

REPUBLIC OF KENYA



**MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING AND
URBAN DEVELOPMENT**



Kenya National Highways Authority

Quality Highways, Better Connections

**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)
PROJECT REPORT FOR UPGRADING TO BITUMEN STANDARDS OF
ISIOLO - MODOGASHE ROAD SECTION 190KM (A10/B84)**



NOVEMBER 2019

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Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
AC	Asphalt Concrete
AIDS	Acquired Immunodeficiency Syndrome
ASALs	Arid and Semi-Arid Lands
ARV	Antiretroviral Drugs
BoQ	Bill of Quantities
CBD	Central Business District
CBD	Convention on Biodiversity
CBO	Community Based Organization
CBR	California Bearing Ratio
CH ₄	Methane
CLO	Community Liaison Officer
CO ₂	Carbon Dioxide
CSR	Corporate Social Responsibility
dB	Decibels
DOSHs	Department of Occupational Safety and Health
EHS	Environmental Health and Safety
EMCA	Environmental Management and Co-ordination Act
ESMMP	Environmental and Social Mitigation and Management Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
FGM	Female Genital Mutilation
GBV	Gender Based Violence
GDP	Gross Domestic Product
GIIP	Good International Industry Practice
GIS	Geographical Information System
GHG	Greenhouse Gases
GOK	Government of Kenya
GPS	Global Positioning System
GRC	Grievance Redress Committees
GRM	Grievance Redress Mechanism/Measures

HIV	Human Immunodeficiency Virus
ICTA	Information Communication and Technology Authority
ID No.	Identity Card Number
IDA	International Development Association
IFC	International Finance Corporation
KAPP	Kenya Agricultural Productivity Project
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KES	Kenya Shillings
KFS	Kenya Forestry Service
KIHBS	Kenya Integrated Household Budget Survey
KII	Key Informant Interviews
Km/h	Kilometers per hour
KPLC	Kenya Power and Lighting Company
KURA	Kenya Urban Roads Authority
KRB	Kenya Roads Board
K.Shs.	Kenya Shillings
KWS	Kenya Wildlife Service
LAPSSET	Lamu Port-South Sudan-Ethiopia-Transport
masl	metres above sea level
MCA	Member of the County Assembly
MDD	Maximum Dry Density
MDG	Millennium Development Goals
MoTIHUD	Ministry of Transport, Infrastructure, Housing and Urban Development
MTP	Medium-Term Plan
NBSAP	National Biodiversity Strategy and Action Plan
NEAP	National Environment Action Plan
NEMA	National Environment Management Authority
NETIP	North-Eastern Transport Improvement Project
NFD	Northern Frontier District
NGO	Non-Governmental Organization
NHIF	National Hospital Insurance Fund
NMK	National Museums of Kenya
NMT	Non motorized traffic
NPEP	National Poverty Eradication Plan

NSSF	National Social Security Fund
O&M	Operation and Maintenance
OP	Operational Policy
OSH	Occupational Health and Safety
OSHA	Occupational Safety and Health Act
PAP	Project Affected Person
PEC	Poverty Eradication Commission
PLO	Project Liaison Officer
PPE	Personal Protective Equipment
PRSP	Poverty Reduction Strategy Paper
RAP	Resettlement Action Plan
RDM	Road Design Manual
RE	Resident Engineer
RMLF	Roads Maintenance Levy Fund
RPF	Resettlement Policy Framework
SEA	Sexual Exploitation and Abuse
SDGs	Sustainable Development Goals
STD	Sexually Transmitted Diseases
TOR	Terms of Reference
US\$	United States Dollar
µg	microgram
WB	World Bank
WIBA	Work Injury Compensation Benefit Act
WHO	World Health Organisation
WSSD	World Summit for Sustainable Development
VCT	Voluntary Counselling and Testing
VOCs	Volatile Organic Compounds

0 EXECUTIVE SUMMARY

0.1 BACKGROUND

1. Kenya National Highways Authority (KeNHA) is a state corporation within the government of Kenya, established under the Kenya Roads Act 2007 with the responsibility for the management, development, rehabilitation and maintenance of international trunk roads linking centres of international importance and crossing international boundaries or terminating at international ports (Class A road), national trunk roads linking internationally important centres (Class B roads), and primarily roads linking provincially important centres to each other or two higher-class roads (Class C roads). In undertaking this mandate, the Authority propels the country to achieve its infrastructure goals espoused in the vision 2030.
2. The Government of the Republic of Kenya (GoK) has applied for funds towards upgrading the Isiolo - Manderla road to bitumen standards under North-Eastern Transport Improvement Project (NETIP) The project is aimed at addressing the constraint by upgrading the Isiolo-Mandera road from its current unpaved state to paved road standards. World Bank is financing the designs for the entire road corridor while construction financing will be done by the World Bank, GoK and Arab Bank. The North Eastern Improvement Project (NETIP) is aimed at enhancing connectivity between Kenya and Somalia as well as Ethiopia via a 3 component approach made up of:
 - i. Component 1: Upgrading Selected Critical Road Infrastructure and associated roadside amenities (US\$455.50 million).
 - ii. Component 2: Institutional Development and Project Monitoring and Management (US\$12.50 million)
 - iii. Component 3: Enhancing Internet Connectivity (US\$34.00 million). Support to Information and Communication
3. This ESIA covers the road section from Isiolo to Modogashe, which will be covered in component 1 of NETIP. Both the design and construction of this road section will be funded by the World Bank
4. The project road is shown in the figure below:

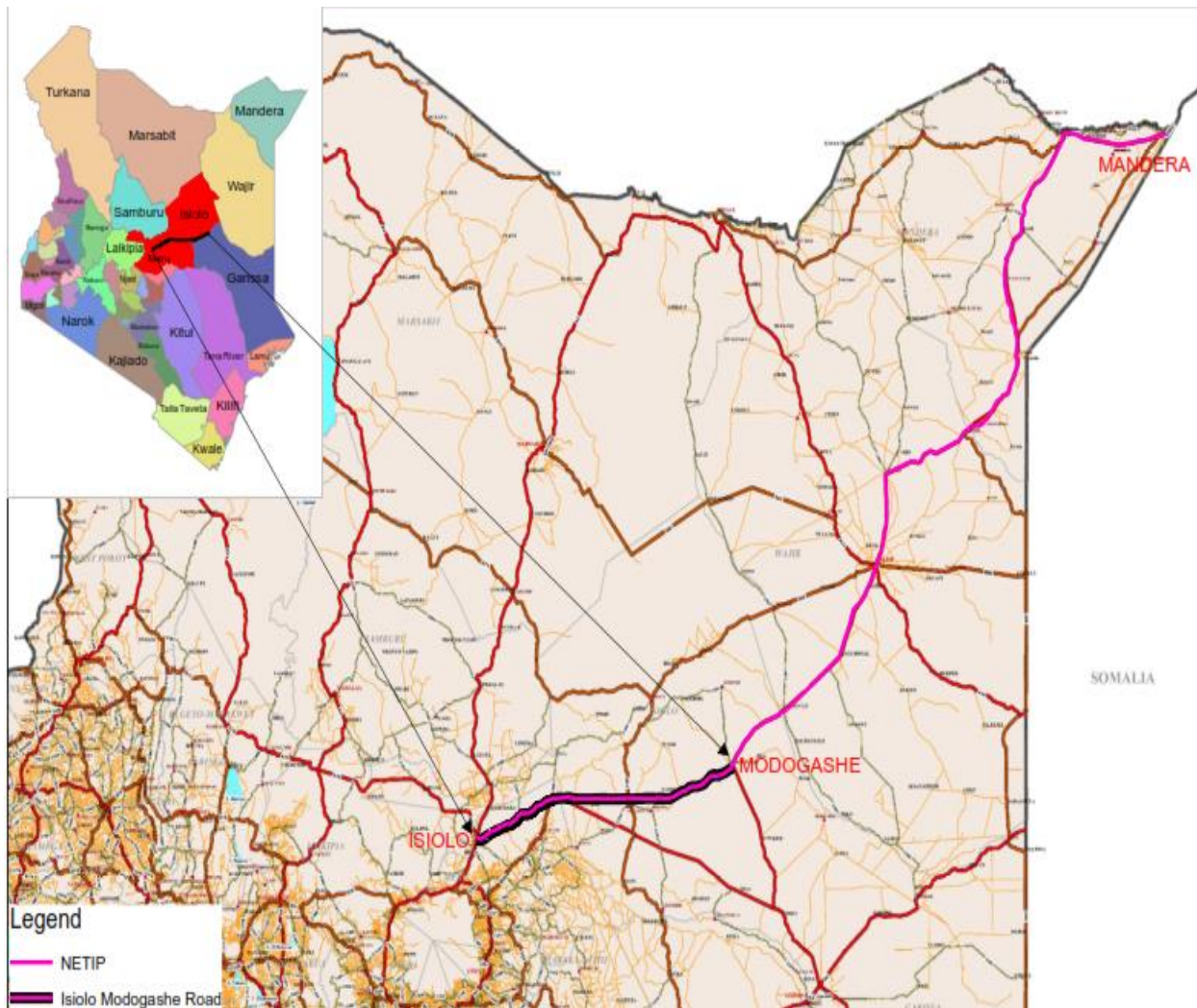


Figure 0-1: Map Showing the Location of the Project Road in Black

0.2 NEED FOR THE ESIA REVIEW AND UPDATE

- During the project concept, the project road was assigned as an environmental and social assessment category “B”, however during project preparation, emerging issues led to its recategorization to category A, requiring a full assessment. A project is classified as Category A as it is likely to have adverse environmental and social impacts that are significant, generally large-scale, irreversible, sensitive, diverse, cumulative or unprecedented setting and may affect an area broader than the sites or facilities financed by the project. The proposed road project will have a major impacts along the road corridor in all phases of the project including loss of grazing land along the road, change in the landscape not just along the quarry and borrow sites (loss of materials), establishment of larger market centres and towns, influx of new populations in search of new opportunities, interference with existing ways of life, GBV, increased conflicts, pressure for existing resources, increase in traffic during the operation phase leading to an increase of foreign members to the community. All these impacts will have a permanent change to the existing status quo, thus requiring an in depth ESIA study provided in this report.

0.3 STUDY METHODS

6. The study approach and methodology adopted included screening to determine the extent of the project and desktop data review and analysis for the baseline bio-physical, social parameters and environmental parameters of the project area. The Consultant engaged on multi-faceted public consultation process which included roadside interviews and public consultation meetings to verify the previous ESIA's stakeholder consultation findings. Based on these findings and expert judgement, the consultant compiled the projected social and environmental impacts (positive and negative) likely to emanate from proposed project activities and the Environmental and Social Management Plan (ESMP) which details how potential adverse impacts will be reduced or mitigated and by whom.

0.4 LEGISLATIVE FRAMEWORK FOR THIS STUDY

7. The principal National legislation governing issues of environmental concern in Kenya is the Environmental Management & Coordination (Amended) Act of 2015 typically referred to as EMCA. EMCA calls for Environmental Impact assessment (EIA) (under Section 58) to guide the implementation of environmentally sound decisions and empowers stakeholders to participate in sustainable management of the natural resources. Projects likely to cause environmental impacts require that an environmental and social impact assessment study to be carried out. It is under this provision that the current study has been undertaken.
8. Other legislation adhered to during this study are the regulations borne of EMCA Cap 387 namely the Environmental Impact Assessment and Audit Regulations 2003; The Environmental Management Coordination Act (Waste Management) Regulations 2006; the Environmental Management Coordination (Water Quality) Regulations 2006; and the Environmental Management and Coordination (Noise and Excessive vibration pollution Control) Regulations 2009 (Legal Notice 61), Air quality Regulations 2009 among others.
9. Sectoral legislation applicable to this Project include the Kenya Roads Act (2007), the Constitution, The Public Health Act (CAP. 242), among others.
10. In addition to the local legislation, the Consultant discussed the World Bank Operational Policies and Bank Procedures that were triggered for this project. These policies include; Operational Policy 4.01: Environmental Assessment; Operational Policy 4.04-Natural Habitats; Bank Operational Policy 4.10: Indigenous Peoples; World Bank Directive on Vulnerable Groups; Operational Policy 4.11-Physical Cultural Resources; The Bank's Operational Policy 4.12: Involuntary Resettlement; World Bank Policy on Access to Information, 2010 and the World Bank EHS guidelines.

0.5 CONCLUSIONS FROM PUBLIC CONSULTATION

11. Part of the ESIA process includes conducting public consultation with the local community within the project area. The consultants identified and mapped stakeholders in the project area. These included
 - i. Community members at the trading centers of Isiolo Junction, Gambella, Ndumuru, Kachuru, Kulamawe, Boji and Modogashe.
 - ii. County officials including County Commissioners, Deputy County Commissioners, Chiefs
 - iii. KeNHA representatives in Isiolo and other government departments in the counties
 - iv. Persons affected by physical and economic displacement

- v. Women, youth and people living with disability along the project road
12. The participants were made up of village elders, youth representatives, religious leaders, teachers, KeNHA representatives and the local administration. In majority of the meetings both women and men attended and their different issues were included in the meeting minutes. However, in some centres including Kulamawe, women attended the meetings but sat at a distance, for such meetings, the Consultant team split with one member having an informal meeting with these women and their general issues were included in the report.
 13. During these meetings the major outcome is that the area currently suffers greatly due to a poor transport network and would stand to benefit greatly from the road upgrade. However several issues including:
 - i. Equal job opportunities for males and females
 - ii. Inclusion of vulnerable members of society along the project road
 - iii. Road safety
 - iv. Wildlife and Livestock crossing facilities
 - v. Resettlement
 - vi. CSR
 - vii. Potential conflicts due to increased pressure on limited resources
 - viii. Loss of grazing land
 - ix. Public health and safety
 - x. Procedures for borrow pits and quarry sites
 14. The issues raised were all included in the updated ESIA report

0.6 EXPECTED IMPACTS

15. The expected impacts emanate from the Planning phase, the Construction Phase, the Operation phase and the De-commissioning Phases of the project.
16. In general, successful implementation of the project will have high environmental and socioeconomic benefits to the people and will contribute to their well-being. Overall, negative expected impacts are related to the planning and construction activities of the project. Majority of these impacts are not considered significant and long-lasting and can be mitigated through appropriate mitigation measures. The severity and duration of these impacts can be minimized by ensuring that the construction and operation activities adhere to the proper construction and operation standards specified by the design and supervision engineers.
17. The positive benefits of the project will include:
 - i. Employment during construction
 - ii. Improved business opportunities
 - iii. Reduced travel times
 - iv. Improved security
 - v. Improved community wellbeing
 - vi. Improved community social infrastructure and social amenities
18. The major potential negative environmental and social impacts of the project will be felt during the planning, construction and decommissioning of the project and include:
 - i. Site Related Oil Spills
 - ii. Soil Erosion and pollution Related Impacts
 - iii. Impact on Water Resources Pollution
 - iv. Air Pollution

Biophysical Impacts

- v. Noise Pollution
- vi. Proliferation of invasive species
- vii. Impact on flora and fauna
- viii. Generation of solid waste
- ix. Loss of assets within the proposed road corridor
- x. Increased Traffic accidents
- xi. Influx of labour in search of opportunities
- xii. Potential for conflicts due to limited resources and difference in culture
- xiii. Increase in potential accidents and incidences along the road
- xiv. Public Health & Safety
- xv. HIV & AIDS Impacts
- xvi. Potential for Gender-Based Violence (GVB) and harassment
- xvii. Service Delivery Impacts (Impacts to Utility Service Provision)
- xviii. Crime Management Increased Crime rates
- xix. Child Labour and Protection (consider rephrasing)
- xx. Gender Equity, Sexual Harassment
- xxi. Increased community conflicts
- xxii. Damage to private property

} Social Impacts

0.7 CUMULATIVE IMPACTS

19. Cumulative effects were considered taking into account other projects or actions planned in the study area.
20. Considering that there are a number of proposed projects along the road corridor. The assessment of cumulative impacts along the project road corridor has taken these projects into account. Some of the projects include;
 - i. The LAPSSET road project from Lamu to Isiolo to South Sudan and Ethiopia.
 - ii. The Garissa – Modogashe A13, which intersects the project road at its end in Modogashe.
 - iii. Various road works and on-going road construction projects along the road corridor by KeRRA, the county Governments and the Constituencies through CDF
 - iv. Impacts on sourcing of construction materials along the corridor;
 - v. Any other initiatives in the project road corridor that may result in positive or negative cumulative impacts were be included in the ESIA Study.
21. The cumulative impacts foreseen in the project for which mitigation measures were provided for in the ESIA review and in the ESMP. The cumulative impacts are summarised in the table below:

Table 0-1: Summary of the Likely Potential Cumulative Impacts

Environmental Topic	Potential Cumulative Impacts	
	Construction Phase	Operation Phase
Increased Traffic	Cumulative impacts may be considered significant during construction. Bearing in mind that the host population is unaware of traffic regulations.	Given that traffic volumes will increase in the project area due to improved road conditions. However, the proposed mitigations on the ESMP need to be strictly adhered to.

Environmental Topic	Potential Cumulative Impacts	
	Construction Phase	Operation Phase
	However, the proposed mitigations on the ESMP are adequate and need to be strictly adhered to.	
Soil Degradation, site related oil spills	Providing adequate mitigation is place, no significant adverse cumulative impacts are anticipated.	
Loss of flora and fauna, proliferation of invasive species	<p>Cumulative impacts will only occur during the construction phase if the construction of other nearby projects coincides with that of the proposed NETIP project.</p> <p>If this is the case, even greater attention should be paid to the mitigation measures outlined in order to ensure the cumulative impact will remain of minor adverse significance</p>	<p>Improved road conditions will lead to an influx of people as well as development in the area. Additionally, an increase in road traffic will lead to cumulative impacts on the wildlife in the area, through potential increase in human wildlife conflicts.</p> <p>However, the proposed mitigation measures need to be strictly adhered to in order to mitigate these potential negative impacts.</p>
Air Quality	<p>Cumulative impacts will only occur during the construction phase if the construction of other nearby projects coincides with that of the proposed project.</p> <p>If this is the case, even greater attention should be paid to the mitigation measures outlined in order to ensure the cumulative impact will remain of minor adverse significance</p>	The impacts of the proposed road on regional air quality and greenhouse gases are predicted to be negligible
Noise and Vibration	There is the potential for cumulative noise impacts of the proposed development in conjunction with other concurrent projects in the vicinity arising from simultaneous demolition and construction works.	
Social Impacts including: Labour influx, Crime, disruption of	Cumulative impacts will only occur during the construction phase if the construction of other nearby projects	Given that traffic volumes will increase in the project area due to improved road conditions.

Environmental Topic	Potential Cumulative Impacts	
	Construction Phase	Operation Phase
services, increased conflicts, impacts on children, GBV sexual exploitation and abuse	coincides with that of the proposed project. However, the proposed mitigations need to be strictly adhered to.	However, the proposed mitigations need to be strictly adhered to.
Interference with water resources	Cumulative impacts will only occur during the construction phase if the construction of other nearby projects coincides with that of the proposed project. However, the proposed mitigations need to be strictly adhered to.	

0.8 ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN (ESMP)

22. This was prepared to reduce, minimize or altogether eliminate the adverse negative impacts. Positive impacts are project enhancements.
23. The ESMP is fully described in chapter 8 of this report, however the table below presents the identified environmental and social impacts, their mitigation measures and the party responsible for carrying out the mitigation measures, in summary.

Table 0-2: The Proposed Environmental and Social Management Plan (ESMP)

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (K.Shs.)	Frequency of Payments	Total Cost for a 2.5 year construction period
Pre-construction	Loss of Community land along the project road	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Pre-construction	Loss of Domiciles along the road corridor	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Pre-construction	Loss of structures along the way leave	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Pre-construction	Loss of planted vegetation within the proposed alignment	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Pre-construction	Loss of fences within the proposed alignment	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	

Pre-construction	Loss Livelihoods	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Construction	Increased Traffic	<p>Provide and implement a traffic management plan</p> <p>Provide traffic controllers</p> <p>Provision temporary road signs or notices to indicate ongoing works.</p> <p>Effecting traffic controls to avoid congestion and accidents on roads.</p> <p>Choosing suitable traffic routes to reduce the impact in the neighbourhood.</p> <p>Ensuring no interference with traffic through traffic control, designated parking, speed limits and hiring a banksman.</p> <p>Provision of a road safety analysis and campaign including provision of road crossing facilities for domestic animals and people</p>	Contractor supervised by the Resident Engineer	100,000	Monthly	3,000,000.00
Construction	Site Related Oil Spills	<p>Employee awareness on company procedures for dealing with spills and leaks from oil storage tanks.</p> <p>Containment of leaks.</p> <p>Provision of absorbent material</p> <p>Maintenance of contractor's plant</p> <p>Provision of relevant emergency numbers</p>	Contractor supervised by the Resident Engineer	50,000	Annually	125,000.00
				100,000	Annually	250,000.00
				Included in Contractor's cost		

Construction	Soil Degradation	<p>Provision adequate drainage facilities to channel water from one side of the road to the other.</p> <p>Restoration of the ground by allowing for natural revegetation or sowing adequate grass cover and planting of trees.</p> <p>Planning emergency response measures in case of accidental oil spills.</p> <p>Provision of a borrow pit/ quarry site rehabilitation plan, including standalone ESIA for each new borrow pit/quarry site.</p>	Contractor supervised by the Resident Engineer	<p>Included in Contractor's cost</p> <p>Restoration of ground costs covered under loss of flora and fauna</p> <p>Oil spill costs covered</p> <p>Included in the Contractor's clauses</p>		
Construction	Proliferation of Invasive Species	<p>Re-use of nutrient rich top soil in the areas of origin.</p> <p>Making use of cut and fill road material within similar homogeneous areas</p> <p>Minimal stockpiling periods.</p> <p>Proper storage of stockpiled material.</p> <p>Manual removal of the invasive species such as the Prosopis Juliflora (Mathenge) at material/work sites to prevent proliferation.</p>	Contractor supervised by the Resident Engineer	<p>Included in Contractor's cost</p> <p>500,000</p>	Annually	1,250,000.00
Construction	Interference with existing Water Resources	<p>Provide a waste management plan</p> <p>Proper solid and liquid wastes disposal mainly from the construction camps, sites and offices.</p>	Contractor supervised by the Resident Engineer	<p>Included in the Contractor's clauses</p> <p>250,000</p>	Annually	625,000.00

		<p>Ensuring proper measures are in place for collection and disposal of spilled oils and lubricants.</p> <p>The Contractor will source for new water sources for construction and after construction these facilities can be given back to the communities.</p> <p>The Contractor will prepare and implement a water sharing plan of any new source with the surrounding community</p>		<p>Oil spill costs covered</p> <p>Included in Contractor's costs</p>		
Construction	Employment of Locals	<p>Hiring unskilled construction and skilled (if available) labour from the local population as far as possible.</p> <p>Use of manual labour during excavation and construction works where possible.</p> <p>Prepare a labour influx plan to manage labour influx</p> <p>Prepare an employment plan</p> <p>Sensitizing workers and the surrounding community on awareness, prevention and management of HIV / AIDS.</p> <p>Provide an on-site clinic to provide VCT services.</p> <p>Enforcing and maintaining a code of conduct for his employees</p> <p>Ameliorate positive socio-economic impacts</p>	<p>Contractor supervised by the Resident Engineer</p> <p>Occupational Health</p>	<p>Included in the Contractor's Cost</p> <p>Included in the Contractor's clauses</p> <p>Included in HIV/AIDS Impacts</p> <p>Included in the Contractor's clauses</p>		

Construction	Air Quality	<p>Use of protective clothing like dust masks on construction crew.</p> <p>Monitoring of air quality during and after construction to ensure no major negative impacts or come up with mitigation measures</p> <p>Regular water spraying of murram and earth roads and construction sites</p> <p>Operation and maintenance of contractor's plant in compliance with relevant vehicle emission standards and manufacturer's specification to minimize air pollution.</p>	Contractor supervised by the Resident Engineer	<p>Included in PPE Costs</p> <p>10,000 per sample</p> <p>Included in contractor's cost</p>	Annually	300,000.00
Construction	Noise Pollution	<p>Avoiding night time construction when noise is loudest near residential areas or areas near wildlife.</p> <p>No discretionary use of noisy machinery within 50 m of residential areas and near institutions or use of manual labour in these sections or give notice to these institutions.</p> <p>Good maintenance and proper operation of construction machinery.</p> <p>Where possible, ensure non mechanized construction to reduce the use of machinery</p> <p>Annual noise measurement</p>	Contractor supervised by the Resident Engineer	<p>Included in Contractor's cost</p> <p>40,000 per sample</p>		1,200,000.00
Construction	Loss of Flora and Fauna	Discuss with the local community and relevant authorities on methods of revegetation or compensation for the lost vegetation.	Contractor, Local Administration	10,000,000	Lumpsum	10,000,000.00

	<p>Avoid night time construction when noise is loudest near areas known to have wild animals.</p> <p>Project will install road signs and speed pumps on the known elephant and other wildlife crossing points to regulate speed and warn motorist</p> <p>Ensure all the Contractor’s camps are sited away from the wildlife corridors to prevent conflicts.</p> <p>Construct dual usage box culverts along the project road for the domestic and wildlife animal crossings</p> <p>Collaborate with Kenya Wildlife Service and other stakeholders to protect wildlife during construction</p> <p>The Contractor code of conduct should include conditions on wildlife conservation and measures to be errand workers</p> <p>Avian nesting sites found along the road should be relocated before trees are cleared for the road construction</p> <p>Avoid fires and smoking of cigarettes in areas with indigenous vegetation as the area is arid and a small spark can cause fire which shall affect vegetation and wildlife</p> <p>Stockpiling of construction material in areas that are naturally void of vegetation.</p>	<p>Contractor supervised by the Resident Engineer</p>	<p>Included in Contractor’s cost 1,000,000</p> <p>Included in Contractor’s cost 1,500,000</p> <p>Included in Contractor’s cost</p> <p>Oil spill costs covered</p> <p>Covered in water resources cost</p>	<p>Lumpsum Per Crossing</p>	<p>1,000,000.00 4,500,000</p>
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		<p>Esure all the Contractor’s camps are sited away from the wildlife corridors to prevent conflicts.</p> <p>The Contractor will ensure that the employees on site are aware of the company procedures for dealing with oil spills and leaks</p> <p>Provide a waste management plan</p> <p>Provision of dustbin and sanitation facilities within the Contractor’s camp to prevent seepage into the natural environment.</p>				
Construction	Occupational Health & Safety	<p>Provide and implement an occupational health and safety plan.</p> <p>Ensure that all construction machines and equipment are in good working conditions and to manufacturer’s specifications to prevent occupational hazards.</p> <p>Provide workers with appropriate personal protective equipment (PPE).</p> <p>Provide workers with adequate potable water and breaks.</p> <p>Provide a fire marshal and a health and safety officer fulltime on site</p> <p>Provide workers training on safety procedures and emergency response</p>	Contractor supervised by the Resident Engineer	<p>2,000,000</p> <p>Included in Contractor’s cost</p> <p>4,000,000</p> <p>50,000</p> <p>Included in Contractor’s cost</p> <p>50,000</p>	<p>Lumpsum</p> <p>Annually</p> <p>Monthly</p> <p>Bi-annually</p>	<p>2,000,000.00</p> <p>10,000,000.00</p> <p>1,500,000.00</p> <p>2,500,000.00</p>

		<p>Work to minimize or altogether eliminate mosquito breeding sites.</p> <p>Provide and implement a waste management plan</p> <p>Provision and implementation of an employee code of conduct</p> <p>Provide clean toilets for workers, these toilets will be to World Health Organisation standards.</p>		<p>500,000</p> <p>100,000</p> <p>Included in the Contractor's clauses</p> <p>500,000</p>	<p>Bi-annually</p> <p>Monthly</p> <p>Annually</p>	<p>2,500,000.00</p> <p>1,500,000.00</p> <p>1,250,000.00</p>
Construction	Community Health & Safety	<p>Implementation of the stakeholder engagement plan</p> <p>Provide and implement an occupational health and safety plan which will have an aspect of public health and safety.</p> <p>Roads passing through population centres will be water sprayed to reduce dust.</p> <p>Work to minimize or altogether eliminate mosquito breeding sites.</p> <p>Provide a waste management plan</p> <p>Provide and implement a stakeholder engagement plan</p> <p>Provide a whistle-blowers policy to ensure wellbeing of whistle-blowers</p> <p>Implement a grievance redress mechanism to ensure community concerns are addressed.</p>	<p>Included in the stakeholder engagement plan</p> <p>Contractor supervised by the Resident Engineer</p>	<p>50,000</p>	<p>Monthly</p>	<p>1,500,000.00</p>

		Fence off the sites with security to avoid unauthorized access to the borrow site(s) and hence mitigate potential injuries.		1,000,000	Annually	2,500,000.00
Construction	Labour Influx	<p>Hiring unskilled construction and skilled (if available) labour from the local population as far as possible.</p> <p>Use of manual labour during excavation and construction works where possible.</p> <p>Prepare a labour influx plan to manage labour influx</p> <p>Sensitizing workers and the surrounding community on awareness, prevention and management of HIV / AIDS.</p> <p>Provide an on-site clinic to provide VCT services.</p> <p>Enforcing and maintaining a code of conduct for his employees</p>	<p>Contractor supervised by the Resident Engineer</p> <p>Public Health Officer</p>	<p>Included in the Contractor's Cost</p> <p>Included in labour influx cost</p> <p>Included in HIV/AIDS Impacts</p>		
Construction	Increase in cases of HIV & AIDS	<p>Sensitizing workers and the surrounding communities on awareness, prevention and management of HIV/AIDS.</p> <p>Provide an on-site clinic to provide VCT services to construction crew and provision of ARVs for vulnerable community members</p> <p>Provide a HIV/AIDS management plan</p>	<p>Contractor</p> <p>Appointed Health and Safety Officer</p>	<p>350,000</p> <p>100,000</p> <p>Included in the Contractor's clauses</p>	<p>Bi-annually</p> <p>Monthly</p>	<p>1,750,000.00</p> <p>3,000,000.00</p>

Construction	Disruption of Service Delivery Impacts	<p>Provide a traffic management plan which will provide alternative routes, traffic controllers, concrete barriers and speed limits for motorists.</p> <p>Communication any intended disruption of the services.</p> <p>Prepare a stakeholder engagement plan</p> <p>Repair of any affected areas in consultation with the local authorities.</p>	<p>Contractor</p> <p>KeNHA & Relevant service provider</p>	<p>Included in traffic costs</p> <p>10,000</p> <p>Included in the Contractor's clauses</p>	Monthly	300,000.00
Construction	Crime Management and Security Risk	<p>Fencing off the Contractor's camp with plant and materials.</p> <p>Working with local committees in addition to the Contractor's own security.</p> <p>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.</p> <p>Taking all reasonable precautions to prevent unlawful, riotous or disorderly conduct by or amongst the contractor's personnel.</p> <p>Prohibiting alcohol, drugs, arms, and ammunition on the worksite among personnel.</p>	Contractor supervised by the Resident Engineer	Included in Contractor's cost		

		<p>Logging all events of a criminal nature that occur at the worksite or are associated with the civil works activities.</p> <p>Reporting all activities of a criminal nature on the worksite or by the contractor's employees to the police.</p> <p>Prepare a code of conduct for signing by all staff members</p>		Included in the Contractor's clauses		
Construction	Increased Community Conflicts	<p>After sourcing and making use of new water sources, the Contractor should give them back to the community.</p> <p>Provision of CSR where possible</p> <p>Ensure working grievance redress mechanism.</p> <p>Preparation and implementation of a stakeholder engagement plan</p>	Contractor, RE and KeNHA	<p>Included in Contractor's cost</p> <p>5,000,000.00</p> <p>200,000.00</p> <p>100,000.00</p>	<p>Lumpsum</p> <p>Monthly</p> <p>Monthly</p>	<p>5,000,000.00</p> <p>6,000,000.00</p> <p>3,000,000.00</p>
Construction	Impacts on children	<p>Ensuring than each employee signs a code of conduct that covers child protection</p> <p>Ensuring no children are employed on site in accordance with national labour laws</p> <p>Ensuring that any child sexual relations offenses among contractors' workers are promptly reported to the police</p>	Contractor supervised by the Resident Engineer Local Administration	Included in the Contractor's clauses		
Construction	Project Impacts on women	Provide and implement a gender-based violence strategy which will form the Contractor's clauses and should include:	Contractor supervised by the Resident Engineer Local Administration			

		<p>Gender mainstreaming in employment at the worksite with opportunities provided for females to work, in consonance with local laws and customs</p> <p>Grievance redress mechanisms including non-retaliation.</p> <p>Provide and implement an employee code of conduct</p> <p>The works contractor should be required, under its contract, to prepare and enforce a No Sexual Harassment and Non-Discrimination Policy, in accordance with national law where applicable.</p> <p>Ensure equitable distribution of employment opportunities between men and women</p> <p>Ensure flexible work hours for women to ensure minimal interference with their family roles.</p> <p>Involvement of women in the periodic dialogues/consultations with contractors and host communities during construction.</p>		<p>Included in the Contractor's clauses</p> <p>Included in the Contractor's clauses</p>		
Construction	Liability for loss of life, injury or damage to private property	<p>Provision of PPE.</p> <p>Training workers on the operation of the machinery and equipment</p> <p>Adequate warning and directional signs.</p> <p>Ensuring that the prepared code of conduct for staff is followed to prevent accidents.</p>	<p>Contractor supervised by the Resident Engineer</p> <p>Appointed Health and Safety Officer</p>	<p>Included in Contractor's cost</p>		

		<p>Developing a site safety action plan.</p> <p>Cordoning off unsafe areas</p> <p>Provision of first Aid kit within the construction site.</p> <p>Recording of all injuries that occur on site in the incident register, corrective actions for their prevention are instigated as appropriate.</p> <p>Compliance with the Workmen's Compensation Act, ordinance regulations and union agreements.</p> <p>Repairing any damage done to private property.</p> <p>Prepare and implement a grievance redress mechanism</p>				
Construction	GRC Facilitation Costs	GRCs will be set up to ensure all potential grievances are logged and resolved and will need a cost which will be included in the implementation costs	Contractor, RE KeNHA, Local administration and NGO	300,00.00	Monthly	9,000,000.00
Construction	Stake Holder Engagement	Implementation of a stakeholder engagement plan throughout the construction phase	Contractor, RE, KeNHA, Local Administration	300,00.00	Monthly	9,000,000.00
Total ESMP Cost during Construction Phase of the Project						84,550,000.00
Operation	Increased Traffic along the Project Alignment	<p>Provision and maintenance of safety signage along the corridor.</p> <p>Periodical road safety audits.</p>	KeNHA	500,000	Annually	

Operation	Increased human wildlife conflict	Partnership with wildlife NGOs and conservation efforts to monitor the any incidences and provision of mitigation measures. Maintenance of animal crossing infrastructure including signs and structures.				
Operation	Air Quality	Policing of unroadworthy vehicles to reduce air pollution.	Police			
Operation	Community Health and Safety	Provision and maintenance of safety signage along the corridor. Periodical road safety audits.	KeNHA	Included in traffic cost		
Operation	Risk of truck drivers stopping along the project area	Provision of visible signage. Working with the police to ensure proper use of truck stops. Encouraging the establishment of businesses near the truck stops to service the truck stops.	KeNHA			
Operation	Impacts of newcomers to the project area.along the project area	KeNHA to work with the County Government on integration between newcomers and host communities.	KeNHA County Governments and Administration	1,000,000.00	Annually	
Decommissioning	Decommissioning of exhausted material sites	Provide and implement a decommissioning plan including backfilling, revegetation, disposal of waste material, recycling of recyclable material and hand over to the community or relevant authority in the case of water sources.	Contractor	300,000.00	Per Site	

Decommissioning	Decommissioning of the Contractor's camp	Provide and implement a decommissioning plan including revegetation, disposal of waste material, and recycling of recyclable material.	Contractor	Included in the Contractor's cost		
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0.9 INSTITUTIONAL FRAMEWORK FOR THE IMPLEMENTATION OF THE ESIA

24. The overall implementation and monitoring of the ESIA/ESMP is the responsibility of KeNHA. The Deputy Director (DD), Environment and Social Safeguards in Kenya National Highways Authority has been designated, with the responsibility to oversee and coordinate various aspects related to environment, social, health and safety management in the project. KeNHA will also assign a dedicated Environment and Social Safeguards staff for the project. The safeguards team will undertake environmental and social monitoring of the ESMP in conjunction with the relevant government departments that have been given that responsibility by the Kenyan laws. In addition to the existing safeguards human resources at the unit, KeNHA has engaged two (social and environment) consultants on a full-time basis to complement and provide dedicated support to the project. KeNHA will be represented on site by a Supervision Consultant. The Project Supervision Consultant will assist KeNHA to provide a full-time presence on site to manage the contracts. The Project Supervision Consultant will comprise of among others the Resident Engineer who will have a qualified full-time Environmental Expert, Sociologist and inputs from a RAP Expert to guide on matters of land acquisition. The Contractor will also have an environmental officer, health and safety advisor and social officer to support in managing potential environmental, social, health and safety risks and impacts. Also, the project will recruit services of a Civil Society Organization that will support the project in GRM, Social Communication and Stakeholder Engagement.
25. The Table below provides the proposed institutional framework for the implementation of the ESIA

Table 0-3: Proposed Institutional Framework for the Implementation of the ESIA

Name of Institution	Role of Institution
KeNHA	<p>Will be an overall implementing agency.</p> <p>Appoint dedicated staff (environmentalist and sociologist) to ensure the implementation of environmental and social safeguards.</p> <p>Induction of the Contractor and Supervision team on national and World Bank Safeguards requirements for the project.</p> <p>Design an environmental, health and social management system for the project.</p> <p>Training of the Contractor and Supervision teams on Environmental and Safeguards and national requirements .</p> <p>Review and approval of the construction ESMP and plans</p> <p>Regular monthly (and when need arises) supervision of the ESMP implementation</p> <p>Review of environmental and social performance of the Contractor and Supervision team.</p>

NLC	Support KeNHA in the implementation of the RAP, including verification of PAPs, and disbursement of payments
NEMA	Provide approval of the ESIA report Review Environmental and Social Audits. Escalate unsolvable grievances to the tribunal.
Directorate of Occupational Safety and Health Services (DOSHS)	Provide OSH permits for workplaces of the project including campsites and quarries Conduct inspections to ensure conformance to OSHA
Kenya Wildlife Service (KWS)	KWS will guide and monitor road construction through animal migratory routes
Water Resources Authority (WRA)	WRA will provide the necessary borehole and water extraction permits from local streams.
The National Museums of Kenya	The National Museums of Kenya will provide guidelines in case any discoveries or existing cultural and natural heritage resources within the project area.
Department of Community Development	Work with poor, marginalized, vulnerable and disadvantaged communities as its primary target group will ensure that this group is supported and is not left out of the project implementation
National Gender and Equality Commission	This commission will be charged with ensuring gender equality and equity throughout the implementation of the project. Representatives will monitor and evaluate gender quality and equity with regards to job provision and harassment cases on site to ensure compliance with the law.
Resident Engineer	Review and approval of the Contractor's ESMP and plans Regular training of the Contractor on ESMP requirements Daily review and monitoring of the implementation of the construction ESMP Inspect the Contractor's equipment, personnel and community in terms of safety. Supervise and monitor environmental and social measures and in the event of any occurrence of unexpected impact co-ordinate with the Contractor on mitigation measures.
The Contractor	The Contractor will be the implementer of the road works in accordance to the prepared design.

