campanulata) trees within the market perimeter that provide a good shade for the market on sunny days.

The existing market traders operate from deteriorating substandard structures and some from car booths and from Lorries. The vendors sell Fresh produce (assorted fruits and vegetables), dry produce (assorted cereals), meat products (poultry, beef, etc.), household commodities (kitchenware) and personal products (clothes, shoes, etc.).The Sellers encroach on available walkways within the market, showing that the formal infrastructure is already too exiguous. All infrastructural facilities such as waste collection point, parking, toilets, water, electricity, drainage facilities, storage facilities,

perimeter walls, etc., are not adequately provided and disaster management systems such as fire exits and hydrants are not provided. Currently, waste disposal at the market is very poor in that there are no receptacles for waste collection. Traders are forced to dump their wastes at the bus park for the County waste collectors to come for collection. Some traders reported that the council at times had to be followed up to collect the accumulated solid wastes.

1.4 Proposed market profile

1.4.1 Design and market facilities:

The proposed market facility will be a two-story building comprising of green groceries stalls, offices, cold stores, loading bay on the ground floor and food stuff stalls on the first floor.

The most practicable intervention at Kihara according to the feasibility studies done will be to erect new market buildings to house both the existing and future vendors. Currently, the market has 271 registered traders. A critical analysis has been done in the design of the stalls, the layout of the building as well as the consideration for horizontal and vertical accommodation of the vendors. A typical multi-level arrangement accommodating all potential vendors is proposed.

The 4 key elements that were considered by the design options are:

- Design of infrastructure based on identified and prioritized needs
- Calculation of required space based on existing infrastructure standards
- Site planning including layout of buildings
- Cost implications

1.4.1.1 Stalls

There will be two levels of stalls**;** bigger stalls designed for products demanding larger space such as clothes which measure 3m by 3m and smaller stalls that will measure 3m by 1.5m. These standards have been adopted based on the retail markets planning guide by the Food and Agriculture Organization (FAO). Space for stores, stalls and stands shall not exceed 40% of total area.

1.4.1.2 Zoning

The site will be organized to allow for different uses as outlined below:

- Grouping of sale outlets- retailers selling similar products will be grouped together

- Customer flow- staple products will be placed away from the point of arrival of customers so as to draw customers into the market
- Facilities for temporary vendors-regular operators will be appointed at fixed locations while temporary vendors will be allotted separate spaces. Small-scale vendors will also be allocated space
- Marketing of live animals- special separate enclosures that are well-ventilated and close to the exits and that have separate supply of water, will be provided. Walls should be solid to prevent spread of contamination and disease while birds will be in cages.

1.4.1.3 Infrastructure

The Market plan includes construction of a car park, access roads and internal passes and drainages. There will be separate cars and pedestrian circulation systems and visitors' vehicles will have separate parking area. Delivery vehicles will have direct access to market stalls but delivery will be restricted to certain working periods e.g. early morning before trading starts to reduce traffic. Special signs will also be put up indicating parking regulations/restrictions.

1.4.1.4 Water Supply and Reticulation

Water supply will mainly be from Kiambu Water and Sewerage Company and can be supplemented by a water tower, where the water will be pumped to an overhead tank and reticulated via gravity. Check meters will be in place to monitor the water usage.

1.4.1.5 Sanitary Facilities

There is provision for public toilets to be constructed to serve the new market. Toilet spacing will be 2.3m^2 per 1000 market users.

1.4.1.6 Fire Fighting

Disaster management systems such as fire exits and hydrants will be constructed and made available to all market users.

1.4.1.7 Garbage disposal

Solid waste cubicles will be placed at distances of between 25 to 50m in various parts of the market for temporary handling of solid waste. Garbage collection cubicles will be both for recyclable and non-recyclable materials.

1.4.1.8 Ventilation

The standard air changes required per hour for kitchens will be used to determine extract fan and duct sizes. UPVC pipe ducts could be used in place of aluminum ducts to cut costs. This forced ventilation will provide a much more habitable work environment. Natural ventilation will be the predominant way of ventilating the market. This is efficient and does not come with prohibitive running costs.

1.4.1.9 Power

A switch room with a meter board will be required for power distribution to the different stalls. Power requirement to the stalls will be calculated based on area and designated use. This will allow the Contractor to confirm whether the existing transformer will be sufficient to cater for the improved market. Power points will be installed in the market stalls to enable traders to connect their equipment and devices. There will be check meters for every stall for management purposes. Provisions for future expansion of the stalls operation will also be taken into consideration. Cabling to and from the switch room will be done by use of cable trays for efficient and neat cable management.

1.4.1.10 Lighting

External lighting: For security reasons, movement of security guards and to explore the possibilities of 24-hour market operation, wall mounted lights and flood lights will be used to effectively light up the market at night.

Internal lighting: The lighting levels in the stalls need to be of a high standard of luminance. LED lights will be used to provide sufficient lighting. LED lights have a longer lifespan and reduce electricity bills as compared to other lighting methods. The number of light fittings will be dependent on the Architectural design proposal.

1.4.1.11 Telecommunication systems

Access to internet is essential component in a modern market. ICT infrastructure will be provided for in the market to support the service provider. This will enhance communication between the buyers and sellers where orders can be placed online and enhance increase the traders' coverage**.**

1.4.1.12 Security

CCTV cameras located at strategic locations will be installed to help curb the insecurity in the market area. With the inclusion of ICT infrastructure, the security system can be linked to an emergency backup service provider to ensure quick response. The DVR and CCTV monitors will be in security room.

1.5 Market Cost

The project is estimated to cost Kenya Shillings, One Hundred and Seventy Nine Million, Nine Hundred and Six Thousand, Five Hundred and Eighty Nine (Ksh 179,906,589.) to construct while the cost of implementing EMP is estimated at Kenya Shillings, Nine Million Five Hundred Thousand (9,500,000). The following table 1-2 shows the summary cost estimate of the project.

Table 1-2: BoQ Cost Summary page

PROPOSED MARKET DEVELOPMENT AT KIHARA

TENDER GRAND SUMMARY

ITEM	PARTICULARS	KSHS	FOR OFFICIAL USE ONLY
1.	PRELIMINARIES AND GENERAL ITEMS FROM PAGE 1-12	~~22,745,000~~ ~~26,335,000~~	22,745,000.00
2.	MARKET BLOCK (BUILDERS WORKS) FROM PAGE MB/17	~~82,128,405~~ ~~84,843,810~~	89,792,785.00
3.	EXTERNAL WORKS FROM PAGE EW/14	5,698,090	
4.	CIVIL WORKS FROM CW/10	12,247,095	
5.	MECHANICAL SERVICES FROM PAGE 16	10693013	
6.	ELECTRICAL SERVICES FROM PAGE 24	~~13434890~~	13,429,130
7.	GENERATOR INSTALLATIONS FROM PAGE D/16	424177690	
8.	DISCOUNT	14,961,879.12	
9.	ADD 16% VAT	22,805,054.13	
	SUB-TOTAL	165,336,859.91	166,906,589.30
10.	CONTIGENCY	13,000,000.00	
	TOTAL CARRIED TO FORM OF TENDER (KSHS)	~~178,336,859.91~~	179,906,589.30

TENDERER'S SIGNATURE

NAME/ADDRESS

Three C's Building & Road Contractors

P.O. Box 586-20618

Ruiru [?]

DATE 22/06/2017

WITNESS SIGNATURE

NAME/ADDRESS

Duncan Gichuhi

P.O. Box 45024

00400 Nairobi

DATE 23/06/2017

TGS

Source: NaMSIP

1.5.1. Presentation of the report

The report is presented as outlined below:

Chapter 1: Introduction of the project which include Background, Scope of the proposed project. It also gives the format of the presentation of the report

Chapter 2: Gives the Objectives, Scope, and Methodology of the ESIA Study.

Chapter 3: Gives the Policy, Legal, Institutional and Administrative Framework.

Chapter 4: Project Baseline Information of the Study Area.

Chapter 5: Outcome of the Public Consultation and Participation process.

Chapter 6: Analysis of Alternatives to the Project.

Chapter 7: Identification of Potential Impacts and mitigation measures of the project.

Chapter 8: Environmental and Social Management Plan (ESMP)

Chapter 9: Conclusion and recommendation

References

Annexes

1.5.2. ESIA Study Team

The study team composed of members from different professional disciplines. The team members included:

- Environmental Team Leader
- Sociologist
- Environmental support staff.

CHAPTER TWO

2 ESIA OBJECTIVES, SCOPE AND METHODOLOGY

This environmental and social impact assessment has been undertaken to fulfil the legislative requirements of the Environmental Management and Coordination Act (Amendment), 2015 and the subsequent Kenya Gazette Supplement on Environmental Impact Assessment and Environmental Audit Regulations 2003 and World Bank Safeguard polices.

The ESIA identifies potential positive and negative environmental, social, and economic impacts of the proposed project and propose mitigation measures to the anticipated negative impacts.

2.1 Terms of Reference (TOR) for the ESIA Process

The following terms of reference for the proposed Kihara Market Development Project were used by the ESIA expert team.

- Provision of baseline and background information;
- Project and site description;
- Identification of environmental impacts of the proposed development in the various phases and their level of significance;
- Impact of the project on existing infrastructure;
- Evaluation of project alternatives;
- Stakeholder participation viz social survey of views from neighbors;
- Identification of possible conflicts;
- Suggest mitigation measures for identified negative impacts; and
- Prepare a comprehensive environmental management plan.

2.2 Scope and Objectives of the ESIA

In accordance with the EMCA, 1999, all new projects must undergo environmental impact assessment study such as to comply with the EIA Regulation, 2003 and to ensure provisions for environmental protection. Therefore, the main objective of environmental and social impact assessment associated with development of the proposed project is to comply with the current requirements of the EIA regulations of 2003 as established under the EMCA, 2015, in addition to the requirements of World Bank Safeguard polices and in particular OP 4.01 requirements.

2.3 Scope of the ESIA

The scope of ESIA study, therefore, covered the following key areas;

- Provide a description of the environmental, social and economic issues associated with the proposed market project,
- Undertaking public and stakeholder consultations in the process through interviews and meetings with stakeholders and the affected traders,
- Identification of anticipated environmental and social impacts with focus on social, economic and natural resources aspects,
- Development of mitigation measures and an environmental management plan for identified negative environmental and social impacts.
- Preparation of ESIA Report including a Project Report for submission to NEMA,
- Obtain appropriate EIA Licenses from NEMA.

2.4 ESIA Approach and Methodology

In accordance to the ESIA guidelines, the study included the following:

- A clear description of the proposed project including its objectives, design concepts, proposed interventions and anticipated environmental and social impacts,
- Description of the baseline conditions in the project area to cover the physical location, environmental setting, social and economic issues,
- A description of the legal, policy and institutional framework within which the proposed market development project will be implemented,
- Description of the project alternatives and selection criteria,
- Details of the anticipated impacts to the environment, social and economic aspects of the project area.
- Appropriate mitigation and/or corrective measures,
- Development of an environmental and social management plan (ESMP) presenting the project activities, potential negative impacts, mitigation measures and responsibilities, associated costs and monitoring indicators

2.5 Approach

According to the Environmental Management and Coordination Act (EMCA), 2015, section 58 requires that all projects falling under the second schedule of the Act must undergo comprehensive environmental and social impact assessment studies. ESIA study should also comply with the EIA Regulations of 2003 on the minimum and other convectional environmental guidelines. ESIA studies are adopted as integrated approach where desk documentary reviews, field investigations, consultations as well as interviews and discussions with stakeholders and affected communities are considered. The overall study was undertaken following these stages;

2.6 Environmental Screening

Screening process was undertaken to decide whether the proposed market project needed to be subjected to an ESIA study or not. Based on literature review, the proposed project falls under category 2 of projects to be subjected to EISA study as provided for by the second schedule of the Environmental Management and Coordination Act of 2015 and Category B under the World Bank Environmental and Social Safeguards Policies as defined in the Bank's Operational Procedures (OPs).

2.7 Environmental Scoping

The aim of this stage was to ensure that the ESIA study adequately addresses all the crucial issues of environmental and social concern to the decision-makers. This was done by narrowing down on the proposed Market Development project issues and also to those requiring detailed analysis. The process involved dialogue with all project stakeholders to ensure that this aim was fulfilled. It also involved the collection of primary and secondary data. From an evaluation of this data, a rapid assessment of the project site and its surrounding areas was made.

The key benefits of scoping include:

- Identification and engagement of key stakeholders
- Identification the existing gaps
- Ensures that the assessment focuses on the key likely environmental and social impacts

2.8 Documentary Review

Several relevant documents were reviewed for a clear understanding of the terms of reference, environmental status of the project area, data on demographic trends (for the project area, the beneficiary areas and the adjoining towns and counties), land use practices in the affected areas, development strategies and plans (Local, National and International) as well as the policy, legal and institutional documents. The documents reviewed were:

- Relevant Legal, Policy and Regulatory documents;
- EMCA (Amendment), 2015
- Kenya National Bureau of Statistics, 2009
- Nairobi Metro 2030, First edition 2008

2.9 Site Assessment

A physical inspection of the ground (proposed site and their surrounding environment) was conducted. This process was meant to appreciate the project's scope of land

requirements, and establish actual baseline as well as verification of facts stated for project designs. This was done with an aim of establishing the anticipated positive and negative impacts on the physical and biological environment (hydrology, climatic patterns and geology), social and economic trends (population trends, settlement trends, economic patterns, cultural setting and linkages, land ownership issues, etc.) and the project affected persons (PAPs) and beneficiaries.

Specific objectives of the field assessment included:

- Obtaining available and relevant information and data from the local public offices including environment, water, lands and agriculture;
- Evaluating the environmental setting around the proposed site - observations were focused on the topography, land tenure, surface and ground water sources, public amenities, land cover, climate, flora and fauna, soils, etc.
- Undertaking comprehensive consultative public participation exercises to reach a large section of the affected persons as well as other stakeholders. Public consultations were also organized with the stakeholders to evaluate the environmental setting around the proposed site.
- Evaluate social, economic and cultural settings in the entire project site.

2.10 Public Consultation and Participation

It is a Kenyan Government policy that beneficiaries and members of the public living near new or improvement project sites (both public and private) are consulted to seek their views and opinions regarding the proposed projects before they are implemented. Interaction with the stakeholders and communities living around the project area was undertaken through public consultation and participation meeting held on 12th August 2016. Refer to **Annex 4, 5 and 6** for Attendance Register, Minutes of Meeting and selected photographs of public stakeholder consultation meeting respectively. Through this process, the stakeholders and the PAPs had an opportunity to contribute to the overall project design by making recommendations and raising any environmental and social concerns of the project. In addition, the process aimed at creating a sense of responsibility, commitment and local ownership for smooth implementation and operation of the proposed project.

2.1.1. Impact Assessment and Mitigation Measures

The primary function of an environmental impact assessment study is to predict and quantify potential impacts, assess and evaluate their magnitude and importance and develop an Environmental and Social Management Plan to mitigate the impacts. Environmental impacts could be positive or negative, direct or indirect, local or regional and also reversible or irreversible. Assessment of impacts depends on the nature and

magnitude of the activity being undertaken and also on the type of mitigation measures that are envisaged as part of the project concept.

For the proposed project, the anticipated impacts are divided into three components of the project: impacts based on Project Location, impacts during Construction phase, and impacts during De-commissioning and Operational phases. The identified potential positive and negative impacts of the project are presented in Chapter 7 of this report.

2.1.2. Environmental and social Management and Monitoring Plan (ESMMP)

The Consultants have developed an Environmental and Social Management and Monitoring Plan (ESMMP) to guide the project team in eliminating or reducing the project negative impacts to acceptable minimum/ standards. The ESMMP is based on good environmental practices of project implementation and safety of the operations. The proposed ESMMP can be improved through continuous monitoring and audits during project implementation. The plan is provided in a matrix form in Chapter 8 of this report and it identifies the anticipated impact; proposed measures to be undertaken; monitoring indicators; the party responsible for implement the measures, and the estimated cost likely to be incurred to undertake the measures.

CHAPTER THREE

3 POLICY, LEGAL AND ADMINISTRATIVE POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

This chapter outlines the policy, legal, regulatory and institutional framework in Kenya particularly for environmental management, protection and assessment applicable to the proposed Project. The Project will be subject to laws, regulations, guidelines and standards of the Government of Kenya and international institutions (IFC/World Bank). Note that wherever any of the laws contradict each other, the Environmental Management and Coordination Act (EMCA) prevails.

3.1 Government of Kenya Policy Framework

Applications of national statutes and regulations on environmental conservation suggest that the owner of any project has a legal duty and responsibility to discharge wastes of acceptable quality to the receiving environment without compromising public health and safety. This position enhances the importance of an EIA for the proposed extension project to provide a benchmark for its sustainable operation when it is finally commissioned. The Kihara market project complies with government policy framework by the act of the proponent conducting ESIA study before initiating any civil works on the project.

3.1.1 The Constitution of Kenya 2010

The Constitution of Kenya, promulgated into law on 27 September 2010, is the supreme law of the Republic: It provides the broad framework regulating present and future development aspects of Kenya and along which all national and sectoral legislative documents are drawn.

With regard to environment, Section 42 inside the Bill of Rights of the Constitution, states that: every person has the right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generations through legislative and other measures; particularly those contemplated in Article 69; and to have obligations relating to the environment fulfilled under Article 70.

Chapter 5 of the new constitution provides the main pillars on which the 77 environmental statutes are hinged and covers "Land and Environment" and includes the aforementioned articles 69 and 70. Part 1 of the Chapter dwells on land, outlining the principles informing land policy, land classification as well as land use and property. Part 2 of the Chapter directs focus on the environment and natural resources. It provides for a clear outline of the state's obligation with respect to the environment. The Chapter seeks to eliminate processes & activities likely to endanger the environment.

Article 69 states that the State shall:

- Ensure sustainable exploitation, utilisation, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits;

- Work to achieve and maintain a tree cover of at least ten percent of the land area of Kenya;
- Protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities;
- Encourage public participation in the management, protection and conservation of the environment;
- Protect genetic resources and biological diversity;
- Establish systems on environmental impact assessment, environmental audit and monitoring of the environment;
- Eliminate processes and activities that are likely to endanger the environment; and,
- Utilise the environment and natural resources for the benefit of the people of Kenya.

There are further provisions on enforcement of environmental rights as well as establishment of legislation relating to the environment in accordance to the guidelines provided in this Chapter.

In conformity with the Constitution of Kenya 2010, every activity or project undertaken within the Republic of Kenya must be in tandem with the state's vision for the national environment as well as adherence to the right of every individual to a clean and healthy environment.

Section 70 provides for enforcement of environmental rights thus:-:

- If a person alleges that a right to a clean and healthy environment recognised and protected under Article 42 has been, is being or is likely to be, denied, violated, infringed or threatened, the person may apply to a court for redress in addition to any other legal remedies that are available in respect to the same matter.
- On application under clause (1), the court may make any order, or give any directions, it considers appropriate —-

(a) to prevent, stop or discontinue any act or omission that is harmful to the environment; (b) to compel any public officer to take measures to prevent or discontinue any act or omission that is harmful to the environment; or

(b) To provide compensation for any victim of a violation of the right to a clean and healthy environment.

- For the purposes of this Article, an applicant does not have to demonstrate that any person has incurred loss or suffered injury.

Essentially, the New Constitution has embraced and provided further anchorage to the spirit and letter of the Environmental Management and Co-ordination Act (EMCA), 1999, whose requirements for environmental protection and management have largely informed Sections 69 through to 71 of the Document. In Section 72 however, the new constitution allows for enactment of laws towards enforcement of any new provisions of the Supreme Law. The proposed project complies with the Constitution by proposing a framework in its ESIA on Social, Health, safety and environmental protection

3.1.2 The Kenya Vision 2030

Kenya Vision 2030 is the country's development programme from 2008 to 2030. It was launched on 10 June 2008 by President Mwai Kibaki with the aim to help transform Kenya into a newly industrializing, middle-income country with a consistent annual growth of 10 % by 2030. Developed through an all-inclusive and participatory stakeholder consultative process, involving Kenyans from all parts of the country, the Vision is based on three "pillars": Economic, Social, and Political. The 2030 goal for urban areas, to reach “a well-housed population living in an environmentally-secure urban environment in particular, will be achieved by bringing basic infrastructure and services namely roads, street lights, water and sanitation facilities, storm water drains, footpaths, and others. It is likewise important the promotion of: environmental conservation and pollution and waste management, through the application of the right economic incentives in development initiatives.