	<p>Prepare and implement the construction ESMP</p> <p>Monthly reporting on the implementation on safeguards</p> <p>Immediately report on serious incidences to the RE and relevant regulatory body</p> <p>Prepare daily supervision CESMP plans</p>
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0.10 CONTRACTOR'S CLAUSES

26. The Contractor's clauses will include various plans and safeguards the Contractor will be expected to prepare and implement during the construction phase of the project. These safeguards will be required as a part of the requirements in the bidding documents. The safeguard documents required will include:

- i. A construction environmental and social management plan
- ii. Occupational health and safety plan
- iii. Waste management plan
- iv. Traffic management plan
- v. Borrow pit and quarry site rehabilitation plan
- vi. Child Protection Strategy
- vii. HIV/AIDS management plan
- viii. Code of Conduct
- ix. Employment plan
- x. Grievance redress mechanism
- xi. Prevention and protection against gender based violence and sexual exploitation
- xii. Labour influx plan
- xiii. Stakeholder engagement plan
- xiv. Whistleblower policy

27. During the bidding process, the Contractor will be expected to include a brief methodology of the implementation of these Environmental and Social Safeguards and attach a cost of implementation of these plans in his proposal bid.

28. In addition the Contractor will have to provide relevant staff for the implementation of the safeguards including a CLO and EHS expert.

0.11 CONCLUSION

29. The improvement of the project road will greatly contribute to the improvement in the socio-economic structure of the Northern Frontier. The project road will act as a major road linking Isiolo county to Wajir, Meru and Garissa Counties, reducing travel times and the improvement in service provision in the project area.

30. The negative impacts identified in this ESIA during the planning, construction, operation and decommissioning phases of the project, including waste generation, air pollution, noise pollution, occupational health and safety impacts, community health and safety impacts, traffic, labour influx, gender based violence impacts, increase in crime, increase in potential accidents, potential of conflicts due to cultural differences and pressure on limited resources and sexual harassment can be mitigated using the measures proposed in the ESMP as well as the preparation and implementation of safeguard policies provided in the report.

31. In addition, the recommendations of the public consultation and participation was incorporated into the findings of this report, some of the major issues addressed in the

public participation include resettlement, compensation and alternative routes which will be mitigated by implementation of a RAP.

1 INTRODUCTION

1.1 KENYA NATIONAL HIGHWAYS AUTHORITY (KENHA)

32. The Ministry of Transport, Infrastructure, Housing & Urban Development is the overall government body charged with ensuring transportation and accessibility of all areas within the country. It does this through Kenya National Highway Authority (KeNHA). Kenya Urban Roads Authority (KURA) and Kenya Rural Roads Authority (KERRA) within the country in meeting its mandate.
33. Kenya National Highways Authority (KeNHA) is a state corporation, established under the Kenya Roads Act 2007 with the responsibility for the management, development, rehabilitation and maintenance of international trunk roads linking centres of international importance and crossing international boundaries or terminating at international ports (Class A road), national trunk roads linking internationally important centres (Class B roads), and primarily roads linking provincially important centres to each other or two higher-class roads (Class C roads). In undertaking this mandate, the Authority propels the country to achieve its infrastructure goals espoused in the vision 2030.

1.2 THE PROJECT

34. The Government of Kenya has received funding from the World Bank towards the cost of the North-Eastern Transport Improvement Project (NETIP) and intends to use a portion of the proceeds of the credit for upgrading 348 km of the Isiolo-Wajir road to bitumen standard. This includes the Isiolo – Modogashe section with a total length of 190km.

1.2.1 NETIP Project Description

35. Road transport is the predominant mode of transport in Kenya, carrying approximately 93% of all cargo and passenger traffic in the country. The road network in Kenya has been established to be approximately 160,886 km long, comprising of approximately 11,189km of paved roads and 149,689km of unpaved roads. The bulk of the road network in Kenya lies within the highly populated parts of the country, providing some level of access to the rest of the country. In sparsely populated areas of the North-Eastern counties of Isiolo, Wajir, Mandera and Garissa covering a total area of approximately 152,694km² or 26% of Kenya's land mass has a road network of only 9,386km or 6% of the total road network in the country which is predominately unpaved. The poor condition of road network in these areas has contributed to uneven distribution of local produce due to time factor and breakage. The effect of this is that recovery and development costs in all sectors are adversely affected, hindering a rapid development of the region. In addition, failure to improve the road conditions of the transport corridors in this region that provide access to the sea and productive centres hinders the realization of full benefits from devolution.
36. It is against this background that the Government of the Republic of Kenya (GoK) has applied for funds for the towards upgrading the Isiolo - Mandera road to bitumen standards under North-Eastern Transport Improvement Project (NETIP) The project is aimed at addressing the constraint by upgrading the Isiolo-Mandera road from its current unpaved state to paved road standards. The NETIP road corridor is shown in the figure below:

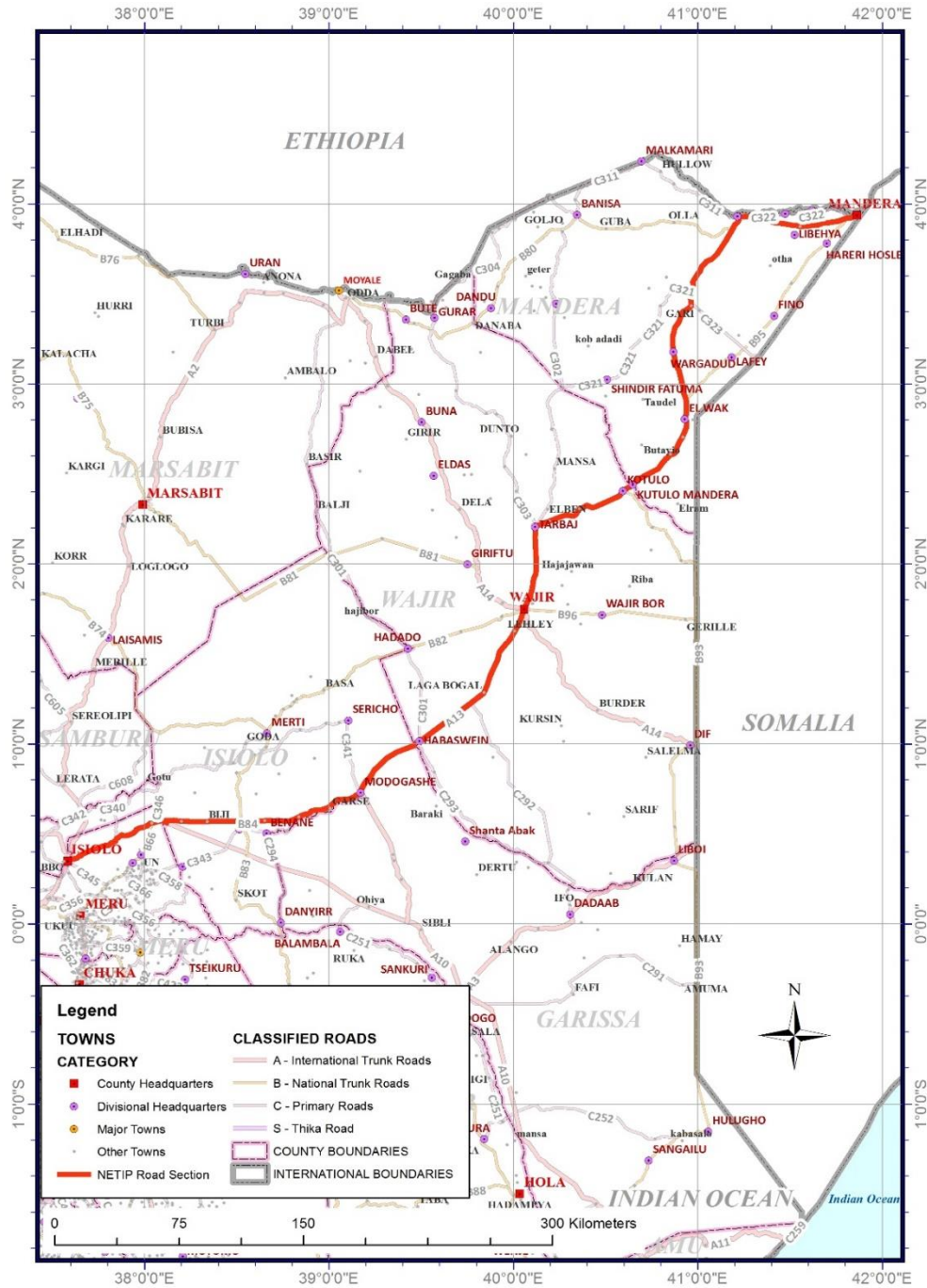


Figure 1-1: Map showing the location (red line) of the proposed NETIP corridor

37. World Bank is financing the designs for the entire road corridor while construction financing will be done by the World Bank, Gok and Arab Bank, as per the table below:

Table 1-1: Summary of Construction Finiancing for the NETIP Project

S.No	Road Section	Length of the road section (km)	Financier
1	Isiolo -Kulamawe	77	World Bank
2	Kulamawe -Modogashe	113	World Bank
3	Modogashe -Samatar	90	Arab Banks

S.No	Road Section	Length of the road section (km)	Financier
4	Samatar-Wajir	67	GoK Annuity
5	Wajir -Kutulo	119	World Bank
6	Kutulo-Dabasi	28	World Bank
7	Dabasi -Elwak	28	World Bank
8	Elwak-Sukelatifa	71	GoK Annuity
9	Sukelatifa-Rhamu	71	GoK Annuity

38. The North Eastern Improvement Project (NETIP) is aimed at enhancing connectivity between Kenya and Somalia as well as Ethiopia. This will be done in three components namely:

1) Component 1: Upgrading Selected Critical Road Infrastructure and associated roadside amenities (US\$455.50 million).

39. This component includes:

- a) Support to KeNHA to carry out design review and feasibility and detailed design studies for upgrading and construction of the 344km of the Isiolo-Wajir-Mandera comprising the following road sections: (i) Isiolo-Kula Mawe (77km); (ii) Kulamawe-Modogashe (113 km); (iii) Modogashe Habaswein (51km); (iv) Habaswein-Samatar (41km); (v) Samatar-Wajir (67 km); and (vi) Wajir-Elwak (175km);
- b) Provisions for roadside social amenities and Human Immunodeficiency Virus Infection/Acquired Immune Deficiency Syndrome (HIV/AIDS) prevention measures to help raise awareness and provide mitigation interventions to support efforts to protect the local community, drivers and contractors personnel;
- c) Carry out a program of activities designed to implement transport, trade and development facilitation measures, for instance, a program to cover activities such as carrying out a study to enhance social infrastructure and social services delivery along the corridor;
- d) Designing and establishing facilities and marketing system for pilot pastoralist roadside markets;
- e) Provision of market shades, milk cooler, slaughterhouses, veterinary posts, livestock holding area in selected locations;
- f) Designing and implementing activities to support key Project stakeholders such as county governments, communities, and households on management and operational modalities of these facilities;
- g) Strengthening the capacity of KeNHA in enhancing the road design manuals and specifications as well as contract management, value engineering, road maintenance, safeguards and procurement management and training; and
- h) Preparation of future projects.

2) Component 2: Institutional Development and Project Monitoring and Management (US\$12.50 million)

40. This component includes:

- a) Support to the State Department of Infrastructure on enhancing project management and oversight capacity, maintenance management and engineering capabilities in the transport sector;

- b) Support to Materials department in mapping road construction material sites;
- c) Supporting the State Departments of Infrastructure and Transport in the monitoring and evaluation of the projects;
- d) Support to strengthen the National Transport and Safety Authority to: (i) conduct needs assessment, vehicle safety inspection and safety audits; (ii) strengthening enforcement capability of the Authority and post-impact care; and (iii) assessing road safety on the Isiolo-Mandera Corridor;
- e) Strengthening the capacity of the National Construction Authority in overseeing and developing the local construction industry; and
- f) Training and coordination of Project implementation activities, including audits, and the monitoring and evaluation of progress achieved in the execution of the Project.

3) Component 3: Enhancing Internet Connectivity (US\$34.00 million). Support to Information and Communication

41. Technology Authority for:

- a) Carrying out feasibility and detailed design and the construction of a fiber optic cable network, alongside the part of the Isiolo-Mandera Corridor;
- b) Construction of fiber spurs and rings and provision made for connecting selected schools, hospitals and other strategic locations including pastoralist roadside markets, rest stops and community and service centers along the corridor;
- c) Connecting community information centers with fiber optic connection and advisory services in the management of these facilities and services; and
- d) Institutional strengthening of ICTA and training.

1.2.2 Isiolo – Modogashe Road Section

- 42. The Isiolo – Modogashe road section of the road falls under component 1 of NETIP.
- 43. This updated ESIA report covers the road section from Isiolo to Modogashe. The proposed design and construction intends to improve the road section from its existing state to bitumen standards. In addition, the new road corridor will provide an emergency runway for light aircrafts in addition to other road furniture.
- 44. The proposed project will provide for social infrastructure that may include market shades, milk cooler, slaughterhouses, veterinary posts, livestock holding area, whose exact locations and designs are unknown at this stage of project preparation . Thus, the Borrower has prepared the Environmental and Social Management Framework (ESMF), the ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social impacts of subprojects prepared during Project implementation including ESIA/ESMPs, ARAP and RAPs. It includes guidelines to prepare measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts of subprojects, provisions for estimating and budgeting the costs of such measures, and information on the agencies responsible for addressing project impacts. The supplementary safeguard instruments will be prepared by KeNHA, reviewed and approved by the Bank.

1.3 NEED FOR THE ESIA REVIEW AND UPDATE

- 45. During the project concept note approval, the project road was assigned as an Environmental Assessment category “B”, however during the project preparation, emerging issues led to its Recategorization to Category ‘A’ as per the World Bank Safeguards Policy OP/BP 4.01 Environmental Assessment, requiring a full assessment. A project is classified as Category A if it is likely to have adverse environmental and social

impacts that are significant, generally large-scale, irreversible, sensitive, diverse, cumulative or precedent setting and may affect an area broader than the sites or facilities financed by the project. The proposed road project will have potential significant environmental and social impacts along the road corridor in all phases of the project including loss of grazing land along the road, change in the landscape not just along the quarry and borrow sites (loss of materials), occupational health and safety risks, soil and water pollution, potential impacts related to camps establishment, establishment of larger market centres and towns, influx of new populations in search of new opportunities, interference with existing ways of life, potential GBV, potential increase in communal conflicts, pressure for existing natural resources, increase in traffic during the operation phase leading to an increase of foreign members to the communities. All these impacts will have potential to result in significant change to the existing status quo, thus requiring an in depth ESIA study provided in this report.

1.4 OBJECTIVE OF THIS REPORT

46. The main objective of this report will be to review and update the existing ESIA report including review of the potential impacts of the project on the physical, biological, social and environment surrounding the project, with an aim of mitigating the negative impacts and augmenting the positive impacts.

1.5 METHODOLOGY OF WORK

47. To commence the works the Consultant had an initial meeting with the Client in order to kick off the ESIA process, agree on the terms of reference for conducting the ESIA and establish a working relationship.

48. The next step included screening and a site reconnaissance and preparation of an inception report which included an updated methodology for conducting the ESIA. Following the screening process, the impacts of the project were seen to affect not only the road corridor but the surrounding plant and animal communities, borrow sites and quarry sites. As such the project was identified as category A with high risk and warrants the controls that come with a typical Category A project. A proposed project is classified as Category A if it is likely to have adverse environmental impacts that are significant, generally large-scale, irreversible, sensitive, diverse, cumulative or precedent setting and may affect an area broader than the sites or facilities financed by the project. The proposed road project will have a major impacts along the road corridor in all phases of the project including loss of grazing land along the road, change in the landscape not just along the quarry and borrow sites (loss of materials), establishment of larger market centres and towns, increase in traffic during the operation phase leading to an increase of foreign members to the community. All these impacts will have a permanent change to the existing status quo, thus requiring an in depth ESIA study provided in this report.

49. The ESIA review and updating included a desktop study, field investigations and data collection, stakeholder identification and engagement, impact assessment and mitigation measure development. These steps are highlighted in the sections below:

1) Desktop Study

50. This mainly involved;

- Review of the Design Review, ESIA reports, RAP reports, gender analysis and design review documents for the proposed road, including subsequent annexes to the reports.

In order to establish the project scope, background, potential impacts and gaps within the reports to provide an update on the same.

- A review of baseline data, maps, reports and any relevant information on the existing environmental and social conditions of the Project Area influenced by the proposed development.
- Review of existing National Legislation, Regulation, World Bank Safeguards Policies and Procedures, relevant to the proposed Project and the World Bank Group Environmental, Health and Safety Guidelines ;
- Preparation of checklists consisting of a simple catalogue of environmental and social factors which were compared to the activities to be developed.
- Early meetings with the Client to deliberate on the proposed project, keeping in mind the site and activity options under consideration;

2) Field Investigations and Data Collection

51. Activities implemented during field investigations involved;

- Site visits to the Project Area and the neighboring areas within the zone of influence of the project.
- Photographing the significant aspects to aid in describing baseline environmental and social conditions of the Project area and its influence zone.
- Identifying potential sensitive environmental and social receptors within the project area of influence including vulnerable and marginalized communities and vulnerable animal and plant species, in order to establish the people or environments that may suffer disproportionately due to the project and find solutions to mitigating the measures.
- Review and update of collected baseline environmental and social data which will be used for monitoring purposes throughout the different phases of the project.

52. The main purpose of the field investigation was to verify information and data collected during the desktop study and collection of any new information that may assist in the assessment of impacts and design mitigation measures.

3) Stakeholder Identification and Engagement

53. The consultant conducted additional stakeholder identification and engagement based on the desktop review in order to fill any potential gaps. The stakeholder identification and engagement included; identifying the various road authorities, county officials, KWS officials, local leaders as well as the general public in the project area. Following the identification of the different stakeholders, different methods of engaging with these stakeholders based on their roles and positions were devised. The Consultant made use of ad hoc interviews, key informant interviews and public consultation meetings at various market centres along the road. The stakeholder engagement plan employed is provided in appendix 11.1 of this report.

4) Impact Identification, Analysis and Mitigation Measure Development

54. Following the fieldwork and desktop studies, the Consultant identified the potential impacts from the project and activities. The impacts were analysed divided based on

- Nature if the impact was positive or negative
- Effect; if the impacts were direct or indirect
- Direct: applies to impacts which can be clearly and directly attributed to a particular
- Time Range; if the impacts were short term, medium term or long term

- Reversibility; if the impacts were reversible or irreversible
55. Following the impact identification, the Consultant identified mitigation measures for the negative impacts and methods of augmenting the positive benefits of the project. Mitigation measures were provided using best practice measures in the industry as well as health and safety guidelines provided by the various laws and policies.

2 PROPOSED PROJECT DESCRIPTION

2.1 LOCATION

56. The project road covers a total length of 190km through Isiolo-Kulamawe-Modogashe. It is part of the road corridor that traverses Isiolo and Meru Counties. The project road is categorized as A10/B84 under the new road classification. The project road is shown in the map below:

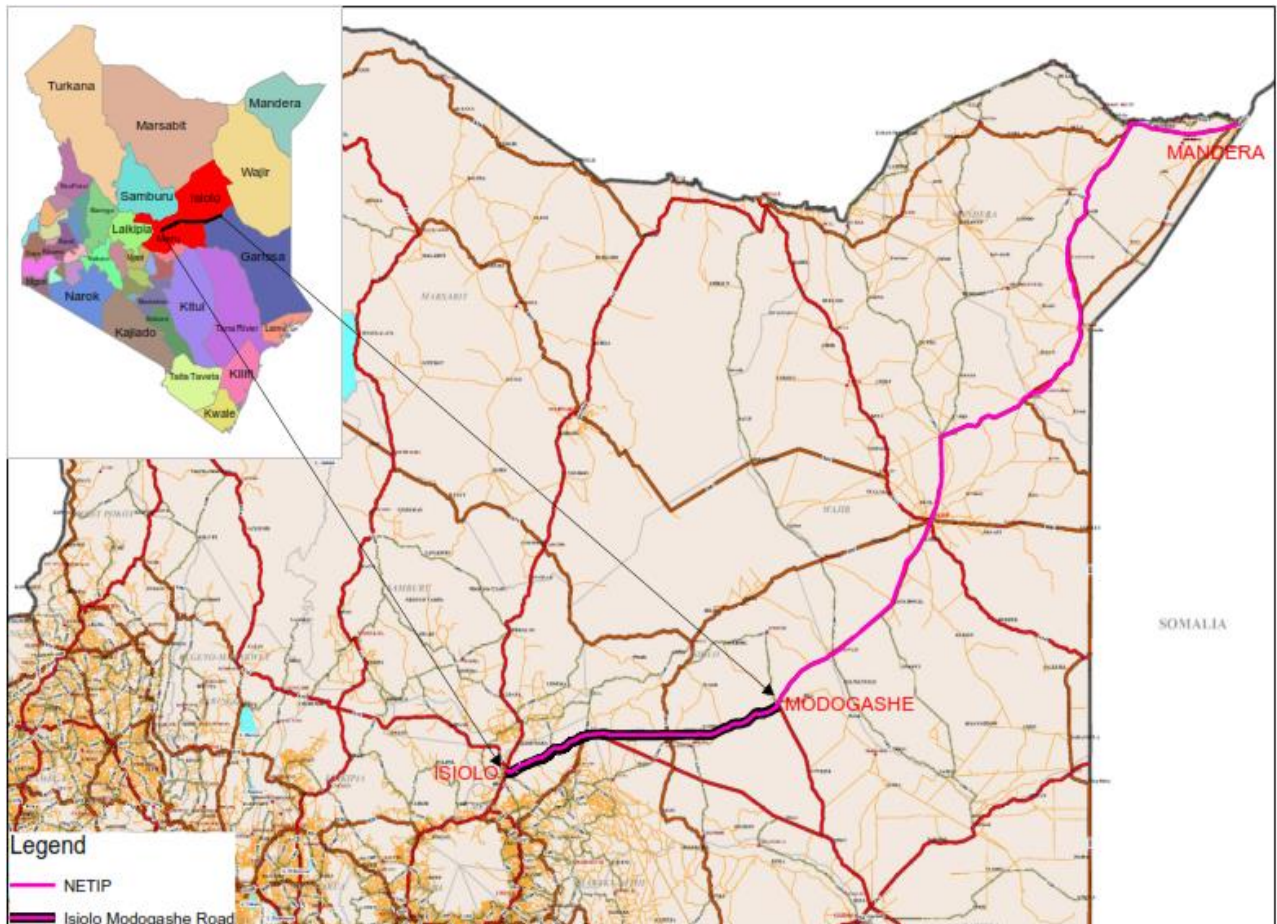


Figure 2-1: Map Showing the Location of the Project Road in Black (The Counties are shown in the smaller Map)

57. The project road starts from Isiolo town, at a T-junction with road A2 approximately 1Km from Isiolo town Central Business District (CBD) at GPS co-ordinates $0^{\circ} 22' 94''\text{N}$ and $37^{\circ} 36' 15''\text{E}$ and traverses for approximately 3Km in easterly direction within Isiolo County. The alignment then exits Isiolo County into Meru County, curving into a north-easterly direction traversing approximately 63Km to Kachuru trading centre in Meru County, where it exits Meru County back to Isiolo ending at Modogashe at GPS co-ordinates $0^{\circ} 44' 74''\text{N}$ and $39^{\circ} 10' 21''\text{E}$.

2.2 CURRENT ROAD NETWORKS IN THE AREA

2.2.1 Current Road Condition

58. The project road which forms part of the Isiolo - Mandera corridor (a class A road), is among one of the major roads that remain unpaved in Kenya. The road has for the longest time been to earth standard with dismal level of maintenance, thereby making the region inaccessible due to the time factor and breakage of vehicles.
59. With the formation of the road authorities, the project road has undergone upgrading to gravel standard for most of the sections by KeNHA and continues to benefit from the routine maintenance program funded by Kenya Roads Board (KRB) using Road Maintenance Fuel Levy (RMLF).
60. The project road is characterized by several dry river crossings (laggas) which render the road impassable at some sections during the rainy season. Majority of these river crossings have drifts with one river having a single lane bridge.

2.2.2 Vertical and Horizontal Alignment

61. The existing horizontal alignment is characterised by long straights and horizontal curves with characteristic short lengths and long radii. While the vertical alignment of the project road is characterized by a gentle slope from a high of 1100masl at Isiolo town to a low of approximately 805 masl at Kulamawe trading centre and finally 262 masl at Modogashe.

2.2.3 Existing Road Reserve

62. According to cadastral maps and a confirmatory topographical survey conducted during the design review in 2018, identified that the existing road reserve from the Junction at Isiolo to the Isiolo Army Barracks is about 30m, however after the barracks the given road reserve is unknown since majority of the land is undergoing or has not undergone adjudication, as such the full extent of the road is undetermined. The carriageway however ranges from 7m to 11m along the entire road corridor.

2.2.4 Other Road Projects in the Area

63. Several road and development projects have been earmarked for development in the project area. These include:
 - i. The LAPSSET road project from Lamu to Isiolo to South Sudan and Ethiopia. Within Isiolo, the LAPSSET is currently undergoing RAP implementation before commencement of construction works. The LAPSSET project road will intersect the project road near Kulamawe.
 - ii. The Garissa – Modogashe A13 road is currently undergoing upgrading to bitumen standards and will intersect the Project Road at Modogashe.

2.3 PROPOSED PROJECT AND ITS OBJECTIVES

64. The proposed project road is expected to meet the following objectives and service needs both during construction and operation phases of the project:
 - Improve the region's road network,
 - Reduce travel time along and across the roads,

- Enhance the operational efficiency of the road,
- Promote economic growth within the region,
- Improve safety and reliability for all road users,
- Attract diverted traffic that will foster regional growth,
- Provide social amenities for the local communities and promote community development,
- Improve security within the project area,
- Provide employment opportunities to local inhabitants, among other benefits.

2.4 DESIGN COMPONENTS AND PROJECT FEATURES

65. This chapter identifies the project design for the proposed road including design processes and road features.

2.4.1 Traffic Survey, Analysis and Design

1) *Motorised Traffic*

66. The traffic survey adopted was based on traffic studies conducted at the following town centres:

- At 1 – Isiolo (on three legs of A2 and B9)
- At 2 – Ndumuru (on three legs of B9 and D486)
- At 3 – Kachuru (on three legs of B9 and E1872)
- At 4 – Garbatula Junction (on four legs of B9 and E802)
- At 5 – Modogashe (on three legs of B9 and C81)

67. Traffic surveys were conducted for a duration of 7 days consisting of classified manual traffic counts augmented with one-night count and a 24-hour Origin/ Destination (O/D) study.

68. Following the traffic surveys and based on the poor state of the roads, relatively low economic activity and the insecurity in the project areas, traffic had not changed significantly since the last survey.

69. Observations and conclusions from the traffic survey were that:

- There was a high increase in the number of motor cycles from 2005 to 2015 and further to 2017.
- The traffic volumes have only increased marginally from 2015 to 2017.
- The high number of motorcycle traffic is an indicator of underlying unmet travel demand which ideally should be served by PSVs.
- Traffic growth (and by extension, economic growth) has been stifled by the condition of the road. The areas therefore appear to be lagging as the rest of the country is experiencing exponential growth in traffic.

70. The Consultant therefore made projections of the increased traffic taking into account all the factors of growth including GDP and expected growth rate due to improved road condition.

71. Following the review of the traffic survey and taking into account the LAPPSET traffic expected an initial traffic class T1 was proposed for design, however following further review, class T2 was proposed for the project road, in order to correlate with the rest of the Isiolo – Mandera corridor, with the provision that the road at the LAPSSET section could

be strengthened when the full LAPSSSET traffic sets in. In addition, traffic class T3 was considered for the loop and service roads.

2) Light Aircraft Traffic

72. The project road will make provision for an emergency runway for light aircrafts, based on the design manual.

3) Non-Motorised Traffic

73. Making use of recommendations from AASHTO, the design Consultant proposed 2m of a combined pedestrian and motor cycle or bicycle cycle lane on either side of the project road.

74. No animal and hand drawn carts were provided for since these would require an additional lane which would be uneconomical and it was recommended that these should not operate on the proposed road due to safety issues. Due to low level of education the signage to be provided will include animated signages. In addition, it was projected that these numbers would reduce with an increase in economic growth.

2.4.2 **Materials Investigations**

1) Alignment of Soil

75. The design consultant conducted sampling along the road at intervals of 1-2Km intervals and following testing the project road was divided with homogeneous sections as shown in the table below:

Table 2-1: Summary of Soil Alignment along the Road

Section Number	From Km	To Km	Length (Km)	Mean CBR %	Min CBR %	Max CBR %	Sub Grade Class
HS 1	0	5	5	15.5	10.0	21.0	S4
HS 2	5	12	7	13.0	10.0	18.0	S3
HS 3	12	34	22	16.2	10.0	22.0	S4
HS 4	34	49	15	13.1	10.0	16.0	S3
HS 5	49	68	19	16.9	11.0	24.0	S4
HS 6	68	77	9	13.8	10.0	18.0	S3
HS 7	77	87	10	12.4	8.0	19.0	S3
HS 8	87	96	9	20.6	18.0	23.0	S4
HS 9	96	107	11	15.8	12.0	20.0	S4
HS 10	107	134	27	17.8	13.0	22.0	S4
HS 11	134	157	23	15.2	11.0	20.0	S4
HS 12	157	184	27	17.1	14.0	22.0	S4
HS 13	184	192	8	15.6	13.0	18.0	S4

**S3 to S4 soils include clayey silts and ash*

2) Earthworks and Fill

76. The project road will have adequate cut and fill quantities to formation level of the road. As such no further material was required.