Under the first Medium-Term Plan (MTP-1) (2008-12) of Kenya’s Vision 2030 strategy, significant efforts were made to promote growth and preserve sound economic policies under challenging circumstances. While reforms were being implemented across the board during 2008-12, the biggest achievements under MTP-1, as noted in the MTP-2, were in improving infrastructure as well as some social indicators, such as school enrolment rates. Through short of the targets set in MTP-1, average annual GDP growth reached 3.8 percent despite the impact of repeated droughts, high international commodity prices, the global financial and economic crisis, and political uncertainty in the run up to the 2013 general elections. Furthermore 2.7 million jobs were created between 2008 and 2012 compared with an objective of 3.3 million.

Kenya’s second Medium Term Plan (MTP-2) covers the 2013-2017 period. It seeks to build on the successes of the MTP 1, including macroeconomic stability, the enactment of the 2010 Constitution, infrastructure development, the growth of the services sector, and improved access to education. At the same time, it recognizes remaining challenges, including a low and declining share of manufacturing, low agricultural productivity, high energy costs, a still limited transport infrastructure, a narrow export base, and major economic and social disparities across the country. The MTP-2 aims to continue the positive trend in areas where substantial progress was achieved, as well as to increase attention on areas where progress was slower while keeping the same priority sectors.

The overall objectives of the MTP-2 are to accelerate growth to reach double-digit levels, to create jobs for the Kenyan youth, and to further reduce the still high poverty levels. The key thematic areas that seek to describe how these objectives will be achieved are: (i) the foundations for national transformation, which cover a broad range of areas including infrastructure, information technology, employment policies, land reform, ending drought emergencies, public sector reform, and national security; (ii) the economic pillar, which identifies the seven sectors that are expected to spur faster growth; (iii) the social pillar; and (iv) the political pillar.

By promoting investment in the priority sectors identified under the Economic Pillar2, Vision 2030 seeks to achieve and sustain annual GDP growth rate at 10% up to 2030 and thereby generating resources required to address other SDGs. This creates the urgent need of investing in both Flagship Projects and requisite infrastructure.

The realization of the proposed project is a step towards realizing the Vision 2030 as provision of trading infrastructure that will create employment for the Kenyan population and spur economic growth for the country.

3.1.3 Nairobi Metro 2030

Nairobi Metro 2030 was developed in the year 2008 to provide a guide for the NMR play its role in the National growth strategies under the Kenya Vision 2030. It is a transitional document that brings into focus challenges faced under urban growth and development. The document provides forum to achieve sustained rates of economic growth necessary for successful economic and social development. The Metro 2030 provides links with the Central Government through Kenya Vision 2030 and other development plans as well as seeking to strengthen the Local Authorities as part of the devolvement of power and recognizing need for ensuring efficient and effective management of resources at the grassroots.

Nairobi Metro 2030 carries the vision for Nairobi Metropolitan Region to be a World Class African Metropolis supportive to the overall national agenda under the Kenya Vision 2030. The agenda to achieve this vision is the need to enhance mechanisms for economic growth, employment creation, improved lifestyles and improved infrastructure. Therefore, the proposed project contributes to the Nairobi Metro 2030 by providing development that will contribute to the economic and employment growth within the metropolitan.

3.1.4 The Sustainable Development Goals

The 2030 Agenda comprises 17 new Sustainable Development Goals (SDGs), or Global Goals, which will guide policy and funding for the next 15 years, beginning with a historic pledge to end poverty.

The concept of the SDGs was born at the United Nations Conference on Sustainable Development, Rio+20, in 2012. The objective was to produce a set of universally applicable goals that balances the three dimensions of sustainable development: environmental, social, and economic.

The Global Goals replace the Millennium Development Goals (MDGs), which in September 2000 rallied the world around a common 15-year agenda to tackle the indignity of poverty.

The MDGs established measurable, universally-agreed objectives for eradicating extreme poverty and hunger, preventing deadly but treatable disease, and expanding educational opportunities to all children, among other development imperatives.

The MDGs drove progress in several important areas:

- Income
- Poverty

- Access to improved sources of water
- Primary school enrolment
- Child mortality

With the job unfinished for millions of people—we need to go the last mile on ending hunger, achieving full gender equality, improving health services and getting every child into school. Now we must shift the world onto a sustainable path. The Global Goals aim to do just that, with 2030 as the target date.

This new development agenda applies to all countries, promotes peaceful and inclusive societies, creates better jobs and tackles the environmental challenges of our time—particularly climate change.
Nationally, the GOK has taken bold steps to domesticate the SDGs as illustrated by:

- Investment in the Poverty Reduction Strategy Paper (PRSP) process through which participatory mapping of poverty incidence at both District and National Level was undertaken,
- Implementation of the Economic Recovery Strategy for Wealth and Employment Creation, and
- Implementation of projects that directly confront specific aspects of the SDGs. By anchoring the

Economic Pillar of Vision 2030 which seeks to generate resources needed to address SDGs, implementation development of the proposed project is attuned to the national and indeed global agenda for economic and social development.
Kihara market project contributes to the policy by creating direct and indirect employment opportunities for many people that be served by the operation of the market.

3.2 Legal and Regulatory Framework for Environment

3.2.1 The Environment Management and Coordination Act No 8, 1999 and the relative Amendment Act No 5, 2015

The Environment Management and Co-ordination (Amendment) Act 2015 No 5 of 2015 was effective on the 17th June 2015 to amend the Environmental Management and Co-ordination Act 1999. The Act has aligned EMCA Act 1999 with the Constitution of Kenya (2010) to include new structures that the Constitution of Kenya 2012 created particularly entrenchment of county government in environment and natural resource management.

The EMCA is an act of Parliament that provides for the establishment of an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto.

The Act further aims to improve the legal and administrative co-ordination of the diverse sectoral initiatives in the field of environment so as to enhance the national capacity for its effective management. In addition Act seeks to harmonize all the 77 sector specific legislation touching on the environment in a manner designed to ensure protection of the environment.

As the principal environmental legislation in Kenya, EMCA sets the legal framework for environmental management basically as follows:-
Part II of the Act states that every person in Kenya is entitled to a clean and healthy environment and has the duty to safeguard and enhance the environment.
In order to ensure the achievement, part VI of the same Act directs that any proponent of a new project, activity or operation should undertake an Environmental Impact Assessment (EIA) and a report prepared for submission to the National Environmental Management Authority (NEMA), who in turn may issue a license as appropriate; while projects already in place will undertake annual Environmental Audits (EA).

Section 58 of the Environmental Law requires that notwithstanding any approval, permit or license under this Act or any other law in force in Kenya, any person being a proponent of a project, shall before financing, commencing proceeding with carrying out, executing or conducting or causing to be financed, commenced, proceed carried out, executed or conducted by another person for any undertaking specified in the second schedule to this Act, submit a project report to the Authority in the prescribed form, giving the prescribed information and shall be accompanied by the prescribed fee.
Section 68 and 69 of EMCA requires all on-going projects to conduct an EA with a view to finding out if the processes and activities have any negative impacts on the environment and to propose any mitigation measures to counter such impacts .EA are further expounded in Regulation 35 (1) and (2) of Legal Notice 101 of June 2003.
Under EMCA 2015, NEMA has gazetted legal tools that govern how EIAs are conducted and general environmental protection. These guidelines are captured in the Contracts for Construction to ensure that contractors are legally bound to undertake mitigation alongside general construction work.
Under EMCA, NEMA has gazetted legal tools that govern conduct of EIAs and general environmental protection. The Proposed project by the NaMSIP falls under the requirement of this Act, and has been screened against these tools with results that (table below) will be triggered.

Table 3-1: Analysis of the Project triggers to the EMCA and its tools.

Legal Tool	Status	Trigger mechanism
EIA and Audit regulations	Triggered	EIA Study has to conform to these rules
Waste Management Rules	Triggered	Construction likely to generate solid waste
Water Quality rules	Triggered	Water for construction will be drawn from rivers or other sources and have to adhere to ensuring water quality is observed
Conservation of Biodiversity regulations	Not triggered	These regulations focus more on benefit sharing in biodiversity conservation.
National Sand Harvesting Rules	Triggered	Construction works will require concrete mixture which shall include sand
Environmental Management and Coordination (Noise and	Triggered	Both construction activities and

Legal Tool	Status	Trigger mechanism
Excessive Vibration Pollution) (Control) Regulations, 2009 Legal Notice No. 61:		construction equipment likely to generate noise
Air Quality Regulation (2014)	Triggered	Both construction activities and construction equipment likely to generate air pollution

In particular, specifications of these guidelines would require to be captured in the Contracts for Construction to ensure that contractors are legally bound to undertake mitigation alongside general construction work. The EMCA Tools likely to be triggered by the proposed construction of the proposed project are briefly reviewed below.

3.2.2 Environmental Impact Assessment and Audit Regulations, 2003

Environmental impact Assessment (EIA) is a tool for environmental conservation and has been identified as a key component in new project implementation. At the national level, Kenya has put into place necessary legislation that requires EIA be carried out on every new project, activity or programme (EMCA), and a report submitted to the National Environmental Management Authority (NEMA) for approval and issuance of relevant certificates. These Regulations provide procedures for conducting an EIA study and detail the parameters to be evaluated during the study. It also provides guidelines on the payment of the EIA license fees, conducting environmental audits and development of project monitoring plans.

In particular, specifications of these guidelines indicate that no proponent should implement a project which can have a negative environmental impact.

This ESIA report has been undertaken in accordance with the Environment (Impact Assessment and Audit) regulation 2003, which operationalizes the Environment Management & Coordination Act (EMCA) 1999 and its subsequent amendment, the Environmental Management and Coordination Act (Amendment), 2015. The report is prepared in conformity with the requirements stipulated in the Act and its amendment and the Environmental Impact Assessment and Audit regulations 2003 regulation7 (1) and the second schedule.

3.2.2.1 Environmental Management and Coordination Act (Waste Management) Regulations, 2006

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

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

Regulation No.4 (1) makes it an offence for any person to dispose of any waste on a public highway, street, road, recreational area or in any public place except in a designated waste receptacle.
Regulation 5 (1) provides categories of cleaner production methods that should be adopted by waste generators in order to minimize the amount of waste generated and they include:

i) Improvement of production process through:

- Conserving raw materials and energy
- Eliminating the use of toxic raw materials and waste
- Reducing toxic emissions and wastes

ii) Monitoring the product cycle from beginning to end by:

- Identifying and eliminating potential negative impacts of the product
- Enabling the recovery and re-use of the product where possible
- Reclamation and recycling

iii) Incorporating environmental concerns in the design and disposal of a product.

The Proponent shall ensure that the main contractor adopts and implements all possible cleaner production methods during the construction phase of the project.
Regulation 6 requires waste generators to segregate waste by separating hazardous waste from non- hazardous waste for appropriate disposal.
Regulation 14 (1) requires every trade or industrial undertaking to install at its premises anti-pollution equipment for the treatment of waste emanating from such trade or industrial undertaking.
Regulation 15 prohibits any industry from discharging or disposing of any untreated waste in any state into the environment.
Regulation 17 (1) makes it an offence for any person to engage in any activity likely to generate any hazardous waste without a valid Environmental Impact Assessment license issued by NEMA.
Regulation 18 requires all generators of hazardous waste to ensure that every container or package for storing such waste is fixed with a label containing the following information:

- The identity of the hazardous waste
- The name and address of the generator of waste
- The net contents
- The normal storage stability and methods of storage
- The name and percentage of weight of active ingredients and names and percentages of weights of other ingredients or half-life of radioactive material
- Warning or caution statements which may include any of the following as appropriate.
- the words "WARNING" or "CAUTION";
- the word "POISON" (marked indelibly in red on a contrasting background;
- The words "DANGER! KEEP AWAY / NO ENTRY FOR UNAUTHORIZED PERSONS";

- A pictogram of a skull and crossbones.

Regulation 19 (1) requires every person who generates toxic or hazardous waste to treat or cause to be treated such hazardous waste.

During the construction phase of the project, the Proponent shall ensure that the main contractor implements the above mentioned measures as necessary to enhance sound environmental management of waste.

3.2.2.2 Environmental Management and Coordination Act (water quality) Regulation 2006

The Regulations provides for sustainable management of water resources including prevention of water pollution and protection of water sources (lakes, rivers, streams,' springs, wells and other water sources).

It is an offence under Regulation No.4 (2), for any person to throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution.

Regulation No. 11 further makes it an offence for any person to discharge or apply any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants or permit the dumping or discharge of such matter into the aquatic environment unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards for effluent discharge into the environment

Regulation No. 14 (1) requires every licensed person generating and discharging effluent into the environment to carry out daily effluent discharge quality and quantity monitoring and to submit quarterly records of such monitoring to the Authority or its designated representatives.

The proponent will have to ensure that appropriate measures to prevent pollution of underground and surface water sources are implemented throughout the project cycle.

Wastewater guidelines

Part of the study involves a review of the envir3044onmental standards that provides a basis for monitoring and future audits. The table below presents recommended guidelines on wastewater quality for discharge into the public sewers and open water bodies.

Table 3-2: Kenya discharge Guidelines for Waste water

Parameter	Discharge in public sewers (mg/l)	Discharge into water bodies (mg/l) – Assuming 10% dilution
PH	6.0 – 9.0	6.0 – 9.0
BOD5 (20oC)	500	20
COD	1000	50
Suspended Solids	500	30
Detergents	30	Nil
Heavy metals (combined)	1	0.1
Oils/Grease	50	Nil
Nitrates (TN)	20	10
Phosphates (TP)	30	5
Conductivity	-	1500 uS/cm

Parameter	Discharge in public sewers (mg/l)	Discharge into water bodies (mg/l) – Assuming 10% dilution
4hr PV Value	No limits	20
Faecal Coliforms	No limits	1000/100ml for large water bodies, otherwise <10/ml)
Sulphates	-	500
Dissolved Oxygen	No limits	2
Phenols	-	2
Cyanides	-	0.1
Chlorides	-	1000
PCB	-	0.003
Colour	No limits	5 Hazen Units
Odour	No limits	Not objectionable

Sources: Department of Water Development

3.2.2.3 Air Quality Regulation, 2014

This regulation is referred to as "The Environmental Management and Coordination (Air Quality) Regulations, 2014". The objective is to provide for prevention, control and abatement of air pollution to ensure clean and healthy ambient air.

It provides for the establishment of emission standards for various sources, including as mobile sources (e.g. motor vehicles) and stationary sources (e.g. industries) as outlined in the Environmental Management and Coordination Act, 1999. It also covers any other air pollution source as may be determined by the Minister in consultation with the Authority. Emission limits for various areas and facilities have been set.

The Regulations prohibits the Proponent from:

- Acting in a way that directly or indirectly cause or may cause air pollution to exceed levels set out in the second Schedule to the Regulations
- Allowing particulates emissions into the atmosphere from any source not listed in the six schedule of the Regulations
- Causing ambient air quality in controlled areas (listed in Schedule Thirteen) to exceed those stipulated under second Schedule.
- Allowing (during construction and demolition) emission of particulate matter above the limits stipulated in second Schedule
- Causing or allowing stockpiling or storage of material in a manner likely to cause air pollution
- Causing or allowing emissions of oxides of nitrogen in excess of those stipulated in the eleventh Schedule of the Regulation

The Proponent shall observe policy and regulatory requirements and implement the mitigation measures proposed in this document in an effort to comply with the provisions of these Regulations on abatement of air pollution.

3.2.2.4 Environmental Management and Coordination Act (Noise and Excessive Vibrations Pollution Control) Regulations, 2009

The regulations define noise as any undesirable sound that is intrinsically objectionable or that may cause adverse effects on human health or the environment. The regulations prohibit any person from making or causing to be made any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment.

Article 13 2(d) of the regulations allows for construction work at night for public utility construction, construction of public works, projects exclusively relating to roads, bridges, airports, public schools and sidewalks, provided noise generated is not caused within a residential building or across a residential real property boundary where such noise interferes with the comfort, repose, or safety of the members of the public. The second Schedule of the Regulations provides for the maximum permissible level of noise at construction sites.

Table 3-3: Maximum permissible noise levels for construction sites (measurement taken within the facility)

Facility		Maximum Noise level permitted (leq) in dB (A)	
		Day (6.01am-6.00pm)	Night (6.01 pm-6.00am)
(i)	Health facilities, educational institutions, homes for disabled and residential areas	60	35
(ii)	Residential	60	35
(iii)	Areas other than those prescribed in (i) and (ii)	75	65

Under section 15, the Regulations require the Proponent during EIA studies to:

- Identify natural resources, land uses or activities which may be affected by noise or excessive vibrations from construction or demolition;
- Determine the measures which are needed in the plans and specifications to minimize or eliminate adverse construction or demolition noise or vibration impacts
- Incorporate the needed abatement measures in the plans and specifications.

It is anticipated that the proposed project will generate noise and/or vibration during the construction phase that will originate from the construction equipment, vehicles and the workers since the project neighbours homesteads and businesses in some sections. It is therefore recommended that the construction team develops mitigations to reduce noise propagation in the project area.

The provisions of this Act will be applied by the Proponent in the management of the project where the contractor will be required to adhere to the provisions of this regulation.

Noise guidelines

The following guidelines will be used to monitor noise levels, especially during the construction stage of the project.

Table 3-4 Comparison between WHO and NEMA Noise Guidelines

Specific Environment	Critical Health Effects	LAeq dB(A) WHO	Time base (hours)	LAeq dB(A) NEMA	Time base (hours)
Outdoor living area	Serious annoyance Moderate annoyance	55 50	16 16	45 35	14 14
Indoor dwelling Inside bedroom	Speech interference Sleep disturbance	35 30	16 8	-	-
Outdoor bedroom	Sleep disturbance	45	8	35	-
School classroom Indoor	Speech and communication	35	During class time	Day 60 Night 35	14 14
School playground outdoor	Annoyance External	55	During play	45	Day
Hospital, treatment room indoor	night time daytime	30 30	8 16	-	-
Industrial, Commercial and traffic areas	Hearing impairment	70	24	60	12
Ceremonies, festivals entertainment events	Hearing impairment	100	4	-	-

The provisions of this Act will be applied by the Proponent in the management of the project where the contractor will be required to adhere to the guidelines to reduce the possibility of adverse noise and vibration impacts to human health. The regulation stipulates that the acceptable standard day and night noise levels should not exceed 65dBa and 45 dBA respectively.

3.3 World Bank Environmental and Social Safeguard Policies

Like in any project financed by, or with financial participation of, the World Bank, the environmental and social safeguards as defined in the Bank's Operational Procedures (OPs) will be respected for the purposes of this project implementation. WB classifies its projects into four Environmental Assessment categories according to the likely impacts on the environment they will have. This classification is as follows (only main conditions mentioned):

a) Category A: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts.

b) Category B: A proposed project is classified as Category B if it's potential adverse environmental impacts on human populations or environmentally important areas—including wetlands, forests, grasslands, and other natural habitats—are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects. *This particular NaMSIP subproject has been categorized as B.*

c) Category C: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further environmental assessment action is required for a Category C project.

d) Category FI: A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts; this case, in any way, is not applicable to the NaMSIP project.

By virtue of source of funding, the proposed development of the market by the Ministry of Land, Housing and Urban Development, and Nairobi Metropolitan Development under the NaMSIP is also subject to World Bank requirements for impact assessment. As such, this Project Report study has been formulated to address and cater for both Kenyan and World Bank requirements for impact assessment. World Bank projects and activities are governed by Operational Policies, which are clearly spelt out in the Bank's Operational Manual ("Bank Procedures" and "Good Practices"). The World Bank's safeguard policies are designed to ensure that projects proposed for Bank financing are environmentally and socially sustainable, and thus improve decision-making. These operational policies include:

- OP 4.01 Environmental Assessment;
- OP 4.04 Natural Habitats;
- OP 4.09 Pest Management ;
- OP 4.11 Cultural Heritage;
- OP 4.12 Involuntary Resettlement;
- OP 4.10 Indigenous People;
- OP 4.36 Forests;
- OP 4.37 Safety of Dams;
- OP 7.50 Projects on International Waterways ;
- OP 7.60 Projects in Disputed Areas.

The table below shows the applicability of World Bank Operational Policies to the proposed project.