3) Gravel Material Sites

77. Twenty three sites were identified as suitable for the provision of gravel for the road construction. These sites are summarized in the table below:

Table 2-2: Investigated Gravel Material Sites

No.	GPS Location	Design Label	Chainage	Approximate Area
1	0352478, 0042440	MS 1	Km 10+800RHS	350x200 m ²
2	0371669, 0052959	MS 2	Km 33+600LHS	500x200 m ²
3	0360113, 0046430	MS 3	Km 19+500RHS	200x150 m ²
4	0399693, 0063969	MS 4	Km 65+700LHS	300x200 m ²
5	0411012, 0063083	MS 5	Km 77+000LHS	150x120 m ²
6	0410559, 0062435	MS 6	Km 77+400RHS	200x180 m ²
7	0349311, 0042164	MS 21	Km 7+400LHS	200x100 m ²
8	0384041, 0058149	MS 22	Km 46+000LHS	200x140 m ²
9	0381977, 0056934	MS 23	Km 48+800LHS	270x220 m ²
10	0418416, 0062920	MS 16	Km 84+800LHS	300x320 m ²
12	0423275, 0062605	MS 19	Km 89+800LHS	200x170 m ²
13	0437049, 0063045	MS 15	Km 103+700LHS	340x300 m ²
14	0445862, 0063176	MS 14	Km 112+600LHS	250x200 m ²
15	0446762, 0063137	MS 12	Km 113+600LHS	280x220 m ²
16	0450266, 0063078	MS 12	Km 117+100LHS	300x230 m ²
17	0454299, 0063157	MS 11	Km 121+100LHS	500x200 m ²
18	0459147, 0063440	MS 10	Km 126+000LHS	450x320 m ²
19	0460640, 0063444	MS 9	Km 127+500LHS	300x240 m ²
20	0446414, 0063100	MS 8	Km 130+100LHS	460x200 m ²
21	04658720, 0063444	MS 7	Km 135+600LHS	400x180 m ²
22	0481073, 0066830	MS 20	Km 149+200LHS	600x200 m ²
23	0492768, 0069884	MS 17	Km 161+800LHS	300x230 m ²

78. Following laboratory testing 3 material sites tested fully meet the criteria for treated base materials while 10 material sites meet the specifications for treated sub base material. Based on this, the design Consultant proposed 3% cement to be used for cement improved gravel

sub base layer (base quality) and 4% cement utilized for cement stabilised gravel base layer for all the identified sites.

4) Hard Stone Quarries

79. Five (5) potential hardstone sites were investigated within the vicinity of the project, these are summarized in the table below:

Table 2-3: Investigated Hard Stone Quarry Sites

No.	Design Label	Chainage
1	HSQ1	-31Km (N)
2	HSQ2	Km -12 Km (S)
3	HSQ3	Km 32+000
4	HSQ4	Km 123+000
5	HSQA	Km 98+000

80. All five of the identified sites have varying levels of suitability with the least favourable workable through the adjustment of the sieves on the crusher site.

5) Sand for Construction

81. Nine sand sources were identified and samples were taken for laboratory testing to ascertain their quality and their compliance with the requirements of Road Design Manual (RDM) Part III. The table below summarizes the sites identified:

Table 2-4: Investigated Construction Sand Sites

No.	Design Label	Chainage
1	Sand 1	Km 123+000RHS
2	Sand 2	Km 129+000RHS
3	Sand 3	Km 134+000RHS
4	SSD 1	Km 33+600LHS
5	Tukwen River (Modogashe)	TP1
		TP2
		TP3
		TP4
		TP5

82. It was established that the sites are appropriate and there is sufficient sand to cater for the structures envisaged for the project.

6) Water for Construction

83. The project road traverses an area of arid/semi-arid climate, with low water availability. Water for human and livestock consumption along the project road is currently sourced from a few boreholes and water pans. These existing water supply points are located at selected centres along the alignment and are summarized in the table below:

Table 2-5: Summary of Existing Water Resources

No.	Borehole No.	Borehole Name	Total Depth	Yield	Status
1.	C97	Military LMD CRE	-	13.4m ³ /hr	In use
2.	C9641	Kulamawe	76	3.0m ³ /hr	In use
3.	C9639	Boji 1	9	2.0m ³ /hr	In use
4.	C9575	Garbatulla(Manyatta Dhemo)	18	6.0m ³ /hr	In use
5.	C9578	Kinna	54	7.0m ³ /hr	In use
6.	C9576	Garbatulla (Catholic Mission)	18	12.0m ³ /hr	In use
7.	C9574	Garbatulla (School cpd)	20	14.4m ³ /hr	In use
8.	C9573	Garbatulla (Hospital)	25	10.0m ³ /hr	In use
9.	C9384	Boji (Malka Galla)	170	7.5m ³ /hr	In use
10.	C9640	Boji 2	-	-	Dry

84. The available water sources are not sufficient to meet the human and animal consumption demand and cannot be used to provide construction water, which in the design review would be approximately 300m³/day. Establishing sources of water for construction is therefore critical for the project works.

85. The alternative systems that can be used to provide construction water are sinking boreholes to tap ground water, rain water harvesting through construction of water pans, or damming of the seasonal rivers. These alternatives have been investigated and sinking of boreholes is considered the most feasible for the project, as the other alternatives would be expensive and would take rather too long to complete. A water pan can also be constructed to provide additional water. These additional water sources will require a stand alone ESIA for each new site.

2.4.3 Pavement Structure

86. Following material investigations and making use of the RDM III and AASHTO, the following are the pavement features that were designed for the project road.

1) Pavement Structure for the Main Carriageway

87. The proposed structure for the main carriageway is shown in the figure below:

	75mm Surfacing – AC type 1
	150mm Cement Stabilised Gravel Base
	175mm Cement improved material subbase (Base Quality)
	300mm compacted natural material improved subgrade to S5

Figure 2-2: Pavement Structure for Main Carriageway

2) Shoulder Pavement

88. The shoulders will be constructed with the same pavement as the main carriageway; the cement Improved Gravel sub base layer and Cement stabilised gravel base layer for the carriageway shall be extended to the shoulders but the surfacing will consist of a 35mm thick Asphalt concrete.

3) Pavement Structure for Service Roads, Access Roads and Market loop roads

89. A pavement structure type T3 for all town service and loop roads is proposed due to expected reduced traffic loading and cost effectiveness.

	50mm Surfacing – AC type 1
	150mm Cement Stabilised Gravel Base
	175mm Cement improved material subbase
	300mm compacted natural material improved subgrade to S5

Figure 2-3: Pavement Structure for Service Roads, Access Roads and Market loop roads

4) Pavement Structure for Truck Parking

90. A rigid pavement has been adopted for the truck parking areas to withstand the static loading and the likely oil spills since the trucks will normally undergo some servicing and maintenance at the parking areas. The proposed structure is shown in the figure below:

	200mm Concrete Slab
	3mm Polythene Sheet
	175mm Cement Improved material subbase
	300mm compacted natural material subgrade

Figure 2-4: Pavement Structure for Truck Parking

5) Pavement Structure for Emergency Landing for Light Aircrafts

91. A pavement structure of class T1 was proposed for emergency landing of light aircrafts. However, the width of the emergency landing section was proposed as 15m and 1,500m long.

92. The pavement structure is summarized in the figure below:

	100mm Surfacing – AC type 1
	150mm Cement Stabilised Gravel Base
	175mm Cement improved material subbase (Base Quality)
	300mm compacted natural material improved subgrade to S5

Figure 2-5: Pavement Structure for Emergency Landing for Light Aircrafts

2.4.4 Geometric Designs

1) Design Speed

93. Various factors were incorporated in the establishment of the project road design speeds these included:

- i. Road Classification
- ii. Terrain
- iii. Density and Character of Land Use
- iv. Traffic Volume Expected of the road

94. Based on the above criteria the design speed for majority of the road was established as 100Km/h with the following exceptions

- i. 60Km/h at areas with sharp horizontal and sharp curvature, steep vertical alignments and for stopping and passing sight distances.
- ii. 50Km/h at the various centres along the road
- iii. 80Km/h along the loop roads

2) Design Vehicles

95. The design vehicle for the roads was selected to correctly dimension the cross section and apply appropriate widening at curves, lay-bys, parking and junction layouts to accommodate all vehicles on the road while eliminating the possibility for side collisions by heavy vehicles. The semi-trailer truck with a 15m overall length was used as the overall design vehicle for the minimum turning radius widening of junction layouts while the standard bus was used for dimensioning of bus bays.

3) Horizontal Alignment

96. In order to maintain the design speeds and vehicles safety when maneuvering corners along the road, the Design Consultant made use of the following horizontal alignment criteria for the project road:

Table 2-6: Horizontal Alignment Criteria which the Project Road was Designed to Meet

Horizontal Alignment Element	Design Speed (Km/h)			
	50	60	80	100
Minimum Horizontal Radius (m)	100	160	350	600
Minimum Stopping Sight Distance (m)	65	85	130	185
Reduced Passing Sight Distance (m)	175	225	325	375
Passing Sight Distance (m)	345	410	540	670
Minimum Factor for Minimum Horizontal Radius (m)	34	54	117	200
Horizontal Radii without Transition (m)	>2000	>2000	>2000	>2000
Horizontal	>4000	>4000	>4000	>4000

Horizontal Alignment Element	Design Speed (Km/h)			
	50	60	80	100
Radii without Superelevation (m)				
Maximum Rate of Change of Superelevation (%)	1.25	1.00	0.5	0.5
Minimum Rate of Change of Superelevation (%)	0.3	0.3	0.3	0.3
Maximum Superelevation (%)	6.0	6.0	6.0	6.0

4) Vertical Alignment

97. The vertical alignment is designed with the use of straight grades and vertical curves. These elements are designed to give a vertical alignment that is consistent to the existing terrain, provide sufficient sight distances and facilitate effective drainage of the roadway. The following is the criteria used to design the project road:

Table 2-7: Vertical Alignment Criteria which the Project Road was Designed to Meet

Topography	Maximum Gradient (%) for the Different Design Speeds			
	50	60	80	100
Flat	-	-	4	3
Rolling	7	6	5	4
Mountainous	9	8	-	-

2.4.5 Hydrological Investigations and Design

98. A hydrological study was carried out with the sole purpose of establishing the hydraulic condition and adequacy of the existing structures along the road. A desk study was conducted which sought to find any gaps in the design documents received from the client. This was then followed by a site investigation after which the following activities were carried out using a 1:50,000 topographical scale maps to delineate all the catchments:

- i. The desktop investigation sought to identify catchment characteristics which were obtained from the topographical maps such as:
 - Area in Km²
 - Length of longest water course in Km
 - Catchment slopes
 - Slope of longest watercourse.
- ii. Field investigation included the following:
 - Observation of vegetation cover
 - Flood models were selected and flood computations were made based on catchment characteristics and adjusted to reflect observed site conditions.
 - The Flood model results were compared with the existing structures hydraulic capacity and recommendations were made for improvements, where necessary.
 - Observation on catchment land usage.

- Soil characteristics were assessed from published- Ref. National Atlas of Kenya, 1991 and from site observations.
- Observation of the main crossings to estimate the mean annual flood and any evidence of overtopping.
- Assessing rainfall characteristics from published data and data obtained from the Meteorological Department.

99. The design consultant then conducted a hydrological analysis on the entire road corridor and surrounding catchment. Following the investigations and analysis the following conclusions were made:

- i. It was observed that the road alignment has several drifts; it was recommended that they be replaced with appropriate proposed structures/culverts. 47 No. Box culverts have been proposed in the design review.
- ii. There are a series of crossings that are localised catchments and could not be measured from the topo scale maps. For these sections the following have been proposed:
 - Relief culverts of 900mm diameter PVC pipes and
 - Pipe culverts on low lying points along the alignment.
 - Open trapezoidal side drains with adequate side slopes based on the type of soil along the alignment.

2.4.6 Road Cross Section Design and Features

100. Following the traffic analysis, material investigations, geometric designs and hydrological investigations, the design consultant proposed the following features and designs for the various parts of the road cross section. In addition, a road reserve of 60m for the project road was required for the project road.

1) Carriageway Cross Section

101. Based on the collected information and analyses, RDM recommends type II road cross section summarized in the table below. This cross section is what will be employed in the project road.

Table 2-8: Carriageway Cross Section

Type	Lanes	Surfacing	Total Width	Shoulder Width	Carriageway Width	Normal Cross-fall
II	2	Bitumen	11.0m	2.0m	7.0m (2 x 3.5m)	2.5%

2) Embankments and Cut Slopes

102. Embankment and cut slopes which were adopted based on the requirements of the RDM I, they are summarized in the table below:

Table 2-9: Embankment and Cut Slopes that will be employed in the Road Construction

Fill Slopes		Cut Slopes	
Height of Fill	Slope	Cut Depth	Slope
$H_f \leq 1m$	1:4	$H_c \leq 1m$	1:3
$1m \leq H_f \leq 3m$	1:2	$1m \leq H_c \leq 3m$	1:2

Fill Slopes		Cut Slopes	
Height of Fill	Slope	Cut Depth	Slope
$H_f \geq 3m$	1:1.5	$H_c \geq 3m$	1:1.5

3) Side Drains and Cut off Ditches

103. The road way has been designed to be drained by drainage system ranging from curb and gutter on curbed embankments on high fill which accumulate water on the pavement surfaces. These curb-and-gutter systems together with ordinary sheet flow on uncurbed sections will evacuate to longitudinal channels alongside of the roadway. The side ditches have been designed to have adequate capacity for the design runoff to ensure that water is removed without soaking the pavement layers. Pursuant to section 4.4, figure 4.3.1 and Table 4.4.1 of RDM I, the review consultant recommended type B-2 to be applied in this area with flaring terrain.
104. The longitudinal channels have been designed to discharge existing natural water courses through mitre drains or discharge into existing streams and rivers at crossing culverts/bridges locations.
105. Where high velocities are anticipated, cut off ditches have been proposed for lining or other erosion control measures proposed to limit the possibility of scour.

2.4.7 **Junction Design**

1) Interchanges

106. The design consultant has proposed a grade separated junction at A2/A10. As instructed by the Client, at A10/B66 junction, land acquisition has been designed to accommodate a grade separated junction in the future but no detailed design has been carried out for the junction.

2) Major & Minor junctions

107. Major and Minor junctions intersecting the project road have been designed at all intersections with primary and secondary roads.

2.4.8 **Road Furniture Design**

108. The Review Consultant has made the following recommendations on road furniture:
- **Road Reserve Boundary Posts** - these are proposed at intervals of 250m on each side of the road reserve edge and details are shown in the book of drawings annexed to this report;
 - **Edge Marker posts** - these are proposed at bridge approaches, pipe culverts, sharp curves and at locations where sight distance requirements are not complied with. Exact location for the Edge Marker Posts will be determined during the construction phase of the project.
 - **Kilometre Marker Posts** - these are proposed at intervals of 2km staggered on either side of the road.
 - **Road Signage** - these are provided and installed in accordance with the recommendations of Ministry of Works, Roads Department (Kenya); Manual for Traffic Signs in Kenya, Part I (Road Markings)- 1975; Due to the limited education level, pictorial road signs will be provided for easy understanding.

- **Road Marking** - Locations for different types of road marking will be determined on site during construction. These are to be determined in accordance with the requirements of Ministry of Works, Roads Department (Kenya); Manual for Traffic Signs in Kenya, Part I (Road Markings)- 1975;
- **Guardrails** - These road furniture elements, whose exact locations will be determined on site during construction, shall be determined at bridge approaches, box culverts and high fill in accordance with Guardrail Need Index (G .N.I) in Figure 8.5 .1 of the RDM I;
- **Kerbs** - these are proposed at junctions, bus bays and parking bays. Exact location shall be determined on site during construction;
- Locations of Reflective Road Stands, Rumble Strips and Speed Bumps shall be determined on site during Construction.
- Crossing points for animals, and wildlife, whose designs will be provided during construction, since the design review did not include this aspect. The ESIA has provided a provisional sum for this
- Bus parks and stops to service the local community whose location will be determined during construction.

2.4.9 Ancillary Road Structures

1) Emergency Light Aircraft Runways

109. Two sections of the road between km 18+100-km 19+600 and 143+300-km 144+800 meets the ICAO runway requirements and are therefore proposed as the site of the emergency runway. The pavement for the proposed runway sections are highlighted in chapter 2.4.3 of this report.

2) Service, Loop and Market Roads

110. Service roads have been provided at several market centres. The main purpose for the service roads is to provide access to the market centre shops, where the traders can load/off load their merchandise in addition to acting as collector roads to combine property accesses and convey them to the project road at selected safe junctions. Service roads have been proposed at Ndumuru, Kachuru, Kulamawe, Boji, Garbatulla, Eldera and Modogashe Markets. The pavement structure is provided in chapter 2.4.3 of this report.

3) Bus Bays

111. Passenger transport will form a key element of road use for the project road. Bus bays have been proposed through stakeholder engagement and feedback to enable buses and matatus to detour off the travel lanes and drop or pick passengers. Travel patterns were critically examined and bus bays provided at convenient locations for road users. At junction locations at least one bus bay location was made available for each traffic movement direction. At village centres, at least one bus bay was provided for each direction depending on the length of the village centre along the road. The locations of these bus bays have been provided in the book of drawings annexed to this report, however there has been provision for additional bus bays that will be decided during the road construction through further stakeholder engagement and citizen forums.

4) Lorry Parking

112. The Isiolo - Modogashe road is part of key transportation corridor linking the north-eastern cities of Wajir and Mandera to key ports of Mombasa, Isiolo and Nairobi. The corridor will attract long distance traffic ferrying transit goods. These long-distance

vehicles will compose majorly of Truck of various types. The long distance journeys will be made over long time. A single trip may take several days. It is with this reasoning therefore that arises the need to designate and design special facilities for parking and resting.

113. Road safety is enhanced when drivers break in their journey to rest since fatigue is a major cause of traffic accidents.
114. The Design Consultant provided truck parking facilities at interval of 30 - 50 Kilometres. The following locations were selected for siting and design of these facilities. The choice of location was informed by among other factors; the need of provision of overall security to the vehicles parked and recommendations from stake holders. Truck parking facilities were therefore provided at the following locations.
- Ndumuru
 - Kulamawe
 - Taiboto junction
 - Eldera
 - Modogashe
115. The truck parking facilities will include a parking bay, on the side of the road, the design however has not provided for additional facilities including shops and accommodation, however it was based on the assumption, that the provision of the truck stop will provide for incentive for establishment of businesses to meet the needs.

2.5 PROJECT ACTIVITIES

116. This chapter looks at the major activities that will be undertaken during all four phases of the project including:
- i. Planning phase
 - ii. Construction phase
 - iii. Operation and Maintenance
 - iv. De-commissioning

2.5.1 Activities during the Planning Phase

117. This is the initial phase of the whole road construction project. During this phase designs will be completed, licensing for the ESIA report. In addition, a major activity during this phase of the project, the implementation of the RAP will commence with the affected persons being compensated as per the RAP report.

2.5.2 Activities during the Construction Phase

118. Majority of the upgrading activities will be conducted during this phase of the project. The activities include:
- 1) Setting out
119. The construction works shall start with setting out the alignment of the road. Pegging will be done all along the alignment to demarcate the road corridor. After cutting of benches and prior to commencement of earthworks or sub-grade works, The Contractor shall take commencement cross-sections again and submit the copy of the same to RE and Client for agreement.

120. These cross-sections shall then be used as basis of measurement for all subsequent layers, unless otherwise stated.

2) Clearance of the Alignment and Creation of Diversions

121. This will involve clearance of the site on road reserve including removal of trees, hedges and other vegetation and any deleterious materials, grub up roots, backfilling and compaction to 100% MDD (AASHTO) with approved material. It will also involve removal of topsoil to a maximum depth of 200mm. When instructed by the RE, the Contractor shall demolish or remove structure and any other obstruction from the road reserve.

3) Earthworks

122. Earthworks will involve:

- Filling in soft material including benching of embankments and compaction to 95% MDD (AASHTO T99) in layers not exceeding 150mm.
- Filling in hard material (rock fill in selected sections).
- Works and transportation of borrow material from the various borrow sites
- Cutting to spoil both hard and material.
- Landscaping and grassing.

4) Excavations and filling for structures

123. The major activities would be:

- Excavations and backfilling for gabions in soft material.
- Excavation in soft materials for culverts and foundations for piers and abutments.
- Placement for gabions and mattresses as directed by the engineer.
- Rock-filing gabions.
- Placement of 200mm thick pitching including grouting to aprons upstream/downstream of bridges, culverts and drains.

5) Use of Borrow and Quarry Sites

124. The Contractor will make available any land for quarries, borrow pits, stockpiles and spoil areas, except for those areas in road reserves specifically approved by the resident engineer. The contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications and for the procurement, mining, haulage to site of these materials and all costs involved therein. Similarly, the contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works the Contractor may utilize these subject to the approval of the RE. These borrow and quarry sites will be rehabilitated as guided by this report. Further, National Environment Management Authority requirements for borrow and quarry sites will be observed.

125. The contractor will also establish and maintain transport routes.

6) Concrete Works

126. The major concrete works will be for all the drainage structures and ancillary structures along the road. The major process of concreting will involve formwork, concrete mixing, pouring and curing.

7) Crushing and Batching

127. The Contractor will establish both a crusher and asphalt batching plant, where the raw paving materials will be combined to the specific requirements as per the design. Following successful batching the Contractor can commence paving of the prepared road surfaces.

8) Carriageway Paving

128. After successful earthworks, for the subgrade, subbase and base layers, the Contractor will then pave the road surfaces to the specifications of the design document overseen by the RE.

9) Construction of Road Furniture

129. These will involve establishment of the necessary road furniture along the project road before completion of the project works.

130. In addition landscaping and restoration of the land will be done during this part of the project. However it should be noted that this report proposes revegetation of land be a continuous process throughout the entire construction phase.

2.5.3 Activities during the Operation Phase

131. The Contractor will be required to remedy any defects during the Defects Liability Period. The major items of work during Defects Liability period included in the contract are as follows:

- Repair of any defects on the road and road furniture;
- Removal of construction camps, removal of un-used material stockpiled on the road, tidying and general cleanness of the road and construction sites.

2.5.4 Activities during the Decommissioning Phase

132. Decommissioning refers to the final disposal of the project and associated materials at the expiry of the project life span. In respect to the road, decommissioning is not anticipated. However, it will be sustained in accordance to transportation demands of the project area expected at the end of construction works.

133. Nevertheless, after the construction period, construction equipment and dismantled camp materials will be salvaged and removed from the site by the contractor.

2.6 EXPECTED WASTES FROM PROJECT ACTIVITIES

134. The Contractor is expected to employ the 3 Rs of waste management i.e. Reduce, Reuse, Recycle, for all expected construction waste. However the construction project is expected to produce different types of waste which need to be identified for purposes of waste management.

135. The expected construction wastes will include:

- i. Soil and Rocks from excavations
- ii. Vegetation from site clearance
- iii. Oil/Grease
- iv. Domestic wastes from the Construction and REs camps
- v. Scrap metal
- vi. Packaging
- vii. Excess Concrete

2.7 PROJECT COST

136. The construction of the proposed road project is estimated to cost KES 27,202,290,239.14. Not including the cost of ESMP implementation. This cost is provided in chapter 8 of this report. A summary of the Bill of Quantities (BoQs) is provided in the table below.

Table 2-10: Project Cost in Accordance to the BoQ

Bill No.	Description	Amount
1.	Preliminary and general items	1,041,489,031.00
4.	Site clearance	769,350,828.50
5.	Earthworks	4,783,006,161.30
7.	Excavation and filling for structures	280,360,843.71
8.	Culverts and drainage works	541,880,080.91
9.	Passage of traffic	421,948,000.00
10.	Gravel wearing course	11,051,040.00
12.	Natural base and subbase	1,457,636,551.67
14.	Cement and lime treatment	2,355,181,085.71
15.	Bituminous surface treatment and surface dressing	1,671,223,634.82
16.	Bituminous mix bases, binder courses & wearing courses	4,754,269,026.29
17.	Concrete works	952,201,966.39
20.	Road furniture	472,082,363.38
21.	Miscellaneous bridge works	25,239,176.24
22.	Dayworks	112,054,000.00
25.	HIV/AIDS awareness and education	41,400,000.00
26.	Piling	267,285,960.00
SUB TOTAL - (1)		19,957,659,749.92
Contingencies @10% of Sub-Total 1 – (2)		1,995,765,974.99
VOP @ 7.5% of Sub-Total 1 – (3)		1,496,824,481.24
SUB TOTAL (4); (1+2+3)		23,450,250,206.16
16% VAT of Sub - Total (5)		3,752,040,032.99
TOTAL BIDS PRICE; (4+5)		27,202,290,239.14

3 ALTERNATIVES TO THE PROJECT

3.1 DESIGN OPTIONS FOR ROAD CONSTRUCTION

137. During the design review, the Design Consultant conducted a traffic survey and analysis of the project road taking into account the expected traffic from the LAPPSET road. The analysis yielded traffic class T1 for the road.
138. However, when looking at the entire Isiolo Manderla Corridor without incorporating the LAPPSET section of the road, the design yielded a road class of T2.
139. Taking into account the two choices it was proposed to adopt class T2 for the project road, in order to correlate with the rest of the Isiolo – Manderla corridor, with the provision that the road at the LAPPSET section could be strengthened when the full LAPPSET traffic sets in. In addition, traffic class T3 was considered for the loop and service roads.

3.2 ALTERNATIVE ROAD SECTIONS

140. During Client and stakeholder meetings in Isiolo in 2018, the local community stated the current project alignment would affect too many people particularly within Isiolo Town, 1km into the road project. As such, the local community proposed an alternative loop road which would have fewer PAPs and impact on grazing land.
141. The new proposal, in contrast to the existing alignment is shown in the google maps image below:

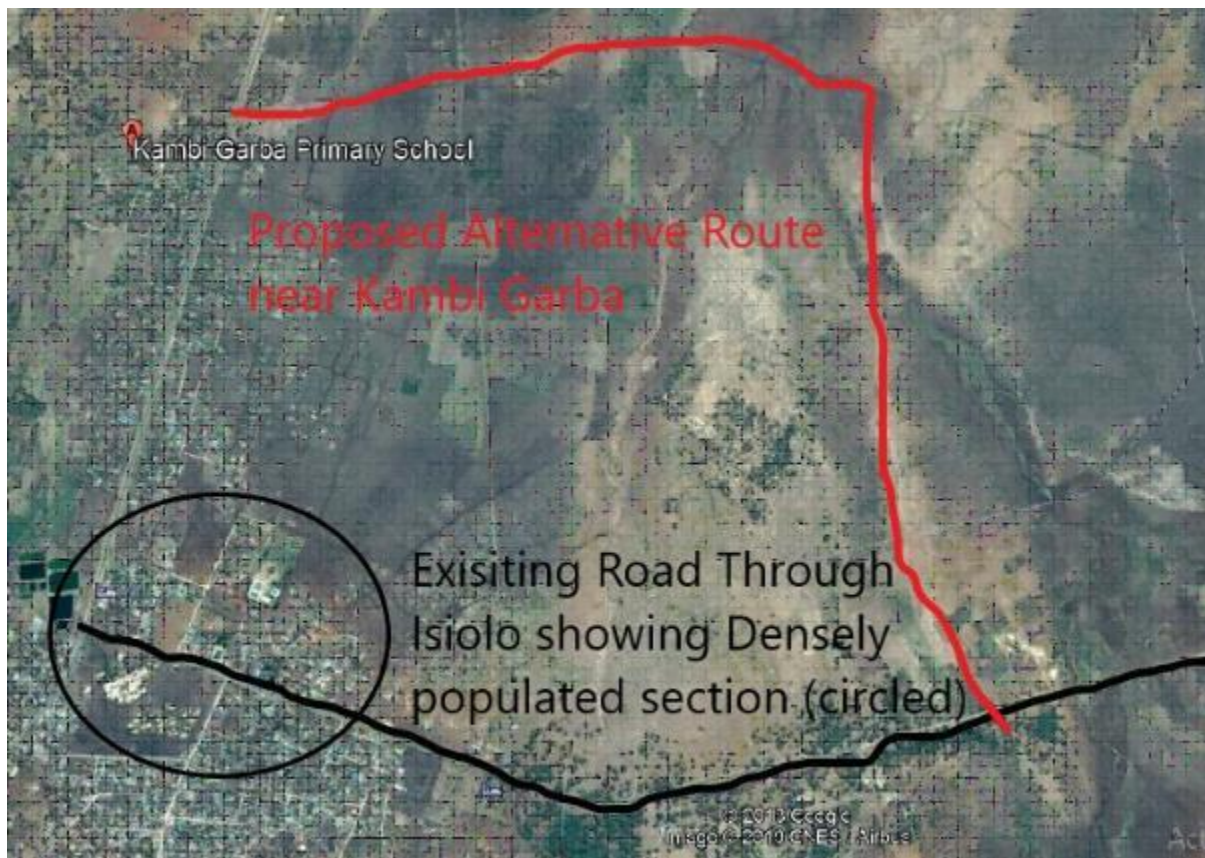


Figure 3-1: Map Showing proposed Alternative Route through Kambi Garba (in Red) in Comparison to the Densely Populated Isiolo Junction Area

In addition, the difference in population densities is shown in the figures below:



Figure 3-2: Kambi Garba Route the area is sparely populated.



Figure 3-3: Junction with the Isiolo - Moyale Road fairly settled, with permanent buildings coming up or town expanding and growing



Figure 3-4: Type of Infrastructure and PAPs at Isiolo

142. The Consultant conducted a brief drive through of the loop road and it was noted indeed proposed loop would have less PAPs however there would be a need for land acquisition. This option seemed like a more feasible project alternative to the project road.
143. Thus, the proposed action plan is to construct the project road through the proposed loop, and maintain the existing road corridor (with improvements in the road surface) from the junction at Isiolo to the new junction with the loop road, with the road maintaining the designed alignment from then onwards to Isiolo. This ESIA has been prepared incorporating this into the impact analysis.

3.3 NO ACTION ALTERNATIVE

144. The No Action Alternative is the future without the planned Project. This alternative involves making the use of the existing road in its current state.
145. This alternative will maintain the current travel times and limited economic growth in the area, an activity which will lead to the further marginalization of the community in the area.
146. This alternative was not considered in this ESIA report.

4 PHYSICAL, BIOLOGICAL AND SOCIAL BASELINE CONDITIONS OF AFFECTED ENVIRONMENT

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

4.1 PHYSIOGRAPHIC AND ENVIRONMENTAL CONDITIONS

4.1.1 Location

148. The project road is located within Isiolo and Meru Counties. The alignment follows the existing Isiolo – Mandera road, formerly classified as Road B9. The road starts at Isiolo town, at a T-junction with road A2 approximately 1km from Isiolo town Central Business District (CBD) and traverses for approximately 3km in easterly direction within Isiolo County. The alignment then exits Isiolo County into Meru County, curving into a north-easterly direction traversing approximately 63Km to Kachuru trading centre in Meru County, where it exits Meru County back to Isiolo to in a north easterly direction for approximately 113Kms, to end at Modogashe shopping centre, at the Junction with the Road A13.

149. Isiolo and Meru counties are located in the former Eastern and central provinces. The counties border six other counties: Samburu to the north east, Garissa to the east, Tana River to the south east, Kitui to the south west, Marsabit to the North West and Wajir to the north east. The general locations of these counties are shown in the map below:



Figure 4-1: Location of Isiolo and Meru Counties within the Country

4.1.2 Topography

150. Most of the land in the proposed alignment is flat low lying plain resulting from weathering and sedimentation. It is characterized by the level to gently undulating plains rising in altitude to the north where they are interpreted by isolated inselbergs or discontinuous hills and ridges of erosion resistant rocks. The vast plains are mantled by alluvial sands, silts and reddish sandy soils underlain at relatively shallow depth by the

consolidated rocks. The plains are interpreted by scattered rocky hill or ridges that have height ranging from approximately 75 m to 750m above the general surface of the plains.

151. Due to the general topography, the project area is prone to flooding during the rainy seasons.
152. The general topography is shown in the figure below:



Figure 4-2: General Topography of the Project Road Showing Isolated Hills in the Background

4.1.3 Climate

153. Isiolo County and the Northern End of Meru County where the project alignment passes through is classified into three climatic zones namely
- Semi-arid (occupying 5% of the area),
 - Arid (30%) and
 - Very arid (65%).
154. High temperatures are recorded throughout the year with variations in some places due to differences in altitude. The mean annual temperatures experienced ranges between 24°C to 30°C. The continuous 9-hour sunshine period in the county gives a high potential for harvesting and utilization of solar energy.
155. Monsoon winds blow across the County throughout the year which attains peak in the months of July and August. This sweeps away all the moisture and evaporation is high hence reducing humidity.
156. The project area also suffers high rainfall intensities with poor temporal and spatial distribution, resulting in short-lived excessive flooding. The county experiences two rainy seasons with the long rains coming between March and May while the short rains are experienced between October and November. The wettest months of the year are April at a high of 149mm and November which hits a high of 123mm. Under these conditions, rain-fed agriculture is unsustainable. Furthermore, evaporation rates are very high. For instance,

in the Modogashe, evaporation exceeds ten times the annual rainfall, indicating yet another constraint to crop production and water storage, especially in surface reservoirs.

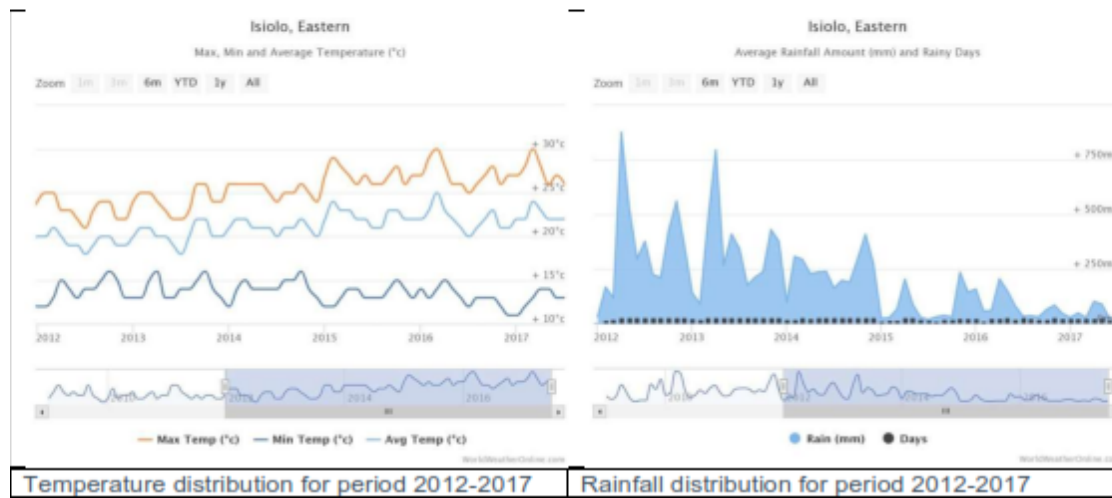


Figure 4-3: Summary of Climate Variation in the Project Year from 2002 - 2007

4.1.4 Geology

157. Geology of the County is mainly composed of metamorphic and superficial rock deposits which also form the larger part on which the project lies. The entire project road traverse diverse geological formations which have interacted with the prevailing climate to yield diverse soil types.

158. The geology of the project area is characterised by tertiary volcanics of alkaline type that include basalts, phonolites, nephelinites, trachites and rhyolites and their pyroclastic equivalents. Lava boulders that cover the land surface and pumice hills created from volcanic eruptions are common.

4.1.5 Hydrology

159. There are no perennial rivers in the proposed project area. The area is drained by intermittent streams which generally flow for only a few hours at a time, once or twice a year when rainfall is adequate. The drainage-ways generally are wide and shallow and many are ill defined.

160. A few of the major drainage-ways are extensive and form well integrated systems that extend entirely across or nearly across the proposed project. These probably were formed during a period of heavier rainfall than today, presumably during the Pleistocene Epoch.

161. The proposed project lies within the Ewaso Ng'iro-Lag Dera watershed, which includes the Lorian Swamp and other swamps, which form a belt of generally 6 to 15 km wide. The proposed project area is drained eastward and north-eastward by channels tributary to the Ewaso Ng'iro-Lag Dera system. The Lorian swamp is located approximately 30Km from the project road as shown in Figure 4-4 below.