Table 3-5: Analysis of potential triggers to World Bank Safeguards Policies

OP	Title	Comments/Impact
4.01	Environmental Assessment	Applicable. As a result of environmental and social screening, the project was identified as a Category B
4.04	Natural Habitats	Not applicable - there no natural habitats at the project site
4.09	Pest Management	Not applicable- the project will not involve any pest management
4.10	Indigenous Peoples	Not applicable- there are no indigenous people at the site or project area
4.11	Physical Cultural Resources	Not applicable. Site inspections and literature searches have not indicated the presence of any cultural (historical, archaeological) sites in the construction area. However, to manage "chance finds" an appropriate procedure is included in this ESIA. Such procedure to be followed by contractors during the construction phase.
4.12	Involuntary Resettlement	Applicable. The site is currently occupied by some squatters, and therefore there will be some minimal resettlements and/ or livelihood restoration requiring relocation to pave way for the project. A separate RAP report has been done for the project.
4.36	Forests	Not applicable- there is no forest at the site
4.37	Safety of Dams	Not applicable because the project will not involve construction of dams.
7.50	Projects on International Waters (OP 7.50)	Not applicable- the site does not sit on international waters
7.60	Projects in Disputed Areas	The site is not classified as disputed in the project area.

3.3.1 Environmental Assessment (OP 4.01)

OP 4.01 requires Environmental Assessment (EA) for projects proposed for Bank financing to ensure that they are environmentally sound and sustainable, and as a basis for decision making. Under OP 4.01 projects are screened and assigned either of four categories each of which requires different levels of environmental assessment as follows:

a) **Category A**: A proposed project is classified in this category if it is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented. Moreover, the EA for this category includes examining the project's potential negative and positive impacts in comparison with those of feasible alternatives and recommends any measures required to prevent, minimize, mitigate or

compensate for adverse impacts and improve environmental performance. These impacts may affect an area boarder than the sites or facilities subject to physical works.

b) **Category B**: A proposed project is classified in this Category if it's potential adverse environmental impacts on human populations or environmentally important areas, including wetlands, forests, grasslands, and other natural habitats, are less adverse than those of Category a projects. These impacts are site-specific, few of them are irreversible and in most cases the mitigation measures can be designed more readily than Category A projects.

c) **Category C**: A proposed project is classified in this Category if it's likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for Category C project.

d) **Category FI**: A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary in subprojects that may result in adverse environmental impacts.

The proposed improvement of the proposed project has been classified as environmental category B and hence requirement for this Project Report study.

3.3.2 Harmonization of both WB and GOK requirements for social and environmental sustainability

With regard to the project under review, our experience informs that when proposed projects are subjected to environmental and social impact assessment as stipulated under EMCA 2015 and its tools, the same process simultaneously fully resolves requirements of OP 4.01. Generally, both requirements are aligned in principle and objective in that:

- Both require Environmental Assessment before project implementation leading to development of comprehensive Environmental and social Management plans to guide resolution of social and environmental impacts as anticipated.
- Both require public disclosure of Project Report and stakeholder consultation during preparation,
- While OP 4.01 of World Bank stipulates different scales of Project Report for different category of projects, EMCA requires Project Report for all sizes of projects, which are required to be scoped as relevant
- Where EMCA requires consultation of Lead Agencies comprising of relevant sectors with legal mandate under GoK laws, the WB has equivalent safeguards for specific interests.
- The Bank requires that stakeholder consultations be undertaken during planning, implementation and operation phases of the project which is equivalent to the statutory annual environmental audits at the operation phase of projects in Kenya.

The understanding of this Project Report study is that, pursuit of an in-depth Project Report process as stipulated by EMCA 1999 is adequate to address all World Bank requirements for environmental and social assessment. This is a major guiding principle in this study.

In keeping with this trend, public consultation has been done to the stakeholders, and their comments have been incorporated in the final Environmental Assessment and

final design of the project. In addition, the Environmental Assessment report will be made publicly available to all stakeholders through disclosure at the project's proponent website, NEMA, and WB infoshop, as well as copy of the report available at the project site.

3.3.3 The Urban Areas and Cities Act 2011

This law passed in 2011 provides legal basis for classification of urban areas (City) when the population exceeds 500,000; a municipality when it exceeds 250,000; and a town when it exceeds 10,000) and requires the city and municipality to formulate County Integrated Development Plan (Article 36 of the Act). Under Article 36, the integrated development plan so developed is required to be the central pillar in public administration of the city or municipality this forming the basis for:

- the preparation of environmental management; preparation of valuation rolls for property taxation plans;
- provision of physical and social infrastructure and transportation;
- preparation of annual strategic plans for a city or municipality;
- disaster preparedness and response;
- overall delivery of service including provision of water, electricity, health, telecommunications and solid waste management; and
- The preparation of a geographic information system for a city or municipality.

The strategy plan as stated above denotes an annual plan to be adopted in the county assembly following the integrated development plan, and the Act requires the board of town committee to formulate the strategy plan soon after the adoption of the integrated development plan (Article 39).

The integrated development plan as stipulated in the Act has to reflect:

I. vision for the long term development of the city or urban area;

ii. An assessment of the existing level of development;

iii. Any affirmative action measures to be applied; development priorities and objectives;

iv. Development strategies which shall be aligned with any national or county sectoral plans and planning requirements;

v. A spatial development framework;

vi. Operational strategies; and

vii. Applicable disaster management plans;

viii. A regulated city and municipal agricultural plan;

ix. A financial plan and;

X. the key performance indicators and performance targets (Article 40).

The integrated development plan thus formulated has to be submitted to the county executive committee, and the committee has to submit the plan to the county assembly with an opinion within 30 days (Article 41).

Kihara Market project complies with the urban area and other cities Act. It is integrated in the County integrated Development plan, and will comply with all the regulations set in the Act.

3.3.4 The County Government Act 2012

The County Government Act of 2012, which has been adapted to the Constitution's State and County structure in relation to devolution, declares the County Integrated Plan to be central to the County's administration and prohibits any public spending outside of the plan. The Act clarifies that the County Integrated Plan to be broken down into the economic plan, physical plan, social environmental plan and spatial plan. Also, the Act states that the County Plan commands,

- County integrated development plan
- County Sectoral plans
- County spatial plan
- Cities and urban areas plans as stipulated by Urban Areas and Cities Act

The act also stipulates that the County Government will be –responsible for functions stipulated in article 186 and assigned in the Fourth Schedule of the Constitution which includes control of air pollution, noise pollution, other public nuisances and outdoor advertising.

The Proponent will ensure the project will be compliant with County Government Act 2012 by controlling all forms of pollution. Additionally an Environmental and Social Management/monitoring plan has been provided in this report with measures for mitigating potential environmental pollution anticipated from the development of the project.

3.3.5 The National Land Commission Act (2012)

Section 5 of the Act, the Commission's functions are to manage public land, recommend national land policy, advise the GoK on a land registration program, conduct research on land use and natural resources, and monitor and oversee land use planning throughout the country. The same section goes on to stipulate that the NLC ensure that state owned land is managed sustainably for future generations. *The project will be subjected to this act by ensuring the land used for the project is a public land and has no encumbrances to be used for development of a market.*

3.3.6 National Sand Harvesting Guidelines, 2007

These Guidelines apply to all sand harvesting activities in Kenya to ensure sustainable utilization of the sand resource and proper management of the environment. Among key features, the guidelines empower respective DECs to regulate sand harvesting within areas of jurisdiction implying that, sand should only be sourced from approved sites and by approved dealers.

The project will commit to the fulfilment of the guidelines.

3.3.7 Traffic Act Chapter 403

This Act consolidates the law relating to traffic on all public roads. The Act also prohibits encroachment on and damage of roads including land reserved for roads. The proposed project is under the provisions of the Act, in that it will utilize the roads near the project.

3.3.8 The Water Act, 2002

The Act vests the water in the State and gives the provisions for the water management, including irrigation water, pollution, drainage, flood control and abstraction. It is the main legislation governing the use of water.

The proposed project shall require some quantities of water during the construction phase and generation of equally large volumes of surface run-off during operations. The water supplied by the local water provider and local rivers might be the sources of water for construction. The river near the project will be receiving bodies for the surfaces run-off, as all the drainage systems shall be designed to discharge into them.

The contractor shall ensure that there will be no pollution to the nearby rivers and streams, and will seek the necessary permits to abstract the water from the rivers, or any other sources, and shall abide by the conditions attached to the permit(s).

3.3.9 The Water Resources Management Rules (2007)

These Rules are described in Legal Notice Number 171 of the Kenya Gazette Supplementary Number 52 of 2007. They apply to all water resources and water bodies in Kenya, including all lakes, water courses, streams and rivers, whether perennial or seasonal, aquifers, and shall include coastal channels leading to territorial waters.

The Water Resources Management Rules empower Water Resources Management Authority (WRMA) to impose management controls on land use falling under riparian land. It also enables any person with a complaint related to any matter covered by these rules to the appropriate office in WRMA as per the Tenth Schedule which provides a format for report on complaints. WRMA is to reply to the complainant with "copies to all other relevant parties within twenty one days of receiving the complaint, starting with what action is being taken, the position of the Authority on the matter and any recommendation to the complainant."

The contractor shall seek the necessary permits to abstract the water from the rivers, or any other sources, and shall abide by the conditions attached to the permit(s).
The contractor/proponent will adhere to the provision of this regulation by obtaining relevant water permit from WRMA or consult with the Kiambu Water and Sewerage Company for its water sources.

3.3.10 HIV/AIDS Prevention and control Act (Act No. 14 of 2006)

Part 11, Section 7 of the Act requires that HIV and AIDs education be carried out at the work-place. The government is expected to ensure the provision of basic information and instruction on HIV and Aids prevention and control to: -

(I) Employees of all government ministries, departments, authorities, and other agencies as well as employees of private and informal sectors.

(ii) The information on HIV/AIDS is expected to be treated with confidentiality at the work place and positive attitude towards infected employees.

In allocating contractors to the proposed project, the proponent should ensure that the contractor offers such training to the worker as provided by law.

3.3.11 Occupational Safety and Health Act OSHA, 2007

The Occupational Safety and Health Act, 2007, is an Act of Parliament to provide for the safety, health and welfare of all workers and all persons lawfully present at workplaces, to provide for the establishment of the National Council for Occupational Safety and Health and for connected purposes. The Act applies to all workplaces and workers associated with it; whether temporary or permanent. The main aim of the Act is to safeguard the safety, health and welfare of workers and non-workers. Part 9 states that the occupier or employer shall establish a health and safety committee where twenty or more people are employed and such an employee shall prepare a written statement of his general policy with respect to the safety and health at the work place. Further, the occupier shall prepare annual safety and health audits by a qualified person.

The contractor shall adhere to all Sections of the Act as it relates to this project, such as observing safety guidelines, provision of protective clothing, clean water, and insurance cover are observed so as to protect all from work related injuries or other health hazards.

3.3.12 Work Injury Benefits Act, 2007

This is an Act of Parliament to provide for compensation to employees for work related injuries and diseases contracted in the course of their employment and for connected purposes. An employee is a person who has been employed for wages or a salary under a contract and includes apprentice or indentured learner.

The proposed project will adhere to the provisions of this act throughout the construction period of the project.

3.3.13 The Public Health Act (Cap. 242)

The Public Health Act provides for the protection of human health through prevention and guarding against introduction of infectious diseases into Kenya from outside, to promote public health and the prevention, limitation or suppression of infectious, communicable or preventable diseases within Kenya, to advice and direct local authorities in regard to matters affecting the public health to promote or carry out research and investigations in connection with the prevention or treatment of human diseases. This Act provides the impetus for a healthy environment and gives regulations to waste management, pollution and human health.

Part IX section 115 states that no person shall cause nuisance or condition liable to be injurious or dangerous to human health. Section 116 requires Local Authorities to take all lawful, necessary and reasonably practicable measures to maintain their jurisdiction clean and sanitary to prevent occurrence of nuisance or condition liable for injurious or dangerous to human health. Such nuisance or conditions are defined under section 118 waste pipes, sewers, drains or refuse pits in such a state, situated or constructed as in the opinion of the medical officer of health to be offensive or injurious to health. Any noxious matter or waste water flowing or discharged from any premises into Public Street or into the gutter or side channel or watercourse, irrigation channel or bed not approved for discharge is also deemed as a nuisance.

Other nuisances are accumulation of materials or refuse which in the opinion of the medical officer of health is likely to harbour rats or other vermin.

This provision is supplemented by Section 126A that requires local authorities to develop by-laws for controlling and regulating among others private sewers, communication between drains and sewers and between sewers as well as regulating sanitary conveniences in connection to buildings, drainage, cesspools, etc. for reception or disposal of foul matter.

Part XII (prevention and destruction of mosquitoes) Section 136 states that all collections of water, sewage, rubbish, refuse and other fluids which permits or facilitate the breeding or multiplication of pests shall be deemed nuisances and are liable to be dealt with in the manner provided by this Act.

The operations and activities of the proposed project can be detrimental to human and environmental health and safety in the absence of appropriate measures. For example waste, dust, noise and air emission generated from activities and process of the proposed project can directly or indirectly have adverse impacts on human and environment. The Act prohibits the Proponent from engaging in activities that cause environmental nuisance or those that cause danger, discomfort or annoyance to inhabitants or is hazardous to human and environmental health and safety.

The proponent will therefore observe the public Health act to mitigate on the negative environmental health and safety to the public.

3.3.14 The Physical Planning Act (Cap. 286)

Section 24 of the Physical Planning Act gives provision for the development of local physical development plan for guiding and coordinating development of infrastructure facilities and services within the area of authority of County, municipal and town council and for specific control of the use and development of land. The plan shows the manner in which the land in the area may be used. Section 29 of the physical Planning Act gives the county councils power to prohibit and control the use of land, building, and subdivision of land, in the interest of proper and orderly development of its area. The same section also allows them to approve all development applications and grant development permissions as well as to ensure the proper execution and implications of approved physical development plans. On zoning, the act empowers them to formulate by-laws in respect of use and density of development.

The proposed project adheres to this act by ensuring that the proposed project is being developed as per the plans approved by the Ministry of Lands and Physical Planning in accordance to the law.

3.3.15 Way Leave Act Cap 292

Section 3 of the Act states that the Government may carry any sewer, drain or pipeline through, over or under any land whatsoever, but may not in doing so interfere with any existing building. Notice, however, should be given one month before carrying out any such works (section 4) with full description of the intended works and targeted place for inspection.

Any damages caused by the works would then be compensated to the owner as per Section 8 of the Act that states that any person whom without consent causes any building to be newly erected on a way leave, or cause hindrance along the way leave shall be guilty of an offence and any alterations will be done at his/her costs.
The proponent shall observe this Way leave Act when developing or improving the sewer and drainage system for the project.

3.3.16 The Building Code 2009

This code was formulated to provide rules and guideline to be observed during construction it requires the proponent to adhere to the set rules and guidelines in the code. The code requires building plans to be approved by county government. It also prohibits;

- Erection, or causing or permitting erection of temporary buildings (e.g. a site office, store, builder's shed etc.) to which the Regulations apply without a permit granted under Regulations and
- Knowingly occupying a temporary building which is erected in contravention to the regulations

The proponent is committed to developing the proposed project in accordance to the building codes, the national standards and other international building standards and guidelines.

3.3.17 Public Roads and Roads of Access Act (Cap 399)

Sections 8 and 9 of the Act provides for the dedication, conservation or alignment of public travel lines including construction of access roads adjacent to lands from the nearest part of a public road.
Sections 10 and 11 allows for notices to be served on the adjacent land owners seeking permission to construct the respective roads.

The proponent shall issue notices to land owners adjacent to the project area before construction works begins. In addition, the proponent will inform the relevant authorities on the intended modifications of the roads near the proposed project.

3.3.18 National Gender and Equality Commission Act, 2011

The Commission was established through an Act of parliament and is mandated but not limited to perform the following functions:

(a) promote gender equality and freedom from discrimination in accordance with Article 27 of the Constitution; (b) monitor, facilitate and advise on the integration of the principles of equality and freedom from discrimination in all national and county policies, laws, and administrative regulations in all public and private institutions; (c) co-ordinate and facilitate mainstreaming of issues of gender, persons with disability into the overall national development framework.

The provisions of this Act shall be invoked in the implementation of the project, especially in ensuring gender equity, by offering opportunities to women in employment and allocation of stalls.

3.3.19 The Sexual Offences Act (No. 3 of 2006)

Relevant Sections in this Act include:-

- 24- Sexual offences relating to position of authority and persons in position of trust.
- 25- Sexual relationship which pre-date position of authority or trust.
- 26- Deliberate transmission of HIV or any other life threatening sexually transmitted disease.

The proposed project will ensure that this Act is adhered to, by ensuring that there will be NO sexual offences committed, especially during the construction period.

3.4 The Institutional Framework

3.4.1 Ministry of Environment and natural resource

Kenya's Ministry of Environment and Natural Resource is mandated to monitor, protect, conserve and manage environment and natural resources of the country. The Ministry is to achieve this monumental task through sustainable exploitation of natural resources for socio-economic development geared towards eradication of poverty, improving living standards and maintaining a clean environment for present and future generations.

3.4.2 The Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD)

The MoTIHUD is the project proponent and is implementing the development of Kihara Market through Nairobi Metropolitan Services Improvement Project (NaMSIP).

3.4.3 National Environment Management Authority (NEMA)

The Government established the administrative structures to implement EMCA as follows:-

3.4.3.1 The National Environmental Council

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

3.4.3.2 The National Environmental Management Authority

EMCA allows for formation of the National Environmental Management Authority (NEMA) as the body charged with overall responsibility of exercising general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of government in the implementation of all policies relating to the environment. In the context of the EIA process NEMA is responsible for approving the ToR for the ESIA and for the approval of the ESIA. Without this latter approval, the project cannot proceed.

The Authority shall review this ESIA Report for the proposed project, visit the project site to verify information provided in this report and emanate an ESIA license whether all the relevant issues to the project have been identified and mitigated in accordance to the proposed measures.

3.4.3.3 County Environmental Committees

The County Environmental Committees also contribute to decentralized environmental management and enable the participation of local communities. These environmental committees are to be constituted by the governor and are responsible for the proper management of the environment within the county for which it is appointed.

3.4.3.4 Public Complaints Committee

Under EMCA 2015, a Public Complaints Committee has been established to provide an administrative mechanism for addressing environmental harm. The Committee whose membership include representatives from the Law Society of Kenya, NGOs and the business community has the mandate to investigate complaints relating to environmental damage and degradation.

3.4.4 The Directorate of Nairobi Metropolitan Development

In the capacity of Employer, the Ministry of Land, Housing and Urban Development, Nairobi Metropolitan Development through the NaMSIP PCT has administrative jurisdiction over the EIA process.

3.4.5 The Market committees, local CBOs and other Civil Society

Members of the market committees at Kihara and civil society groups working in the area will be involved in the proponent's efforts of sensitizing the people and empowering them to realize maximum benefits from the project.

CHAPTER FOUR

4 PROJECT ENVIRONMENTAL AND SOCIAL BASELINE

4.1 Introduction

Kihara Market forms part of the Nairobi Metropolitan Service Improvement Project (NaMSIP) being implemented by the Ministry of Transport, Infrastructure, Housing and Urban Development with financial support from the World Bank. This initiative is financed by the World Bank with the objectives of providing an enabling physical space for organized markets; creating market linkages for products; fostering access to services so as to promote efficiency and quality of products, and promoting reliable linkages with financial institutions. The goal is to enhance livelihoods especially for the urban poor who are operating as vendors in these select markets. The selection of the Kihara market was on the basis of the existing local participatory process from prioritizing local investment called the Local Authority Service Development Action Plan.

Kihara Market is an open air market that currently has 271 registered traders and is the main market serving Kitusuru, Gachie, Karura, Runda, Nyari and other adjacent areas. The traders are well organized and have a market management committee, comprising of the traders only. The market sits on approximately 0.476 ha of land. It is both a wholesale and retail market and operates all days of the week but the major market day is Sunday. On Sunday, the number of traders increases and spills on to the streets of the adjacent roads all around the market. There are four mature Nandi Flame (Spathodea campanulata) trees within the market perimeter that provide a good shade for the market on sunny days.

The existing market traders operate from deteriorating substandard structures and some from car booths and from Lorries. The vendors sell Fresh produce (assorted fruits and vegetables), dry produce (assorted cereals), meat products (poultry, beef, etc.), household commodities (kitchenware) and personal products (clothes, shoes, etc.).

The Sellers encroach on available walkways within the market, showing that the formal infrastructure is already too exiguous. Infrastructural facilities such as waste collection bins, parking areas, toilets, water, electricity, drainage and storage facilities, perimeter walls, etc., are not adequately provided and disaster management systems such as fire extinguishers and hydrants are neither available. Currently, waste disposal at the market is very poor in that there are no receptacles for waste collection and handling. Traders dump their wastes at the bus park for the County waste collectors to collect. Some traders reported that the County waste collectors at times have to be followed up to collect the solid wastes after days of none collection.