162. There are no permanent surface water sources in the project area as most of the sources are subsurface such as boreholes and shallow wells. The road alignment is dominated by ephemeral river crossings. Most of them are from the Nyambene hills flowing from the high areas, only to lag at the flat areas. At some points, the project area has swampy sections. The rivers are however known to flow high and dangerous during the wet seasons. Throughout the road alignment are notable localised streams.

163. At the higher altitude towards Isiolo, several farmers make use of the Nyambene Hills catchment to irrigate their farms.
164. The general hydrology within the project area is summarized in the figure below:

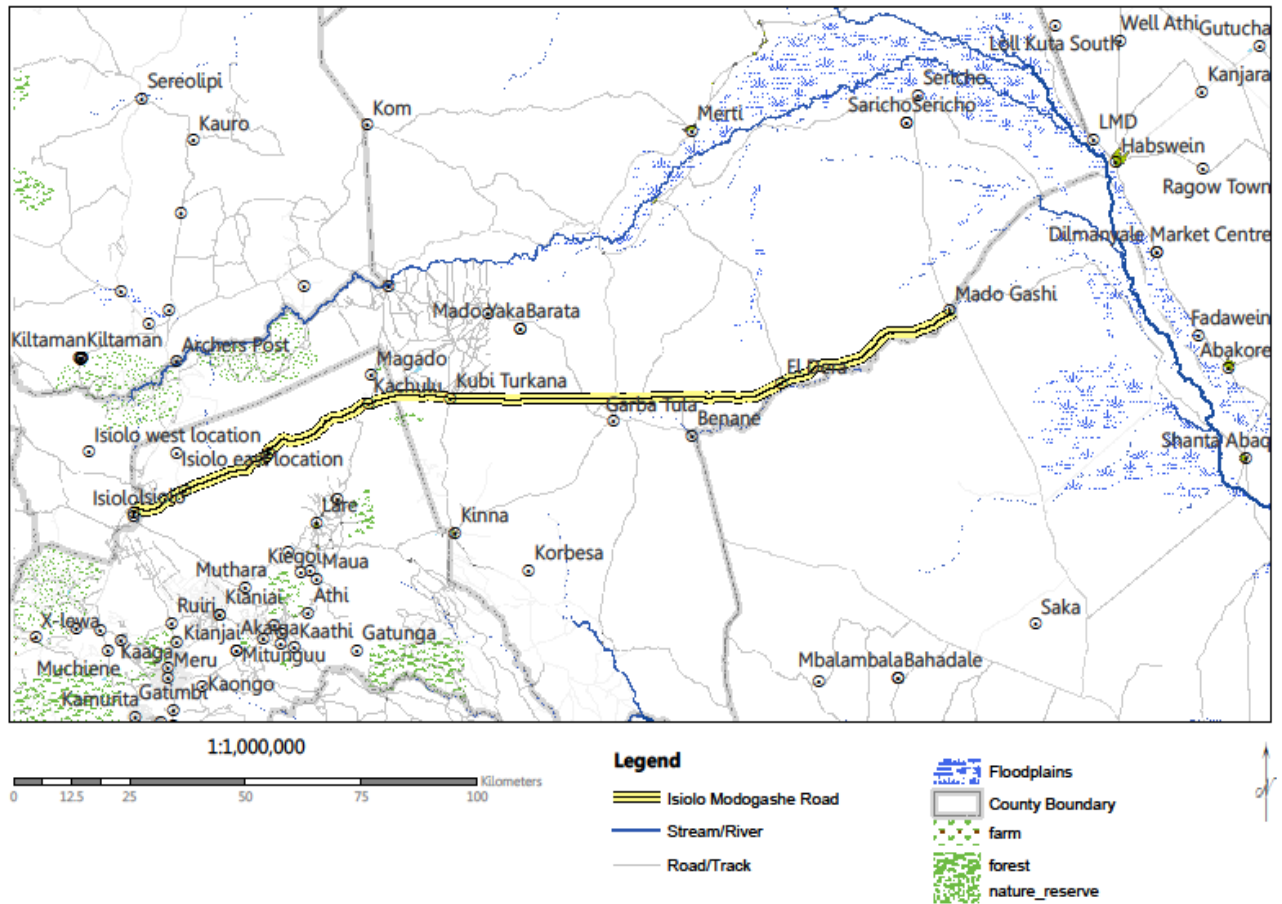


Figure 4-4: Summary of the Project Area Hydrology



Figure 4-5: Sample Perennial Water Body along the Project Road

4.1.6 Flora and Fauna

1) Flora

165. In any given area the natural and cultivated vegetation depends on physical factors such as climate, soil and topography, as well as human activities.
166. The area does not have gazetted forests. However, community forests dominate. Large areas of the County are occupied by bush lands, grasslands and shrub lands, comprising various combinations of dry land vegetation such as *Acacia reficiens*, *Acacia tortilis*, *Commiphora spp*, *Duosphermae remophilum* and grasses which include *Aristida spp*, *Leptothrium senegalese*, *Sporobolus spp*, *Lintonianutans* and forbs.
167. The project corridor is dominated by wooded bushland of *Acacia sp.*, *Balanites sp.* and *Boscia sp. trees* of between 5-20 cm diameter scattered between 20-50 meters apart. That is, there are between 20-100 trees per kilometer. Different shrub species co-occur with some sections being open grassland and some sections are totally devoid of vegetation. Trees are host to many bird species (some trees have over 10 bird nests). This vegetation is shown in the figures below:



Figure 4-6: Acacia Tree Species found along the Project Road Alignment

168. Invasive *Prosopis Juliflora* (Mathenge) is first observed at Modogashe town and towards Isiolo town where it is more common at the centre of the market towards Isiolo-Garissa border. Some mature *P. Juliflora* have over 300 seedlings under their canopy. The *Prosopis Juliflora* (Mathenge) plant characteristic of the area towards Modogashe is shown in the figure below:



Figure 4-7: Prosopis Juliflora Species in Modogashe

169. Due to the unreliable and inadequate rainfall, crop cultivation is limited to small areas in Meru County, in areas like Kachuru and Ndumuru.

170. With the exception of game reserves like Shaba, Meru, Buffalo and private game ranches, where ecotourism is an important economic activity, the rest of the Isiolo County and the arid region of Meru County in general is taken up by communally-owned pastoral grazing lands with the naturally existing vegetation provides pasture for both the domestic and wild browsing animals. The figure below shows the game reserves in the two counties with regard to the road alignment.

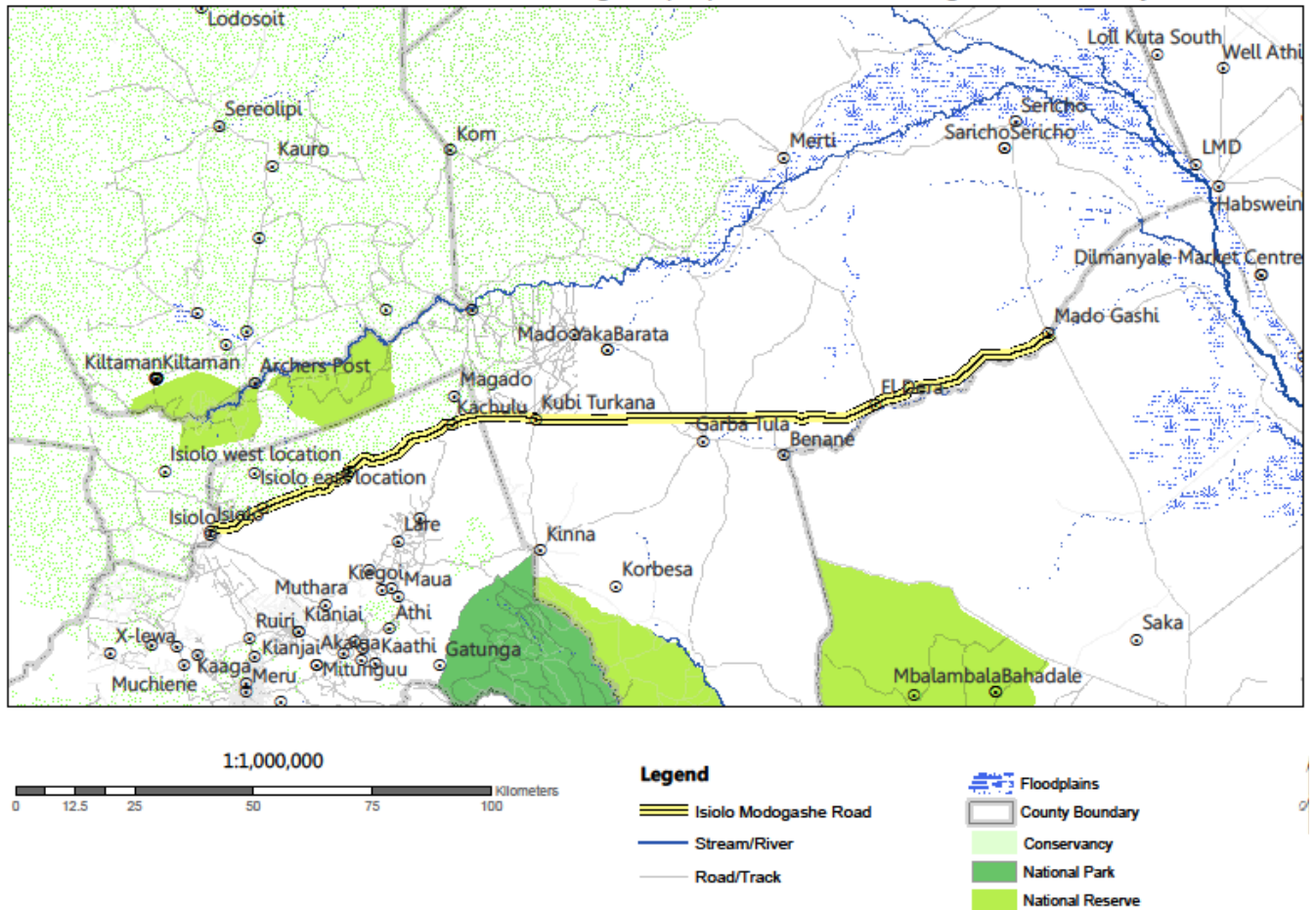


Figure 4-8: Proposed road project versus Conservancies and Protected Areas-National Parks and National Reserves

2) Fauna

171. Due to the vegetative nature of the area, the fauna is characterized by both domesticated and wild fauna.
172. The proposed project area falls under the greater Ewaso North Ecosystem which contains large wildlife population of diverse species. The wildlife is concentrated largely within the Laikipia-Samburu-Isiolo-Meru landscapes, which support a diversity of 4-13 species per 25 KM, but landscapes in the rest of the ecosystem hold low wildlife densities and species diversity. The project area falls in a typical savannah woodland/grassland. Such ecosystems form suitable habitats for both big and small game. While the woodland vegetation forms a food source for browsers, the grasslands/open plains provide suitable food source for grazers, hunting sites for carnivores and ecologically suitable niches for bird species. In the two Counties where the project area traverses, wild life exists.
173. Meru County Integrated Development Plan 2013-2017, notes that Meru National park is one of the gazetted parks in Kenya and a major tourist centre. The Lewa Downs ranch which is privately owned attracts tourists and competitive sports like the cross country, rhino charge and marathon. There are a variety of wildlife such as white elephant, baboons, giraffe, gazelle, buffalos, rhino, cheetah, zebras and different birds' species. These wildlife species are mainly found in the gazetted game parks and forests such as the Meru National

Park, Mt. Kenya National Park and Imenti forest. According to KWS warden, Meru County, the proposed project area falls under a wildlife rich zone. Though there exists no gazetted wildlife reserve in the proposed project area, wild game roam freely in the expansive woodland. Meru National Park lies far away from the proposed project area. While the Meru National Park is secured by electric fence to reduce human-wildlife conflicts, at the proposed project area, the wild game roam freely and as such, pose challenges to the residents. The Meru National Parks adjoins three national reserves namely Bisanadi, Kora and Mwingi National Reserves.

174. Isiolo County is generally rich in wildlife resources. The neighborhood Counties of Wajir and Marsabit are equally rich in wildlife resources. According KWS Warden in Isiolo County, though the project does not pass through gazetted game parks and reserves there are private conservancies under Northern Rangeland Trust and National Reserves – Shaba National reserve and Samburu National- that exist on the outskirts of the project area. According to the Warden, both small and big game disperse and exist outside these protected areas hence can be found in the community land where the project area traverses. According to Isiolo Integrated Development Action Plan 2013-2017, the county has several ranches. Borana Wildlife Conservancy neighbours Lewa Wildlife Conservancy. The group Conservancy is used as a breeding ground of Black Rhinos and is a home to 50 indigenous tree families and over 300 species of bird life. Its unique geographic situation makes the 35,000 hectares ranch a haven for a wide diversity of wildlife: buffalo, eland, Jackson's hartebeest and herds of Grant's gazelle, the highly endangered species grevy gazelle, impala and Burchell zebra roam its plains. Other similar conservancies include Leparua Community Conservancy, Lekurruki Conservation Trust amongst others.
175. Large game at the project area and its environs have seasonal pattern of movement. The movement is dictated by food and water availability. According to the residents, during dry seasons, big game tends to move from the protected areas to farmlands in search of food. However, during the rainy season when there is luxuriant fodder in the forests, they retreat and are rarely seen in settled areas and farmlands. Similarly, during dry seasons, especially when many areas are facing acute water shortage, big game such as elephants and buffaloes traverse the expansive woodland to Ewaso Nyiro River. Elephants use specific corridors during their movement.
176. According to Ojwang et al (2017), large, contiguous habitats linked by dispersal areas and corridors that provide a high degree of connectivity are critical in sustaining larger elephant populations, which need to be able to migrate between range patches that offer important ecological resources. In Kenya, in most cases, an elephant population's range extends beyond conservation area boundaries, while some populations also have cross-border ranges extending into neighboring countries.
177. The assessment notes that there have been habitat fragmentation driven by development projects and other land use changes which have posed a serious challenge to continued existence of continuous habitats. According to Ojwang et al (2017), sweeping land use changes over recent decades have affected many ecosystems in Kenya, resulting in the fragmentation and/or loss of wildlife habitats and sharp declines in species populations. However, it is noted that the proposed road upgrading design will not result significant fragmentation of the habitats or the wildlife dispersal areas.
178. An expansive open plain occurs at the project area. The plain is characterized by assorted grass species and isolated trees. Typically, such a plain form a suitable site for a wide range of grazers due to abundant fodder. The open plain is used as a grazing ground by the local people. According to residents, different wild game such as zebras, antelopes

(onyx), gazelles, dik dik are common at the open plain. The presence of herbivores (livestock and wild game) attracts carnivorous animals thereby completing an ecological food chain. According to the residents, hyenas are the most dominant wild animals at the open plain posing a major challenge to the pastoralist. Wild dogs are also prevalent preying on small livestock and wild game.

179. All the wildlife is located within the national reserves and conservancies shown in Figure 4-8. Although the project road does not affect any conservancies or national parks and reserves, the road intersects several wildlife crossings points.

180. Consultations with KWS and several wildlife trusts in the area including Save The Elephants, Grevy’s Zebra Trust and The Lions of Ewaso Nyiro has established that indeed the project does not affect known habitats, however will intersect wildlife crossings which in essence are links between wildlife habitats and are vital to the success of the wildlife. During the project implementation, KeNHA will collaborate with the KWS and other stakeholders to incorporate safety measures for the wildlife crossings and carrying out awareness campaigns for motorist using the road. Figure 4-9 below identifies the elephant crossing corridors that intersect the project road at the following GPS co-ordinates:

- a) Point 1: Between 0°21’39.21” N 37°36’15.45” E and 0°21’49.26” N 37°37’28.11” E
- b) Point 2: Between 0°22’16.97” N 37°38’12.55” E and 0°23’49.38” N 37°40’47.93” E
- c) Point 3: Between 0°24’14.94” N 37°41’47.77” E and 0°25’18.60” N 37°44’32.47” E

Conservancies and Protected Areas along the proposed Isiolo - Modogashe Road, Kenya

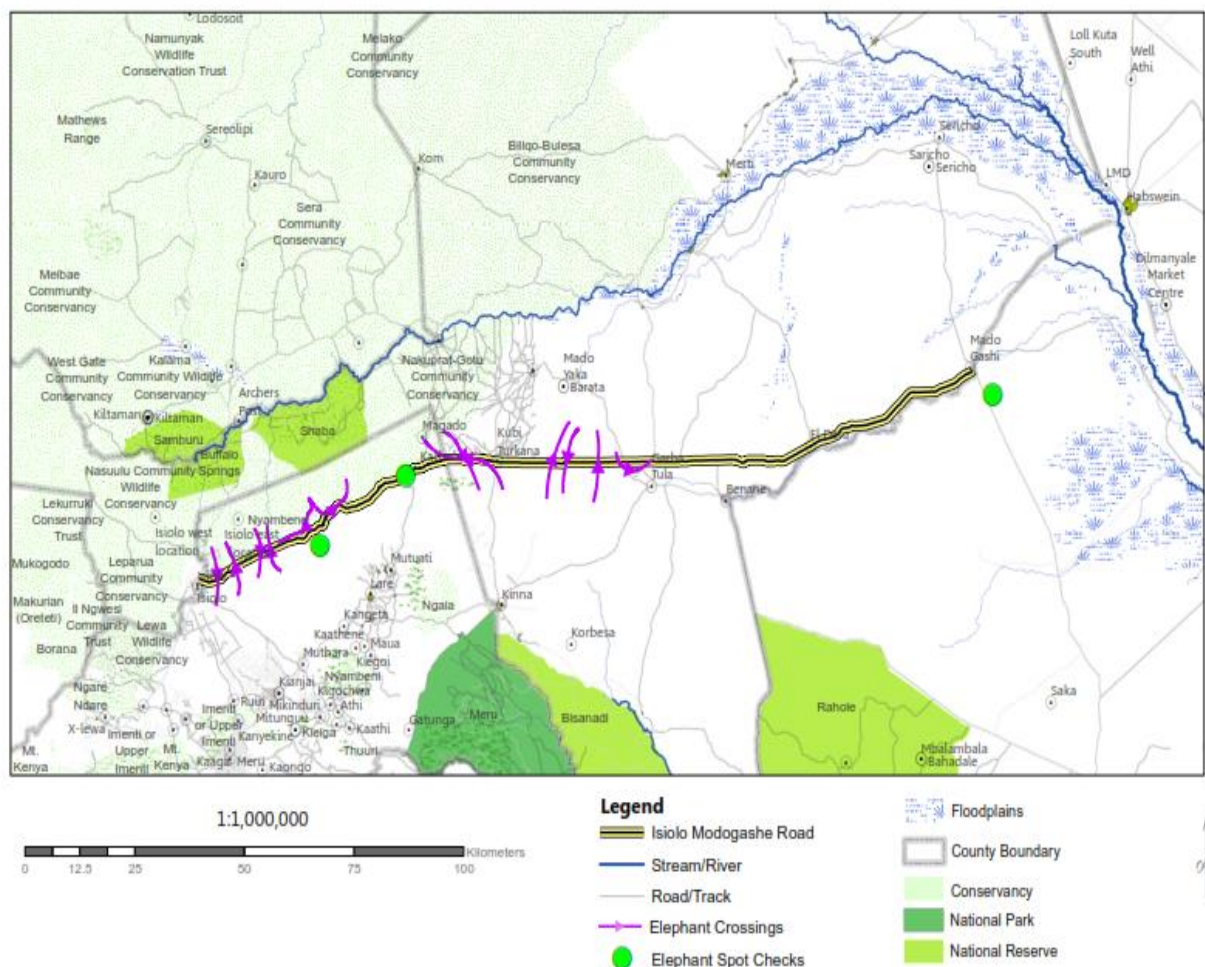


Figure 4-9: Map Showing identified Elephant Crossings (source: save the elephants)

181. Upgrading the Isiolo-Modogashe road section, motor vehicles will be travelling at a design speed of 80-100km/h. Being a pastoralists zone, livestock cross the road for pasture and water. The availability of wildlife like giraffes, dik-diks, ostriches, gazelles and gerenuk along the proposed project road may also lead to increased wildlife kills . At important wildlife and animal crossing points, the project will provide box culverts or bridges and use of nonstructural methods such as use of signs and or speed pumps to reduce speed and enhance speed limit enforcement to allow for movement or crossing. The ESIA has recommended mitigation measures to enhance wildlife crossing and movement of cattle along the road corridor.
182. In addition to wildlife species, domestic herds of camels and goats were also seen along the corridor. Cattle were hardly seen. These grazers particularly the domesticated animals are seen crossing the road along with their owners at all points along the road. The identified Fauna is shown in the figures below:



Figure 4-10: Herd of Sheep Crossing the Road



Figure 4-11: Herd of Camels making use of the Existing Road



Figure 4-12: Reticulated Giraffe Species Common to the Project Area Seen along the Alignment

183. Several birds nestling points were seen along the road and would need to be preserved or the birds' nests moved to other locations that they can adopt to where clearance of vegetation is required. According to County Development plan, there are over 300 species of birds in the county. Bird species such as Baya weaver (*Ploceus philippinus*), are prevalent in the area.
184. Based on the ESIA baseline surveys it was observed that the communities within the project area live in harmony with their environment and there are rarely cases of human wildlife conflict.

4.1.7 Air Quality

185. During the initial ESIA in 2018 the Consultant conducted a baseline assessment. The survey conducted established that there were no current air polluting activities within the project area. For instance, vehicle traffic within the project area is extremely low hence does not pose air quality risk. Further, there are no industries along the project area which could otherwise pose air quality risks. The only possible air quality contaminants are dust along the road during the dry months from vehicular traffic and wind, however this confined to the road corridor.
186. Under the ESIA review the Consultant identified baseline air quality measurements at Isiolo, Kulamawe and Modogashe points with the results summarized in Table 4-1 below:

Table 4-1: Air Quality Baselines

Location	Parameter	Measured Parameter
Isiolo	Hydrogen Sulphide ($\mu\text{g}/\text{m}^3$)	13.2
	Nitrogen Oxides ($\mu\text{g}/\text{m}^3$)	<0.01
	Sulphur Oxides ($\mu\text{g}/\text{m}^3$)	1.0
	Hydrocarbons (ppb)	281
	Particulate Matter PM ₁₀ ($\mu\text{g}/\text{m}^3$)	79
Kulamawe	Hydrogen Sulphide ($\mu\text{g}/\text{m}^3$)	2.5
	Nitrogen Oxides ($\mu\text{g}/\text{m}^3$)	<0.01
	Sulphur Oxides ($\mu\text{g}/\text{m}^3$)	<0.01
	Hydrocarbons (ppb)	107
	Particulate Matter PM ₁₀ ($\mu\text{g}/\text{m}^3$)	23
Modogashe	Hydrogen Sulphide ($\mu\text{g}/\text{m}^3$)	3.5
	Nitrogen Oxides ($\mu\text{g}/\text{m}^3$)	<0.01
	Sulphur Oxides ($\mu\text{g}/\text{m}^3$)	0.2
	Hydrocarbons (ppb)	119
	Particulate Matter PM ₁₀ ($\mu\text{g}/\text{m}^3$)	50

4.1.8 Noise

187. Similarly, the initial ESIA in 2018 the Consultant conducted a baseline noise assessment. During the baseline study and survey conducted, there were no significant noise polluting activities within the project area. For instance, there are no industries along the project area which could otherwise pose noise pollution. Vehicle traffic within the project area is also extremely low and only characterised by motorbikes, few buses and vehicles, hence does not pose noise pollution.

188. Under the ESIA review the Consultant identified baseline noise measurements at Isiolo, Kulamawe and Modogashe points with the results summarized in Table 4-2 below:

Table 4-2: Baseline Noise Measurements

Location	Parameter	Measured Parameter	
		Low	High
Isiolo	Decibels (dB)	53.3	70.2
Kulamawe	Decibels (dB)	30.8	46.2
Modogashe	Decibels (dB)	32.2	51.6

4.1.9 Water Quality

189. Three samples were taken along the project road in order to establish the general water quality in the project area. The following are the findings in comparison to the WHO and NEMA standards.

Figure 4-13: Summary of the Water Quality Analysis along the Project Road

Sampling point/Parameter	Drainage Channel near 78 Barracks (5KM)	River Laghlaba (38Km)	Kulamawe Community Borehole (77Km)	WHO	NEMA Guideline values
Ph	7.4	7.0	7.9	6.5 – 8.5	6.5 – 8.5
Colour mgPt/l	1750	1750	<5	-	-
Turbidity (NTU)	4200	1790	2.92	< 5	-
Conductivity (μScm^{-1})	166.9	63.2	1689	< 2500	-
Iron(mgl-1)	6.26	6.13	0.10	<0.3	<0.3
Manganese (mgl-1)	0.1	0.3	<0.01	1	-
Calcium (mgl-1)	36	NIL	41.6	100	-
Magnesium (mgl-1)	2.45	1.94	116.6	100	-
Sodium (mgl-1)	2.3	7.4	76	200	-
Potassium (mgl-1)	3.8	5.8	70	50	-
T. hardness (mgl^{-1})	100	8	584	< 500	-
T. alkalinity (mgl^{-1})	74	34	680	< 500	-
Chloride (mgl^{-1})	5	NIL	72	250	-
Fluoride (mgl^{-1})	0.79	0.54	0.78	<1.5	<1.5
Nitrates (mgl^{-1})	0.435	0.415	6.362	10	-
Nitrites (mgl^{-1})	0.02	<0.01	<0.01	<0.1	0.003
Sulphate (mgl^{-1})	<0.3	<0.3	36.9	< 450	1.5
Free Carbon Dioxide	10	6	66	-	-
TDS (mgl^{-1})	103.5	39.18	1047	<1500	1200
Arsenic	1.0	1.0	NIL	<10	<0.01

Sampling point/Parameter	Drainage Channel near 78 Barracks (5KM)	River Laghlaba (38Km)	Kulamawe Community Borehole (77Km)	WHO	NEMA Guideline values
Lead (mg ^l ⁻¹)	ND	ND	ND		<0.05
Cadmium	ND	ND	ND	<0.003	<0.01
TSS (mg ^l ⁻¹) -	1200	400	NIL	-	30

190. The water quality parameters analyzed, showed that there were variations although generally within the NEMA standards/guideline values and World Health Organization standards (WHO). The pH range was within the acceptable levels in the sampled points. Storm waters such as found at the drainage channel near 78 Barracks were found to contain PH 7.4 whereas Kulamawe Community Borehole had PH 7.9.

191. The values of Turbidity observed near 78 Barracks (5KM) and River Laghlaba (38Km) are relatively high. In addition, turbidity and total suspended solids concentrations were found to be above the guideline values in the latter two samples. Typically, water flowing in a river may have high concentrations of these parameters when coupled with flooding and erosion events. However, Kulamawe Borehole depicted turbidity and total suspended solids ranges that were within the NEMA guideline values. Heavy metal concentrations for iron were found to be above WHO and NEMA Guidelines limit in the three samples. Nonetheless, other metals such as Lead, Cadmium and Arsenic were found to be below the detection limit and well below the NEMA standards. However, Arsenic was detected in waters of the drainage channel and River Laghlaba, this could be attributed to runoff from upstream agricultural fields.

4.1.10 Energy Sources

192. The project area's main source of energy is wood fuel. Over 70 percent of the households rely on fire wood as their main source of power. This has led to over-harvesting of trees primarily for charcoal causing extensive land degradation in the county. Of the 31,326 households in the county, only 2,500 have access to electricity.

4.2 SOCIO ECONOMIC INFRASTRUCTURE

4.2.1 Administration

193. The project road is predominantly within Isiolo County, with a small section of the road, approximately 63Km, within Meru County. The project road passes through the following sub-counties:

- i. Isiolo
- ii. Merti
- iii. Garbatulla and
- iv. Tigania North in Meru County

4.2.2 Population

194. The population data for the project area's two counties (Integrated Development Plans for each of the counties) was taken in accordance to the 2009 census and is summarized in the table below:

195. The table also gives the projections for 2017

Table 4-3: Population Data based on Isiolo and Meru County Integrated Development Plans

County	2009		2015		2017	
	Male	Female	Male	Female	Male	Female
Isiolo	73,694	69,600	91,645	86,554	98,551	93,073
Meru	670,656	685,645	759,721	776,701	791,965	809,665

196. Within the Sub counties, the populations are distributed as follows:

Figure 4-14: Populations within the Sub Counties affected by the Road (Source 2009 population and housing census)

County	Sub County	2009		2015		2017	
		Male	Female	Male	Female	Male	Female
Isiolo	Isiolo	20,750	20,746	23,240	23,236	24,070	24,065
	Merti	6,014	6,100	6,736	6,832	6,976	7,076
	Garbatulla	23,314	19,804	26,112	22,180	27,044	22,973
Meru	Tigania North	141,177	152,049	158,118	170,294	163,765	176,377

197. The high populations in Meru County are due to the fact that the county has several environmental regions including highlands and arid and semi-arid regions, with a more sedentary lifestyle in comparison to the Nomadic lifestyle led by the residents of Isiolo.

4.2.3 Health

198. In Isiolo County Over 70% of the county's inhabitants live in the rural areas where health facilities are inadequate, inaccessible, and unaffordable. Health services in the County are provided through over 40 institutions comprising of 2No. Level 4 health facilities, 5No. Level 2 health facilities and 34 No. Level 1 health facilities. These facilities lack adequate personnel. The doctor/patient ratio for the County is 1:20,000 despite its vastness; the County is poorly covered by existing health facilities. Most of the health facilities are concentrated within the County headquarters and major settlement centres.

199. Meanwhile in Meru, the County has 80 public health facilities, 27 private facilities and 2 facilities run by NGO/missions. The County has 10 level IV hospitals, 26 level III health centers, 46 level II health centers, 46 dispensaries and 24 clinics. According to the 2005/2006 KIHBS, 95.9 per cent of the population must cover more than 5 Km to access a health facility and only 4.1 per cent access a health facility within less than 1Km.

200. The health sector in the project area alignment is poorly developed and characterized by absence of health facilities such as dispensaries including chemists at the key market

centres. There is a general lack of public and private investment in the health sector at the project area. Residents are forced to travel long distances to seek medical services. For instance, the inhabitants of Gambella market centre seek medical services from Isiolo town, those from Ndumuru and Kachuru markets must travel to Maua or Laare towns ...kms away, those from Bullo, Kulamawe and Boji go to Garbatulla or Modogashe to get medical services.

201. Along the project corridor, dispensaries offer medical assistance to locals. These facilities are not equipped and are lacking adequate personnel. The five most prevalent diseases in the county are: malaria, diarrhoea, stomach upsets, respiratory diseases and flu. The majority of the cases of diarrhoea and stomach aches are associated with the use of contaminated water especially during the wet seasons. It was observed that most homesteads do not have latrines hence use bushes for nature calls. This contaminates water once it rains thus causing the mentioned water borne diseases.
202. With regards to the HIV/AIDS prevalence in the area is estimated at 4.9 % (GoK, 2013 a), with 43.4% of the respondents have undertaken a HIV/AIDs test. Further, 89.8% were aware of the existence of Sexually Transmitted Infections (STIS). On protection methods, the respondents indicated: use of condom 13.1%, abstinence 30.6% and stick to one partner 56.3%.
203. Wasting and stunted growth is prevalent among children and stands at 3% and 18.6 % respectively. This is due to malnutrition and the records shows that 90% of the children in the county have been immunized against various diseases.
204. Reproductive health (RH) is a big challenge in this region, because of:
 - Reluctance by local population to accept modern family planning methods;
 - Low condom usage;
 - Inadequate number of specialized investigative equipment in health facilities;
 - Long distances to health facilities;
 - Inaccessibility to family planning services (not available in the grassroots' dispensaries); and
 - Inadequate health personnel (in number);

4.2.4 Land Tenure and Land Use

205. Pastoralism is the dominant livelihood activity in the proposed project area (North Eastern Kenya). It is supplemented by a limited amount of agriculture along the river beds, which involves growing of maize, sorghum, some fruits and vegetables by small scale irrigation. The area faces various developmental challenges including poverty and food insecurity, low human capital and poor health standards, high vulnerability to climate change, poor infrastructure, insecurity and low crop and livestock productivity.
206. The main agricultural products are camel and goat milk with limited cultivation of crops.
207. The LAPSSET corridor which seeks to link Lamu Port in Kenya to Ethiopia and South Sudan with Isiolo at the centre and the construction of the Isiolo International Airport and Isiolo Resort City is set to open Isiolo County.
208. The county government of Isiolo has prioritized the development of Pastoralism in Isiolo County with the help of development partners. For instance, the African Development Bank funded the construction of an abattoir to the tune of Ksh. 350 million. The facility has a capacity of slaughtering 100 goats, 100 camels and 200 cows per day.

There are several Vision 2030 flagship projects which are ongoing in Isiolo County including the construction of an International Airport in Isiolo town.



Figure 4-15: Typical Land Use within the Project Area

209. From Isiolo towards Gambella, the land adjacent to the road is individually owned with titles, however as the road progresses towards Modogashe the land is more communally owned. However, within the Meru section of the road alignment, adjudication is on-going.

4.2.5 Settlement Patterns

210. Due to the pastoralist nature of the communities within the project area, settlements along the corridor are few and far between. The following are the settlements along the road corridor:

- i. Isiolo Junction
- ii. Gambella
- iii. Ndumuru
- iv. Bullo
- v. Kachuru
- vi. Kulamawe
- vii. Boji
- viii. Garbatulla
- ix. Janju
- x. Eldera
- xi. Modogashe

211. The human settlements along the project area are largely dictated by availability of water sources.
212. The general type of settlement is shown in the figure below:



Figure 4-16: Typical Settlement (Kachuru) along the Project Road

4.2.6 Transport and Communication

213. The main form of transport within the project area and the two counties in general is road transport, with poorly maintained roads. Majority of the roads with the exception of the Isiolo – Marsabit – Moyale Road and the roads in Maua being the only paved roads nearby. The project road acts as a major link between Isiolo, Meru and Wajir Counties. This poor transport infrastructure in the area has led to limited economic growth.
214. However, following the establishment of the road authorities, the project road has undergone upgrading to gravel standard for most of the sections by KeNHA and continues to benefit from the routine maintenance program funded by KRB using RMLF, thus reducing the travel times to an average of 7-8 hours.
215. Communication within the road corridor is also limited, especially in between the various towns. Fortunately, majority of the towns have access to a cellphone network with the major towns including Kinna, Garbatulla, Isiolo and Modogashe having access to post office boxes.
216. Plans for the improvement of the transport and communication network is on-going and is set to improve with the establishment of the project road, LAPPSET and the establishment of an airport at Isiolo, the project area and the Northern frontier in Kenya is

expected to experience major improvements in the development sector including transport and communication.

4.2.7 Commerce and Industry

217. The project area has no manufacturing establishments /industries despite a huge potential in livestock product-based industries. The main economic activity in the county is livestock production and this provide a huge potential for hides and skins processing (tannery), camel and goat milk processing industries.
218. Both counties in general have tourist exploitations housing several national reserves and individual ranches including Shaba, Meru and Buffalo reserves. These ecotourism areas boost the economy in the Northern Frontier, as such the project road can open up the area to further exploitation.