4.2 Physical Environment

Baseline information for Kihara market assumes the larger Kiambu County's baseline environmental and social conditions. Discussed below is the physical and social environment for the project area.

4.2.1 Climate

The region is characteristic by equatorial climatic conditions and rainfall is highly influenced by altitude and proximity to the Aberdare forest. Rainfall in the area comes in two seasons, long rains come between March to May and short rains come between October and December. The annual mean rainfall varies from 1070mm to 1750mm per annum. The nearest meteorological station registered in the Kenyan Meteorological Department is the Thika Meteorological Station.

The County enjoys a warm climate with temperatures ranging between 12°C and 18.7°C. The rainfall aggregate for the County is 1000mm each year. The cool climate makes it a conducive for farming. June and July rank as the coldest months while January-March and September-October are the hottest months.

The main wind – direction is easterly, evaporation ranging from 100 to 150mm per month while the humidity varies from 50% to 90%.

4.2.2 Topography and Physiographic Features

Kiambu County is divided into four broad topographical zones namely, Upper Highland, Lower Highland, Upper Midland and Lower Midland Zone. The Upper Highland Zone is found in Lari Constituency and it is an extension of the Aberdare ranges that lies at an altitude of 1,800-2,550 metres above sea level. It is dominated by highly dissected ranges and it is very wet, steep and important as a water catchment area.

The lower highland zone is mostly found in Limuru and some parts of Gatundu North, Gatundu South, Githunguri and Kabete constituencies. The area is characterized by hills, plateaus, and high-elevation plains. The area lies between 1,500-1,800 metres above sea level and is generally a tea and dairy zone though some activities like maize, horticultural crops and sheep farming are also practiced. There are also large plantations of pineapples owned by Del Monte in parts of Thika Sub County.

The upper midland zone lies between 1,300-1,500 metres above sea level and it covers mostly parts of Juja and other constituencies except for Lari. The landscape

comprises of volcanic middle level uplands. The lower midland zone partly covers Thika Town (Gatuanyaga), Limuru and Kikuyu constituencies.

Below is the Elevation map of Kiambu at 1734 meters above sea level. The elevations are displayed in different colours. The elevation map of Kiambu was generated using elevation data from NASA's 90m resolution SRTM data. The maps also provide ideas of topography and contour of Kiambu, Kenya.

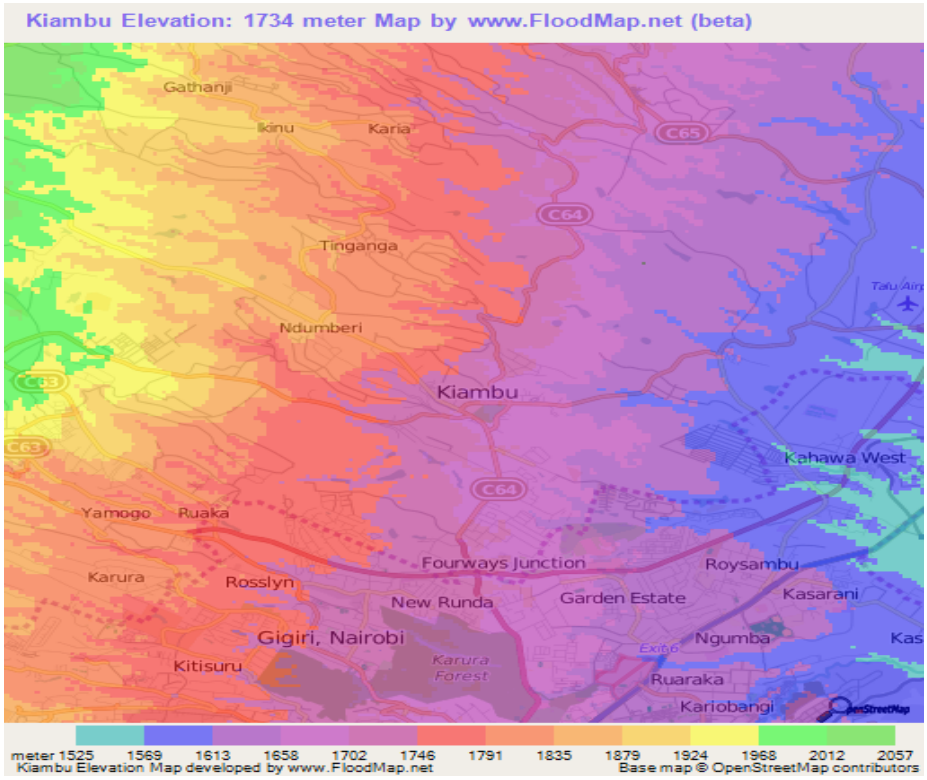

Figure 2: Elevation map of Kiambu area

Source: Nairobi Kenya Elevation map at FloodMap.net 2014

4.2.3 Hydrology

Kiambu County is endowed with both surface and groundwater resources. It has sixteen permanent rivers originating from Aberdare Ranges, which is the main water tower for the County. The major rivers that meet the County water demand are; Ndarugũ, Thiririka, Ruiru, Kamiti and Kiu, all of which eventually drain into Athi River, and five major wetlands viz; Kikuyu, Lari, Theta, Kiganjo and Gacii wetlands.

The project area is well drained as it is characterized by horizontal valleys, vertical slopes and well drained loamy red volcanic soils. Two rivers, Karuri and Rui Rwa Maingi are located due north and south, respectively at approximately a kilometer from the project site.

4.2.4 Geology and Soils

The County is covered by three broad categories of soils which are: high level upland soils, plateau soils and volcanic footbridges soils. These soils are of varying fertility levels with soils from high-level uplands, which are from volcanic rocks, being very fertile. Their fertility is conducive for growth of various cash crops and food crops such as tea, coffee, horticultural products, pyrethrum, vegetables, maize, beans, peas and potatoes. These soils are found in the highlands, mostly in Gatundu South, Gatundu North, Githunguri, Kiambu, Kiambaa, Lari, Kikuyu, Kabete and Limuru Constituencies. Low fertility soils are mainly found in the middle zone and the eastern part of the County which form part of the semi-arid areas. The soils are sandy or clay and can support drought resistant crops such as soya beans and sunflower as well as ranching. These soils are mostly found in parts of Juja, Thika Town, Ruiru, Kabete, Limuru, Gatundu North and Gatundu South Constituencies.

Most parts of the County are covered by soils from volcanic footbridges. These are well drained with moderate fertility. They are red to dark brown friable clays, which are suited for cash crops like coffee, tea and pyrethrum. However, parts of Thika Town, Ruiru, Juja and Lari constituencies are covered by shallow soils, which are poorly drained, and these areas are characterized by low rainfall, which severely limits agricultural development. However, these areas are suitable for ranching and growth of drought resistant crops.

The soils around at site have been disturbed by human activities over a long period of time because it is located in an existing town. The soils at the market consist of sandy clay soils type of origin. The surface of the market is most by vegetation e.g. grasses, herbaceous plants and some trees.

4.2.5 Biological Environment

Information in Kiambu indicates that the County has few wildlife resources since many gazetted forests were allocated illegally to individuals. An example is Kinare forest in Lari Constituency, whose ecosystem constitutes of a dense forest with elephants, hyenas, bush baby, baboons, colombus monkeys, dik-dik, bush pigs, tree and ground squirrels, porcupines and many species of birds such as weaver, guinea fowls, sparrow among others. The proposed market area is within a built environment however, a few trees are found within the project area's vicinity. Fauna expected at the project area mainly include lizards, grasshoppers, rats among other seasonal faunae.

4.2.6 Air Quality

A limited spot check survey and analysis was undertaken in the Project area as part of this ESIA process. Measurements of the baseline PM_{10}, SO_2 and NO_2 levels were undertaken at proposed market site (1º 10' 33.21" S, 36º 45' 20.61" E). The results obtained were well within WHO and Kenyan standards; Environmental Management and Coordination (Air Quality) Regulations 2014. The air quality is expected to be impacted by construction, operation and demolition activities; however, implementation of the proposed recommended mitigation measures will keep the levels within the acceptable limits. The results are presented in Table 4-1 below.

Table 4-1: Air Quality Results for Kihara Market

Site / Location Unit	GPS Coordinates	Parameter	Results ug /m^3	Kenyan limits (NEMA ug /m^3	IFC/WB guidelines ug /m^3	EU standards/WHO Guidelines ug /m^3
Kihara Market	1º 10'33.21"S, 36º45'20.61"E	PM_{10}	36.00	100	50	50
		NO_2	0.17	80	200	-
		SO_2	<0.76	80	20	/20

4.2.7 Ambient Noise levels

Noise surveys were undertaken on 27th July, 2016 as part of this assessment. Measurements were undertaken at 2 locations (MSP1 – MSP2); (1º 10' 33.21" S, 36º 45' 20.61" E). and 1º 10' 33.65" S, 36º 45' 19.99" E at the proposed project site using Type 1 Precision Impulse Integrating Sound Level Meter, in accordance with international standards for sound level meter specifications IEC 61672:1999, IEC 61260:1995 and IEC 60651, as well as ISO 19961:2003 and ISO 3095:2001 for the measurement and assessment of environmental noise.

Ambient noise levels measured at the site during this study ranged between 62.3 dB (A) and 58.5 dB (A) as shown in Table 4-2. The levels are expected to increase during construction and demolition phases; however, implementation of the proposed recommended mitigation measures will keep the levels within the acceptable limits.

Table 4-2: Noise Survey Results

Measurement Points	Type of Zone	Noise Level (dB(A)) Daytime	NEMA Limits	WB Limits
MP1 Commercial/ residential	1°10'33.21"S 36°45'20.61"E	62.3	55	55
MP2 Commercial/ residential	1°10'33.65"S 36°45'19.99"E	58.5	55	55
World Bank Guidelines: Residential: Daytime: 55 dB(A), Night-time: 45 dB(A) Industrial: Daytime: 70 dB(A), Night-time: 60 dB(A) Mixed Residential (with some commercial and places of entertainment): 55 dB(A)				

4.3 Social Environment

4.3.1 Demographics

Kenya Population and Housing Census 2009 indicate Kiambu County population at 1,623,279 with 802,609 being male and 820,670 being female. The average population growth rate in the County is 2.81% and the sex ratio is approximately 1/1.02.

4.3.2 Education

Kiambu County has high literacy level which stands at 90.1%. The project area is thus characterized with high literacy levels. There are several ECD centres, primary and secondary schools within the project area and its immediate neighborhood.

Majority of the surveyed PAPs in the project area have completed primary education (33.8%) and secondary education (20.8%) with only 5.2% having completed technical training. 3.9% did not complete primary education and 13% did not complete secondary education. Over 93% of the project affected persons could read and write.

Table 4-3: Education level of the household head

Level of Education	Frequency	%
Without Education	3	3.9%
Didn't Complete Primary Education	17	22.1%
Completed Primary Education	26	33.8%
Didn't Complete Secondary Education	10	13.0%
Completed Secondary Education	16	20.8%

Level of Education	Frequency	%
Completed Technical Training	4	5.2%
Completed Vocational Training	0	0.0%
No Response	1	1.3%
Total	77	100.0

Table 4-4: Can read and/or write

Response	%
Yes	93.5%
No	1.3%
Did Not Respond	5.2%
Total	100.0

4.3.3 Energy

Electricity is readily available in the County with many of the markets connected to the national grid. However, some households have not connected despite availability of the Rural Electrification Programme. The main source of energy in the area is electricity from the national grid though there are many other sources of energy such as fire wood, kerosene and biogas which people use for cooking food, lighting and other household activities.

4.3.4 HIV/AIDS

The HIV/AIDS Policy of 2009 identifies HIV/AIDS as a global crisis that constitutes one of the most formidable challenges to economic development and social progress. The pandemic heavily affects the Kenyan economy through loss of human resource due to deaths, loss of man hours due to prolonged illnesses, absenteeism, reduced performance, increased stress, stigma, discrimination and loss of institutional memories, among others. Due to the large of number of traders, business activities and the social stature of Kihara market, HIV/AIDS has been considered as one of the possible impacts and adequate mitigation measures have been proposed to that effect.

The Kenya HIV County profile of 2016 indicates that HIV prevalence in Kiambu is comparable to the national prevalence at 5.6% (Kenya HIV Estimates 2015). The HIV

prevalence among women in the County is higher (8.2%) than that of men (2.9%) indicating that women are more vulnerable to HIV infection than men in the County

Kiambu County contributed to 4.7% of the total number of people living with HIV in Kenya, and is ranked the sixth highest nationally. By the end of 2015, a total of 70,971 people were living with HIV in the County, with 10% being young people aged 15-24 years and 4% being children under the age of 15 years.

4.3.5 Income Levels

Within the Kihara Market traders' households, the estimated average household income of the traders is Kshs 13,154. Majority (56.4%) of the traders receive between Kshs 1,000-10,000, those between the range of Kshs 11,000-20,000 are (23.2%). With a net business profit per month of Kshs 7,952 and a total monthly household income of Kshs 13,154, it implies that some affected traders do not solely rely on their businesses as the only source of income.

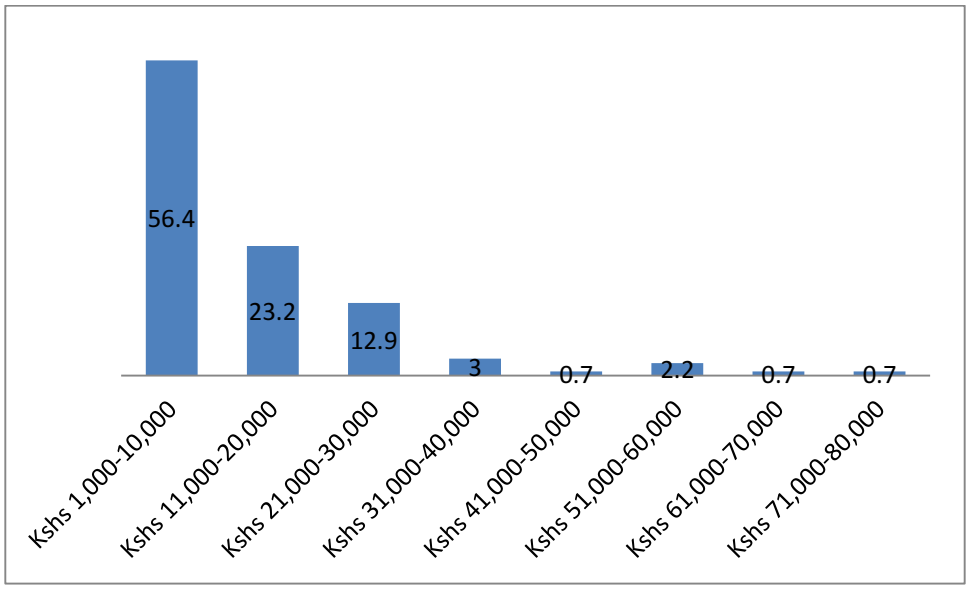

Figure 3: Estimated Total Monthly Household Income

Source; Kihara NaMSIP RAP Report 2017

4.3.6 Infrastructure

The County has a good road network. It has a total of 2,034km of roads under bitumen standards, 1,480.2 km under gravel surface and 430.1 km under earth surface. There is a great need in improving the condition of the earth roads since during the rainy season, most of the roads become impassable. However, the terrain poses a great challenge for road maintenance.

There has been a lot of improvement in the roads subsector with the example of Thika-Nairobi highway.

It also has 131 km of railway line and four railway stations in Ruiru, Githurai, Juja, Thika, Kikuyu and Limuru towns. The rail is not fully utilised in the County and only passenger trains operate in the morning and evenings between the City of Nairobi and the four stations. However, there is a great potential in the sector and hence efforts need to be put in place to ensure the rail infrastructure is improved which will encourage introduction of modern efficient trains.

At Kihara Market, Sellers encroach on available walkways within the market, showing that the formal infrastructure is already too exiguous. The Market is served by Kihara-Gacii-Karura Road which is located to the south of the project site and several unnamed feeder roads. Other major roads within the area include: RedHill Road to the east, Kinanda Road to the South and Kagongo Karura Road to the north.

4.3.7 Administrative Units

Kiambu County is divided into ten (10) sub-counties namely: Gatundu North, Gatundu South, Ruiru, Thika East, Thika West, Githunguri, Kiambu, Limuru, Kikuyu and Lari. Lari sub-County is the largest in size while Thika East is the smallest. The proposed Kihara Market is located in Kiambaa Sub County. The sub-counties are further subdivided into 29 divisions, 95 locations and 236 sub-locations. Kiambu town is the commercial and administrative capital of Kiambu County. Due to its proximity to the City of Nairobi (16 kilometres), the town hosts key government offices for the main ministries. See the constituencies in figure 4 overleaf:

Figure 4: Constituencies in Kiambu County

Source: ***UNEP (2009), Kiambu County Environment Outlook***

4.3.8 Political Units

The County has 12 parliamentary constituencies: Gatundu South, Gatundu North, Juja, Ruiru, Thika Town, Kiambu, Kabete, Githunguri, Limuru, Kikuyu, Kiambaa and Lari. Kiambu town is the County headquarters.

CHAPTER FIVE

5 PUBLIC CONSULTATION AND PARTICIPATION

5.1 Introduction

Public consultation and participation is basically concerned with involving, informing and consulting the general public and the directly affected persons in planning, management and other decision-making activities. Legal Notice 101 of EMCA 1999 (The Environmental Regulations, 2003) requires that all environmental assessment process in Kenya to incorporate Public Consultation.

Public consultation in this project was carried out with the following aims:

- To inform the local people, directly affected traders, leaders and other stakeholders about the proposed project and its objectives
- To seek views, concerns and opinions of people in the area concerning the project
- To establish if the local people foresee any positive or negative environmental effects from the project and if so, how they wish the perceived impacts to be addressed
- is to ensure that all stakeholder interests are identified and incorporated in project development, implementation and operation

5.2 Public Consultation Methodology

The following techniques and instruments were used for public consultation and participation.

5.2.1 Stakeholders identification

The ESIA team identified the following key stakeholders for the project. The table 5-1 below illustrates the stakeholders consulted.

Table 5-1: Categories of identified stakeholders

Primary Stakeholders		
No	**Name**	**Category**
1.	NaMSIP	Project Proponent
2.	Traders	Project Affected Persons
3.	Kiambu County	County Government
4.	Local Administration	

5.3 Public Consultation Methodology for Kihara Market

The public consultations methodologies that were used to get information from Kihara Market traders and stakeholders include the following:

a) Initial Interviews;
a) Public meetings;
b) Socio-economic survey.

5.4 Findings In the Public Consultation Forum

The following are the comments and issues raised from the public consultation meeting that was undertaken on 12th August 2016.

Table 5-2: Comments and issues raised at the public consultation meeting

Questions/Comments	Responses
Secretary- There are 3 buildings which are not in the plan, is it possible for them to be demolished and the owners compensated to make room for parking?	These 3 buildings are not within the market project site so they will not be affected
Margaret – There is such poor drainage, when it rains it floods making it difficult to trade and giving room for diseases to spread. We would like a good drainage system.	The drainage system has been addressed in the architectural plans.
Secretary- The current garbage collection system which is under the County government is poor. After the construction of the new market we would like the market committee to be in charge of waste management.	The management of the market including garbage collection will be done by the market management committee which will have a representative from the County Government
Margaret - Will the Youth be involved in construction?	The Contractor identified for construction will be advised to make use of local labour and materials as much as possible.
Chairman – How will the socio-economic survey be done and will all stakeholders be interviewed?	The survey will be conducted using a structured questionnaire as the interview tool. Not all traders will be interviewed; the survey team will take a sample of the traders.
Secretary-When will the project commence?	As soon as the reports are complete, approved by NEMA and World Bank, the necessary funds will be released.

CHAPTER SIX

6 ANALYSIS OF ALTERNATIVES

6.1 Introduction

Regulation 18(1) of Legal Notice 101 specifies the basic content of an Environmental Impact Assessment Study Report subsequent to which, subsection (i) requires an analysis of alternatives including project site, design and technologies and reasons for preferring the proposed site, design and technologies.

6.2 RELOCATION ALTERNATIVE

Relocation option to a different site is an option available for the project implementation. At the moment, there are no alternative sites for the proposed development in Kihara area. The viability of this alternative lies on finding new location all together then relocating the market, traders and its users. Looking for the land to accommodate the scale and size of the project and completing official transaction on it may take a long period. In addition, it is not guarantee that such land would be available. The traders and the market users will be affected negatively if this was to be the option followed, and in the processes traders will lose customers as they would find other better alternative markets to do their shopping.