4.2.8 Local Communities

219. The project area is home predominantly the Borana community, a Cushitic pastoralist community. Other communities include: the Ameru, Samburu, Meru, Somali, Turkana, and other immigrant communities from other parts of the country.

The project has triggered OP/BP 4.10 Indigenous People due to the presence of pastoralist communities that meets the criteria in OP/BP 4.10. The project has carried out a Social Assessment (SA) was carried out in accordance to World Bank's O.P 4.10, Free, Prior and Informed Consultations (FPIC) with Vulnerable and Marginalized Groups (VMGs) lead to broad community support for the project.

220. The SA analyzed VMGs social issues, establish project potential impacts, mitigation measures and FPIC that informs the design of the project. This SA will enable the project to be responsive to social development concerns, including seeking to enhance benefits for vulnerable and marginalized groups, while minimizing or mitigating risk and adverse impacts. The potential positive impacts identified include: (i) reduced insecurity; (ii) reduction in travel time and costs; (iii) creation of employment; (iv) improved access to social services; (v) reduction in vehicles operating costs; (vi) diversification of the local economy; (v) improved livestock production; (vi) increased information access; and (vii) increased social interaction. The potential negative impacts include: (i) loss of land and other assets; (ii) in-migration risks; (iii) resources use competition;(iv) cultural erosion; (v) road accidents; (vi) Gender Based Violence; and (vii) VMGs health and safety risks. Mitigation measures have been proposed in the ESMP.

221. The project broad community support was achieved through FPIC. This was carried out in a non-coercive, open, transparent manner, free from any forms of manipulation, bribery, intimidation or duress with the VMGs during the stakeholder consultations and they were conducted in accordance to the cultural requirements. Stakeholders, specifically the VMGs, were adequately informed in advance that they were not obliged to make any decisions concerning matters under discussion if they were not entirely sure of their preferred position. Women were consulted separately from their male counterparts in separate locations. Besides, VMGs were informed of their right to privacy in negotiations and consultations if they felt that the presence of the consultants restricted their ability to discuss and decide freely. They were informed of their right to accept, reject, partially accept, partially reject or choose not to give an opinion on the project, and that they were at liberty to request as much time as they required to make decisions on their interests at all stages of consultation

222. According to the Constitution of Kenya the communities within the project area are identified as vulnerable and marginalized communities due to the following criteria: there are an indigenous community that has retained and maintained a traditional lifestyle and livelihood based on a hunter or gatherer economy; or pastoral persons and communities, whether they are:

- i. nomadic or
- ii. a settled community that, because of its relative geographic isolation, has experienced only marginal participation in the integrated social and economic life of Kenya as a whole.

4.2.9 Water and Sanitation Services

223. The proposed project area has limited access to water and sanitation services. With the exception of major towns i.e. Isiolo, Garbatulla and Modogashe, the rest of the towns lack access to water supply and sanitation services.

224. Majority of the towns along the road alignment formed as a result of water resources. The available water sources are summarized in the table below:

Table 4-4: Sources of Water along the Road Alignment

Source of Water	Percentage of locals that use the source along the road
Borehole	45.2 %
Water Pan	1.7 %
Piped public tap	10.7 %
Piped water into dwelling	15.1 %
Piped water into yard / plot	8.0 %
Protected spring	7.7 %
River/ stream / canal	11.7 %

225. There is low toilet ownership in the project area. Only 28.3% households had a toilet facility, the rest of the population undertakes open defecation. The types of toilet facilities were; composting toilet 4.7%, flush to pit latrine 12.8%, flush to septic tank 4.3%, pit latrine with slab 77.5% and VIP 0.7%. In addition, only 23.8% of the households have a rubbish pit or disposal unit for waste. Only 7.4% of the households have a dish rack. Disposal of waste that cannot be recycled or re-used is done in various ways with burning or burying taking precedent at 34.5%, 10.3% dispose in the compound, 12.6% dispose by the roadside, whereas 27.6% composite.

226. Due to the limited access to water and sanitation there are common outbreaks of gastrointestinal illnesses especially during the rainy periods.

4.2.10 Gender

227. The communities in the project area are patriarchal, where women's position is viewed as subservient, marginalized and disempowered. The Somalis for instance consider women and children as part of a man's property. The responsibilities of men in these ethnic groups

is livestock issues which include herding, watering animals, selling and making other key decisions within the household. While, women normally perform domestic duties such as tending the home and children, milking animals, fetching water and firewood, looking after home herds of sheep and goats while a few engage in small scale farming and trade. According to a UN article¹, women in northern Kenya bear the brunt of drought due to travelling long distances in search of domestic water.

228. It is also notable more men benefit more from formal education, as compared to young girls remain at home to help in household chores and herding or are subject to early marriages and female genital mutilation (FGM).

229. Because of this, women are not able to develop skills that enable them to find gainful employment or engage in business. They are therefore not able to compete with men in many spheres of life. Primary school dropout rates are higher among girls than boys. Most girls never complete primary education or secondary education. From Isiolo towards Kulamawe, where the project area passes through Meru County, women were more empowered having access to credit and owing roadside businesses, however this occurrence reduced from Kulamawe towards Modogashe, these occurrences reduced. A social assessment conducted for the same road has established that there is a changing socio-economic environment in the project area has had an impact on assigned gender roles. Women within the community are increasingly taking up more roles that used to be the preserve of men. For instance, men's role as the household head and provider is now shifting to some women as men migrate to take up paid work in urban areas. Women therefore have had to take up an extra load of responsibilities in addition to their normal household chores leaving them overburdened and worsening poverty levels in the area.

4.2.11 Education

230. Education within the project area is highly limited due to the nomadic nature of the communities within the project area. According to a household survey conducted in the initial ESIA approximately 48.8% of the household heads have not attended school, primary 27.8%, secondary 19.4% and 4% have attained University education. Further, in the households it was established that a total of 61 (boys 46 and girls 15) under 18 years were not in school. The main reasons for not being in school are presented in Table below.

Table 4-5: Reason for School Absences

Reason	Percent (%)
Caring for household	3.5
Herding	33.3
Illness / sickness	5.3
Business / charcoal burning etc	12.3
Lack of school fees	7.0

¹ <http://www.unwomen.org/en/news/stories/2017/6/feature-in-kenya-women-bear-brunt-of-drought>

Reason	Percent (%)
No school in the neighborhood	12.3
Pregnancy	26.3

231. The road traverses a territory occupied by Borana, Somali, Turkana pastoralists and Meru sections that keep livestock. This explains why herding is a key factor for dropping out of school especially for boys.
232. Herding was more attractive and rewarding compared to school attendance. In the context of early pregnancy being high the main factor is Female Genital Mutilation (FGM). All the communities Borana, Meru and Somali practice it and girls are liable to have sexual intercourse as soon as they get circumcised around 1-15 years.

4.2.12 Conflict and Insecurity

233. The major types of conflict in the region can be divided into four;
- Inter and intra community conflict;
 - Cross border activities and
 - Terrorism
234. The initial conflict was as a result of a secessionist conflict in which ethnic Somalis in the Northern Frontier District (NFD) of Kenya a region that is and has historically been almost exclusively inhabited by ethnic Somalis attempted to join with their fellow Somalis in a Greater Somalia. The government responded to frustrate their efforts by enacting several repressive measures in what came to be known as the Shifta war (1963-1967) which ended in 1967 through a ceasefire. Somali leaders were routinely placed in preventive detention by the government, where they remained well into the late 1970s. Meanwhile, violence continued in the region deteriorating into disorganized banditry, with occasional episodes of secessionist agitation, for the next several decades.
235. The other type of conflict in the project area is inter and intra communal. Conflicts among the communities are largely caused by competition over control of and access to natural resources particularly water and pasture. Other causes of conflicts include historical rivalry, deep-seated cultural values, land issues, border disputes, political incitements, idleness amongst the youth and more recent proliferation of illicit arms. The existence of conflict in the project area was confirmed during community consultation meetings where participants complained of insecurity and frequent raids from neighbouring communities and clans. In Isiolo County, the main source of conflict between the Meru and Borana is a long outstanding administrative boundary between the two communities. The Borana blame the Meru for shortchanging them during the drawing of the boundary because the Borana were not represented while the Meru accuse the Borana who are nomadic pastoralist of invading their land for grazing. The Borana and the Meru perceived the Turkana as aggressors and complained that they always raid their land for pasture and sometimes steal their livestock. Towards Modogashe counties inter communal conflict emanates from inter clan politics and competition over pasture and water resources; more often triggering inter-clan and cross-border resource deficiency related conflict between the Somali clans. The social assessment study established that the counties have witnessed increased cases of insecurity in form of inter-clan conflicts. Pastoral zones in the project area are divided

among communities, with clans committed to protecting their rights to land, encroachment into such area leads to conflict.

236. Cross border activities such as armed groups and ethnic militias based in Kenya's neighbours are also important source of insecurity in the region. The conflict in Somalia has had a significant spill-over effect on the security situation in Kenya and especially on the North-East part of Kenya. This has seen an increase in the proliferation of small arms in the region. The impartial disarmament by government of one community leaves the disarmed community vulnerable to attacks and makes the region volatile because any attack on a community will most likely lead to revenge attack.

237. Jihadist insurgency, especially the emergence of Al-Shabab, has complicated the insecurity situation in Isiolo County, with the Isiolo – Modogashe route being a suspected access route from Somalia into the country. Several efforts have been made to address the recurrent conflicts in the project area.

238. The above conflicts have rendered the project area rampant with insecurity. At the national level, the government has beefed up security in some of the hot spots by establishing security camps or posts with security personnel and also conducted disarmament of the armed communities. The government and some development partners have also tried to avert resource-based conflicts by providing water resources in some areas. At the local level, the local leaders have been engaged in conducting peacebuilding initiatives such as forming local peace committees that promote peace through dialogue and mutual understanding among community members. Other local initiatives include forming local vigilant groups that monitor and inform authorities of community members likely to engage in any subversive activities likely to disrupt peace.

4.2.13 Physical Cultural Resources

239. Physical Cultural Resources are resources of archaeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic or other cultural significance. During the ESIA review, the consultant identified a few graveyards which may be affected by the road alignment at GPS Co-ordinates 0°34'15.8"N 38°11'55.4"E. Other sites may be underground or not identified, as such the Consultant has provided "Chance Find Procedures" provided in appendix 11.3.

4.3 ENVIRONMENTAL AND SOCIO-ECONOMIC SURVEY

240. The socio-economic situation of the area was captured based on findings of a household survey carried out using a structured questionnaire. A sample group of 120 households, distributed along the road was interviewed for purposes of the analysis. The gender of the respondents was distributed as follows:

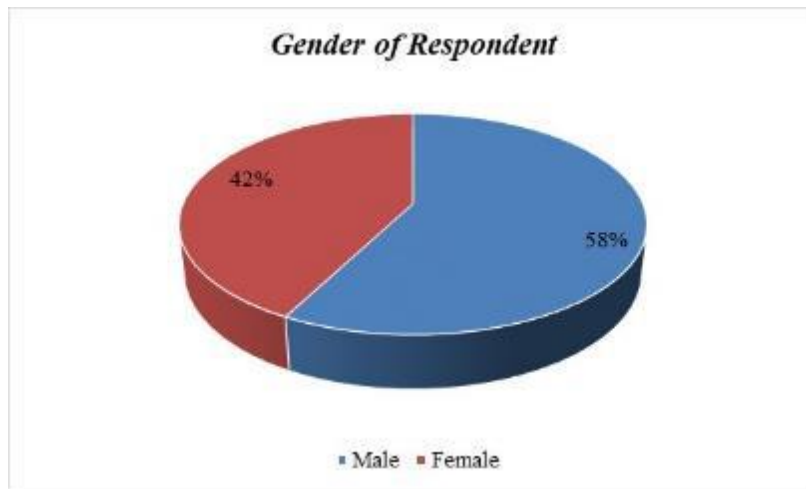


Figure 4-17: Gender of Respondent

Source: Survey Data

241. In addition the respondents consisted of the following ethnicities:

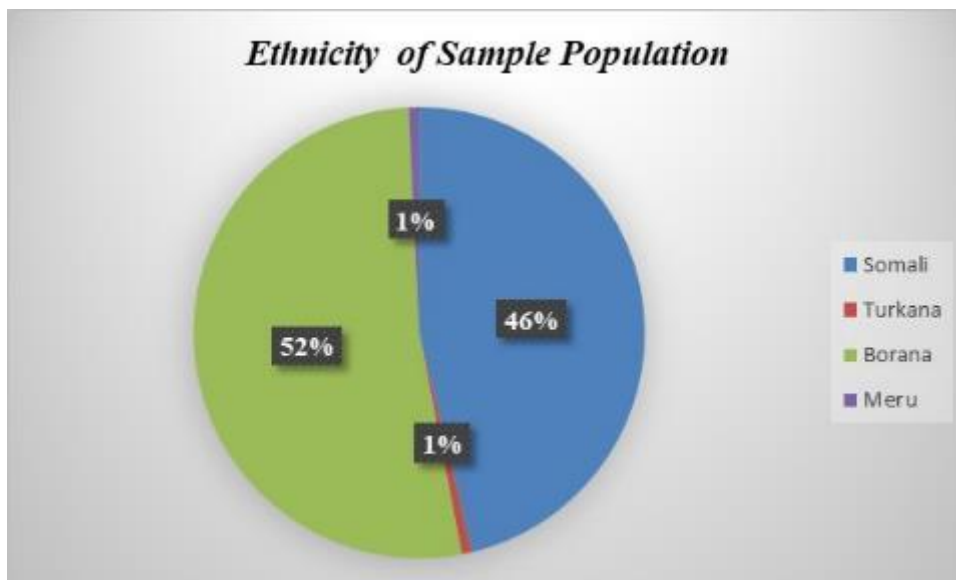


Figure 4-18: Ethnicity of Sample Population

Source: Survey Data

4.3.1 Population dynamics and household characteristics

242. The average household size is 7 people. The general trend shows that most of the people fall in the 19-35 and 6-18 age groups, showing that the area is predominantly made up of young families. Figure 4.1 shows the population age brackets.

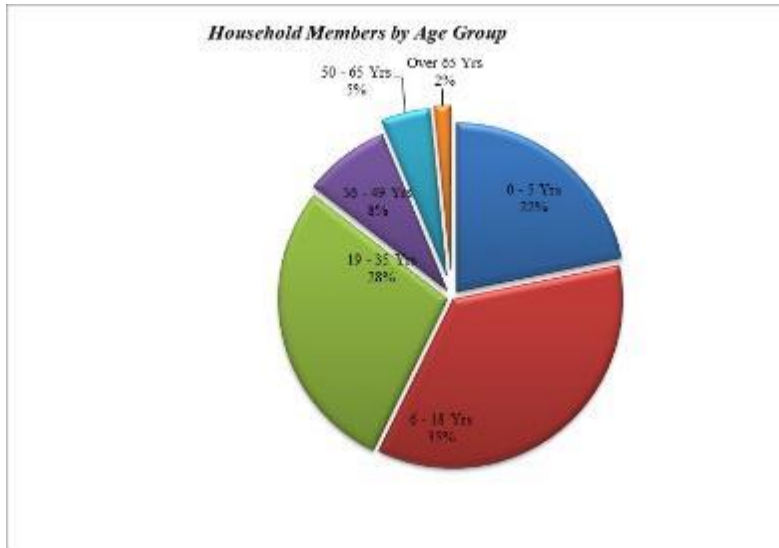


Figure 4-19: Age Distribution of the Population

Source: Survey data.

243. Literacy levels were as follows:- Primary level 41%, Secondary level 24%, college /university 6% and no education at all 29%. The data collected indicates that the project area has a low literacy levels with majority of the population having only achieved primary or no education, this is due to the reasons highlighted in Chapter 4.2.11 of this report.

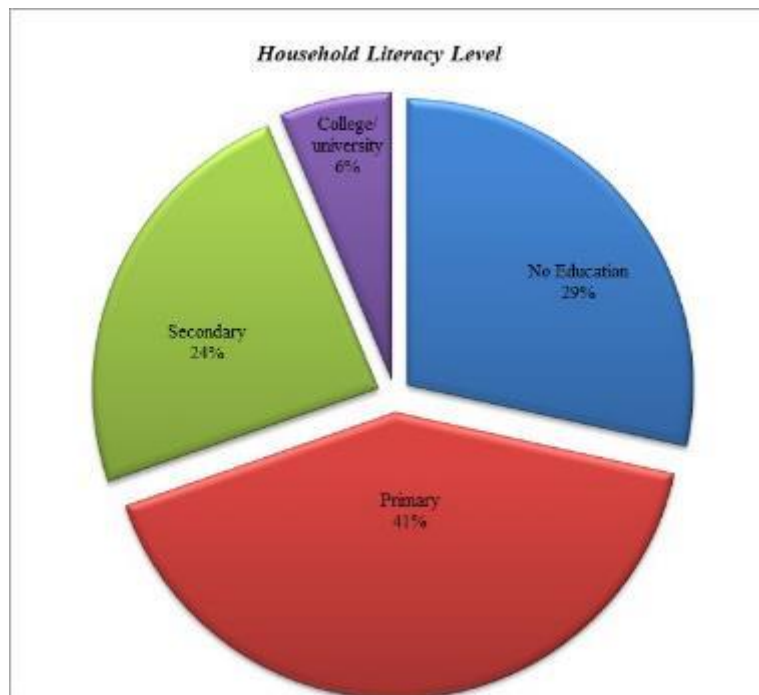


Figure 4-20: Household Literacy Level

Source: Survey data.

244. Islam is the predominant religion in the area with a major 98% of the population being Muslim and the remaining 2% being Christian.

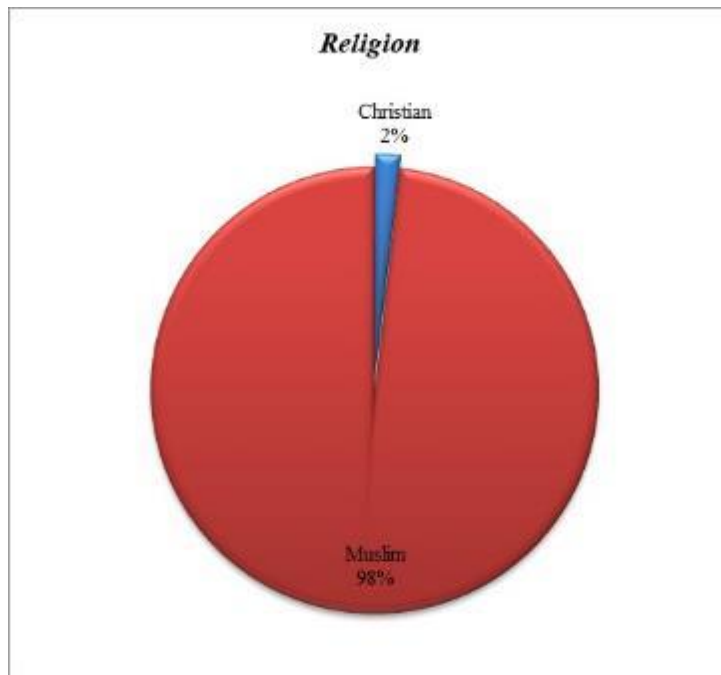


Figure 4-21: Religion of the Population

Source: Survey data.

245. Due to the nature of the project area and the nomadic nature of its people, Firewood and charcoal are the main fuels used for cooking in the ratios shown below:

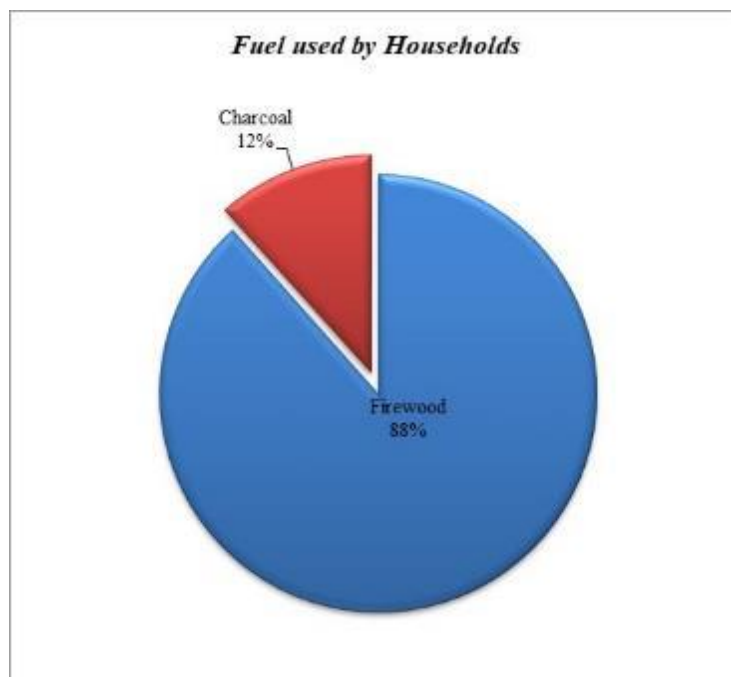


Figure 4-22: Sources of Energy

Source: Survey data.

246. Being that the project area is a rural area characterized by community land and a pastoralist community; the main economic activities include livestock farming/pastoralism and crop farming at 46% and 19% respectively. The other socio-economic activities are shown below:

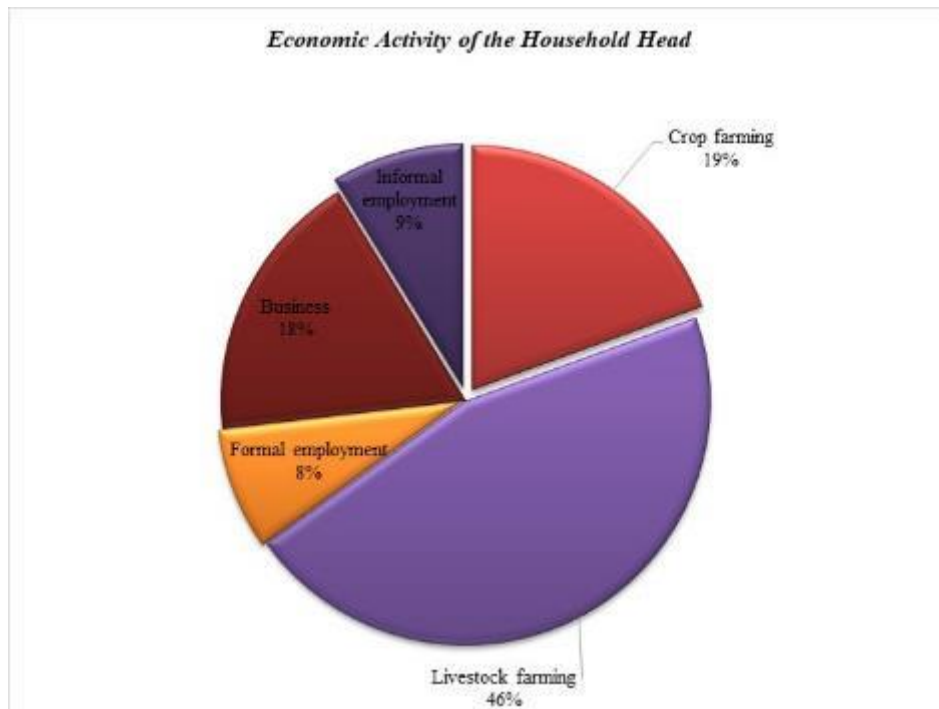


Figure 4-23: Household Socio-Economic Activities

Source: Survey data.

247. Most of the populations’ income lies under 15000 as shown in the figure below.

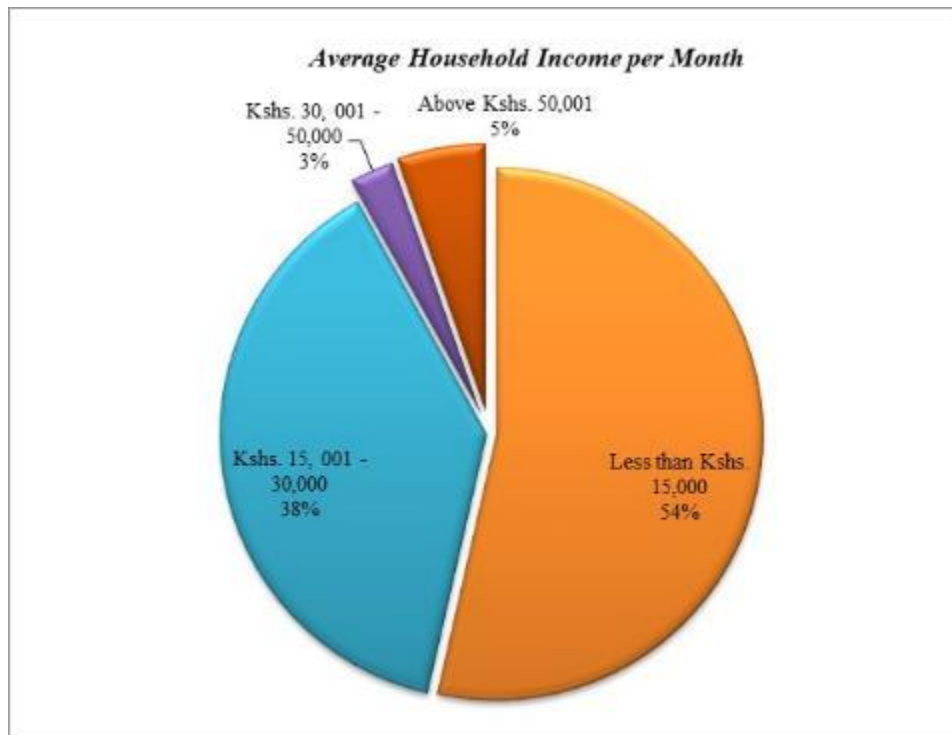


Figure 4-24: Household Income per Month

Source: Survey data.

4.3.2 Transport, Water and Sanitation

248. Road transport is the major mode of transportation in the area with the respondents making use of public and private means. The major modes of road transport are shown in the figure below:

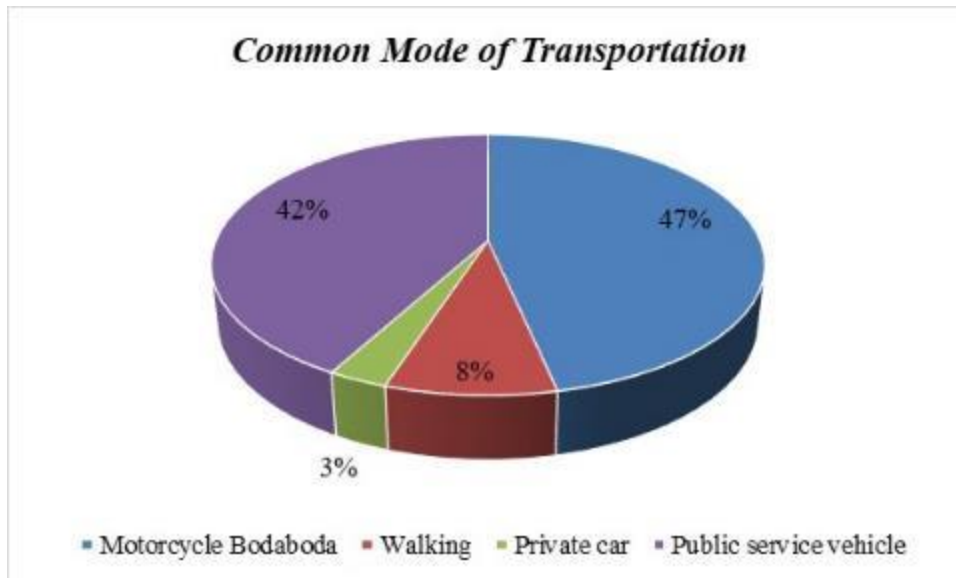


Figure 4-25: Common mode of Transportation

Source: Survey Data

249. The major issues experienced by the locals concerning road transport include long travel times, poor road condition, poor frequencies of public transport among others summarized in the figure below:



Figure 4-26: Transport Issues Experienced by the Community

Source: Survey Data

250. Being a rural area in an arid area, the main sources of water for domestic purposes include boreholes and public water pans. Other water sources are shown in the figure below.

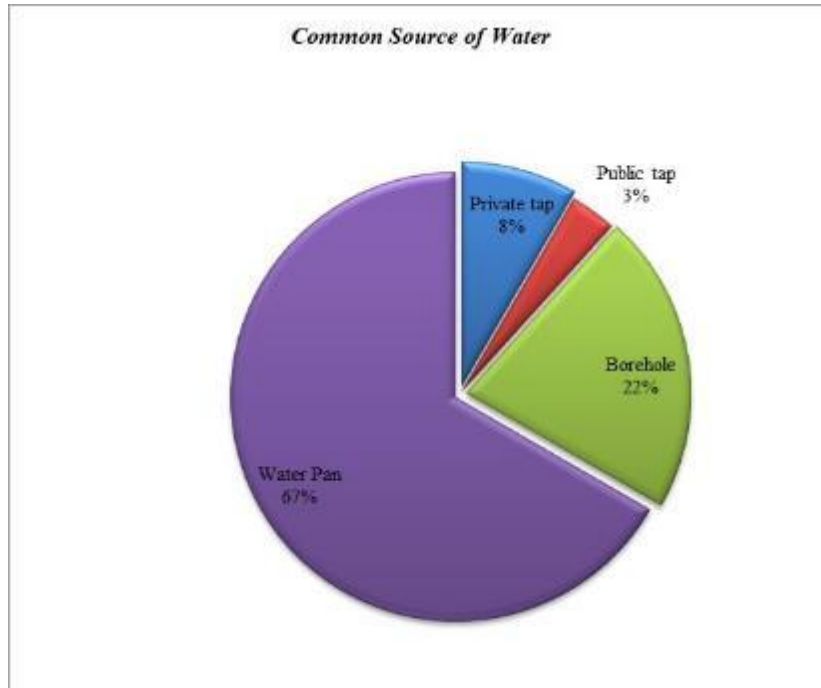


Figure 4-27: Main Sources of Water for the Community

Source: Survey data.

251. The water quality is generally fair with 93% of the respondents indicating that the water quality is acceptable. 7% of the respondents find the water to be good.

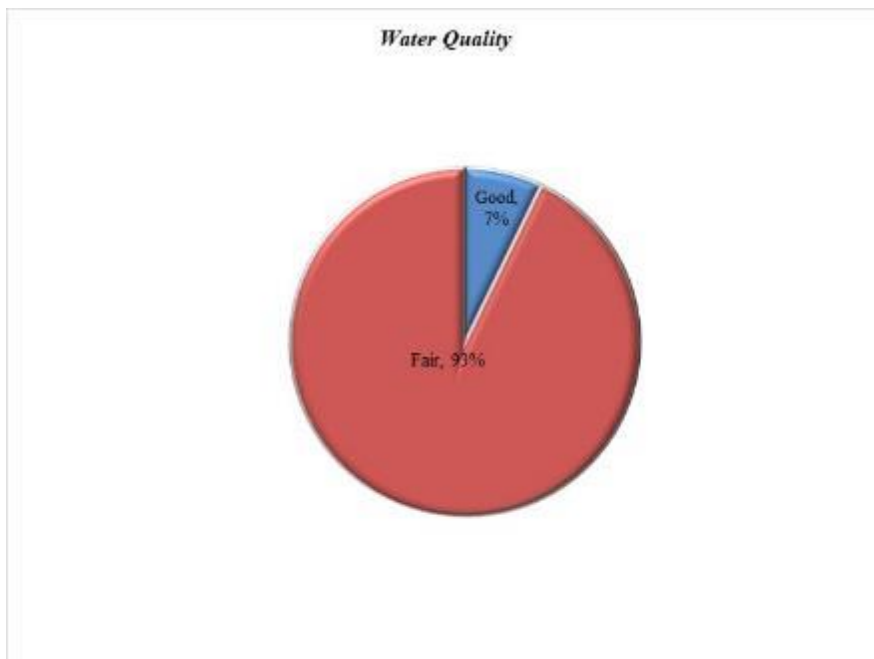


Figure 4-28: General Status of the Water Quality

Source: Survey data.

252. The major challenges experienced with regards to water supply are summarized in the figure below, with the major challenge being long times taken to fetch water:

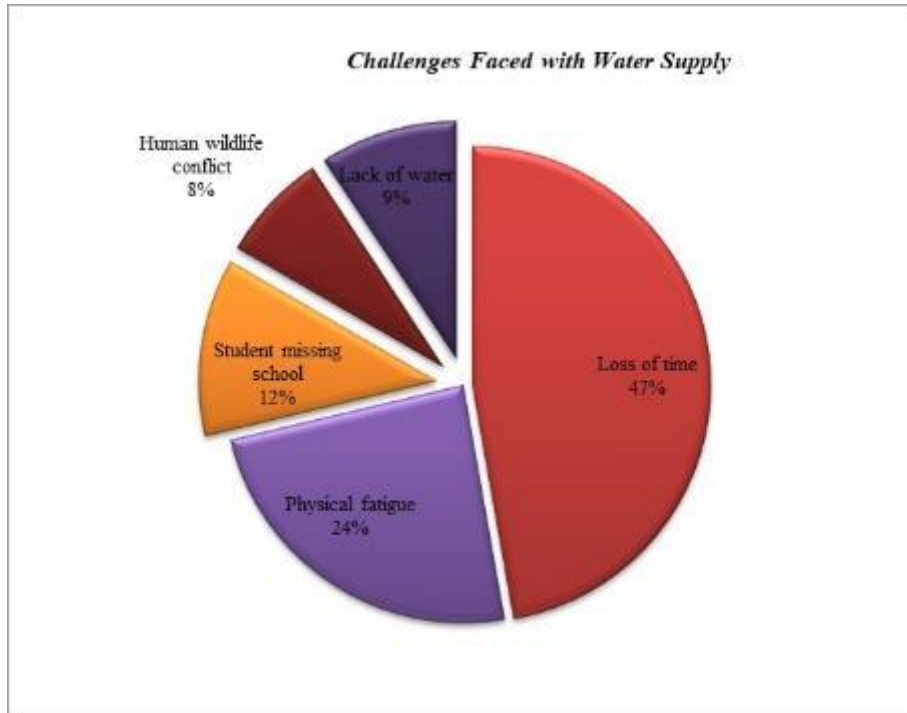


Figure 4-29: Challenges faced concerning Water

Source: Survey Data

253. The methods used by the population to dispose of household waste are distributed as follows: 33% rely on private collectors, 33% burn their waste, 15% dump in open areas, 11% on collection by the county and 8% bury their waste the chart below shows the waste disposal figuratively.