It would also mean that more time will be spent on looking for the best alternative land, designing and approvals of the plans by the relevant departments. This would call for an extra cost and this will lead to delays and longer time period before implementation. In consideration of the above concerns and assessment of the current proposed site, relocation of the project is not a viable option.

6.3 THE NO ACTION ALTERNATIVE

The No Action Alternative in respect to the proposed project implies that the status quo is maintained. This option is the most suitable alternative from an extreme environmental perspective as it ensures non-interference with the existing environmental conditions. This option will however, involve several losses to Government, both central and local, the traders, customers and the country at large and especially the traders who do their businesses in substandard conditions. The property will remain under-utilized.

6.4 THE NO PROJECT OPTION

This is the least preferred from the socio-economic and partly environmental perspectives since if the project is not done:

- The economic benefits especially during construction and operation i.e. provision of much needed jobs for skilled and non-skilled workers will not be realized
- There will be no generation of income by the Contractor, Consultants and the government.
- The government's development policy may not be realized
- The socio-economic status of Kenyans and the local people would remain unchanged.
- The local skills would remain under utilized
- No new employment opportunities will be created for Kenyans who will work in the project area, both during the construction and operation phase as new traders.
- Discouragement of investors, donors and funders to produce this level of standard and affordable developments.

6.5 Analysis of Alternative Construction Materials and Technology

The proposed project will be constructed using modern, locally and internationally accepted materials to achieve public health, safety, security and environmental aesthetic requirements. The construction works will be done using locally sourced materials that meet the Kenya Bureau of Standards requirements.

The technologies available include use of traditional material which is represented by concrete structures and concrete or clay bricks or use of steel frame and thermo-acoustic aluminum panels. Some of these may not be desirable from a cost and durability perspective, e.g. steel frame. The technology to be adopted will be the most economical and one sensitive to the environment.

6.6 Solid waste management alternatives

A lot of solid wastes will be generated from the proposed project, which could be detrimental to the environment. An integrated solid waste management system has been recommended to mitigate any impacts of solid waste generated from the project during construction and operation of the proposed project. First, the Proponent will give priority to reduction at source of the materials. This option will demand a solid waste management awareness programme in the management and the staff. Recycling and reuse options of the waste will be the second alternative in priority. This will call for a source separation programme to be put in place. The third priority in the hierarchy of options is combustion of the waste that is not recyclable. Finally, the Proponent will

need to establish an agreement with Kiambu County Government to ensure regular waste removal and disposal in an environmentally-friendly manner. In this regard, a NEMA registered solid waste handler would have to be engaged. This is the most practical and feasible option for solid waste management considering the described options.

In summary, provided the Environmental Impact mitigation measures are implemented as well as adoption of sound construction management practices, negative effects on water, soil, air, sound, sewerage and drainage systems will be avoided /minimized. However, commitments related to development alternative would ensure that potential impacts are minimized to levels of insignificance.

CHAPTER SEVEN

7 ENVIRONMENTAL AND SOCIAL IMPACTS ASSESSMENT AND MITIGATION MEASURES

7.1 Introduction

This chapter outlines the potential negative and positive impacts that will be associated with the project. The impacts will be related to activities to be carried out during the construction and operation phases of the project. The operational phase impacts of the project will be associated with the activities carried out within the completed market premises. In addition, closure and decommissioning phase impacts of the project are also highlighted.

The impacts of the project during each of its life cycle phases (construction, operation and decommissioning) can be categorized into: impacts on the biophysical environment; health and safety impacts and socio-economic impacts.

7.2 Approach

The process involved in assessing the potential impacts of the project used the following steps:

- Prediction: What will happen to the environment as a consequence of the project?
- Evaluation- will it have beneficial or adverse effects? How big is the change expected to be? How important will it be to the affected receptors?
- Mitigation- if the impact is of concern, can anything be done to avoid, minimize, or offset the impact? Or to enhance potential benefits?
- Assessment of Residual impact-After mitigation, is the impact still of concern?

7.3 Anticipated Positive Project Impacts

7.3.1 Employment creation

This project is anticipated to create employment opportunities for many people within Kiambu County. Direct Job creation will begin from the construction phase of the project whereby the locals will be employed to undertake both informal and formal jobs at the construction site. The socio-economic survey carried out for this project indicated that majority of the traders are in their youthful age. This shows that the market will attract more youth to venture into trade business and hence reduce the number of the unemployed population in the society.

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7.3.2 Source of revenue to the government

The County government can source for revenue from the traders through collection of levies. This contribution enables the County government to maintain the market and carry out other developments within the County.

7.3.3 Socialization

Socialization and interactions realized among traders within the market encourages sharing and dissemination of important and helpful information among people of the same social groups and interests.

7.3.4 Permanent working location

Having the modern market will give the traders an opportunity to have permanent and organized working locations. This encourages stability in business undertakings hence more income generation.

7.3.5 Improved public health

Construction of the modern market will improve the state of public health for the market and its vicinity as the project will entail provision of good drainage system, adequate water provision, sanitary facilities, and organized waste management systems.

7.3.6 Reduced Congestion

The upcoming development will enable reduction of congestion as currently witnessed in the market. All the traders will be accommodated in the new market building.

7.3.7 Economic growth.

Construction of the market is likely to spur economic growth in the area such as development of other business activities including; banking, transportation and residential among others.

7.3.8 Solid Waste Management

Solid waste management will be a shared responsibility among all the stakeholders who are the County government, generators, shoppers, contracted and licensed waste handlers, owners and occupiers of premises. Traders will be provided with separate collection bins for biodegradable and non-biodegradable waste at the new facility. Waste from such bins shall be collected on daily basis by the County workers for proper disposal. Traders will also be provided with bins near their merchandising points to

ensure waste generated is collected at garbage stations or transfer points and later disposed at the main collection points for further disposal by the County government.

7.3.9 Shield against adverse weather conditions

The construction of a modern market will ensure traders carry out their businesses without worry of extreme weather such as vulnerability to rainfall and heat from the sun since the market will have a roof and wall around it.

7.4 Anticipated Negative Project Impacts and Mitigation Measure

7.4.1 Biodiversity and vegetation loss

The project will have a direct impact to the existing biodiversity in the market centre since the construction phase will involve removal of the vegetation cover and trees planted in the market. However, this development will have minimal impact to the biodiversity because the area is a business area as categorised by Kiambu County Government.

Mitigation

With the rating of low medium impact, the Proponent is advised to compensate the loss of biodiversity by planting flowers and other aesthetic plants once the project is complete.

7.4.2 Soils and Geology disturbance

Since the construction phase will involve use of heavy plant machinery and excavations, soil disturbance is bound to happen. Therefore, the Contractor should put in place mitigation measures to aim at minimum soil disturbance and soil erosion. These measures will include clearing the project site of excavated materials or protect excavated sections from storm water, avoid excavation through flood plains or into stream banks, creating proper channels for waste water and solid waste disposal, develop emergency measures and procedures for protection of soils.

Mitigation

The impact rating is low, however the Proponent through the Contractor should ensure that Excavations are undertaken safely in that shoring and good slope banking is put in place and by adhering to all safety rules.

7.4.3 Depletion of Water Resources

Construction works demand high level of water utilization. This high water demand will in turn impact to the water supply in the County. The impact will be reduced water supply to other adjacent areas that shares the same water infrastructure.

Mitigation

The Impact rating is low. The Contractor is advised to consult with Kiambu Water and Sewerage Company to get permit for their share allocation of water. This consultation and collaboration with water supplier will be encouraged so that water demand conflict will not arise. The Contractor is also advised to install water storage tanks and other water saving technology at the site to save on water usage.

7.4.4 Soils and groundwater Contamination

The Proponent and Contractor will prepare a hazardous substance control systems and emergency response plans that will include preparations for quick and safe cleanup of accidental spills. It will prescribe hazardous-materials handling procedures to reduce the potential for a spill during construction, and will include an emergency response programme to ensure quick and safe cleanup of accidental spills.

Mitigation

The following mitigation measures should be undertaken:

- Pave and shield the waste collection area from direct sunlight and rains;
- Place all oily and contaminated wastes on paved surfaces;
- Dispose offsite oily waste appropriately;
- Obtain spill kits for use in case of accidental spillages on site;
- Obtain portable secondary spill containments for use on site

7.4.5 Air pollution (Dust generation)

The construction activities often result in increased dust and gas emission. These Pollutants emanate from movement of construction machinery and trucks as well as dust generated during construction.

Mitigation

- Practice prevention measures such as dampening dust by use of water (sprinkling water on surfaces that produce dust or covering them);
- Provide PPEs such as nose masks to the workers on the construction site;
- Control over areas generating dust particles. Such areas should be regularly cleaned;

- Workers should be encouraged to go for regular health check-ups to ascertain their health standards;
- Regular air quality tests to enhance air quality monitoring;
- Wet sweeping of the surfaces that produces a lot of dust particles;
- Establishment of optimum green spaces in the compound particularly at the perimeter fence as the vegetation helps in extracting pollutants from the air.

7.4.6 Air pollution (Generation of exhaust emission)

The following measures are recommended to mitigate impact of air pollution associated with exhaust emissions;

- Maintaining equipment appropriately;
- Keeping vehicle idling time to the very minimum.
- Use of alternative fueled construction equipment where feasible.

7.4.7 Noise and excessive Vibration generation

Noise refers to unwanted sound that can affect job performance, safety and health. Physical impacts may include; loss of hearing, pain, nausea and interference with communications when the exposure is severe. Psychological effects could be disruption of concentration and cause of annoyance. Construction activities tend to cause noise which affects the immediate environment and even disrupt other nearby operations. The noise will affect small animals and birds which are sensitive to noise.

Mitigation measures

- Construction activities should be carried only during the day when most the neighbours are active or carrying on with their normal day chores. The appropriate time could be between 0800hrs to 1800hrs.
- Construction vehicle's drivers and machine operators should be sensitized to adopt a habit of switching off engines of their vehicles or machinery when they are not in use.
- Regular maintenance of the construction machinery is highly encouraged to reduce the noise resulting from friction.
- The Proponent should provide a well-marked billboard at the construction site gates. This is meant to notify the public of the construction activity and timings.
- Unnecessary hooting should be avoided at all costs by the construction vehicles and even during project occupation.
- Personal protective equipment and /materials such as earmuffs and earplugs should be provided to the workers when operating noisy machinery and in a noisy environment. This measure ensures physical barrier that reduces inner noise levels and guard against hearing loss.

7.4.8 Construction solid/liquid wastes generation

Construction operations will generate solid wastes within the site. The wastes may include; rods of metal, pieces of iron sheets, broken glasses, pieces of wood, empty containers and broken stones.

Mitigation

- The Proponent should liaise with private waste handlers and the Kiambu County Government to have a sound waste handling and disposal.
- The wastes should be properly segregated and separated to facilitate recycling of some useful waste materials. For example; broken stones can be used for backfills. Integrated solid waste management system may also be adopted through hierarchy of options like source reduction, recycling, composting and re-use.
- The Proponent should ensure that measures are put in place to ensure that construction materials required for the project are carefully budgeted to ensure the amount of construction materials left are kept to the minimal level possible.
- All the solid wastes should be collected by NEMA licensed waste collectors and dumped in NEMA recognized dumpsite
- E portable Human waste will be discharged into toilets and disposed appropriately by the mobile toilet handler.

7.4.9 Health and safety Impacts

Construction activities such as excavation and concreting can pose occupational hazards and risks to construction workers and the general public living and working in the neighbourhood of the construction site. They can cause respiratory infections and injuries to limbs and body due to exposure to, dust and combustion gases, operation of equipment and handling of construction materials. Accidents may occur during construction as a result of workers falling from heights or being hit by falling construction materials or tools.

Dust and combustion gases can irritate the eyes causing trachoma and respiratory problems. While the operation of construction equipment and handling of materials can result in injuries to the workers especially in the absence of appropriate protective devices. The health of the site workers may be further compromised by the food which is often supplied by mobile individuals with no licenses to handle food and some of the foodstuffs may be prepared in unhygienic manner.

Mitigation

- Depending on the occupational safety and health hazards encountered while performing assigned tasks, workers may require using properly fitting personal protective equipment (PPE) to avoid injuries and illness. They (workers) must be

provided with full protective gear. These include working/safety boots, overalls, helmets, goggles, earmuffs, masks, gloves etc.

- Adapt effective emergency response plans. A good start of learning how to respond to an emergency is through certification in Basic First Aid. Regular drills and emergency situations should be followed to impart the anticipated insight and awareness to the workers.
- A first aid kit should be provided within the site. This should be fully equipped always and should be managed by qualified persons.
- Safety awareness may be gained through regular safety training or personal interest in safety and health.
- Local individuals preparing food for the workers at the site must be controlled to ensure that food is hygienically prepared. Allow only authorized food vendors to supply food for the workers in the site
- The Contractor should have workmen's compensation cover. It should comply with Workmen's Compensation Act, as well as other Ordinances, Regulations and Union Agreements.
- Workers should always be sensitized on social issues such as drugs, alcohol, diseases etc.

7.4.10 Disruption of water supply

Disruption of water supply can occur during construction phase. During excavation activities, the underground water pipes supplying water to other businesses and residents may be accidentally broken.

Mitigation

Contractor should promptly contact Kiambu Water and Sewerage Company immediately any water pipe is damaged during construction to prevent prolonged water disruptions to neighboring businesses and residents

7.4.11 Increased surface runoffs

Increase in the runoffs emanating from expansive roof tops and paved grounds shall be mitigated. These runoffs often lead to flooding and overflow of the drainage system.

Mitigation

- Construct gutters along the roofs for rainwater harvesting and provide tanks for water storage;
- Construct efficient drainage systems within the market.

7.4.12 Landscape and Visual destruction

At the initial stages of construction, excavators and landscape distortion can be an eye sore to the passerby.

Mitigation

- The Contractor shall put up a perimeter fence using non-transparent material to prevent people from accessing the site.
- The Proponent shall beautify the building and the site after its completion by painting it and planting aesthetic plant round it

7.4.13 Hazardous materials use/storage

There may be the need to use hazardous materials for construction. These materials can lead to minor or major destructions to life, soils and water. They may include paint; reacting chemicals among others.

Mitigation

- Ensure that all chemicals used in construction are appropriately labeled or marked and that material safety data sheets containing essential information regarding their identity, suppliers' classification of hazards, safety precautions and emergency procedures are provided and are made available to employees and their representatives;
- Keep a record of all hazardous chemicals used at the premises, cross-referenced to the appropriate chemical safety data sheets;
- There should be no eating or drinking in areas where chemicals are stored or used

7.4.14 Food poisoning

Construction workers may contract food poisoning by buying food from food vendors. This may lead to reduces work personnel and may lead to delay of works and increased expenses for training new workers.

Mitigation

- Allow only authorized food vendors to supply food for the workers in the site;
- Sensitize workers on the possibility of food poisoning from the vendors

7.4.15 Poor sanitation

Poor sanitation may be realized during construction when construction workers do not have access to toilets and water for washing hands thereafter.

Mitigation

- Provide Suitable, efficient, clean, well-lit and adequate gender specific sanitary conveniences for construction workers;
- Provide water and soap for washing hands after visiting the toilets.

7.4.16 Traffic snarl up and accidents

Activities related to construction works and operation will undoubtedly induce uncharacteristic levels of additional vehicular traffic at the site and roads leading to the

site and market respectively. Related issues of vehicle congestion and reckless driving by truck drivers delivering construction materials and supplies to the site and market will be sources of potential accidents to road users and pedestrians. Disturbance of normal living conditions to the local population and business people due to the increased traffic in the area will also be expected especially during the construction period.

Mitigation measures during construction

The Proponent shall implement the following measures to minimise inconvenience and danger to proximate residents through increased road traffic and dust, and reduced access to worksites:

- Determine the main access and egress points for the site throughout the project duration, along with scheduled changes in these access and egress points, if applicable. These points need to be shown on the site layout (i.e., site setup) drawings.
- Proper traffic control signage should be installed. This includes road signage to be erected near all the entrances and junctions to control construction traffic
- Delivery of materials should be planned at night when there is minimal traffic
- Any excavated materials should be hauled at night or timed during traffic off-peak periods
- Prepare a plan for communication with residents and businesses surrounding the construction site. Effective communication with local stakeholders is essential to minimise the inconvenience to the surrounding community
- The Contractor shall prepare a traffic management plan to be approved by the RE
- The Contractor's vehicles and equipment must be in proper working condition and have registration plates, and numbering.
- The Contractor shall ensure proper driving discipline by its employees, and sanctions those in breach.
- Excavated sites, embankments, and dangerous locations are protected with proper safety barriers, tape and warning signs.
- Maintain a log detailing every violation and accident on site or associated with the project work activities, including the nature and circumstances, location, date, time, precise vehicles and persons involved, and follow-up actions with the police, insurance, families, community leaders, etc
- Implement grievance resolution mechanism

Mitigation measures during Operation

- Make the necessary arrangements for coordinating and controlling delivery vehicles
- Make arrangements with the traffic police and County personnel to manage traffic in the area to mitigate against traffic accidents and traffic jam built up at the entry and exit points of the market

- Delivery of supplies should be limited to off-peak hours when the market is not operational to minimize traffic jams in the area.

7.4.17 Socio-Economic Impacts

Since the market will be upgraded into a modern type of indoor market, the existing open-air market will be closed and relocated temporarily. The temporary closure of the open-air market will impact negatively on the economy of the traders, farmers and inconvenience the customers/residents. In the long run, the new modern type market will bring positive impacts to the people of the town and the surrounding areas. They will be able to do trade in the new market and access other services such as sanitation, water and will be sheltered from the sun and rain.

Mitigation

- Relocate the market to a suitable location nearby; the County government can provide land or hire a piece of land temporarily as the market building is being constructed.
- Give priority to the currently existing traders in the market to avoid conflict with new traders.

7.4.18 Housekeeping

During construction, organization of the construction area is important to ensure prevention of accidents and incidences within the site. Clear gangways and pathways enable faster movements even during normal working time and during response to emergencies.

Mitigation

Ensure that there is a well-organized housekeeping plan in place at the construction site.

7.4.19 Crime Management, Child protection, Gender equity and sexual harassment

The laws of Kenya prohibit Contractors from “employing children in a manner that is economically exploitative, hazardous, and detrimental to the child’s education, harmful to the child’s health or physical, mental, spiritual, moral, or social development. It is also important to be vigilant towards potential sexual exploitation of children, especially young girls. The Contractor should adopt a ‘Child Protection Code of Conduct’; that all staff of the Contractor must sign, committing themselves towards protecting children, which clearly defines what is and is not acceptable behavior.

Crimes might occur in the project area during the construction and operation such as stealing of construction materials or individual property, fighting, petty crimes such as pick pocketing, drug abuse and alcoholism among others.

There is also potential that gender inequality might occur during project construction through unequal distribution of work, discrimination against women, and unequal pay for women, lack of provision of separate facilities for women, among others. Sexual harassment against women might also happen because of mixing of women and men at the construction site.

Mitigation Measures (design)

- Proper design incorporating lighting to enhance security at the market
- Provision for fencing along the property boundary should be part of the design to control entry and exit points

Mitigation measures during construction

- Ensure no children are employed on site in accordance with national labor laws
- Ensure that any child sexual relations offenses among Contractors' workers are promptly reported to the police
- 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.
- The Contractor shall require his employees, sub-Contractors, sub-Consultants, and any personnel thereof engaged in construction works to individually sign and comply with this Code of Conduct.
- Removing any employee who persists in any misconduct or lack of care, carries out duties incompetently or negligently, fails to conform to any provisions of the contract, or persists in any conduct which is prejudicial to safety, health, or the protection of the environment.
- Taking all reasonable precautions to prevent unlawful, riotous or disorderly conduct by or amongst the Contractor's personnel, and to preserve peace and protection of persons and property on and near the site.
- Prohibiting alcohol, drugs, arms, and ammunition on the worksite among personnel.
- The Contractor and Supervision Consultant should register in a log all events of a criminal nature that occur at the worksite or are associated with the civil works activities.
- The Contractor and Supervision Consultant should report all activities of a criminal nature on the worksite or by the Contractor's employees (whether on or off the worksite) to the police and undertake the necessary follow-up. Crime reports should include nature of the offense, location, date, time, and all other pertinent details.

- Sensitize the construction workers, locals, and security to be on the lookout on suspicious activities near the site

The Contractor's responsibility for workers' conduct within the worksite should include but not limited to:

- Contractor to prepare and enforce a "No Sexual Harassment Policy" in accordance with national law where applicable
- Contractor and implementing agency to prepare and implement a Gender Action plan to include at minimum, in conformance with local laws and customs, equal opportunity employment, gender sensitization
- Provision of gender disaggregated bathing, changing, sanitation facilities
- Grievance redress mechanisms including non-retaliation should be set up for the workers
- Liaise with the administration units (County and sub County governments, Police, DO, chiefs, etc.) to provide regular surveillance and patrols to protect workers and shoppers during operation
- The market management should hire a security firm to manage security within the market

7.4.20 Complaints and Grievances/Social Conflict

During construction, the neighbouring community and traders may have complaints and grievances regarding the ongoing activities. There is also potential for social unrest among the local population if they are not considered for employment. This can bring negative publicity during construction including stoppage of work and can delay the projects progress.

The development of the market as well as allocation of space for doing business has been discussed through public consultation, and there are many expectations on who will occupy the stalls when the development is completed. Against the background of this knowledge and expectation, there is a risk of dissatisfaction if procedures of allocation of stalls and spaces are not adequately applied, or if they are seen to be applied in an inequitable manner.

Mitigation

- Provide grievance redress mechanism for the public and traders;
- Advice the public and traders on where to report grievances;
- Consider prioritizing the local manpower for both skilled and unskilled labour.
- Adhere to the market policy in allocation of stalls and spaces to traders;
- Implement proposed grievance resolution mechanism

7.4.21 Increased HIV/AIDs prevalence and other diseases

Construction sites in developing countries are potentially primary centres of HIV-AIDS because construction sectors provide entry-level local jobs, which may be crucial to

the survival of youth-headed households and extended families.

Mitigation

- HIV-AIDS awareness methods used in campaign to increase understanding about the disease;
- Raising awareness about HIV/AIDS;
- Promote the benefits of abstinence / avoidance;
- Distribute condoms to construction workers;
- Encourage workers to go for HIV voluntary counseling, testing and referral services;
- Monitoring of outcomes, in collaboration with National HIV/AIDS Authorities.

7.5 Operation phase Impacts

7.5.1 Poor Solid and liquid waste

The market building after completion and upon occupation will generate solid and liquid wastes. The efficient management of the solid waste generated by the project during the operation phase rests on the hands of the Kiambu County Government

Mitigation

- Wastes should be disposed off in a regular and an appropriate manner. It is recommended that the Proponent should put measures in place to ensure that the wastes are disposed of efficiently through reuse, recycling and proper disposal procedures
- The Proponent should provide waste handling facilities such as waste bins for holding wastes temporarily before disposal by appropriate waste handlers.
- The Proponent should ensure that the market is connected to the septic tank to ensure proper discharge of liquid waste.

7.5.2 Increased Energy consumption and demand

The building will be connected to the electric line which is already available in the area. However; increase in energy consumption will be experienced in the existing electric supply infrastructure.

Mitigation

- The Proponent shall install energy-efficient system within the building for instance the use of energy saving bulbs. This will promote energy conservation during the operational phase of the project.
- The occupants of the building will be sensitized to ensure energy efficiency in their commercial operation.
- The above measures will be complemented by monitoring energy use during the operation of the market and set targets for efficient energy use.
- Maintenance of regular checks of the electrical systems and appliances.

- Switching off security and internal lights during the day when natural lighting can be used.

7.5.3 Occupational Health and Safety Concerns

The market premise should be maintained at its optimum useful state and high standards of hygiene maintained to avoid any disease outbreak. All electrical installations should be properly fixed and maintained to avoid any risk of fire outbreak.

Mitigation

- Local individuals preparing food for at the market must be controlled to ensure that food is hygienically prepared and served.
- Adapt effective emergency response plans. A good start of learning how to respond to an emergency is through certification in Basic First Aid. Regular drills and emergency situations should follow to impart the anticipated insight and awareness to the workers.
- A first aid kit should be provided within the market. This should be fully equipped always and should be managed by qualified persons.
- Safety awareness may be gained through regular safety training or personal interest in safety and health.
- Traders should be sensitized on social issues such as drugs, alcohol, diseases etc.

7.5.4 Fire Outbreak

The anticipated occupants are likely to use LPG Gas cylinder, electricity and charcoal as their source of cooking fuel. The occupants are also likely to store flammable materials since the premise is a trading hub dealing with different good. Therefore, the risk of fire outbreak is likely and should be prevented as much as possible.

Mitigation

- Installation of firefighting equipment, which must be strategically placed
- All electrical systems must undergo regular checks
- If appliances or equipment that can cause fire like petroleum and liquid gas may be used in the shops/supermarket/restaurant/hardware, then the occupants must be sensitized on the fire risks they are exposed to
- Highly inflammable paints should be avoided in the kitchen walls and other areas where cooking activities are anticipated.

7.5.5 Blockage of drainage systems

The plumbing system and drainage might be blocked if proper use and maintenance is not exercised by the occupants

Mitigation

- The Proponent should ensure that unwanted materials such as sticks and cloths are not allowed into the drainages. Special bins for handling sanitary materials or clothes should be provided in the toilets.
- Regular maintenance of the drainage should be done to avoid blockages.

7.5.6 Water Pollution

During the operation phase, water pollution may occur when market users litter the drainages, channeling contaminated water to the drainage systems and disposal of liquid waste inappropriately.

Mitigation

- Avoid channeling contaminated water onto the public drainage systems.
- Channel unrecyclable water into the public sewer line. There is no drainage system within the market even though a sewer main line belonging to NCC exist a short distance from the market. There is need for a drainage system within the market to be connected to the main sewer line
- Dispose market waste appropriately

7.5.7 Depletion of water resources

Operation of the market will lead to a higher demand of water by the market users. This demand may lead to depletion of the water from the water service provider and at times water rationing will be required.

Mitigation

- Install water tanks and other water saving technology at the site to save on water usage;
- Train market users on water saving techniques;
- Carry out rainwater harvesting to supplement tapped water.

7.5.8 Air pollution (Dust; Source emissions; odour/foul smells)

Air pollution may occur due to operation activities at the market. These include piling of solid waste for a long time, rotting food stuffs especially vegetables and meats, use of sanitary facilities without proper cleaning, burning waste on site, and source emissions from the generators as well as occurrence of uncovered manholes at the market.

Mitigation

- Clean all dusty areas regularly;
- Solid waste should be regularly removed from the market collection points
- Carry out proper maintenance of generators used on site
- Manholes should be covered using airtight covers in the sewerage lines to reduce any air pollution inform of foul smell; There is no drainage system within the market even though a sewer main line belonging to NCC exist a short distance from the

market. There is need for a drainage system within the market to be connected to the main sewer line
- Frequently (Hourly) clean the sanitary facilities by use of detergents;
- Unnecessary combustion of materials within the compound should be avoided.
- All rotting vegetables and meat must be removed from the market and disposed of appropriately

7.5.9 Accidents and incidence occurrence

Accidents and incidences may occur during operations of the project. Occurrence of such incidences may include falling, being knocked down by vehicles, damage to goods and property.

Mitigation

- Ensure that provisions for reporting incidents, accidents and dangerous occurrences during operations using prescribed forms obtainable from the local Occupational Health and Safety Office (OHSO) are in place;
- Provisions must be put in place for the formation of a Health and Safety Committee, in which the County Government and the traders are represented;
- Train employees on how to respond to incident and accident occurrences.

7.5.10 HIV/AIDS prevalence

HIV-AIDS prevalence is likely to increase among market traders when many youths get self-employed and earn income. Without proper campaign on prevention, the spread of HIV can be rampant within traders.

Mitigation

- Awareness methods used in campaign to increase understanding about the disease;
- Raising awareness about HIV/AIDS;
- Promote the benefits of abstinence / avoidance;
- Availing condoms to traders;
- Encourage traders to go for HIV voluntary counselling, testing and referral services;
- Monitoring of outcomes, in collaboration with National HIV/AIDS Authorities

7.6 Decommissioning phase impacts

7.6.1 Solid wastes (Scraps and other Debris Onsite)

Demolition works generates a lot of solid wastes. These wastes range from; wood, tiles, waste metals and stones amongst others.

Mitigation

- The Proponent should liaise with private waste handlers and the Kiambu County Government to have a sound waste handling and disposal.
- The wastes should be properly segregated and separated to facilitate recycling of some useful waste materials. For example; broken stones can be used for backfills. Integrated solid waste management system may also be adopted through hierarchy of options like source reduction, recycling, composting and re-use.
- All the solid wastes should be collected by NEMA licensed waste handlers and dumped in NEMA recognized dumpsite.

7.6.2 Air, Water and Soil Pollution

Demolitions also generate a lot of waste that can contaminate water, air or soil. These wastes may include liquids, dust or waste water.

Mitigation

Solid waste and liquid waste resulting from demolition or dismantling works will be managed as described in the construction phase

7.6.3 Occupational Health and Safety Concerns

The decommissioning phase may cause accidents; inhalation of dust; generation of noise and occupational incidences like fall.

Mitigation

- Depending on the occupational safety and health hazards encountered while performing assigned tasks, workers will use properly fitting personal protective equipment (PPE) to avoid injuries and illness. Workers must be provided with full protective gear. These include working/safety boots, overalls, helmets, goggles, earmuffs, masks, gloves etc.
- A first aid kit should be provided within the site. This should be fully equipped at all times and should be managed by qualified persons.
- Local individuals preparing food for the workers at the site must be controlled to ensure that food is hygienically prepared.
- The Contractor should have workmen's compensation cover. It should comply with Workmen's Compensation Act, as well as other Ordinances, Regulations and Union Agreements.
- Workers should always be sensitized on social issues such as drugs, alcohol, diseases etc.
- Grievance redress mechanisms including non-retaliation should be set up for the workers

7.7 Cummulative impacts

Cumulative impacts are those that result from the successive, incremental, and/or combined effects of an action, project, or activity. For practical reasons, the identification and management of cumulative impacts are limited to those effects generally recognized

as important based on scientific concerns and/or concerns of affected communities[1]. Cumulative impacts can only occur where, following the implementation of mitigation, significant residual impacts are predicted by the ESIA process.

The cumulative impacts considered in this project include the following;

- Air quality,
- Water quality,
- Waste management
- Noise impacts
- Traffic
- Social economics

7.7.1 Assessment of the impacts

The ESIA assessment looked at the likelihood of an impact having a residual impact that can build up or interact with other impacts from other market projects after the implementation of the mitigation measures proposed in this report. The impact was then rated likely or unlikely. The distances between the markets were also taken into consideration. The distance of other proposed markets to Kihara market is set out in table 7-1 below.

Table 7-1: The distance of Kihara Market in reference to other fourteen markets on a straight line

	Market	Approximate distance from/to Kihara Market
1.	Muthurwa	10.51 Km
2.	Jogoo Road	13.30 Km
3.	Githurai	16.51 Km
4.	Kiambu Market	8.72 Km
5.	Mwariro	10.09 Km
6.	Kikuyu	11.73 Km
7.	Karandini	8.91 Km
8.	Ngong	19.78 Km
9.	Ole Kasasi	20.12Km
10.	Kitengela	35.79 Km
11.	Ruiru	22.25 Km
12.	Juja	30.66 Km
13.	Madaraka	42.36Km
14.	Tala	62.15 Km

[1] IFC), 2013, Good Practice Handbook Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets

The following tables look at the significance of an impact to have residual cumulative impact. The impacts are rated as negligible, minor or moderate.

Residual cumulative impact of air quality

No significant local air quality effects are predicted following the good construction practice, which incorporates the implementation of the identified mitigation measures in the ESMP

Phase	Significance (Pre-mitigation)	Residual Significance (Post-mitigation)
Construction	negligible	negligible
Operation	negligible	negligible

Residual cumulative impact of water quality

No significant impacts on the local water environment are predicted with the implementation of proposed mitigation measures. Therefore, in reference to the fifteen markets, interaction of the impacts to produce cumulative impact is negligible.

Phase	Significance (Pre-mitigation)	Residual Significance (Post-mitigation)
Construction	minor	negligible
Operation	minor	negligible

Residual cumulative impact of Waste management

In waste management, cumulative impact to the waste services could be impacted if mitigation measures are not implemented and the impact significance could be minor. Therefore, following the implementation of mitigation measures cumulative impact are localised and impossible to spread and combine to produce any significant cumulative impact

Phase	Significance (Pre-mitigation)	Residual Significance (Post-mitigation)
Construction	minor	negligible
Operation	negligible	negligible

Residual cumulative impact of Noise quality

For the proposed market project, the noise generation is predicted to be localized. In addition to distance between the markets it is impossible for the noise level to combine and produce significant cumulative impact.

Phase	Significance (Pre-mitigation)	Residual Significance (Post-mitigation)
Construction	negligible	negligible
Operation	negligible	negligible

Residual cumulative impact of traffic congestion/interruption

Due to the geographical location of the markets and the fact that all the markets are not going constructed at the same time. It's unlikely that any significant cumulative traffic impacts arising from the market improvement projects. In addition, the haulage routes and access roads for the markets are different and widespread; therefore, no significant impact will arise following the implementation of the localized mitigation measures

Phase	Significance (Pre-mitigation)	Residual Significance (Post-mitigation)
Construction	minor	negligible
Operation	negligible	negligible

7.7.1.1 Cumulative impact on socio economic

Cumulative impacts on socio economic as a result of all the fifteen markets being built at the same time is likely to have positive impacts to the socio economic of the metropolitan region. Some of the benefits include the following;

- Increased number of people employed in the building sector as casual/permanent during the construction and as traders or business assistants during operation phase
- Improved markets will reduce produce loses because of the improved storage conditions and working condition and increase profitability of the businesses in the markets
- The County revenue tax will increase due to the increase of number of traders in the market.
- The quality of life of both the traders and the customers will improve from trading and buying commodities in modern and hygienic conditions

7.7.2 Conclusion

The possibility of the interaction of the anticipated impact is unlikely to produce any cumulative impact due to the distance between the 15 markets and their geographic location. In addition, the markets will not be constructed at the same time, which make the interaction of the impacts unlikely or even produce any cumulative impacts.

CHAPTER EIGHT

8 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)

8.1 Significance of ESMMP

The purpose of the Environmental/Social Management & Monitoring Plan is to initiate a mechanism for implementing mitigation measures for the potential negative environmental impacts and monitor the efficiency of these mitigation measures based on relevant environmental indicators. The EMMP assigns responsibilities of actions to various actors and provides a timeframe within which mitigation measures can be implemented, supervised and monitored. Further, it provides a checklist for project monitoring and evaluation. The objectives of the ESMMP are:

- To provide evidence of practical and achievable plans for the management of the proposed project.
- To provide the Proponent and the relevant Lead Agencies with a framework to confirm compliance with relevant laws and regulations.
- To provide community with evidence of the management of the project in an environmentally acceptable manner.

The ESMMP outlined below will address the identified potential negative impacts and mitigation measures on the following project stages:

- Pre-construction and Construction Phases ESMMP
- Operation Phase ESMMP and
- Decommissioning Phase ESMMP.

Once all the operational activities have ceased, it is necessary to highlight the basic mitigation measures that will be required during the decommissioning phase of the project. Thus, the crucial objectives, mitigation measures, allocation of responsibilities, time frames and costs pertaining to prevention, minimization and monitoring of all potential impacts associated with the decommissioning and closure phase of the project.

8.2 Environmental and Social, Management and Monitoring Plan

ESMMP is a detailed summary of the impacts and the proposed mitigation measures. It further specifies who is responsible for implementation of the proposed actions and the cost involved in the action. It describes monitoring schedule and the parameter to be monitored. The following table 8-1 outlines the ESMMP for the market.

Table 8-1: Environmental and Social Management and Monitoring Plan

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
Loss of vegetation	**CONSTRUCTION PHASE** Minimize clearing of unnecessary areas at the construction site Replant vegetation through landscaping upon completion **OPERATION PHASE** Replenish vegetation at the open areas of the market regularly Proper maintenance of trees and other vegetation at the market	Design Engineer, Project Engineer and Contractor	check and follow specifications in the drawings and plans (c) Minimal clearance of vegetation and soil stripping (c&o) Net change in vegetation types at the project site; (c&o) Net change in fauna at the project site	Continuous during construction & operation phases	Included in the BoQ under excavations Bill No 2
Soil erosion	**CONSTRUCTION PHASE** Provide erosion channels to natural drains and rivers/streams to minimize erosion	Design Engineer, Project Engineer and Contractor KCG	(c) and (o) Soil erosion levels	During rainy seasons	Included in the BoQ under Drainage Structures Bill No 2

Table 8-1: Environmental and Social Management and Monitoring Plan

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
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Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	Design to incorporate existing drainage pattern and avoid disturbing the same **OPERATION PHASE** Regular cleaning and proper maintenance/repair of drainage structures				Normal maintenance budget of the market during operation
Disruption of Public Utilities	**DESIGN and CONSTRUCTION PHASE** Design to incorporate existing public utilities and avoid disturbing the same Contractor to generate utility management plan Contractor to minimize damage to public utilities	Project Engineer and Contractor Utilities providers	(c) Down time of utilities affected Complaints from the residents No of disruptions	(c) daily	Budget under provisional sums of Utilities Bill No 1, Item E Kshs 6,000,000
Disruption of Businesses or livelihood	**CONSTRUCTION PHASE** Have a Resettlement Action Plan to temporarily solve	The Proponent Kiambu County Government	(c) Implementation of the RAP	Before construction starts	RAP Budget of Ksh 20,304,570

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	disruption of business as the trader await the construction of the market to be complete		Monitor grievance or complaint recorded by local leader/market official/leaders and traders		which is OUTSIDE the Costs build in the planning and administration costs of the Contractor
Air Pollution	**CONSTRUCTION PHASE** Speed control of vehicles accessing the site Construction of bumps along the road near the market Regular watering of access roads and work sites Proper maintenance of construction equipment as per the manufacturer requirements	Project Engineer, Contractor, Traffic police	(c) inspection / observation Dust levels (particulate matter)- the levels may exceed the baseline levels (36 $\mu g/m^3$) presented in table 4-1 of this report but should be within the limits set out in the First Schedule of EMC (Air Quality) Regulations, 2014. At	daily/ random	Equipment - costs build in the planning and administration costs of the Contractor equipment

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
			the project site boundary, the 24hour and annual time weighted average should not exceed 70 and 50 $\mu g/m^3$ respectively. Exhaust fumes from the vehicles- the emission levels should not exceed the levels prescribed under Kenya Standards (KS1515:2000 on vehicular emission) e.g. CO shall not exceed 0.5 per cent volume and hydrocarbons (HC) concentrations shall not exceed 0.12 per cent volume (1200ppm)		

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
			Maintenance levels of plant and equipment		
Noise pollution	**CONSTRUCTION PHASE** Regular Sensitization of workforce and residents on potential noise levels Controlled operation of construction plant and equipment No blasting shall be done on site	Project Engineer and Contractor	Inspection / observation Construction noise and vibration levels at the construction site should be within the limits prescribed in EMC (Noise and Excessive Vibration Pollution (Control) Regulations 2009 or no more than baseline levels presented in table 4-2 of this report. The regulatory limits are as follow: Noise levels- as provided in the Second Schedule of the above	daily/ random	Costs build in the planning and administration costs of the Contractor

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
			regulations the levels should not exceed Leq 60 and 30 dB(A) in diurnal and nocturnal schedules respectively. Vibration levels do not exceed 0.5 centimeters per second beyond any source property boundary or 30 metres from any moving source. Number of Complaints from the residents		

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
Water Resources Usage	**CONSTRUCTION PHASE** Develop water abstraction plan to minimize conflict with residents Manage use of piped water and other water sources mainly used by local people Abstraction licenses should be obtained from WRMA	Project Engineer and Contractor WRMA	Inspection /method of waste collection Complaints from the neighbouring communities or the authorities Amount of water abstracted	(c) monthly	Costs build in the planning and administration costs of the Contractor
	OPERATION PHASE Monitor water wastage and usage during operational stages of the market Install pressure taps that minimize and time usage Repair damaged taps and toilets to minimize waste	KCG	Inspection Amount of water used Repairs and damaged water facilities	(o) monthly	Normal maintenance budget
Water Pollution	**DESIGN and CONSTRUCTION PHASE**	Project Engineer and Contractor	Inspection Discharge into roadside storm water drain	(c) daily (o) regularly	Costs build in the planning and