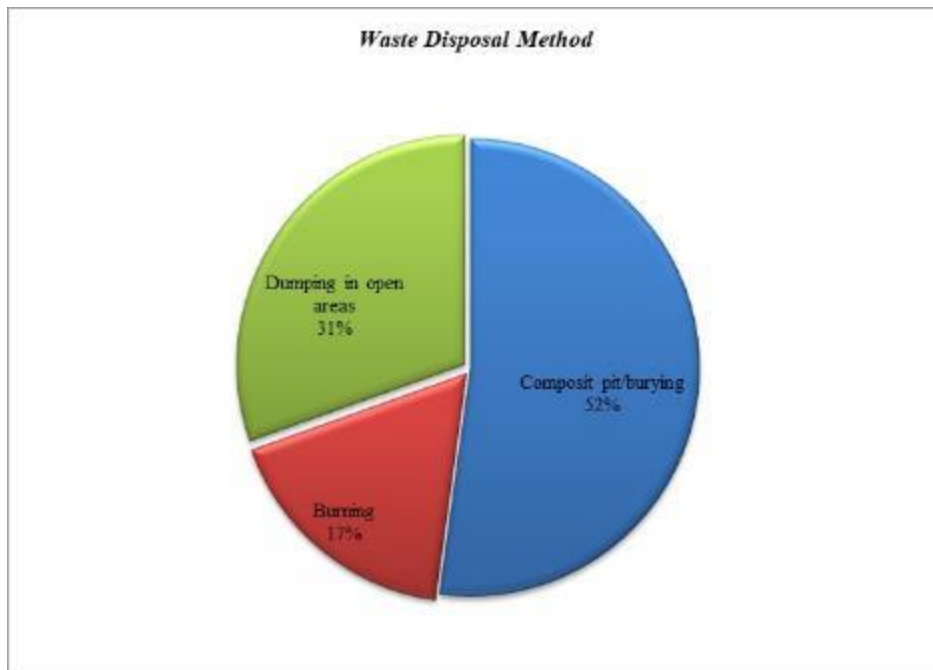


Figure 4-30: Common Waste Disposal Methods

Source: Survey data.

254. 57% of the households interviewed have access to a toilet, however due to a non-existent sewerage network and the nomadic nature of most of the residents, pit latrines and open defecation are the main sanitary facilities. Towards Isiolo town, however several households have access to flush toilets connected to a septic tank as shown in the figures below.

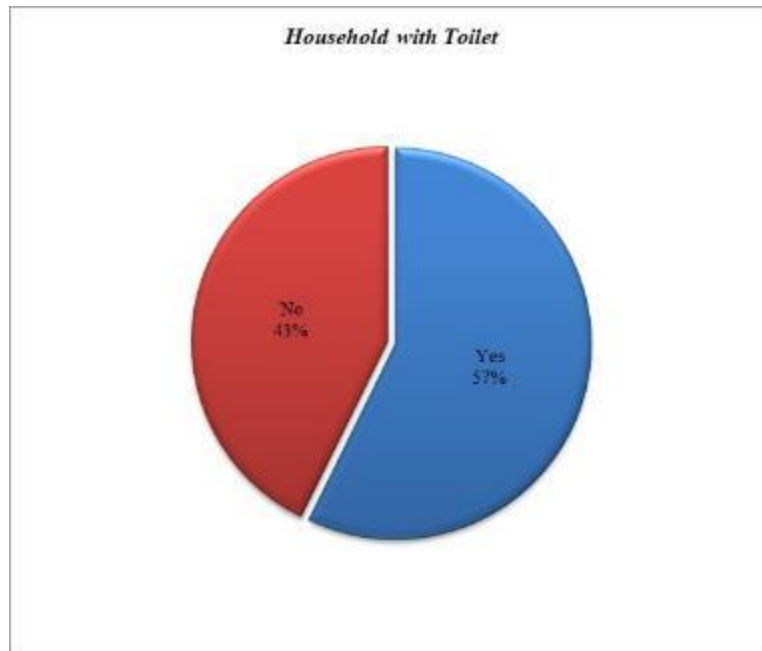


Figure 4-31: Respondents Who Have Toilets in Their Compound

Source: Survey data.

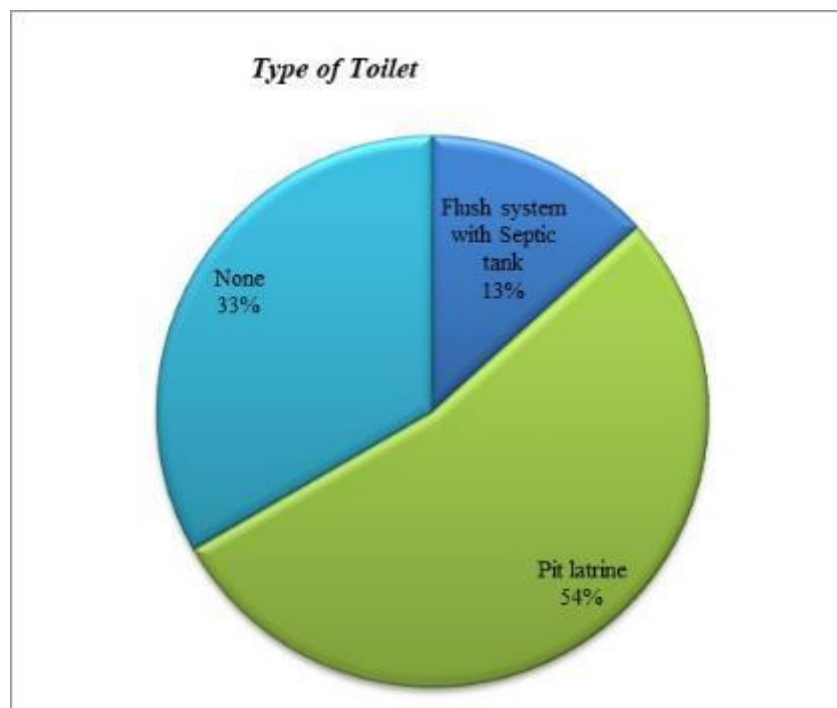


Figure 4-32: Types of Toilets Respondents Have in Their Compound

Source: Survey data.

4.3.3 Environmental & Social Situation

255. The environmental concerns in the area include overgrazing, water shortage, drought, malaria spread and solid waste as shown in the figure below.

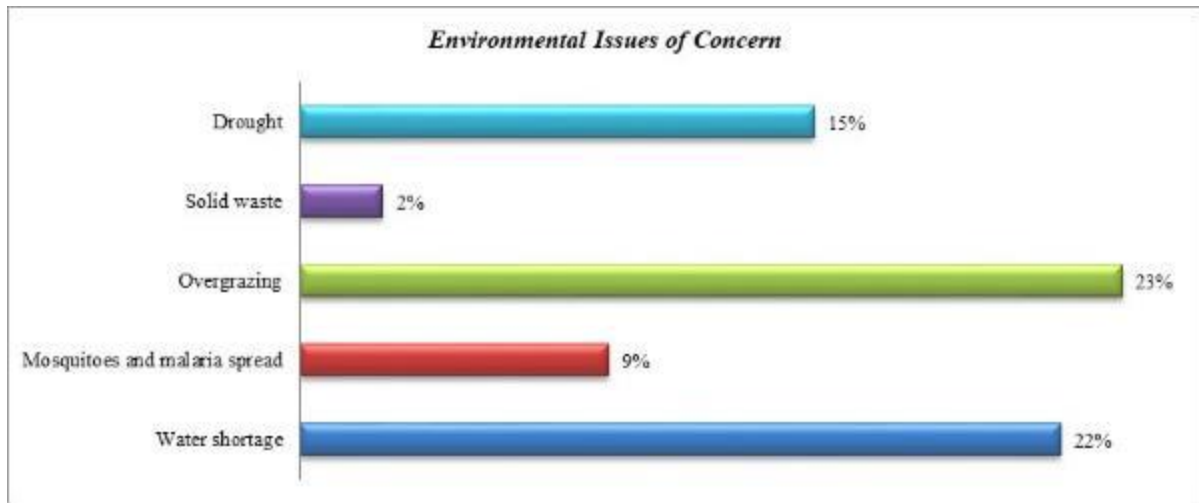


Figure 4-33: Environmental Issues of Concern

Source: Survey data.

256. There are a number of environmental conservation initiatives in the area such as educating the public on environmental conservation and clearing of mosquito breeding sites and others such and tree planting initiatives.

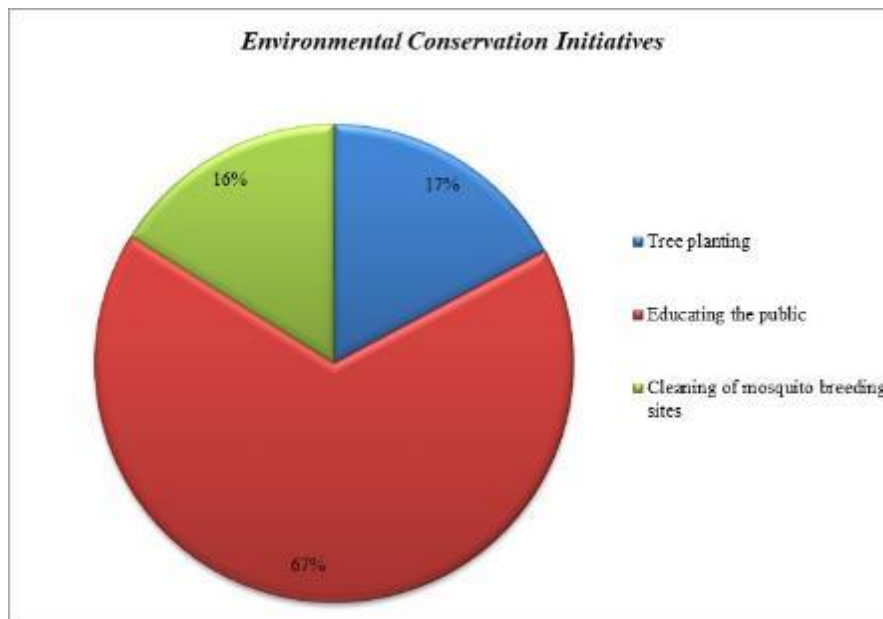


Figure 4-34: Environmental Conservation Initiatives

Source: Survey data.

257. With regards to the Social aspect, the main social issues within the area include, insecurity, conflicts between neighbouring communities among for limited resources, among others shown in the figure below:

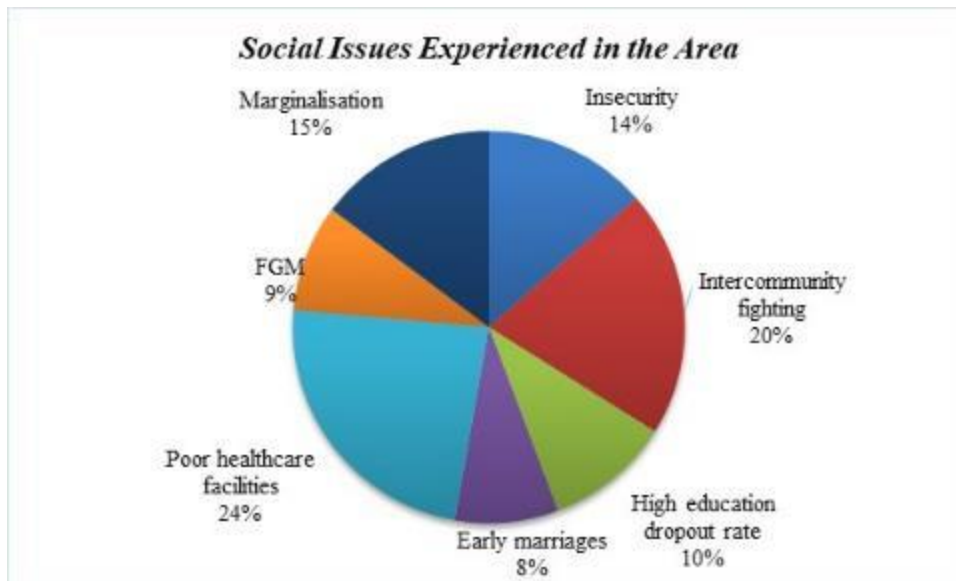


Figure 4-35: Social Issues Experienced in the Area

Source: Survey Data

258. Several initiatives are being undertaken to mitigate some of these issues in the area, these are summarized in the figure below:

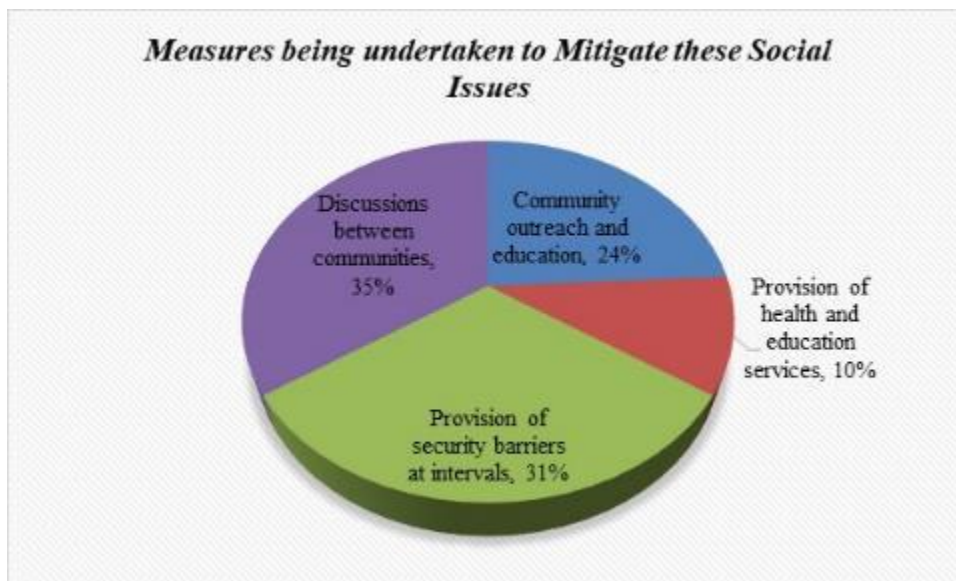


Figure 4-36: Measures being undertaken to mitigate the Social Issues Currently being experienced in the Area

Source: Survey Data

4.3.4 Health Status

259. The prevalent diseases in the area are malaria, diarrhea, skin rashes cholera and respiratory infections as shown in the figure below:

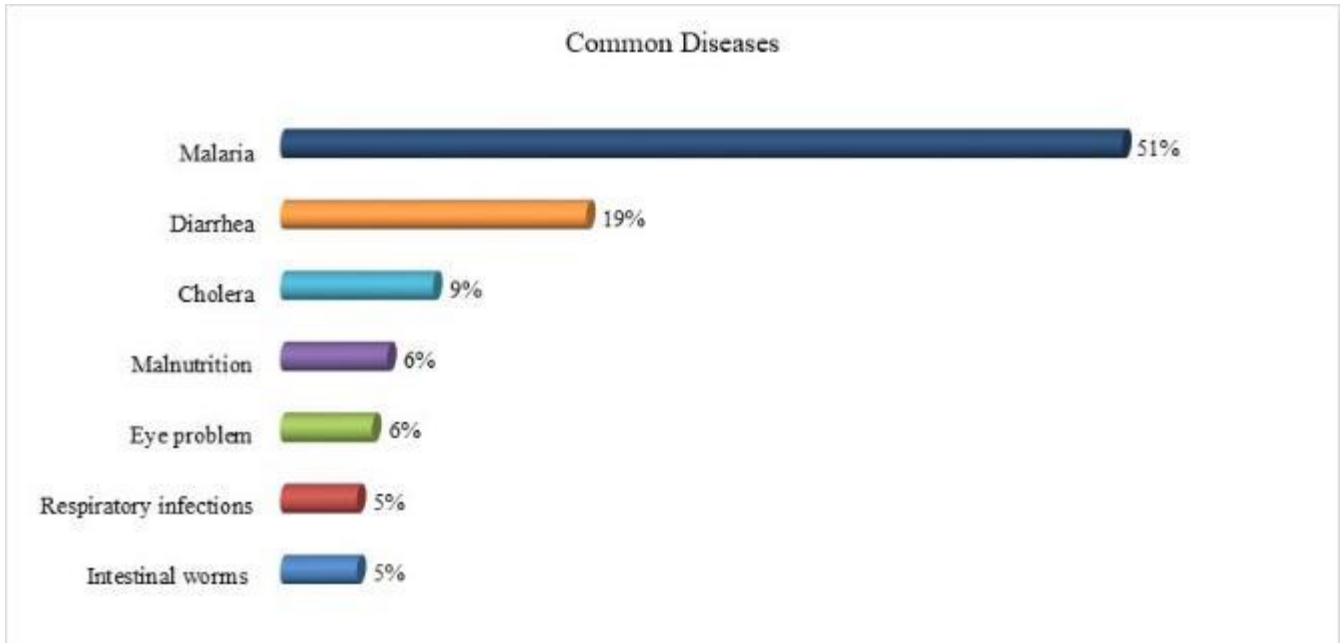


Figure 4-37: Prevalence of Diseases in the Area

Source: Survey data.

260. Most of the respondents when sick seek medical attention from a health centre.

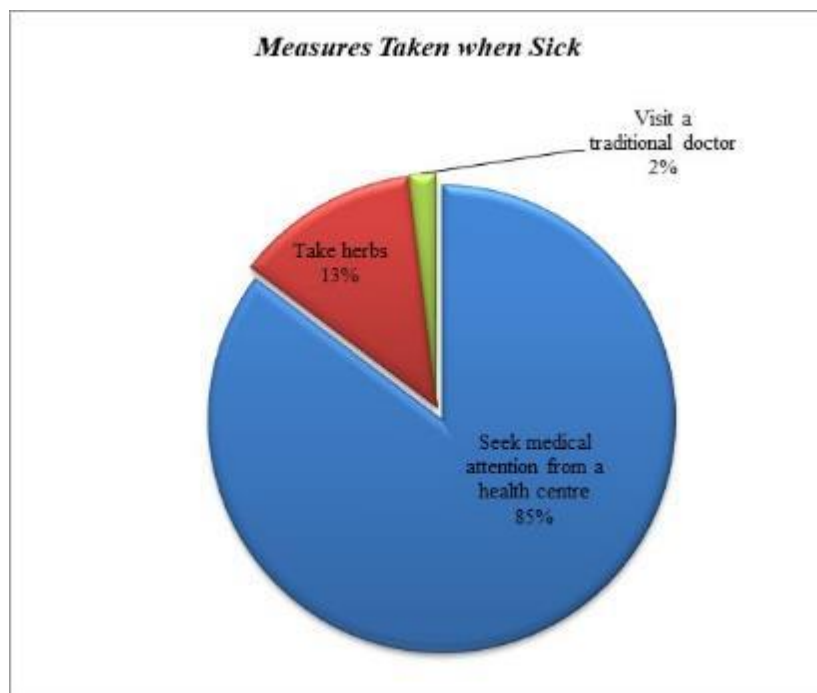


Figure 4-38: Type of Treatment

Source: Survey data.

261. The health facilities sought by the local population are mainly publicly owned health facilities.

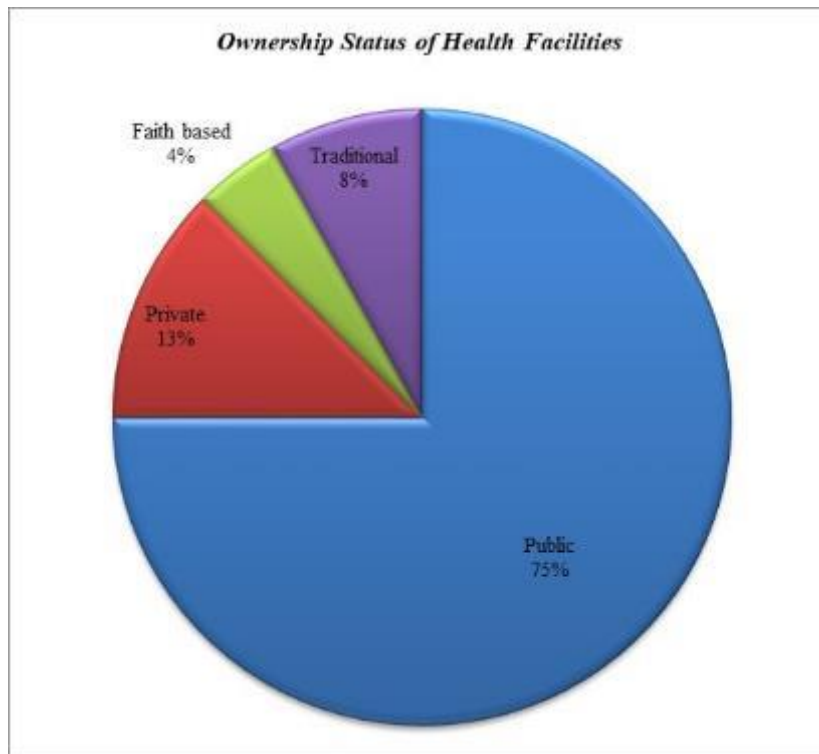


Figure 4-39: Ownership Status of the Health Facilities.

Source: Survey data.

262. Being a rural area, the health centres are located at market centres along the road, which causes long distances to these facilities for families that live away from the centres. The distances to health centres is shown in the figure below.

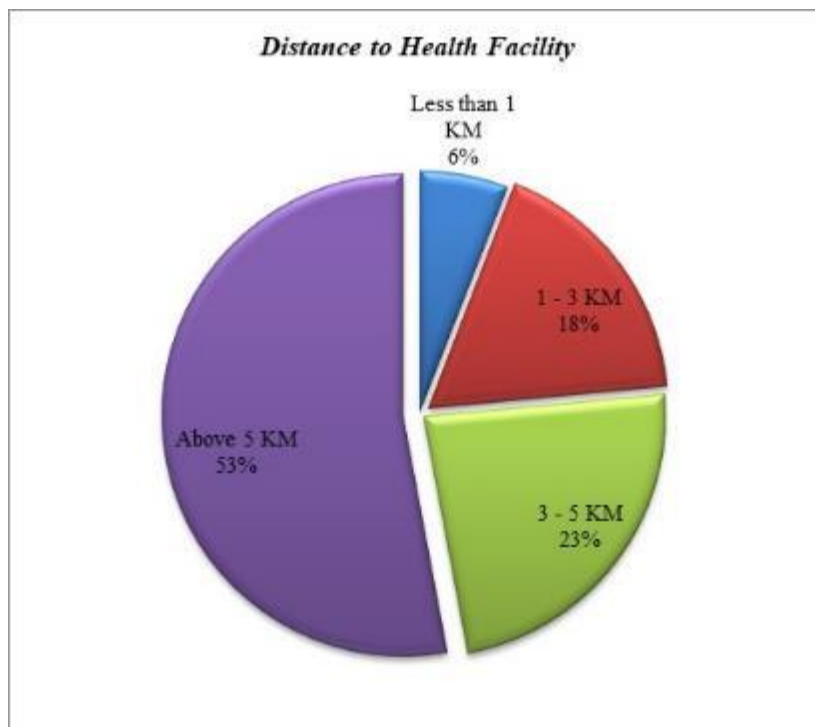


Figure 4-40: Distance to the Health Facilities.

Source: Survey data.

263. Majority of population is aware of HIV/AIDS with 89% of the community having knowledge on HIV/AIDS.

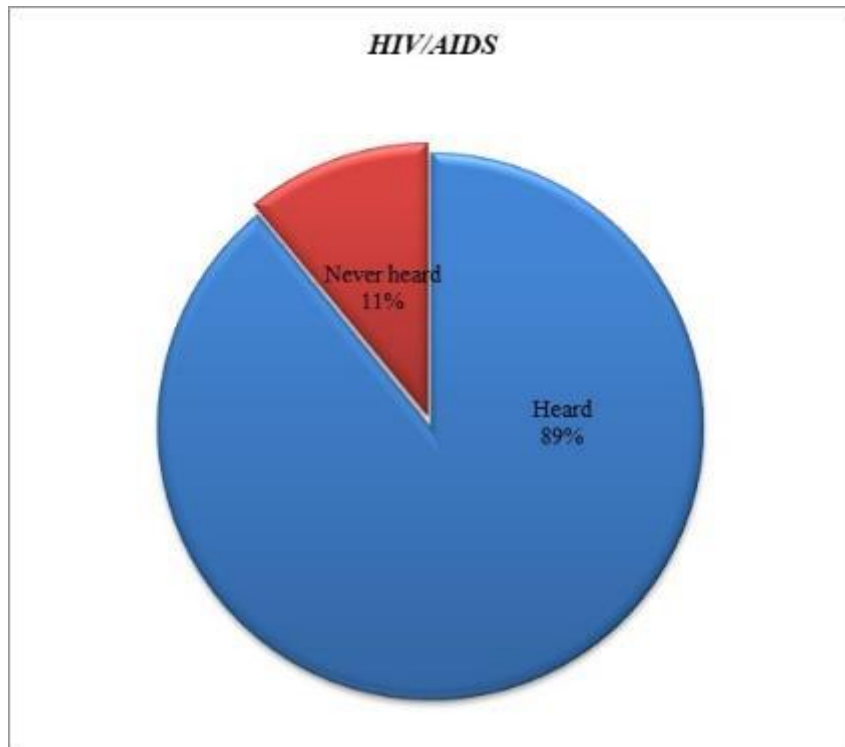


Figure 4-41: Level of Awareness on HIV/AIDS

Source: Survey data.

264. Information about HIV/AIDS is mainly obtained from the media, religious leaders, health workers and NGOs/CBOs.

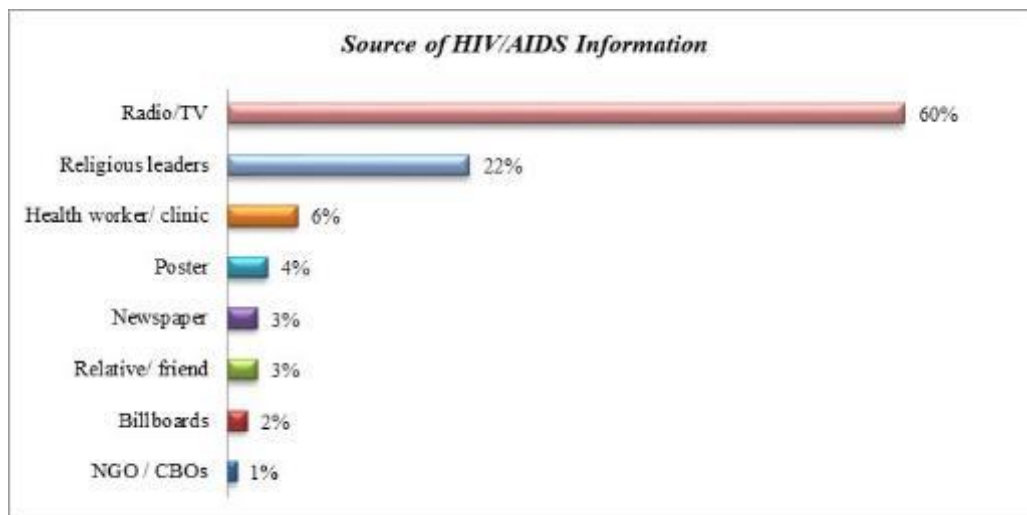


Figure 4-42: Source of information on HIV/AIDS

Source: Survey data.

265. 99% of the respondents have not been affected by the epidemic. The affected population will be treated as a vulnerable group due to the stigmatization of the scourge, and can be assisted by provision of ARVs during the project duration.

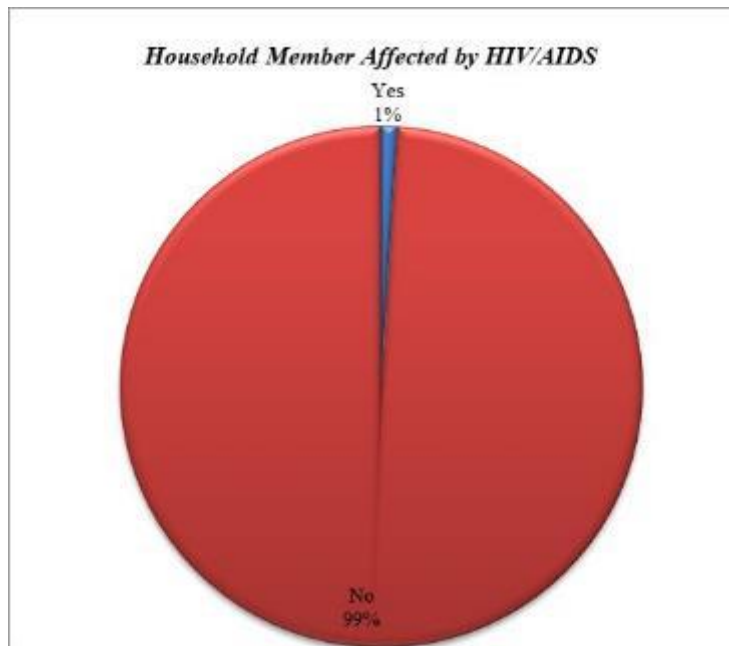


Figure 4-43: Household Members affected by HIV/AIDS

Source: Survey data.

266. 44% of the respondents feel that HIV/AIDS can be prevented while 28% feel that it cannot be prevented and 28% do not know if it can or cannot be prevented.

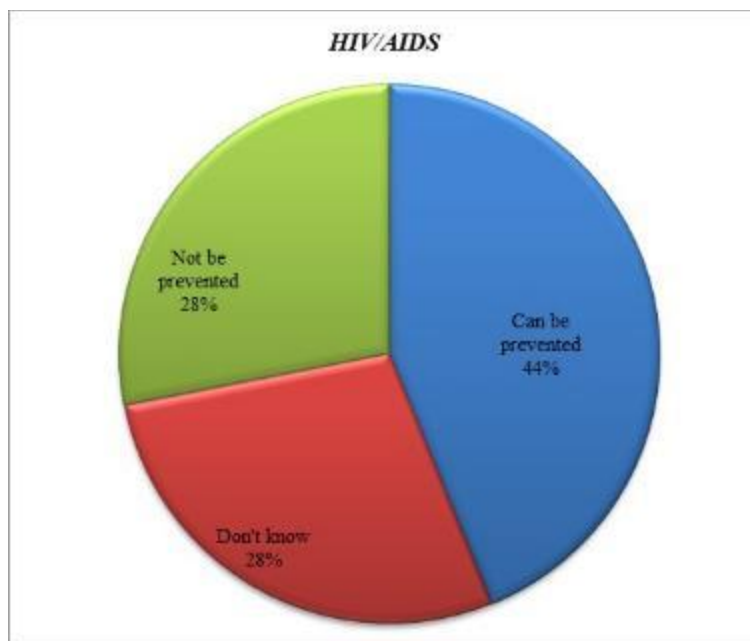


Figure 4-44: Knowledge on whether HIV/AIDS can be prevented

Source: Survey data.

267. 40% of the respondents know where to go for voluntary counselling and testing for HIV/AIDS, while a larger 60% do not know where to go, which reflects negatively on the awareness of HIV/AIDS and its repercussions.

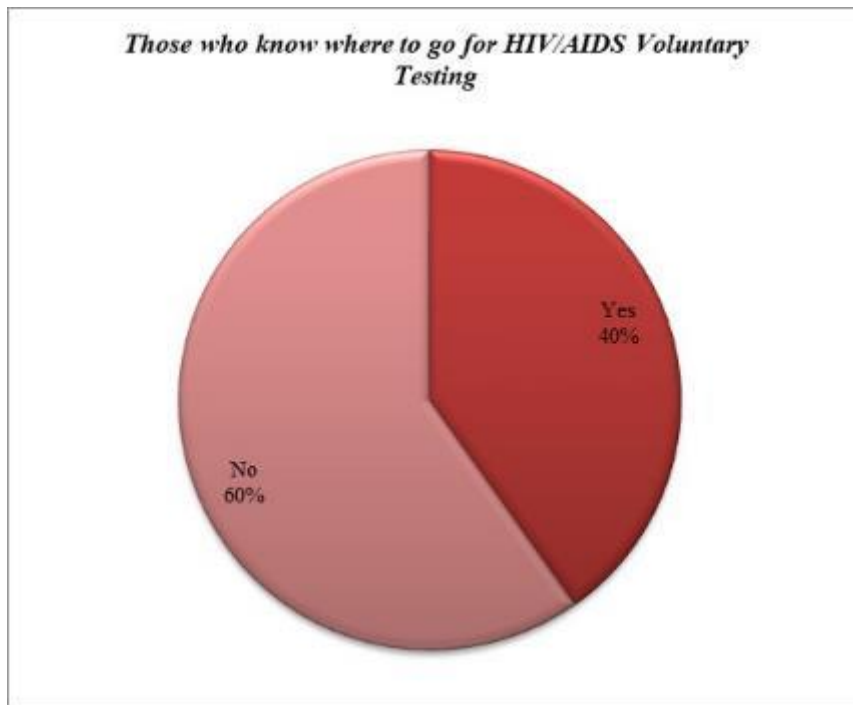


Figure 4-45: Respondents who know where to go to for Voluntary HIV/AIDS Testing

Source: Survey data.

4.3.5 The Project

268. Most of the residents are aware of the proposed project as shown in the figure below

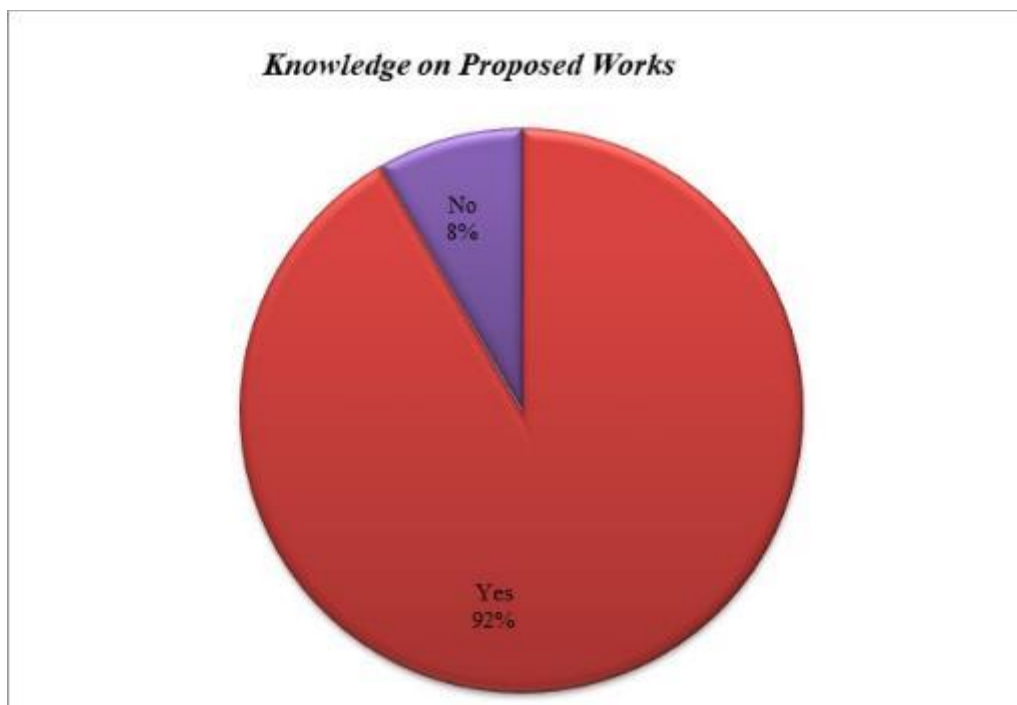


Figure 4-46: Public Awareness of the Intended Construction of the Pipeline

Source: Survey data.

269. 75% of the respondents perceived that the construction of the road will bring positive impacts while 25% percent perceived that it will bring about adverse impacts.