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	Incorporate erosion control measures during construction at the site No oils and fuels should be stored at the construction site – small works Maintenance, re-fueling and cleaning of equipment should NOT be done at construction site by the Contractor – but in a licensed garage outside the site area The design will incorporate oil sumps at the parking areas to isolate oil spills from parked vehicles that might spill to the storm drains Not any form of solid and liquid waste, fuels or oils shall be discharged on land surface, into	Sub-County Health & Environmental Officer, NEMA, WRMA KCG	Complaints from the neighbouring communities or the authorities Visible solid waste and oil stains in the storm water drainage Inspection status of the two rivers which are 1Km away from the project site		administration costs of the Contractor & Maintenance costs of the market

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	the storm water drains which could eventually get to the two rivers which are 1km away from the site especially during the rain seasons when the storm water volume increases and could reach the rivers **OPERATION PHASE** Monitor oil spills and other leakages at the parking lots, and delivery areas Regular cleaning of oil sumps and storm water drains				
Traffic safety	Contractor to prepare a Traffic Management Plan for approval to address the following issues; Initiation of a safety program and measures by creating awareness and educational	Project Engineer and Contractor Local Police, KCG	Inspection and accident reports (c) & (o) - No of accidents	Monthly	Costs build in the planning and administration costs of the Contractor

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	campaigns for workers and local communities Installation of appropriate road signage, speed signs, and other warning signs at the site and access roads Copies of drivers' licenses and insurance policies for the Contractor's drivers and vehicles respectively should be provided to the Supervision Consultant. The Contractor's vehicles and equipment must be in proper working condition and have registration plates, and numbering. The Contractor ensures proper driving discipline by its employees, and sanctions those in breach.		(c) & (o) - Complaints from the local people (c) Adherence of insurance and traffic Act requirements		Contract clause No 18

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	Excavated sites, embankments, and dangerous locations are protected with proper safety barriers, tape and warning signs. Maintain a log detailing every violation and accident at site or associated with the project work activities, including the nature and circumstances, location, date, time, precise vehicles and persons involved, and follow-up actions with the police, insurance, families, community leaders, etc. (including during operation stages)				
Settlement/ Induced settlement changes	**CONSTRUCTION PHASE** Ensure the site is fenced off to discourage informal settlement and trading around the construction site	KCG, Local sub-County Authorities	Inspection/observation Number of informal business set up near the project	monthly	No direct costs

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	Discourage informal business settlement near the market				
Social Issues/ employment	**CONSTRUCTION PHASE** Utilization of local skilled and unskilled worker; Adhere to the local labour laws of 30% women in employment.	Contractor, Project Engineer	(c) observation /reports Number/percentage of local workers from the local communities Number of female employees; Complaints from residents	Monthly	No direct costs to ESMMP, costs build in the planning and administration costs of the Contractor
Workers and traders' health and sanitation	**CONSTRUCTION PHASE** Contractor to provide clean and adequate sanitation facilities for the workers at all times Contractor shall also provide clean drinking water at the construction site for his workers at all times **OPERATION PHASE**	Contractor, Project Engineer KCG	Inspection/observation/ reports Number of sanitation facilities Sanitation facilities cleanliness Number of disease outbreaks	Daily Monthly reports	No direct costs to ESMMP, costs build in the planning and Administration costs of the Contractor

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	Project Proponent to provide clean and adequate sanitation facilities for the traders.				& Normal maintenance costs during operation
Security and Crime	**CONSTRUCTION AND OPERATION PHASES** Proper design incorporating lighting to enhance security at the market Sensitize the construction workers, locals, and security to be on the lookout on suspicious activities near the market Liaise with the administration units (County and sub County governments, Police, DO, chiefs, etc.) to provide regular surveillance and patrols to protect workers and traders	Contractor, Project Engineer Local police KCG	Reporting Number of crimes reported (target =0)	Monthly	No direct costs to ESMMP, costs build in the planning and administration costs of the Contractor & Normal operational costs during operation
	CONSTRUCTION PHASE		observation / reports	Monthly	

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
HIV/AIDS, STDs,	Initiate a sensitization and awareness campaign on HIV/AIDS and STDs to be done to workers and local community; Reduce risk of transfer through provision of male and female condoms for all workers; Provide free STI and HIV/AIDS screening, diagnosis, counseling for workers and local people near the site	Contractor, Project Engineer Sub-County Health & Environmental Officer, local sub-County authorities	No of HIV/AIDs programs conducted by the Contractor No of testing, counseling provided Prevalence of prostitution, HIV/AIDS and STDs in the area during construction period		HIV/AIDS awareness campaign HIV/AIDS prevention campaign Kshs 2,500,000 as per provided in the BoQ Bill No 1
	<u>OPERATION PHASE</u> Maintain a continuous awareness program on health issues related to STDs and HIV/AIDS at the market, e.g. installing posters at the market		Observation / reports Information flow, dissemination and awareness on HIV/AIDs No of posters at the market	Continuous Response to HIV/AIDS issues	
Solid Waste	**<u>CONSTRUCTION PHASE</u>**	Contractor and Project Engineer	Inspection Disposal methods of solid waste from the site	weekly	Costs build in the planning and

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	Establish a well-planned method of solid disposal of debris/ garbage at the camp site		Complaints on health and safety aspects related to construction activities Site cleanliness Amount of waste/debris on site		administration costs of the Contractor
	<u>OPERATION PHASE</u> Provision of disposal bins at designated areas at the market Regular collection and disposal of garbage by the project Proponent Clean storm water drains to minimize clogging Provision of separate collection bins for biodegradable and non-biodegradable waste at the new facility.	KCG	Inspection Accumulation of garbage at the market Complaints by traders (target =0) Number of drainage areas clogged Facilities cleanliness	daily	KCG budget

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	Traders to be provided with bins near their merchandising points to ensure waste generated is collected at garbage stations or transfer points and later disposed at the main collection points for further disposal by the County authorities. All the collection bins and collection points/stations shall be properly maintained on regular basis				
Occupational Health and Safety	The Contractor to prepare a Health and Safety Plan that will include consideration of the following; **<u>CONSTRUCTION PHASE</u>** Provide medical and insurance cover for all workers	Project Engineer and Contractor Sub-County Health & Environmental Officer	Inspection No of PPEs provided Workers OHS compliance (use and adequacy) Number of construction activities related accidents	Monthly	Standard conditions of contract for Insurance - Clause 18 of contract

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	Provide adequate and right safety tools, and enforce use of PPEs to all workers Appoint a fulltime OHS personnel Ensure provisions of first aid for staff, insurance, and access to ambulance service at all worksites, and arrangement to access local hospital/dispensary with qualified medical staff by workers The site shall be fenced off and provided with security at the access gates to reduce potential accidents and injuries to the public				Bill No 1, Item A Health & Safety for Workers and Equipment – Approx. Kshs 1,000,000
Child protection	**CONSTRUCTION PHASE**	Contractor, Project Engineer,	observation /reports/random checks	Regularly	No Direct costs

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	The Contractor to have and enforce 'Child Protection Code of Conduct' Ensure no children are employed on site in accordance with national labor laws Ensure that any child sexual relations offenses among Contractors' workers are promptly reported to the police		Inspection of employees working at the site Labour Records by the Contractor		
Gender equity and Sexual harassment	**CONSTRUCTION AND OPERATION PHASE** Contractor to prepare and enforce a No Sexual Harassment Policy in accordance with national law where applicable Contractor and implementing agency to prepare and implement a Gender Action plan	Contractor, Project Engineer,	observation /reports Number of incidences (target =0) Number of women employed Labour Records by the Contractor	monthly	No direct costs to EMMP, costs build in the planning and administration costs of the Contractor

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	to include at minimum, in conformance with local laws and customs, equal opportunity employment, avoid sexual exploitation of women, give equal opportunities to women in allocation of the new stalls and at market management committees, avoid harassment by male counterparts. Provision of gender disaggregated bathing, changing, sanitation facilities Grievance redress mechanisms including non-retaliation				
Loss of life, injury, or damage to people and	**<u>CONSTRUCTION PHASE</u>** Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage	Contractor, Project Engineer,	Number of incidences reported (target=0)		No direct costs to EMMP, costs build in the planning

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
private property	to property, as the RE may reasonably require Insuring against liability for any loss, damage, death or bodily injury which may occur to any physical property or to any person which may arise out of the Contractor's performance of the contract Insuring against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's personnel. The construction site shall be fenced off to prevent access to members of the public.				and administration costs of the Contractor Schedules, BOQ, Sect A, No 5
Chance Finds	The Contractor should have and implement the Chance Finds	Contractor, Proponent, KCG	Log of chance find;	Constant monitoring	No cost implication

Project Environmental and Social Impact	Proposed Mitigation and Aspects for Monitoring	Responsibility for intervention and monitoring during design, construction and defects liability period	Parameters for Monitoring/ Indicators – construction (o) - operations	Timing - Recommended frequency of monitoring	Estimated Mitigation & Monitoring costs to be included in the BoQ (Kshs)
	Procedure set out in Annex 2 in the event that cultural heritages is discovered		100% implementation of Chance Finds Procedure	during excavation	
TOTAL APPROXIMATE COSTS OF ESMMP					**Kshs9,5000,000**

8.3 Grievance redress Mechanisms (GRM)

Proper and strong Grievance mechanisms are very important in ensuring the stakeholders grievances and issues as they relate to the proposed project are addressed in a timely and appropriate manner, to enhance the relationship between the project Proponent, Contractor, traders and the stakeholders. It is therefore recommended that the project Proponent should therefore put in place a GRM for the project to ensure any issues raised by traders and stakeholders related to the project safeguards are addressed during the construction and operational phases of the project.

It is important to emphasize that grievance redress mechanisms are for all aspects and phases of a project, not just environmental and social safeguards. The implementing agency should prepare and disseminate grievance redress guidelines for the project, including a hierarchy of reporting levels for redress, roles, and responsibilities. Public information about grievance redress should be posted in visible locations in project area of influence. Where needed, Grievance Redress Committees (GRCs) should be established, with the necessary authority, training and resources. Entities involved in grievance redress should keep proper records and logs. Project budgets should include resources for the establishment and operation of the Grievance Redress System. The implementing agency should on regular occasions review the GRM and verify that they are working properly. A sample grievance process has been provided in Annex 3 of this report.

CHAPTER NINE

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Environment and Social Assessment Conclusions

The EIA study revealed that the proposed project has got both socioeconomic and environmental benefits and costs. It emerged that the benefits exceed the costs. Also, all the identified environmental impacts can be mitigated to a level of minimum or no significance throughout the project cycle. Further, none of the potential impacts would result to permanent irreversible damage on the ecosystem components.

9.2 Environment and Social Assessment Recommendation

Environmental monitoring is essential to track and sustain the effectiveness of the mitigation measures proposed in this report. An environmental monitoring plan has been prepared as part of the ESMP. The focus areas of monitoring cover air, noise, traffic management, water and energy resources, occupational health and safety, as well as local employment and economic impact of the project during construction and operation phases. The burden of implementing the mitigation measures largely lies with the Project Contractor under supervision by the Proponent. Key observations are that most adverse impacts are short-term and will disappear once civil works ends. The construction contract for the proposed project should bear relevant clauses binding the Contractor to institute environmental mitigation as recommended in this study. The core monitoring strategy for this project will be through site meetings, in which case, it is recommended that the County Environmental Officers be invited to such meetings. Other stakeholders such as the County Labour Officer should also attend such meetings to ascertain that measures towards securing the health and safety of workers have been put in place.

It is the duty of the Proponent to carry out annual environmental audits once it has been commissioned. This will be in compliance with the Environmental Management and Coordination Act, EMCA of 1999 and the Environmental Impact Assessment and Audit Regulations, Legal Notice No. 101 of 2003.

The tentative budget allocated for the proposed project is Ksh. 179,906,589 and an ESMP cost of Ksh. 9, 5000,000. It is the responsibility of the project Proponent to allocate this budget to facilitate diligent implementation of the mitigation measures and minimize potential negative impacts at construction and operational phases of the project.

The following are recommended for effective implementation of the mitigation measures for the project;

- All mitigation measures need to be specified in tender and contract documents, and must be included in the Engineering Drawings, Specifications and Bills of Quantities.
- Diligence on the part of the Contractor and proper supervision by the Project Engineer during construction and the initial operation phase is crucial for mitigating impacts.
- Periodic environmental and social monitoring is required by the project Proponent to ensure that mitigation measures have been implemented to prevent or avert any negative impacts of the project.
- The Contractor will be required to prepare a Construction Environment Management Plan (CEMP) which shall be approved by the Proponent before beginning of works;
- The Proponent should set up proper and applicable Grievance Redress Mechanism (GRM) for the project to deal with grievances and issues on the project.

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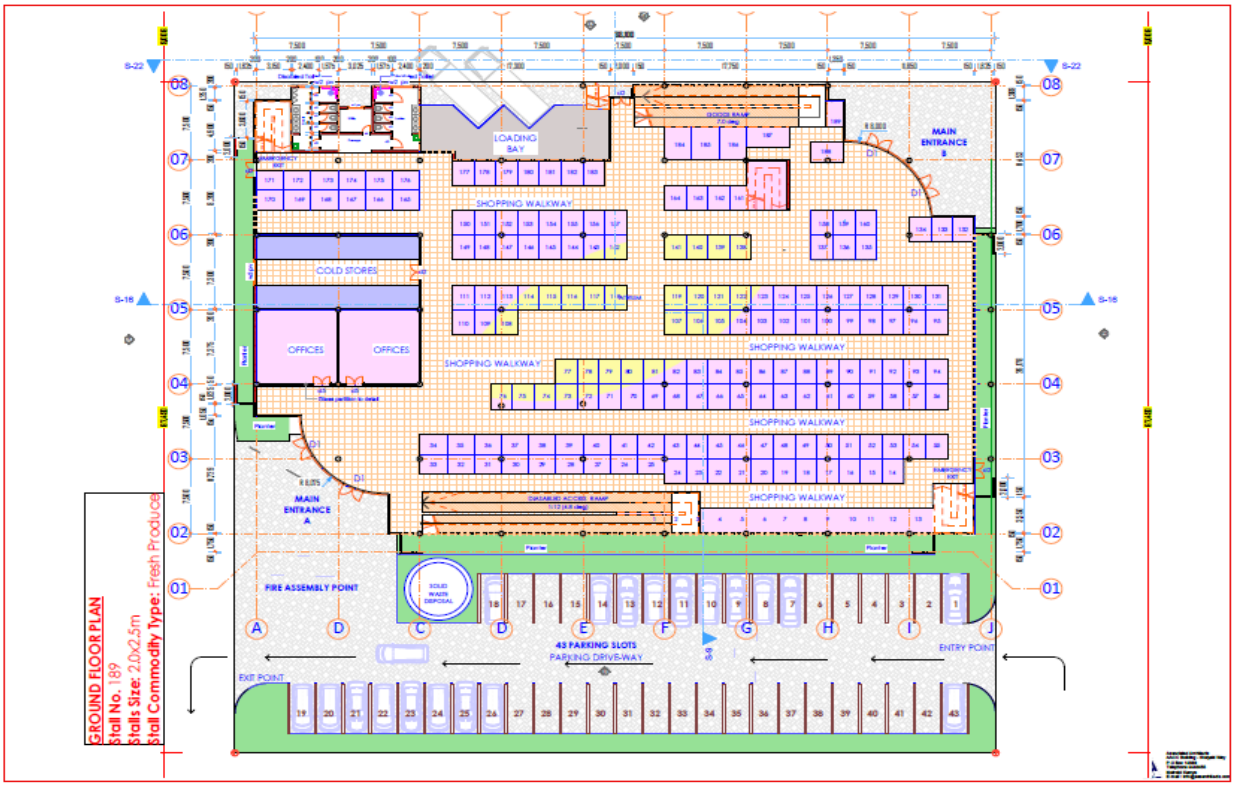
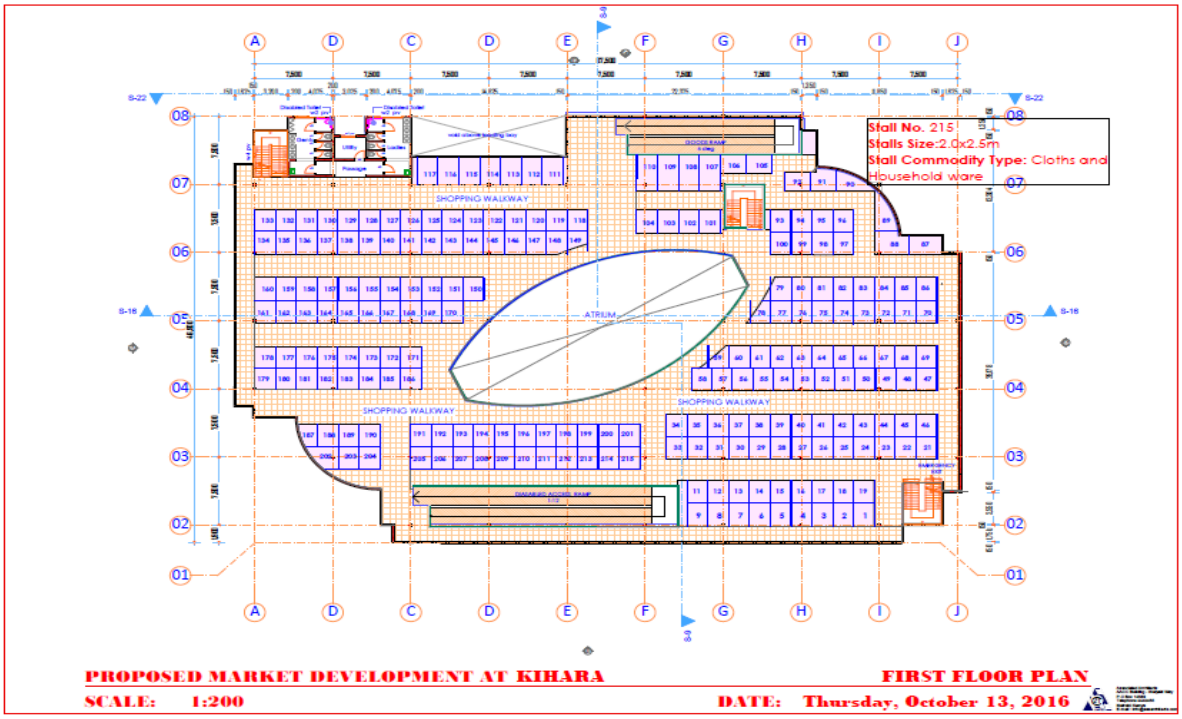
REFERENCE

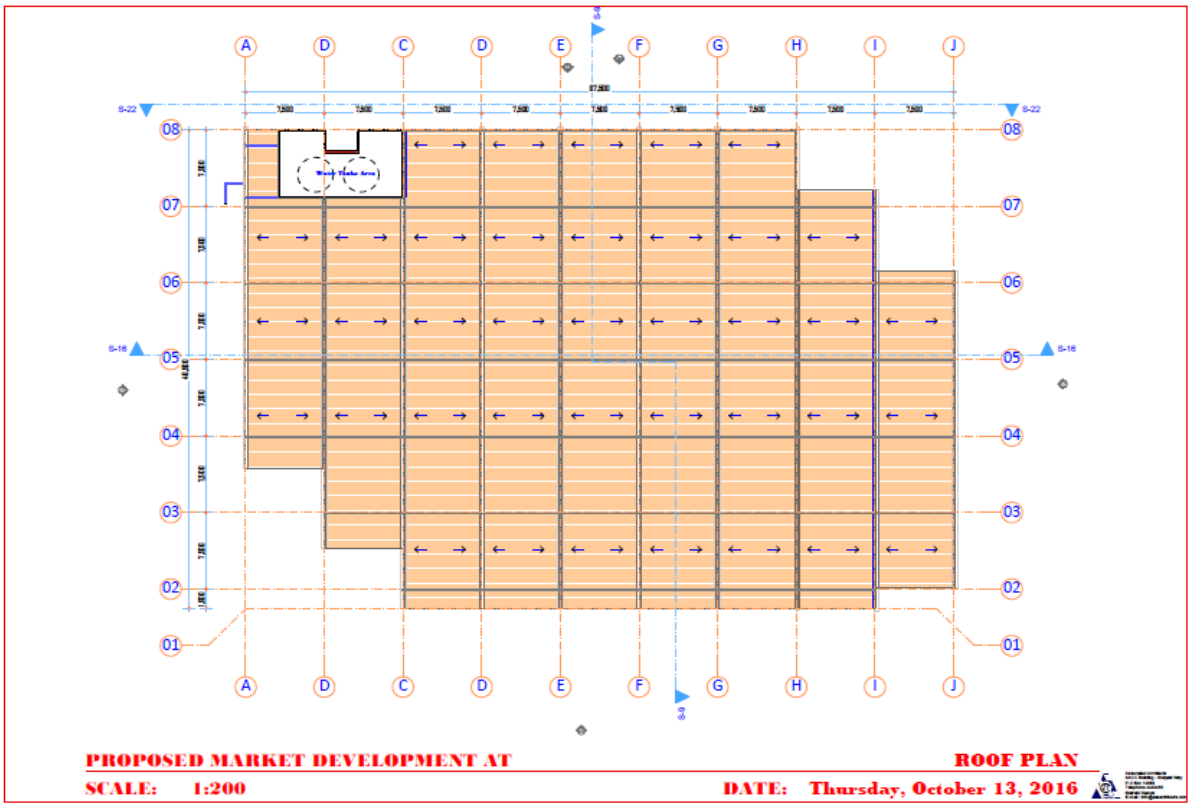
1. Environmental Management and Co-ordination Amendment Act 2015 No5 of 2015
2. Nairobi Metro 203 first edition of 2008
3. Feasibility study report market 2015
4. Kenya gazette supplement Acts 2000, Environment Management and Coordination Act Number 8 of 1999. Government Printer, Nairobi.
5. Kenya gazette supplement Acts Building code 2000 by Government Printer, Nairobi.
6. Kenya gazette supplement Acts *Land Planning Act (Cap. 303) Government printer, Nairobi.*
7. Kenya gazette supplement Acts *Local Authority Act (Cap. 265) Government printer, Nairobi.*
8. Kenya gazette supplement Acts Penal Code Act (Cap.63) *Government printer, Nairobi*
9. Kenya gazette supplement Acts *Physical Planning Act, 1999 Government printer, Nairobi.*
10. Kenya gazette supplement number 56. Environmental Impact Assessment and Audit Regulations 2003. *Government printer,* Nairobi.
11. Noise prevention and Control Rules 2005, Legal Notice no. 24, *Government Printers*, Nairobi
12. Kenya gazette supplement Acts *Public Health Act (Cap. 242) Government printer, Nairobi.*
13. *Kenya Gazette: The Kiambu County Finance Bill, 2OI4.*
14. Kenya gazette supplement Acts *Water Act, 2002 Government printer, Nairobi.*
15. Kenya Population and Housing Census, *2009, Kenya National bureau of statistics*
16. Environmental Management and Coordination (Waste Management) Regulations, 2006, *Government Printers*.

ANNEXES

Annex 1: Site Layout Plan



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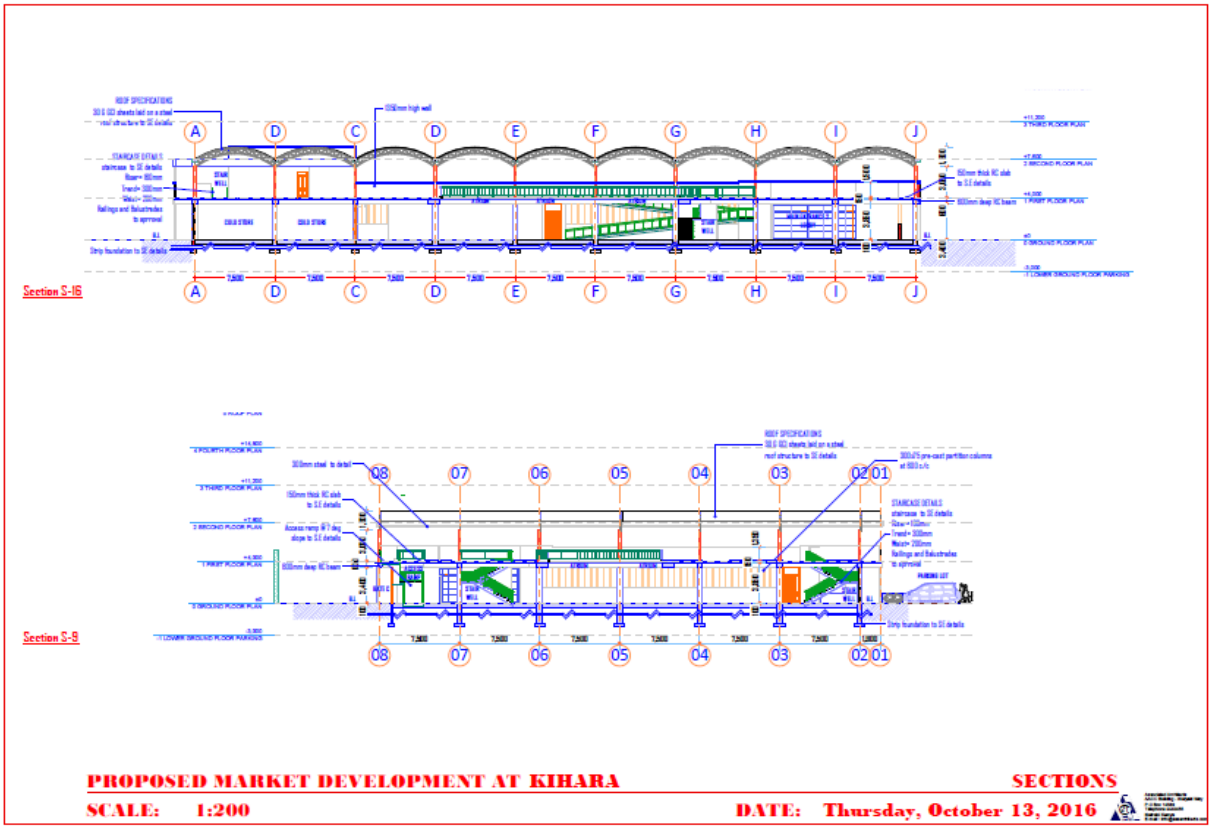
Section S-16
Section S-9
PROPOSED MARKET DEVELOPMENT AT KIHARA
SECTIONS
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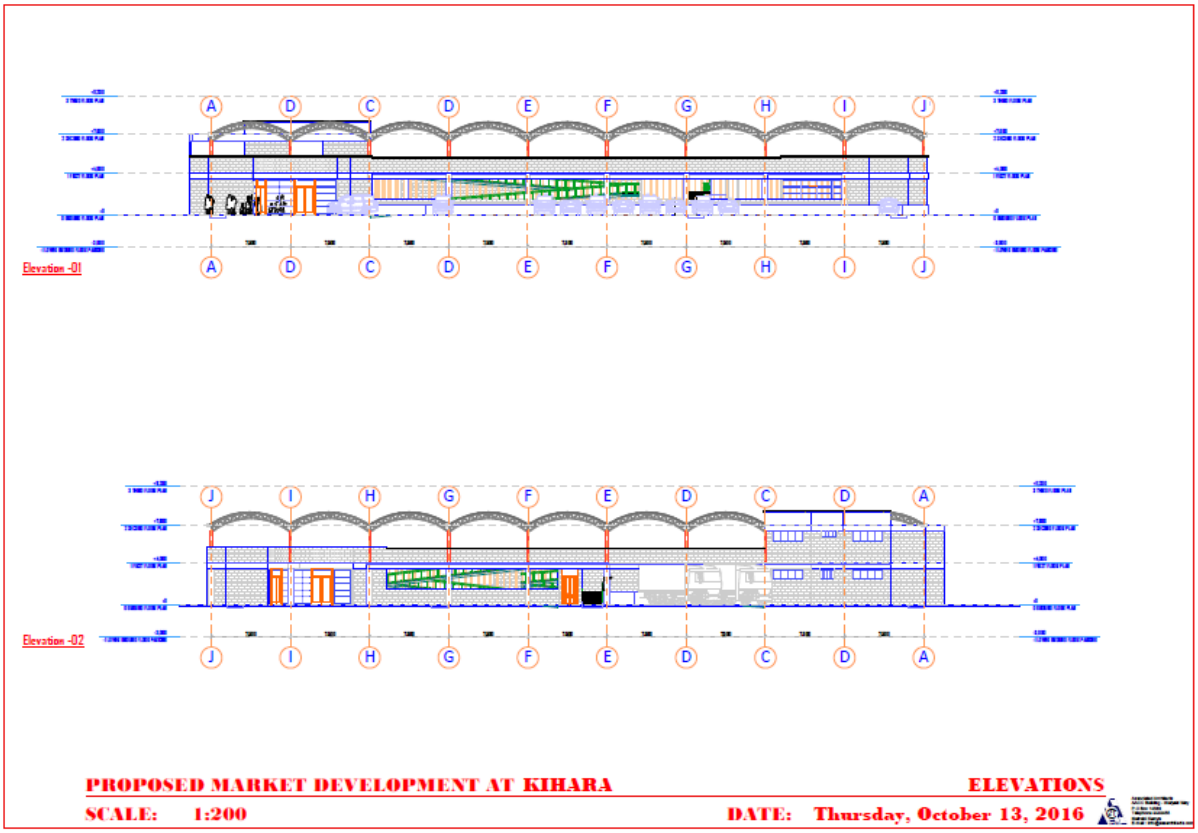
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J I H G F E D C D A
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ELEVATIONS
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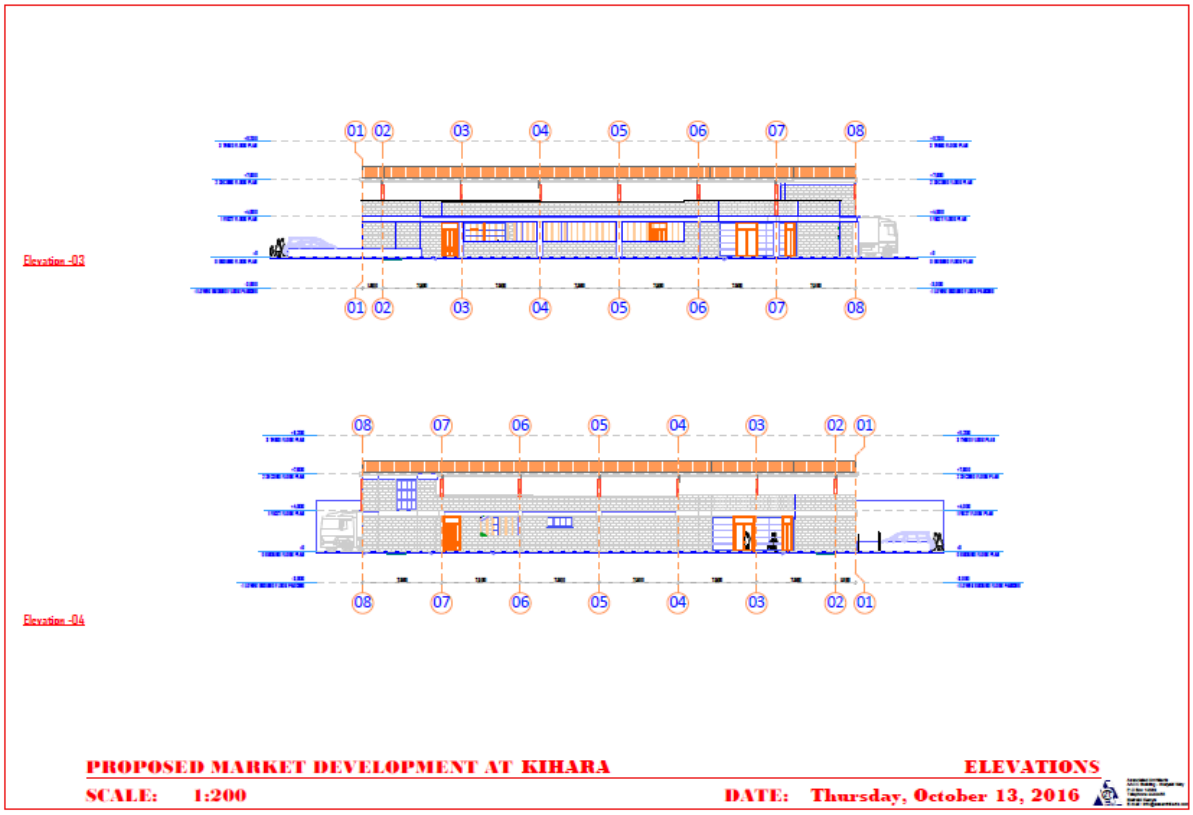
DATE: Thursday, October 13, 2016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Elevation -04
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ELEVATIONS
SCALE: 1:200
DATE: Thursday, October 13, 2016

Annex 2: Sample Chance Find Procedures

Chance find procedures are an integral part of the project ESMMP and civil works contracts. The following is proposed in this regard:

If the Contractor discovers archeological sites, historical sites, remains and objects during excavation or construction, the Contractor shall:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the Ministry of State for National Heritage and Culture take over;
- Notify the supervisor, Project Environmental Officer and Resident Engineer who in turn will notify the responsible local authorities and the Ministry of State for National Heritage and Culture immediately (within 24 hours or less).

Responsible local authorities and the Ministry of State for National Heritage and Culture would then be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the National Museums of Kenya. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, namely the aesthetic, historic, scientific or research, social and economic values.

Decisions on how to handle the find shall be taken by the responsible authorities and the Ministry of State for National Heritage and Culture. This could include changes in the layout (such as when finding irremovable remains of cultural or archeological importance) conservation, preservation, restoration and salvage.

Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities.

Construction work may resume only after permission is given from the responsible local authorities or the Ministry of State for National Heritage and Culture concerning safeguard of the heritage.

Annex 3: Grievance Redress Process

Process	Description	Time frame	Other information
Identification of grievance	Face to face; phone; letter, e-mail; recorded during public/community interaction; others	1 Day	Email address; hotline number
Grievance assessed and logged	Significance assessed and grievance recorded or logged (i.e. in a log book)	4-7 Days	Significance criteria: Level 1 –one off event; Level 2 – complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or the ESIA provisions
Grievance is acknowledged	Acknowledgement of grievance through appropriate medium	7-14 Days	
Development of response	Grievance assigned to appropriate party for resolution Response development with input from management/ relevant stakeholders	4-7 Days 7-14 Days	
Response signed off	Redress action approved at appropriate levels	4-7 Days	Project staff at project Proponent to sign off
Implementation and communication of response	Redress action implemented and update of progress on resolution communicated to complainant	10-14 Days	
Complaints Response	Redress action recorded in grievance log book Confirm with complainant that grievance can be closed or determine what follow up is necessary	4-7 Days	
Close grievance	Record final sign off of grievance If grievance cannot be closed, return to step 2 or refer to sector minister or recommend third-party arbitration or resort to court of law.	4-7 Days	Final sign off on by project Proponent

Annex 4: List of Participants Consulted

ESIA/SA BY SGS KENYA

NAMSIP PROJECT PUBLIC CONSULTATION ATTENDANCE LIST – KIAMBU KIHARAMARKET

NAME	TYPE OF BUSINESS	TELEPHONE NUMBER	SIGNATURE
KAACK W. MAINA	SELLING CLOTHES	0727868340	[illegible]
MARGRET NJERI	" Sukuma	0716492218	[illegible]
PURITY NDUTA MATHAI	SECOND HAND CLOTHES	0721352365	Purity
LYDIAH CHANYA	SELLING SUKUMA	0701262414	[illegible]
Serah wanjiku	Olakanjo	071322393	[illegible]
Peninah wambui	Sukuma	0716929235	PW
PRISCILLA NJOKI	GREENS	0726777596	PNM
Martha wairimu	Sukuma	0702492652	[illegible]
EUNICE KEBI	chapu	0725783931	[illegible]
Sharon kanini	Nyanya	070545039	[illegible]
Lilian wanjiru	Nyanya	0795326600	[illegible]
Jemimah Mokeira	grocer	0728413341	[illegible]
David mwangi	Cloth shoes	0724325557	[illegible]
Esther Mumbi	Sukuma	0727366079	Em
Jeniffer Wambui	Sukuma	0715376695	Jen
Lydia K. Kamundi	fruits	0715370699	[illegible]
Peter R. Njeru	Selling New Items	0720399774	[illegible]
Susan Nyambura	Grocery	0710682331	[illegible]
Ruth Nyokio	071172547	0711725112	Ru..
LISPER Kerubo	[illegible]	0754588408	[illegible]
Callen nyakerario	fruits & mboga	0724672419	[illegible]
WALTER KARIUKI	MARIMALI	0720545508	[illegible]
Pauline ~~Njoki~~ Wangari	Selling [illegible]		[illegible]
Rebecca Mucene	Soko	0707467361	[illegible]
Susan Wairimu	Soko	0720096613	[illegible]
MONICAH WAITHERO	SOKO	0725419681	
HANNAH NJERI	SOKO	0716331389	HANNAH
Eunice Njeri	SOKO	0771230362	[illegible]
Muhinja Gitau	Soko		[illegible]
Jane Ndute	"	0727588802	[illegible]
Jane Wanjiku	"	0729780075	[illegible]
Mary muthoki Munene	"	0723139267	[illegible]
KELLEN KAWIRA	fruits	0728169365	Kellen
KESIA NJERI WANERU	SUKUMA	0729457248	KEN.
[illegible] JAMALI	SOKO	0711936728	H.J.
IRENE MUTOMO	SOKO	0724838882	[illegible]
LUCY muthoni	fruits	0729472394	Lm
Cathrine karimi	So	0723589564	ch

PETRINA W NJUGUNA	KINGUU	0713540472	
FLORENCE MUTHEU	KIASI	0720591013	
JANE MUTHONI	MARDIZI	0702754400	
Naomi muthoni	food	0727215201	
Grace waringa	food	0711498606	
Pricilla Wambui	grocery	0717860444	
Mary NZOKI	grocery	0114326398	
Celestine Wanjiru	grocery	0718586131	
ANN Waruinu	green grocer	0714383940	
ANN Ngonyo Muiruri	green grocer	0723573951	
Joyce Wainimu	grocery	0704571102	
DEBRA ORANGA	FOOD	0715544152	
SUSAN NJUGUNI	GROCERY	0723504073	
MARGARET WAMBUI	POTATO	0715486967	
JAMES KARANJA	STALL (VICE CHAIR MARKET)	0722609413	
STANLEY MBUGUA	MARKET CHAIR	0729700652	

Annex 5: Minutes of Stakeholder Meeting

Minutes of the Public Consultation Meeting held at Kihara Market on 12/08/2016 (Namsip Proposed construction of Modern Market)

Present;

- Godwin Sakwa Lidahuli
- Jackline Wahome
- List pf participant is under **Annex 4**

Agenda

Public/Stakeholder consultation- ESIA for proposed construction of a modern market at Kihara in Kiambu County.

Min 01:

The public consultation meeting took place at Kihara Market, Kiambu County. The meeting was attended by diverse project stakeholders that included women, men and the youth. The meeting began at 12:30 pm with a go ahead from the chairman of the market committee.

Min 02:

With the consent of the market committee chairperson, the SGS team introduced themselves to the assembled stakeholders. They then explained the purpose of the meeting. The public was made aware of their intentions to carry out a Social Assessment exercise regarding the proposed construction of the market. The members of the public were also requested to collaborate with the SGS team during the exercise and have some of their youth work with the research team as research assistants.

Min 04:

The stakeholders presented their views as summarized below.

Questions/Comments	Responses
Secretary- There are 3 buildings which are not in the plan is it possible for them to be demolished and the owners compensated to make room for parking?	These 3 buildings are not within the market project site so they will not be affected
Margaret – There is such poor drainage, when it rains it floods making it difficult to trade and giving room for diseases to spread. We would like a good drainage system.	The drainage system has been addressed in the architectural plans.
Secretary- The current garbage collection system which is under the County government is poor. After the construction of the new market we would like the market committee to be in charge of waste management.	The management of the market including garbage collection will be done by the market management committee which will have a representative from the County Government
Margaret - Will the Youth be involved in construction?	The Contractor identified for construction will be advised to make use of local labour and materials as much as possible.

Questions/Comments	Responses
Chairman – How will the socio-economic survey be done and will all stakeholders be interviewed?	The survey will be conducted using a structured questionnaire as the interview tool. Not all traders will be interviewed; the survey team will take a sample of the stakeholders.
Secretary-When will the project commence?	As soon as the reports are complete, approved by NEMA and World Bank, the necessary funds will be released.

Min 05

The traders set 16/08/2016 for the Social Assessment survey exercise.

Conclusion

There being no A.O.B, the meeting ended at 2:00pm. The traders expressed that they were eager to see the project become a reality and vowed their support to see its completion.

Sign……..Date ……..

Recorded by – Jackline Wahome

SGS Kenya

Sign……Date…….

Checked by – Environment and Social Specialist

SGS Kenya

Annex 6: Selected Photographs of Public Stakeholder Consultation