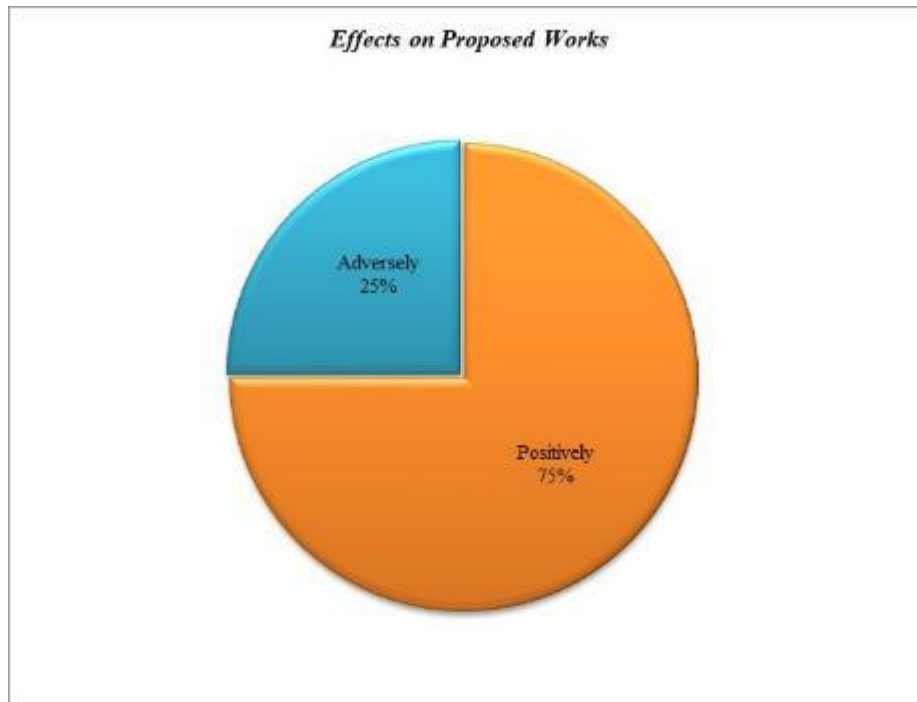


Figure 4-47: Perceived Impact of the Water Supply Project

Source: Survey data.

270. The positive impacts expected include reduced travel times, growth of towns, increased job opportunities supply among others as shown below.

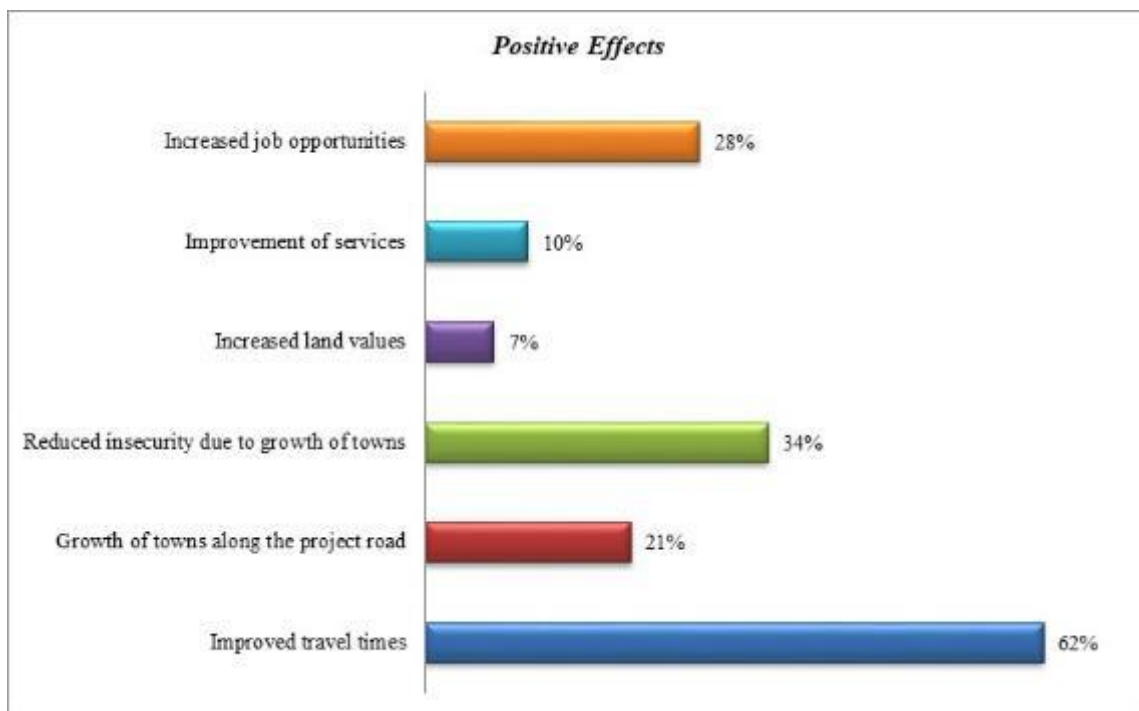


Figure 4-48: Positive Impact of the Proposed Project

Source: Survey data.

271. The negative impacts expected include demolition of structures and dust, noise generation, interruption of services, soil erosion, loss of vegetation as shown in the figures below during construction.

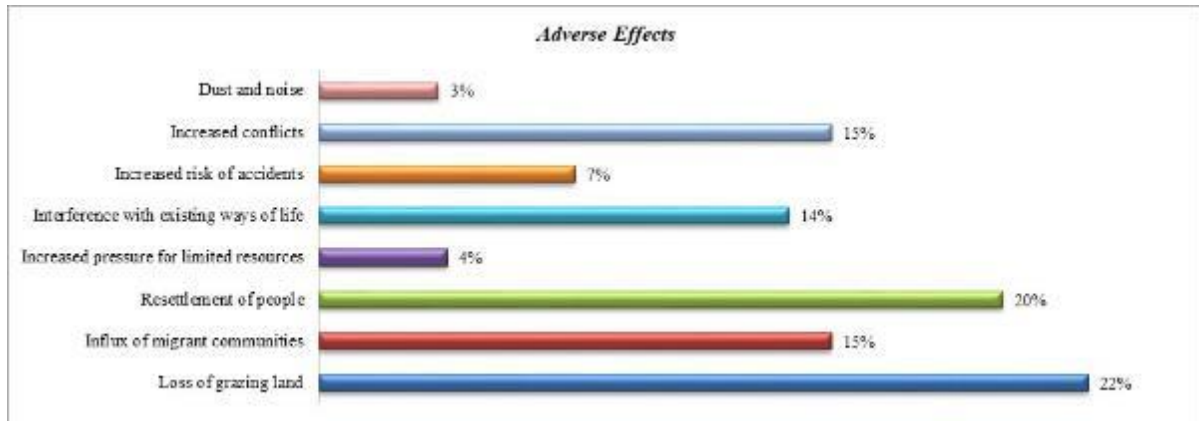


Figure 4-49: Negative Impact of the Proposed Project

Source: Survey data.

272. To mitigate the negative impacts the respondents feel that there is need to inform the public on any interruption of services, need to educate the public and the construction crew on health and safety, compensate the structure/land/crops/tree owners and avoid night time construction.

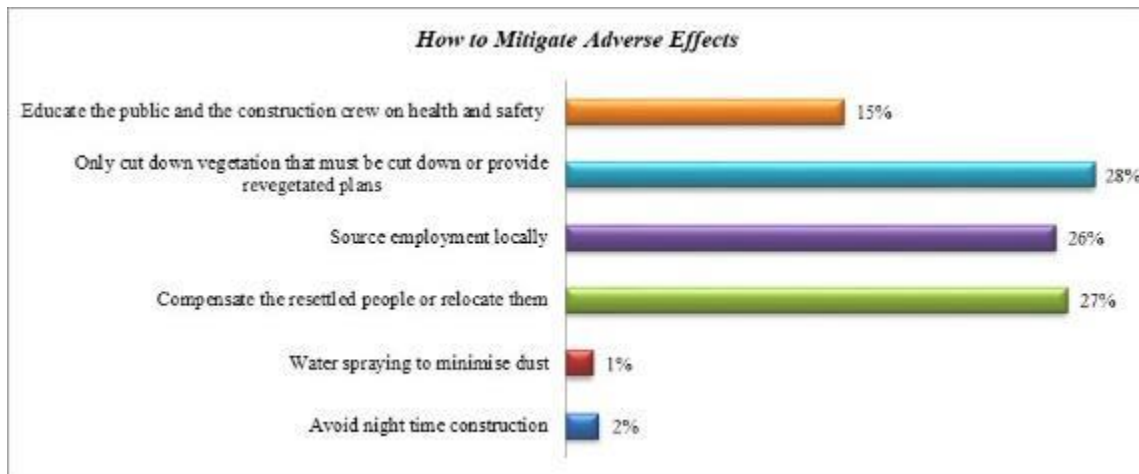


Figure 4-50: How to Mitigate Adverse Impact of the Project

Source: Survey data.

5 RELEVANT POLICY LEGISLATIVE AND REGULATORY FRAMEWORK

273. There are many laws and regulations governing issues of environmental and social concern in Kenya. The principal National legislation is the Environmental Management & Coordination (Amended) Act of 2015. The Act empowers stakeholders to participate in sustainable management of the natural resources. It calls for Environmental and Social Impact assessment (ESIA) to guide the implementation of environmentally and socially sound decisions. Other local laws and regulations looked into include but are not limited to, the Constitution, the Water Act of 2016 among others.

274. In addition to the national legislation, the Consultant has discussed the World Bank Safeguards Policies and Procedures that were triggered for this project.

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

5.1 THE CONSTITUTION OF KENYA 2010

276. Article 42 states that every person has the right to a clean and healthy environment. The constitution provides guidance on steps that may be taken in case any of any infringement on these rights. In addition, the constitution provides for the establishment systems for carrying out environmental and social impact assessment, environmental and social audit and monitoring.

277. Article 56 of the constitution further highlights the rights of marginalized communities, in the decision-making process with regards to development and their input. Thus, highlighting the need for consultation during the ESIA process and the implementation of the project.

278. In addition to the protection of the environment, the constitution states that the land in Kenya belongs to the people of Kenya collectively as a nation. The constitution classifies the land in Kenya into different categories. These categories will dictate whether compensation will be required for the acquisition of a way leave. The categories include: public (including all roads and thoroughfares).

5.2 NATIONAL POLICY FRAMEWORK

279. The Republic of Kenya has a policy, legal and administrative framework for environmental and social management. The broad objectives of the national environmental and social policy in Kenya are: -

- To ensure optimal use of natural resources while improving environmental quality.
- To conserve natural resources such that the resources meet the needs of the present without jeopardizing future generations in enjoying the same.
- To develop awareness that inculcates environmental stewardship among the citizenship of the country.
- To integrate environmental conservation and socio-economic aspects in the development process.
- To ensure that national environmental and social goals contribute to international obligations on environmental management and social integrity.

280. To achieve the above policy objectives, it is a policy directive that appropriate reviews and evaluations of all forms of developmental project plans and operations are carried out to ensure compliance with the environmental and social policy and legal frameworks. The following section provides details on the relevant policies in the country.

5.2.1 Sessional Paper No. 10 of 2012 on Kenya Vision 2030

281. Kenya Vision 2030 is a comprehensive national development plan for period 2008 to 2030. The plan was developed following successful implementation of the Economic Recovery Strategy for Wealth and Employment Creation which ensured the country's economy was back on the path for realization of rapid economic growth since 2002. The country's GDP growth rose from 0.6% to 7% in 2007, but declined to 1.7% and 1.8% in 2008 and 2009, respectively. The objective of the Vision 2030 is to transform Kenya into a middle-income country with a consistent annual economic growth of 10 % by the year 2030. This goal is expected to be achieved by developing basic infrastructure services such as roads, street lights, water and sanitation facilities, storm water drains, footpaths, and others while ensuring that the country has a clean, secure and sustainable environment by 2030 through reduction of pollution and improvement of waste management. The proposed road project will contribute to the realization of the goals of Vision 2030 through improvement of a reliable and efficient road infrastructure facility, provision of employment opportunities, and provision of faster and efficient mode of transport, among others.

5.2.2 Environment and Development (Sessional Paper No. 6 of 1999)

282. The Kenya's policy paper on the Environment and Development was formulated in 1999. The policy defined approaches that will be pursued by the Government in mainstreaming environment into development. The policy harmonized environmental and developmental objectives with the broad goal of achieving sustainable development. The policy paper also provided guidelines and strategies for government action regarding environment and development. In regard to wildlife, the policy reemphasized government's commitment towards involving local communities and other stakeholders in wildlife conservation and management, as well as developing mechanisms that allow them to benefit from the natural resources occurring in their areas. The policy also advocated for the establishment of zones that allow for the multiple use and management of wildlife. This policy is relevant to the proposed development project in view of the potential impacts on the environment and involvement of the public in project planning.

5.2.3 Sessional Paper No. 10 of 2014 on the National Environment Policy

283. The policy seeks to provide the framework for an integrated approach to planning and sustainable management of natural resources in the country. It recognizes the various vulnerable ecosystems and proposes various policy measures not only to mainstream sound environmental management practices in all sectors of society throughout the country but also recommends strong institutional and governance measures to support achievement of desired objectives and goals.

5.2.4 National Environmental Action Plan (NEAP) of 2009-2013

284. The 1992 Earth Summit held in Rio de Janeiro came up with various recommendations, among them Agenda 21, a Global Environmental Action Plan. The theme of the Summit focused on how nations could attain sustainable development. The Government of Kenya

embraced this idea by developing the first National Environment Action Plan (NEAP) in 1994. The NEAP report addresses environmental issues from various sectors in an integrated manner and their significance in development planning. It proposed a strategy for achieving sustainable development in line with Kenya's quest to meet the Sustainable Development Goals (SDGs), Vision 2030 and Medium-Term Plan (MTP). The report brings out several proposed interventions, legal and institutional framework to be incorporated into sectoral development plans and programmes. Its implementation is monitored through the Annual State of the Environment Reporting. The proposed road intends to meet the development part, this ESIA will ensure that the development is conducted sustainably.

5.2.5 The National Poverty Eradication Plan (NPEP) of 1999

285. The National Poverty Eradication Plan (NPEP) was formulated with an objective of reducing the high levels of poverty in Kenya by 50 percent by the year 2015, as well as to strengthen the capabilities of the poor and vulnerable groups to earn income. The plan also aimed at reducing gender and geographical disparities in order to create a healthy, better-educated and more productive population.

286. The formulation of the plan was guided by the goals and commitments agreed during the World Summit for Sustainable Development (WSSD) of 1995. The plan therefore focuses on the delivery of four WSSD themes of poverty eradication; reduction of unemployment; social integration of the disadvantaged people and creation of an enabling economic, political, and cultural environment through development of transport and communication sector. The plan is implemented by the Poverty Eradication Commission (PEC) that was established in collaboration with various Government Ministries, bilateral and multilateral donors, the private sector, Community Based Organizations (CBOs) and Non-Governmental Organizations (NGOs). The NPEP is relevant since the proposed road will create an enabling environment that will contribute immensely in the enhancement of economic growth in Kenya. The proposed project would also impact businesses, agricultural and tourism related activities that have great relevancy to poverty eradication in the country.

5.2.6 National Gender and Development Policy

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

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

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

women should be consulted during the project implementation for their contribution to the development.

5.2.7 The Poverty Reduction Strategy Paper (PRSP) of 2000

290. The Poverty Reduction Strategy Paper (PRSP) for Kenya has the broad objective of reducing poverty and promoting economic growth. This policy articulates Kenya's commitment and approach to tackling endemic poverty through involvement of the poor communities in both rural and urban areas in various socio-economic development activities. The proposed project, during and after implementation will offer various employment opportunities to Kenyans and will therefore contribute directly towards the realization of the broad national goal of reducing poverty in the country. In addition, the project would stimulate economic development by creating an enabling environment for other key sectors of the economy to thrive.

5.2.8 The National Biodiversity Strategy of 2000

291. The National Biodiversity Strategy and Action Plan (NBSAP) was formulated to enable Kenya address national and international commitments defined in Article 6 of the Convention on Biological Diversity (CBD). The strategy is a national framework of action for ensuring that the present rate of biodiversity loss is reversed, and present levels of biological resources are maintained at sustainable levels for posterity. The general objectives of the strategy are to conserve Kenya's biodiversity; to sustainably use its components; to fairly and equitably share the benefits arising from the utilization of biological resources among the stakeholders; and to enhance technical and scientific cooperation nationally and internationally, including the exchange of information in support of biological conservation. The proposed road project will need to comply with the requirements of this strategy since the project may lead to loss of naturally existing vegetation along the project route.

5.2.9 Sessional Paper No. 3 of 2009 on National Land Policy

292. The Land Policy in Kenya is guided by the environmental management principles which are aimed at restoring the environmental integrity through introduction of incentives and encouragement of use of technology and scientific methods for soil conservation, among others. The policy further requires fragile ecosystems to be managed and protected by developing a comprehensive land use policy bearing in mind the needs of the surrounding communities. The policy also requires zoning of catchment areas to protect them from degradation and establishment of participatory mechanisms for sustainable management of fragile ecosystems. The policy also calls for development of procedures for co-management and rehabilitation of forest resources while recognizing traditional management systems and sharing of benefits with contiguous communities and individuals. Lastly, all national parks, game reserves, islands, front row beaches and all areas hosting fragile biodiversity are declared as fragile ecosystems under the policy. The policy recognizes that sustainable management of land based natural resources depends largely on the governance system that defines the relationships between people, and between people and resources. To achieve an integrated approach to management of land-based natural resources, all policies, regulations and laws dealing with these resources need to be harmonized with the framework established by the Environmental Management and Coordination Act (EMCA Cap 387).

5.2.10 Sessional Paper No. 8 of 2012 on National Policy for the Sustainable Development of Northern Kenya and other Arid Lands

293. In Kenya, the ASAL occupy 89% of the country and are home to about 36% of the population, 70% of the national livestock herd and 90% of the wild game that supports the country's tourism industry. Arid lands of Northern Kenya cover close to 400,000 km of land but have less than 700 km of tarmac road, most of which is in disrepair. This has an impact on the attraction of investment and communication in the region
294. Since 2003 the Government has demonstrated renewed commitment to the ASALs, for example through the Economic Recovery Strategy launched in 2003, which recognized 'the important contribution the ASALs can make to national development'. The Government of Kenya is committed to putting in place a holistic policy framework that facilitates and fast-tracks sustainable development in the region, reducing levels of inequality with the rest of Kenya and releasing its potential for the benefit of the nation.
295. The Government recognizes that Kenya will not achieve sustained growth in her economy and progress as a nation if the ASALs are not appropriately factored into national planning and development. Trickle-down benefits from areas which already have more favourable investment climates have not worked across the country; moreover, the potential for significant growth in these areas is now limited. The Government also recognizes that Kenya will not achieve the goals of Vision 2030 or meet international commitments such as the Sustainable Development Goals (SDGs) if regional inequalities are not addressed. Poverty, inequality and insecurity in one part of the country negatively affect the country as whole. Accelerated investment in ASALs is necessary if all Kenyans are to have an equal chance of sharing in the promise and benefits of Vision 2030. Through appropriate financing, the Government will provide leadership in mobilizing and allocating resources necessary for strengthening the foundations for development, including roads, energy, ICTs, water, education, health and security in ASAL areas.

5.2.11 Wildlife Policy of 2011

296. The wildlife policy is aimed at promoting protection and conservation of wildlife in Kenya, both in protected and non-protected areas. The policy is implemented by the Kenya Wildlife Service (KWS). The proposed road project will need to be consistent with this policy. Where wild animals will be disturbed during the construction and operation of the road, appropriate mitigation measures must be implemented to minimize disturbance to wildlife.

5.2.12 Physical Planning Policy

297. The current policy governs the development and approval all building plans as provided for in the Physical Planning Act (Cap 286). The proposed project will be subjected to the provisions of this policy and legislation.

5.2.13 Public Health Policy of 2014

298. The public health policy calls upon the project proponents to ensure that buildings are adequately provided with utilities so that they are fit for human habitation. The workers camps must be provided with all amenities/utilities that are essential for safeguarding public health for all people using the facilities.

5.2.14 Occupational Health and Safety Policy of 2012

299. This policy is intended to protect safety and health of workers in work places. The proposed road project will provide employment opportunities to many workers at various categories. The contractor will be expected to comply with the requirements of this policy when engaging workers in various construction activities. The preliminary environmental management provides mitigation measures that can be undertaken to ensure compliance with the requirements of this policy.

300. In addition, the section 18 of the Act also states that an employer in this case the Contractor ensures the health and safety of persons other than his/her employees. This section of the Act establishes the role of the Contractor in ensuring the health and safety of the surrounding communities during the implementation of the project. This ESIA report takes into account the general public and surrounding communities in the identification of impacts and provision of mitigation measures.

5.2.15 HIV/AIDS Policy of 2009

301. The policy identifies HIV/AIDS as a global crisis that constitutes one of the most formidable challenges to development and social progress. The Pandemic heavily affects the Kenyan economy through loss of skilled and experienced manpower 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 workers who will be involved in the project and the associated social issues with projects of such as scale, HIV/AIDS has been considered as one of the proposed impacts, but adequate mitigation measures have also been proposed to that effect.

5.2.16 The Kenya National Climate Change Response Strategy of 2010

302. This strategy provides measures that the Government of Kenya is taking to address issues related to the impact of climate change on various sectors of the economy. The proposed road will need to take onboard the effects of changing climate in the country and apply applied climate change mitigation measures. This is important because climate change will in future affect the operation of the road.

5.2.17 KeNHA's Environment and Social Safeguards Policy, 2018

303. The revised policy is set within KeNHA Vision of quality, safe and adequate National Trunk Roads network. It contains the actions KeNHA will take so as to ensure that the Authority activities don't negatively harm the environment and adversely affect the social fabric in communities where it works. Working in an environmentally and socially responsible and safe manner are conditions of employment of contractors for various projects. This policy is therefore targeting all its staff, contractors and other service providers.

5.3 ENVIRONMENTAL GUIDELINES

304. In line with the Kenyan Constitution, NEMA has developed a number of guidelines which are part of a series of environmental and social management tools for environmental and social management in Kenya under the Environmental Management and Coordination Act, CAP 387 of the Laws of Kenya. Below is a highlight of the key project relevant guidelines;

5.3.1 National Solid Waste Management Strategy, NEMA, 2014.

305. NEMA developed the National Solid Waste Management Strategy in 2014 as a framework for implementing the Vision 2030 flagship project. The Strategy establishes a common platform for action between stakeholders to systematically improve waste management. It introduces a new approach for improved waste management in Kenya to create wealth, employment and reduce pollution of the environment.
306. The proposed road project is anticipated to produce waste; the proponent will be required to manage waste as guided by this strategy but in line with Waste Management regulations of 2006 and other relevant legislative frameworks. In general, the project proponent should ensure waste management activities are 7R oriented, by Reducing; Rethinking; Refusing; Recycling; Reusing; Repairing and Refilling waste.

5.3.2 Technical guidelines on the management of used oil and oil sludge in Kenya (NEMA, 2014)

307. The main objective of the guidelines is to ensure effective and efficient collection and transportation systems for used oil. These guidelines target government agencies (responsible for decision making, formulating policies and enforcing health and safety aspects of used oil and oil sludge management in the country), small generators, bulk generators of used oil and oil sludge, garages, used oil treatment plants, recycling and disposal facilities, and other interested stakeholders. The Proponent is envisioned to use heavy machinery which will require servicing hence producing used oil. These guidelines provide direction on safe management of used oil and oil sludge in Kenya and are a main regulatory reference material for management of used oil in Kenya and hence will be used as a key reference point to create awareness on hazards associated with handling used oil and to provide guidance on infrastructure for management of used oil.

5.3.3 National sand harvesting guidelines, 2007

308. These guidelines apply to all sand harvesting activities in Kenya. This is deemed key to ensure sustainable utilization of the sand resource and proper management of the environment. Since the road project will require use of sand, it is expected that the contractor's sand harvesting activities will be conducted in line with respective legal requirements and guided by these sand harvesting guidelines.

5.3.4 Integrated Land Use Guidelines

309. Land in Kenya is a key factor of production, making its proper management a requirement for sustainable development. The demand for arable land, grazing, forestry, wildlife, tourism and urban development are greater than the land resources available. These demands become more pressing every year with continued population growth. To address the identified key issues in land use management within a development-oriented approach poses challenges to all stakeholders and requires integrative solutions across the policy, socio-economic, and environment sectors.
310. The project area is located in a predominantly grazing area meaning that the development of the road and its associated features including market centres. These guidelines promote consultation with the local community of the establishment of the associated road works which may have an impact on the livestock activities.

5.4 NATIONAL ENVIRONMENTAL LEGAL FRAMEWORK

311. The Republic of Kenya has numerous statutes that guide environmental and social management and conservation in the country. Most of these statutes are sector specific and cover a wide range of issues including public health, soil conservation, protected areas conservation, endangered species, public participation, water rights, water quality, air quality, excessive noise control, vibration control, land use, among others. The relevant legislations are described in the following sub-sections.

5.4.1 The Environmental Management and Coordination Act of 2015 (CAP 387) and its Amendment

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

313. The Environmental Management and Coordination (Amended) Act, 2015 harmonizes the various requirements of the other existing laws and regulations by stipulating that where the provisions of any existing law conflicts with itself, then the provisions of the Environmental Management and Coordination Act, Cap 387 shall prevail. This way, the act is able to minimize any conflicts in enforcement of the various environmental laws and regulations as applied to the relevant sectors. The Environmental Management and Coordination Act represents the culmination of a series of initiatives and activities coordinated by Government and stakeholders. It accentuates the right of every person in Kenya to live in a clean and healthy environment and obliges each and every one to safeguard and enhance the environment.

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

315. The act highlights the need for an ESIA which is presented in this report.

5.4.2 The Environment Management and Coordination Act CAP 387 and Its Tools

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

1) Environmental (Impact Assessment and Audit) Regulations 2003

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

- Submission of an ESIA project report to NEMA for review or licensing

- In some cases the Authority will request for a full study report for some projects for which the applicant will be required to prepare a Terms of Reference and submit a study report.
318. The project and study reports will be conducted before the implementation of the development in question, the reports will be subject to approval by NEMA, the 0.1% fee requirement however has been scrapped via government notice.
319. The regulations also calls for Environmental and social auditing and monitoring that will be carried out during the construction or operation of the enterprise, the regulations provide the format of the audit report which will be provided to NEMA.
- 2) Water Quality Regulations (2006)
320. Water Quality Regulations apply to water used for domestic, industrial, agricultural, and recreational purposes; water used for fisheries and wildlife purposes, and water used for any other purposes. Different standards apply to different modes of usage. These regulations provide for the protection of lakes, rivers, streams, springs, wells and other water sources.
321. The contractor will be expected to obtain water for human consumption for his staff which should meet the following requirements:

Table 5-1: Quality Standards of Domestic Water

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

322. In addition, the regulations give the recommended standards for effluent disposal, and being that the project area is not served by a public sewer, the Contractor's camp will have to have on site effluent treatment to meet before release into the environment.

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

323. The Waste Management Regulations are meant to streamline the handling, transportation and disposal of various types of waste. The aim of the Waste Management Regulations is to protect human health and the environment. The regulations place emphasis on waste minimization, cleaner production and segregation of waste at source.

324. These regulations will be of great importance particularly during the construction phase of the project. During the Construction, the Contractor will have to meet the requirements of the regulations, by providing solid waste sorting and transportation using a licensed transporter who will dispose of the solid waste to the designated receptacle.

325. The regulations will guide the Contractor's preparation of a waste management plan for all solid waste from the site and site related works.

4) *EMCA (Noise and Excessive Vibration Pollution Control) Regulations, 2009*

326. These Regulations determine the level of noise that will be permissible in particular during the construction of the improvements, the following factors will be considered:

- Time of the day;
- Proximity to residential area;
- Whether the noise is recurrent, intermittent or constant;
- The level and intensity of the noise;
- Whether the noise has been enhanced in level or range by any type of electronic or mechanical means; and,
- Whether the noise is subject to be controlled without unreasonable effort or expense to the person making the noise.

327. The Contractor will have to meet the requirements of these regulations particularly during the construction process, where some of the construction activities are bound to make some level of noise. These regulations are summarised in the table below:

Table 5-2: Table showing Permissible Noise Level for a Construction Site

Facility		Local Maximum Noise Level Permitted in Decibels	
		Day	Night
1.	Health facilities, educational institutions, homes for disabled etc.	60	35
2.	Residential areas	60	35
3.	Areas other than 1 and 2 above	75	65

328. In addition the IFC regulations for permissible noise levels are summarized in the table below:

Facility		Maximum Noise Level Permitted in Decibels	
		Day	Night
1.	Residential; institutional; educational	55	45
2.	Industrial; commercial	70	70

329. Comparatively both regulations are relatively similar, as such the local regulations will be used.

5) *Draft Environmental Management and Coordination (Air Quality) Regulations, 2009*

330. The objective of the Regulations 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 such as mobile sources (e.g. motor vehicles). The Contractor will have to ensure all his machinery do not exceed the emissions made in the regulations. These values are presented in the first schedule of the regulations and based on 24hr sample collections (Sulphur Oxides – 30-125 µg/m³, Nitrogen Oxides NH₃ – 30-150 µg/m³, Particulate matter PM₁₀ -50-70 µg/m³, Hydrocarbons – 400 – 2000 ppm and Hydrogen Sulphides 50 – 200 µg/m³).

6) *Environmental Management and Co-ordination (Fossil Fuel Emission Control) Regulations, 2006*

331. The EMCA (Fossil Fuel Emission Control) Regulations, 2006 aims at eliminating or reducing emissions emitted from internal combustion engines to acceptable levels. The regulation provides guidelines on use of clean fuels, use of catalysts and inspection procedures for engines and generators. This regulation is applicable to the proposed project since there would be use of vehicles, machinery and equipment that depend on fossil fuel as their source of energy. The requirements of the regulation must be implemented to eliminate or reduce air quality degradation. Sections of the regulation citing the standards of recommended emission levels will be given to the contractor and or pinned at strategic points in the contractor's field offices.

7) *Environmental Management and Co-ordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006*

332. The EMCA (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006 provides that no person shall engage in any activity that may have an adverse impact on any ecosystem; may lead to the introduction of any exotic species or to unsustainable use of natural resources, without an Environmental Impact Assessment License issued by the Authority under the Act.

333. The regulation requires NEMA in consultation with the relevant lead agencies, to impose bans, restrictions or similar measures on the access and use of any threatened species to ensure its regeneration and maximum sustainable yield. The proposed road traverses' areas with diverse ecosystems which will need to be protected as per the requirements of this regulation.

8) *Environmental Management and Co-ordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009*

334. The Environmental Management and Co-ordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009 applies to all wetlands in Kenya whether occurring in private or public land. The objectives of the regulations are to provide for the conservation and sustainable use of wetlands and their resources in Kenya and promote the integration of sustainable use of resources in wetlands into the local and national management of natural resources for socio-economic development.
335. The act also aims at ensuring the conservation of water catchments and the control of floods and the sustainable use of wetlands for ecological and aesthetic purposes for the common good of all citizens.
336. The act also makes provision for the protection of wetlands as habitats for species of fauna and flora. It also provides a framework for public participation in the management of wetlands.
337. Due to the fact that the project area traverses several river courses and areas prone to flooding. The road construction should ensure that there is adequate infrastructure to ensure the natural flow of these water bodies is maintained and not impeded.

5.4.3 The Kenya Roads Act, 2007

338. This is an Act of Parliament that provided for the establishment of Kenya Road Agencies i.e. Kenya National Highway Authority (KeNHA), the Kenya Urban Roads Authority (KURA) and the Kenya Rural Roads Authority (KeRRA) and provided powers and functions of the authorities.
339. KeNHA is mandated to manage, develop, rehabilitate and maintain all national roads. Other function vested to this authority relevant to the proposed project are controlling national roads and road reserves and access to roadside developments; implementing road policies in relation to national roads; ensuring adherence to the rules and guidelines on axle load control prescribed under the Traffic Act (Cap. 403) and under any regulations under this Act; ensuring that the quality of road works is in accordance with such standards; in collaboration with the Ministry responsible for Transport and the Police Department, overseeing the management of traffic and road safety on national roads; collecting and collating all such data related to the use of national roads as may be necessary for efficient forward planning under this Act; monitoring and evaluating the use of national roads; planning the development and maintenance of national roads and liaising and coordinating with other road authorities in planning and on operations in respect of roads.

5.4.4 The Kenya Roads Board Act, 1999

340. The Act was assented in January 2000. Establishing a board to oversee the road network in Kenya and thereby coordinate its development, rehabilitation and maintenance and to be the principal adviser to the Government on all matters related to Road Development.
341. The Standard Specifications for Road and Bridge construction has guidelines on environmental protection and mitigation. Standard Specification Clauses 116,117,125,135,137 specifically address protection of the environment, with regard to water, health, safety and accidents, water supply, maintenance of the engineers' staff houses, offices, laboratories, and attendance upon the engineer and his staff. The provisions of these standards and codes must not be contravened during project implementation. These

provisions are largely supportive of EMCA, Cap 387 and forms part of the legal basis for environmental mitigation, avoidance, prevention, compensation, restoration and enhancement.

5.4.5 Public Roads and Roads of Access Act Cap 399

342. The Public Roads and Roads of Access Act Cap.399 Act states that a public road is any road which the public has a right to use immediately before the commencement of this Act, or all proclaimed or reserved roads and thoroughfares being or existing on any land sold or leased or otherwise held under the East Africa Land Regulations, 1897, the Crown Lands Ordinance,1902, or the Government Lands Act at any time before the commencement of this Act and all roads and thoroughfares hereafter reserved for public use. The construction of the proposed road will need to take note of the provisions of this Act.

5.4.6 The Traffic Act Cap 403

343. The Traffic Act reserves the use of the road corridor for road facilities only. Any vegetation grown to protect the road edges should not cause problems during maintenance. Encroachment along the road corridor will have to be checked especially during the operational phase of the project. The Act also spells out conditions for use of roads by motorists, among others. The contractor's vehicles shall comply to all traffic rules in Kenya.

5.4.7 The Wildlife Management and Conservation Act 2013

344. The Wildlife and Conservation Act deals with the conservation and management of wildlife in Kenya. The Act provides that wildlife should be conserved to yield optimum returns in terms of cultural, aesthetic, scientific and economic benefits. The Act requires that full account be taken of the interrelationship between wildlife conservation and land use. The Act controls activities within the national parks, which may lead to the disturbance of wild animals. Unauthorized entry, residence, burning, damage to objects of scientific interest, introduction of plants and animals and damage to structure are prohibited under this law.

345. The act also provides for the formation of County Wildlife Conservation and Compensation Committee, which according to clause 19(d) gives the committee to bring together all relevant stakeholders within the county to actively harness their participation in the planning and implementation of projects and programmes related to the protection, conservation and management of wildlife resources in the county;

346. Although the project road does not traverse any conservation areas, the project road will affect some wildlife crossing areas. The road construction will need to make provisions for the free passage of wildlife at these identified crossing points.

5.4.8 Water Act 2016

347. This Act is an update of the Water Act of 2002. It makes provision for the provision of clean and safe water in adequate quantities and to reasonable standards of sanitation for all citizens. In addition, it gives authority to various authorities in meeting its mandate including the water resources regulatory authority (WRA), among others.

348. The Act stipulates that a permit shall be required in all cases of proposed diversion, abstraction, obstruction, storage or use of water, with minor exceptions relating to use for domestic purposes (Section.36). Under the Water Act (General) Rules, it is stated that any

rights acquired under the permit are subject to the Public Health Act and the Malaria Prevention Act, in addition to the Water Act itself.

349. The Water Act (General) Rules make provision for discharges in a number of respects, as follows:

- Effluent shall not be returned to any body of water unless it has been purified. Further, it must not contain poisonous or injurious matter or excess silt, gravel or boulders.
- Water used for pulping, mulling or washing of coffee shall be efficiently screened.

350. There will be several works along dry river beds, when in flow, the contractor will be expected to obtain permits from WRA, in addition the with regards to any new boreholes sunk during the project construction and operation phases, the Contractor will obtain water abstraction permits from WRA.

5.4.9 The Public Health Act (CAP. 242)

351. Part IX Section 8 & 9 of the Act states that no person/institution shall cause nuisance or condition liable to be injurious or dangerous to human health. Part XII Section 136 states that all collections of water, sewage, rubbish, refuse and other fluids which permits or facilitates the breeding or multiplication of pests shall be deemed nuisances The Act addresses matters of sanitation, hygiene and general environmental health and safety. This Act will govern the Contractor's activities on site including ensuring the health and safety of employees including providing health services when it comes to venereal diseases.

5.4.10 The Land Act, 2012

352. The Land Act was enacted by Parliament to give effect to Article 68 of the Constitution, to revise, consolidate and rationalize land laws; to provide for the sustainable administration and management of land and land-based resources, and for connected purposes. The Act applies to all land declared as (a) public land under Article 62 of the Constitution; (b) private land under Article 64 of the Constitution; and (c) community land under Article 63 of the Constitution and any other written law relating to community land.

353. The Land Act guarantees security of tenure for land under (a) freehold; (b) leasehold; (c) such forms of partial interest as may be defined under the Act and other law, including but not limited to easements; and (d) customary land rights, where consistent with the Constitution and guarantees equal recognition and enforcement of land rights arising under all tenure systems and non-discrimination in ownership of, and access to land under all tenure systems.

354. Under the Lands Act 2012, The Wayleaves Act, Cap 292 and The Land Acquisition Act, Cap. 295 have been revoked but Sections 8 and 9 allow for Compulsory Acquisition as an option in acquiring land for public utility.

355. Majority of the project road is located along community grazing land as such this Act will be key for the establishment of the road reserve along the project road during the implementation of the resettlement action plan (RAP).

5.4.11 The National Land Commission Act, 2012 (No. 5 of 2012)

356. The National Land Commission of Kenya is an independent government commission whose establishment was provided for by the Constitution of Kenya to, amongst other duties, manage public land on behalf of the national and county governments, initiate investigations into present or historical land injustices, recommend appropriate redress,

monitor and have oversight responsibilities over land use planning throughout the country. It was officially established under The National Land Commission Act, 2012. The mandate of the National Land Commission is drawn from the National Land Policy of 2009, Constitution of Kenya 2010, National Land Commission Act, 2012, the Land Act 2012 and the Land Registration Act of 2012. Under the National Land Commission Act, the Commission shall among other duties monitor the registration of all rights and interests in land and ensure that public land and land under the management of designated state agencies are sustainably managed for their intended purpose and for future generations. Also, the commission is required to manage and administer all unregistered trust land and unregistered community land on behalf of the county government and develop and encourage alternative dispute resolution mechanisms in land dispute handling and management. The Commission is also required in consultation and cooperation with the national and county governments, to establish county land management boards for the purposes of managing public land.

357. This Act is extremely important due to the need for acquisition of the community land along the project road alignment.

5.4.12 Community Land Act 2016

358. The Community Land Act, No. 27 of 2016 (the Act) came into force on 21 September 2016. The Act aims at: 1. Giving effect to Article 63 of the Constitution of Kenya, 2010 (the Constitution) which provides for a classification of land known as community land. To this end, the Constitution provides that community land shall vest in and be held by communities. 2. Providing for;

- i. The recognition, protection and registration of community land rights.
- ii. The management and administration of community land.
- iii. The role of county governments in relation to unregistered community land and related matters.

359. The Act repeals the Land (Group Representatives) Act (Chapter 287 of the Laws of Kenya) and the Trust Lands Act (Chapter 288 of the Laws of Kenya). This project shall uphold the requirement of all the relevant land legislations, involving key administrative stakeholders and the affected parties (i.e. the community) facilitating in coexistence with the surrounding community. Most of the land within the project route is community land. Community consultations and consent will be critical during project construction period.

5.4.13 The Environment and Land Court Act, 2011

360. This is an Act of Parliament to give effect to Article 162(2) (b) of the Constitution to establish a superior court to hear and determine disputes relating to the environment and the use and occupation of land.

361. The Environment and Land Court is one of the Courts contemplated by article 162(2). It is a Superior Court and has the same status as the High Court. The court is established under section 4 of the Environment and Land Court Act No. 19 of 2011. It has jurisdiction to hear any other dispute relating to environment and land. The jurisdiction of the court is provided under section 13 of the Act. The Court has original and appellate jurisdiction to hear and determine all disputes in accordance with Article 162(2) (b) of the Constitution and with the provisions of the Act or any other written law relating to environment and land. The court has powers to deal with disputes relating to land administration and management. The court is also empowered to hear cases relating to public, private and

community land and contracts or other instruments granting any enforceable interests in land. The court also exercises appellate jurisdiction over the decisions of subordinate courts or local tribunals in respect of matters falling within the jurisdiction of the Court. The court further exercises supervisory jurisdiction over the subordinate courts, local tribunals, persons or authorities in accordance with Article 165(6) of the Constitution.

5.4.14 Physical Planning Act (Cap 286)

362. Under the physical planning act, physical development activities are supposed to be carried out according to the physical plans. Accordingly the processes of physical planning involve two stages; the plan making stage and the development control stage. The former involves drawing up the actual plan to indicate the various activities and zones whereas the later involves the process of determining applications by developers to carry out specific development activities. Section 36 states “if in connection with a development application a local authority is of the opinion that proposals for the proposed road project or any other development activity will have injurious impact on the environment, the applicant shall be required to submit together with the application an environment impact assessment report”. This ESIA covers the proposed works.

5.4.15 Occupational Safety and Health Act

363. This legislation provides for protection of workers during construction and operation phases of the project. This act will provide some of the mitigation measures for any negative impacts in particular those concerning the workers within the site.

364. Section 17 of the Act further highlights the importance of an employer or in this case Contractor to ensure the health and safety of persons other than his/her employees. As such this Act also ensures the inclusion of community health and safety in this ESIA

5.4.16 The Penal Code (Cap. 63)

365. The Penal Code (Cap. 63) chapter on “Offences against Health and Conveniences” strictly prohibits the release of foul air into the environment, which affects the health of other persons. Any person who voluntarily violates the atmosphere at any place, to make it noxious to health of persons in general dwelling or carrying out business in the neighborhood or passing along public ways is guilty of misdemeanor and shall be subjected to imprisonment not exceeding two years with no option of fine.

366. Under this code, any person who for trade or otherwise makes loud noise or offensive awful smell in such places and circumstances as to annoy any considerable number of persons in the exercise of their rights, commits an offence, and is liable to be punished for a common nuisance, i.e. imprisonment not exceeding one year with no option of fine. The contractor of the proposed road will therefore need to ensure that all emissions are controlled during the construction phase of the project to avoid interference on health of the local communities and the workers.

5.4.17 The Employment Act, 2007

367. The Employment Act, 2007 defines the fundamental rights of employees including the basic conditions of employment of workers. It also regulates employment of children. The contractor on site will have to employ casual labourers probably from the communities where the road traverses during construction.

368. The basic conditions of employees should be observed to avoid unnecessary conflicts during the construction works. The Contractor shall pay the entire amount of the wages earned by or payable to the workers. Payment of such wages should be done at the end of a working day at or near the place of work. The Contractor shall also ensure that all statutory deductions are submitted without delay to appropriate government agencies e.g. Kenya Revenue Authority, NSSF, NHIF, among others.

5.4.18 Work Injury Compensation Benefit Act (WIBA) 2007

369. The Work Injury Compensation Benefit Act 2007 provides guideline for compensating employees on work-related injuries and diseases contacted during employment. The Act also requires provision of compulsory insurance for all employees. The Act defines an employee as any worker on contract of service with employer. It will be important for the Contractor of the proposed project to ensure that all workers contracted during the project implementation phase are provided with appropriate insurance covers so that they can be compensated in case they get injured while working.

5.4.19 The HIV and AIDS Prevention and Control Act

370. This is an Act of Parliament to provide measures for the prevention, management and control of HIV and AIDS, to provide for the protection and promotion of public health and for the appropriate treatment, counseling, support and care of persons infected or at risk of HIV and AIDS infection, and for connected purposes.

371. This Act will ensure that the Contractor makes provision for Voluntary Counselling and Testing (VCT) services for employees and locals, as well as promotes public awareness. This will go a long way in ensuring stigmatization of HIV and AIDS is reduced as well as managed during the construction period.

5.4.20 The Sexual Offences Act, 2006

372. This Act protects people and employees from any unwanted sexual attention or advances by staff members. This act ensures the safety of women, children and men from any sexual offences which include: rape, defilement, indecent acts. This law will govern the code of conduct of the Contractor's staff and provide repercussions of any wrong doing.

5.4.21 The National Gender and Equality Act, 2011

373. National Gender Equality Commission is a constitutional Commission established by an Act of Parliament in August 2011, as a successor commission to the Kenya National Human Rights and Equality Commission pursuant to Article 59 of the Constitution. NGECE derives its mandate from Articles 27, 43, and Chapter Fifteen of the Constitution; and section 8 of NGECE Act (Cap. 15) of 2011, with the objectives of promoting gender equality and freedom from discrimination.

374. Gender mainstreaming in road projects ensures that the concerns of women and men form an integral dimension of the project design, implementation, operation and the monitoring and evaluation ensures that women and men benefit equally, and that inequality is not perpetuated.

5.4.22 The Children Act, 2001

375. This Act protects the welfare of children within the Country. The Act identifies Children as a person below the age of 18 years old and protects them from exploitation. Of particular importance to this project, is section 10, which protects the child from:

- Economic exploitation.
- Any work that interferes with his/ her education, or is harmful to the child's health or physical, mental, spiritual, moral or social development.

5.4.23 Persons with Disability Act, CAP 133

376. This act protects the rights of people with disabilities ensuring they are not marginalized and that they enjoy all the necessities of life without discrimination. The act guarantees that (1) No person shall deny a person with a disability access to opportunities for suitable employment. (2) A qualified employee with a disability shall be subject to the same terms and conditions of employment and the same compensation, privileges, benefits, fringe benefits, incentives or allowances as qualified able-bodied employees. (3) An employee with a disability shall be entitled to exemption from tax on all income accruing from his employment.

377. This Act will ensure that persons with disabilities are included in vital decision-making processes throughout all phases of the project.

5.4.24 Security Laws (Amendment) Act, 2014

378. This act entails a legal framework and jurisdiction on security matters. It is a constitutional entitlement to live and feel secure from agents that may compromise ones' life and safety. Security measures are vital in this project following past terrorist experiences reported in the area; the contractor shall embark on a community policing program to be executed by a competent security firm. It is recommended that the government takes keen in providing adequate support to enhance the security of persons involved in this project and the community at large, which will translate to provision of critical intelligence that will trigger a review of the existing security measures and tactics, among other advantages such as security expertise and artillery.

5.4.25 The County Governments Act, 2012

379. The promulgation of the 2010 Constitution brought about County Governments. This Act highlights the role of the County Government. The County Government will be in charge of all development activities within the County, as such will be a major stakeholder for the proposed project.

5.4.26 Building Code 2009

380. This by-law recognizes the county governments as the leading planning agencies. It compels potential developers to submit development applications for the approval. The county governments are hence empowered to approve or disapprove any plans if they do or don't comply with the law, respectively.

381. Section 214 of the by law requires that any public building where the floor is more than 20 feet above the ground level should be provided with firefighting equipment that may include one or more of the following; hydrants, hose reels and fire appliances, external

conations portable fire appliances, water storage tanks, dry risers, sprinkler, drencher and water spray spring protector system.

382. The Contractor will refer to these by-laws in the establishment of his camp and site offices.

5.4.27 The National Museums and Heritage Act, 2006

383. This is an act of parliament to provide for the establishment, control, management and development of national museums and the identification, protection, conservation and transmission of the cultural and natural heritage of Kenya. Due to the project area's rich and diverse history and background, there might be historical and cultural sites which may be affected. The chance find procedures presented in appendix 11.2 of this report taken into account this act for its implementation.

5.5 WORLD BANK SAFEGUARD POLICIES

5.5.1 Operational Policy 4.01: Environmental Assessment, 2001

384. Environmental Assessment is used in the World Bank to identify, avoid, and mitigate the potential negative environmental and social impacts associated with Bank lending operations. The purpose of Environmental Assessment is to provide guidance for environmental and social assessment of the WB financed projects, improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people have been properly consulted. A proposed project is classified as Category A if it is likely to have adverse environmental and social impacts that are significant, generally large-scale, irreversible, sensitive, diverse, cumulative or precedent setting and may affect an area broader than the sites or facilities financed by the project. The proposed road project will have a major impacts along the road corridor in all phases of the project including loss of grazing land along the road, change in the landscape not just along the quarry and borrow sites (loss of materials), establishment of larger market centres and towns, influx of new populations in search of new opportunities, interference with existing ways of life, GBV, increased conflicts, pressure for existing resources, increase in traffic during the operation phase leading to an increase of foreign members to the community. All these impacts will have a permanent change to the existing status quo, thus requiring an in depth ESIA study provided in this report.

5.5.2 Operational Policy 4.04-Natural Habitats

385. This operational policy requires that the ESIA study applies the precautionary principle approach to natural resource management to ensure environmental sustainability. The policy requires conservation of critical habitat during project development. To ensure conservation and project sustainability, the policy requires project alternatives to be sought when working in fragile environment areas and key stakeholders to be engaged in project design, implementation, monitoring and evaluation including mitigation planning.

5.5.3 Bank Operational Policy 4.10: Indigenous Peoples

386. This policy contributes to the World Bank's mission of poverty reduction and sustainable development by ensuring that the development process fully respects the dignity, human rights, economies, and cultures of Indigenous people. The project planning therefore must involve in-depth consultations with the public all the involve key

stakeholders in ensuring the objectives of this policy are attained by (a) avoiding potentially adverse effects on the Indigenous Peoples' communities; or (b) when avoidance is not feasible, minimize, mitigate, or compensate for such effects. The project should also be designed to ensure that the indigenous people receive social and economic benefits that are culturally appropriate and gender and inter-generationally inclusive.

387. The communities predominantly identified along the transport corridor are the Meru, the Borana, Somali, and Turkana communities. Some of which are considered as marginalized.

388. Due to the identification of marginalized communities who are considered vulnerable, in addition to an ESIA, a social assessment, process of free prior, and informed consultation with the affected Indigenous Peoples' communities at each stage of the project, and particularly during project preparation and the preparation of an Indigenous Peoples Plan.

5.5.4 World Bank Directive on Vulnerable Groups

389. As mentioned in chapter 5.5.3 of this report, the project area is home to the Borana, Somali and Turkana communities, some of which are considered as marginalized and vulnerable. The term "vulnerability" refers to those individuals or groups who, by virtue of, for example, their age, gender, ethnicity, religion, physical, mental or other disability, social, civic or health status, sexual orientation, gender identity, economic disadvantages or indigenous status, and/or dependence on unique natural resources, may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a project's benefits. Such an individual/group is also more likely to be excluded from/unable to participate fully in the mainstream consultation process and as such may require specific measures and/or assistance to do so. This will take into account considerations relating to age, including the elderly and minors, and including in circumstances where they may be separated from their family, the community or other individuals upon whom they depend.

390. This ESIA needs to take into account the vulnerable community members along the project road, engage them in various consultations in order to include them and their various vulnerabilities in the ESIA with a means of adequately providing mitigation measures to their various disadvantages for all phases of the project.

5.5.5 Operational Policy 4.11-Physical Cultural Resources

391. This policy guides in preserving physical cultural resources and helps reduce chances of their destruction or damage. The policy considers Physical Cultural Resources (PCR) to be resources of archaeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic or other cultural significance. This policy applies to all projects requiring a Category A or B Environmental Assessment under OP 4.01, project located in, or in the vicinity of, recognized cultural heritage sites.

392. There is a potential of the project road affecting some of these sites, whose exact location is unknown as such the Consultant has presented "Chance Finds Procedures", in appendix 11.2 of this report.

5.5.6 The Bank's Operational Policy 4.12: Involuntary Resettlement

393. This is triggered in situations involving involuntary taking of land and involuntary restrictions of access to legally designated parks and protected areas. The policy aims to

avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts.

394. It promotes participation of displaced people in resettlement planning and implementation, and its key economic objective is to assist displaced persons in their efforts to improve or at least restore their incomes and standards of living after displacement.
395. The policy prescribes compensation and other resettlement measures to achieve its objectives and requires that borrowers prepare adequate resettlement planning instruments prior to Bank appraisal of proposed projects.
396. The proposed road project will affect several people living and conducting businesses along the road, in addition there will be the loss of grazing land along the road corridor for which a resettlement action plan was conducted.

5.5.7 World Bank Policy on Access to Information, 2010

397. The World Bank policy on access to information sets out the policy of the World Bank on public access to information in its possession. This Policy supersedes the World Bank Policy on Disclosure of Information, and took effect on July 1, 2010.
398. This Policy is based on five principles:
- ❖ Maximizing access to information.
 - ❖ Setting out a clear list of exceptions.
 - ❖ Safeguarding the deliberative process.
 - ❖ Providing clear procedures for making information available.
 - ❖ Recognizing requesters' right to an appeals process.
399. In disclosing information related to member countries/borrower in the case of documents prepared or commissioned by a member country/borrower (in this instance, safeguards assessments and plans related to environment, resettlement, and indigenous peoples, OP/BP 4.01, Environmental Assessments, OP/BP 4.10 and OP/BP 4.12 Involuntary Resettlement); the bank takes the approach that the country/borrower provides such documents to the Bank with the understanding that the Bank will make them available to the public.

5.6 WORLD BANK GROUP ENVIRONMENTAL, HEALTH AND SAFETY (EHS) GUIDELINES

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

5.6.1 Environmental Guidelines

402. These guidelines will govern the Contractor's activities during the construction of the road and the construction works impacts on the physical environment. The guidelines include:
- i. Air Emissions and Ambient Air Quality – which provide the air quality standards, limits and monitoring requirements for construction works. The guidelines incorporate WHO

- air quality guidelines on the major air pollutants expected from the Contractor's machinery and equipment.
- ii. Wastewater and Ambient Water Quality – These guidelines will be key particularly in the Contractor's camp and the impacts of wastewater generation and treatment before release into the environment, in order to prevent pollution of the surrounding physical environment. Due to the fact that the project area has no operational sewer system, the Contractor will have to establish onsite treatment of waste water, proper channeling of stormwater to prevent contamination of the physical and social environment. The guidelines call for monitoring of wastewater from the site through testing and inspections for which the Contractor will have to establish a plan for management and monitoring.
 - iii. Waste Management – All construction works are expected to produce one or more forms of waste. The construction of the road will be no exception. Construction wastes and Domestic wastes are expected from the Contractor's site as well as the camp. The Contractor will have to prepare a waste management plan using these guidelines that conform to the local legal framework provided in this chapter.
 - iv. Noise – Use of several equipment and plant is bound to generate some level of noise, which are bound to have a negative impact on the surrounding environment and in particular sensitive receptors. These impacts will be short-lived during the construction phase of the project. The guidelines also provide the maximum noise levels, provided in table 5.2, which the Contractor should strive to adhere to. The guidelines also call for baseline and annual monitoring of noise generation within the Contractor's site to establish compliance to the guidelines and local regulation.

5.6.2 Occupational Health and Safety Guidelines

403. These guidelines are geared towards ensuring the safety of the staff on site and within the Contractor's camp. The guidelines with regards to occupational health and safety include:
- i. General Facility Design and Operation – These guidelines will guide the Contractor's workspace. Being that the project area is in the Northern Region of the Country, characterized by high temperatures the Contractor will have to provide suitable potable water supply for the staff, a clean eating area, suitable lavatories and showers, fire precaution measures (extinguishers and safety drills) and first aid services.
 - ii. Communication and Training – This will provide for communication and training of staff and visitors to the site, to govern behavior within the site. This is necessary to ensure safety while operating within the site. The Contractor will need to employ a health and safety officer fulltime on site who will be in charge of ensuring safety and communication of safety within the site.
 - iii. Physical Hazards – These guidelines will govern the exposure of the staff to physical dangers including excavation sites, bridge sites, noise, dust, welding, manual handling, work environment temperatures. The guidelines provide fall protection when working at height and work hour limits (8 hours maximum).
 - iv. Personal Protective Equipment (PPE) - Personal Protective Equipment (PPE) provides additional protection to workers exposed to workplace hazards in conjunction with other facility controls and safety systems. PPE is considered to be a last resort that is above and beyond the other facility controls and provides the worker with an extra level of personal protection. The Contractor will have to provide the relevant PPE for staff on site for the different job descriptions. In addition visitors to site will have to be provided with some minimal form of PPE during their visits.

- v. Monitoring - Occupational health and safety monitoring programs should verify the effectiveness of prevention and control strategies. The selected indicators should be representative of the most significant occupational, health, and safety hazards, and the implementation of prevention and control strategies. The Contractor will have to employ a health and safety officer who will come up with an occupational health and safety monitoring program for implementation by the Contractor. In addition the Contractor will provide a clinic and log of accidents and incidences on site as a control measure for ensuring health and safety.

5.6.3 Community Health and Safety Guidelines

404. These guidelines complement the environmental, social and occupational health and safety guidelines. However, these guidelines specifically address the impact of the project activities on the surrounding community. The guidelines involve the following aspects:
- i. Structural Safety of Project Infrastructure – Construction works, works on borrow/quarry sites may pose a risk to the surrounding communities. As such safety measures have to be taken into account. The Contractor will have to provide physical buffers such as cordons to prevent falls into the pits, road signage, establishment of speed limits, water spraying to ensure the safety of the community.
 - ii. Traffic Safety – The project road will still be under use during construction. As such the Contractor will have to provide a traffic management plan in order to ensure safety of motorists and other road users. The traffic management plan will include alternative diversion routes and a traffic controller to divert traffic and road signage.
 - iii. Emergency Preparedness and Response – These are designed to deal with events and acts that are unplanned when a project operation loses control, or could lose control, of a situation that may result in risks to human health, property, or the environment, either within the facility or in the local community. Emergencies do not normally include safe work practices for frequent upsets or events that are covered by occupational health and safety. The Contractor will prepare a emergency preparedness and response plan, including training of staff, drills to gauge responses to preparedness, and communication with the local community in case of rinse.

5.6.4 Construction and Decommissioning Guidelines

405. These guidelines will govern the project components that will require decommissioning including the material sites and camp. The Contractor will have to prepare a decommissioning plan for all these features taking into account the previous EHS guidelines mentioned above.

5.7 GAPS BETWEEN KENYAN LEGISLATION AND WORLD BANK SAFEGUARDS WITH RECOMMENDATIONS FOR BRIDGING THE GAPS

406. The table below summarises a comparison between Kenyan legislation and the World Bank Safeguards with recommendations of bridging the gaps between the two policies.

Table 5-3: Summary of Gaps between Kenyan legislation and World Bank Safeguards giving recommendations on how to bridge the Gaps

World Bank OP 4.01	EMCA	Comparison	Recommendation
<p>O.P 4.01 requires screening of sub project investments in order to determine if further environmental and social assessments (ESIAs) are needed</p> <p>Following screening and determination of the category of ESIA required, an ESIA will be prepared before project design and implementation (which also includes an assessment of social impacts).</p> <p>Also gives guidelines on air, noise, water, waste management, emissions and wetlands management.</p>	<p>EMCA requires screening of project investments in order to determine if further environmental and social assessments (ESIAs) are needed</p> <p>An ESIA of a project will be prepared in accordance to EMCA guidelines and the report submitted to NEMA for licensing.</p> <p>EMCA is also equipped with regulations on air, noise, water, waste management, emissions and wetlands management.</p>	<p>Both the Kenyan and World Bank safeguards require screening to establish the level of ESIA prepared.</p> <p>The ESIA will be prepared with mitigation measures for any negative environmental and social impacts.</p> <p>The various limits set out in the regulations are close to World Bank and IFC policies with minimal differences in the actual figures.</p>	<p>Preparation of the ESIA to meet both NEMA and World Bank Standards.</p> <p>Use of Kenyan regulations in accordance to EMCA.</p>
World Bank OP 4.04	EMCA	Comparison	Recommendation
<p>The ESIA prepared should take into account natural resources taking into account the principle approach to natural resource management to ensure environmental sustainability.</p>	<p>The EMCA (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006 provides that no person shall engage in any activity that may have an adverse impact on any ecosystem; may lead to the introduction of any exotic species</p>	<p>Both require an ESIA to establish the potential impact of a development on biodiversity and ensuring environmental sustainability.</p>	<p>Preparation of the ESIA to meet both NEMA and World Bank Standards.</p>

	<p>or to unsustainable use of natural resources.</p> <p>The Wildlife management and conservation act also ensures the consideration of wildlife and their conservation in project implementation.</p>		
World Bank OP 4.10	Kenyan legislation	Comparison	Recommendation
<p>Inclusion of persons considered indigenous, who without proper consultation may suffer as a result of the project leading to further marginalization.</p> <p>Similarly, the bank has a directive on vulnerable groups, who may be left out of the benefits of the project or suffer more as a result of the negative impacts of the project.</p> <p>These safeguards are in place to ensure the vulnerable and often marginalized are adequately consulted and their issues addressed in the ESIA.</p>	<p>Article 56 of the constitution highlights the rights of marginalized communities, in the decision-making process with regards to development and their input</p> <p>The National Gender and Equality Act Children Act and Persons with Disabilities Act promote the inclusion of these persons, who in society are often looked over, in the implementation of projects.</p>	<p>Both the Kenyan and World Bank Safeguards requires the inclusion of communities that are marginalized and inclusion of the vulnerable in project planning, implementation and operation phases of the project. In order to ensure these communities, reap the benefits of the project without suffering disproportionately in comparison to the rest of the communities.</p> <p>However, the if the World Bank OP 4.10 is triggered, the proponent will be required to conduct a social assessment in order to have an in depth analysis of the impact of the project on marginalized and vulnerable groups, in a bid to mitigate the negative impacts. Kenyan legislation only requires an ESIA.</p>	<p>Preparation of an ESIA in accordance to Kenyan and World Bank Standards in addition a separate social assessment in accordance to the World Bank Safeguards.</p>

World Bank OP 4.11	Kenyan Legislation	Comparison	Recommendation
This policy guides in preserving physical cultural resources and helps reduce chances of their destruction or damage.	The National Museums and Heritage Act identifies the need for the protection, conservation and transmission of the cultural and natural heritage of Kenya	The World Bank policy offers more detail on the physical and cultural resources other than archaeological finds identified in the Kenyan Policy.	Use of the World Bank policy in handling any physical and cultural site, while making use of the Kenyan institutional framework.
World Bank OP 4.12	Kenyan Legislation	Comparison	Recommendation
Involuntary resettlement should be avoided wherever possible, or minimized, exploring all alternatives.	Involuntary resettlement may occur as a result of projects implemented in public interest.	The Kenyan Policy does not stipulate that resettlement should be avoided wherever possible; on the contrary, as long as a project is for public interest, involuntary resettlement is considered to be inevitable.	Resettlement issues considered at the design stage of the project in order to avoid/ minimize resettlement.
World Bank policy on access to information	EMCA	Comparison	Recommendation
Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs	EMCA requirements for project proponent to seeks the views of persons/communities that may be affected by the project to be consulted, at least explain project potential impacts and obtain oral/written comments	Both Policies are similar	Consultation of stakeholders in the ESIA in accordance to both Kenyan legislation and World Bank Safeguards.
World Bank and EHS	Kenyan Legislation	Comparison	Recommendation
In addition to the operational policies, the World Bank has guidelines to ensure, environmental, occupational and community health, and	The Occupational Health and Safety Act is the main act ensuring the health and safety of the	Both provide guidelines the which should be adhered to, during all phases of the project, with the Kenyan legislation providing an institutional framework for the	Incorporation of the World Bank Guidelines while ensuring conformance to the Kenyan

<p>decommissioning guidelines. These guidelines will provide the Contractor with best working procedures.</p>	<p>Contractor’s employees and the surrounding community</p>	<p>implementation of the Act. The World Bank guidelines provides best international practices for construction works.</p>	<p>Legislation and institutional framework.</p>
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5.8 INTERNATIONAL CONVENTIONS, TREATIES AND GUIDELINES

407. During the preparation of this report, the Consultant also incorporated the following conventions, treaties and guidelines:
- i. United Nations Convention on Biological Diversity
 - ii. African Convention on the Conservation of Nature and Natural Resources
 - iii. United Nations Convention to Combat Desertification
 - iv. Rio Declaration on Environment and Development
 - v. Earth Summit on Sustainable Development Agenda 21
 - vi. Convention on the Rights of the Child
 - vii. Convention on the Elimination of all forms of Discrimination against Women
 - viii. International Convention on Labour

5.9 INSTITUTIONAL FRAMEWORK

408. This section deals with the institutions involved in environmental and social management as well as their roles.

5.9.1 National Environment Management Authority

409. NEMA was founded and mandated under EMCA to exercise general supervision and coordination over all matters relating to the environment and to be the principal instrument of the government in the implementation of all policies relating to the environment.
410. This ESIA Project Report will be submitted to NEMA for review and further issuance of license to undertake the proposed project. The annual environmental and social audits shall also be submitted to NEMA.
411. Any complaints by the public on environmental pollution, and social impacts is lodged with NEMA for follow up and intervention.

5.9.2 Kenya National Highways Authority (KeNHA)

412. The Kenya National Highways Authority (KeNHA) is a State Corporation established under the Kenya Roads Act, 2007 with the responsibility for management, development, rehabilitation and maintenance of national roads of class A, B and C. The proposed road will be managed by KeNHA since it's classified as Class A and B road.
413. The overall implementation and monitoring of the ESIA/ESMP is the responsibility of KeNHA. The Deputy Director (DD), Environment and Social Safeguards in Kenya National Highways Authority has been designated, with the responsibility to oversee and coordinate various aspects related to environment, social, health and safety management in the project. The unit has the experience of implementing similar projects financed by the Bank that include the Kenya Transport Sector Support Project (P124109, KTSSP) and the East Africa Regional Transport, Trade and Development Facilitation Project (P148835, EARTTDFP).
414. KeNHA will also assign a dedicated Environment and Social Safeguards staff for the project. The safeguards team will undertake environmental and social monitoring of the ESMP in conjunction with the relevant government departments that have been given that responsibility under the Kenyan laws. In addition to the existing safeguards human resources at the unit, KeNHA has engaged two (social and environment) consultants on a full-time basis to complement and provide dedicated support to the project.

415. KeNHA safeguards team will take the lead to induct and train the Contractors and the Supervision Consultant teams on the safeguards and national environmental and social framework requirements before commencing the construction works. Also, KeNHA and the World Bank will review and approve the Contractor's ESMPs and other plans before commencing works. Contractor are obligated to acquire the project ancillary facilities, KeNHA will undertake the due diligence on the facilities and ensure the relevant environmental and social assessments are carried out and approvals obtained before commencing the works/or installations.
416. KeNHA will carry out regular monthly review and meetings with both the Contractors and Supervision Consultants to monitor compliance to the ESMP, RAP , management of grievances and GBV issues on the project and safeguards performance for the project.

5.9.3 The County and Sub-County Committees

417. The County and Sub-County Committees contribute to decentralization of activities undertaken by NEMA. This has enabled local communities to have greater access to environmental and social management information. It has also enabled the County and Sub-County Environment Committees to conduct quick site visits and review of reports of proposed projects. Since the proposed project traverses through several Counties, the review of the report will be done at a National level for issuance of EIA license. However, it is also recommended that the EIA report should also be reviewed in each of the counties to create awareness and obtain ownership at county level. In fact, it is a practice and legal requirement that the review at County level be done before the ESIA Report is approved to NEMA.

5.9.4 Directorate of Occupational Safety and Health Services (DOSHS)

418. The Directorate of Occupational Safety and Health Services (DOSHS) is one of departments within the Ministry of Labour and East African Community Affairs, whose primary objective is to ensure safety, health and welfare of all workers in all workplaces. Unsafe and unhealthy work environment causes accidents, diseases, disasters and environmental pollution that occasion huge economic and social burdens to individuals and enterprises thereby stifling economic and social growth. DOSHS will provide OSH permits for workplaces of the project including campsites and quarries.

5.9.5 Kenya Wildlife Service (KWS)

419. KWS is a state corporation that was established with the mandate to conserve and manage wildlife in Kenya, and to enforce related laws and regulations. It undertakes conservation and management of wildlife resources across all protected and unprotected areas systems in collaboration with stakeholders. KWS will guide and monitor road construction through animal migratory routes.

5.9.6 Water Resources Authority (WRA)

420. Water Resources Authority (WRA) is a state corporation established under Section 11 of the Water Act, 2016. Pursuant to Section 6 of the Act, the Authority is an Agent of the National Government responsible for regulating the management and use of water resources. The Water Act, 2016 makes extensive provisions on the Authority's role in regulating the use and management of water resources. WRA was operationalized on 21st

of April, 2017 vide Gazette Notice No. 59. However, the Authority has been in existence for 12 years following its establishment under the Water Act, 2002 as Water Resources Management Authority (WRMA). WRA will provide the necessary borehole and water extraction permits from local streams.

5.9.7 The National Museums of Kenya

421. Is a state corporation established by an Act of Parliament, the National Museums and Heritage Act, 2006 no. 6 of 2006. it is a multi-disciplinary institution whose role is to collect, preserve, study, document and present Kenya's past and present cultural and natural heritage. This is for the purposes of enhancing knowledge, appreciation, respect and sustainable utilization of these resources for the benefit of Kenya and the world, for now and posterity. The National Museums of Kenya will provide guidelines in case any discoveries or existing cultural and natural heritage resources within the project area.

5.9.8 National Land Commission (NLC)

422. NLC manages public land on behalf of the national and county governments, initiates investigations into present or historical land injustices and recommend appropriate redress and monitor and have oversight responsibilities over land use planning throughout the country. It will undertake a key role in delivering land acquired through compulsory acquisition for the project.

5.9.9 Department of Community Development

423. The department will work with poor, marginalized, vulnerable and disadvantaged communities as its primary target group will ensure that this group is supported and is not left out of the project implementation. This department will ensure the vulnerable members are not marginalized on behalf of the GOK. Representatives of the department will receive and assist in the resolution of all matters regarding vulnerable members of society.

5.9.10 National Gender and Equality Commission

424. The National Gender Equality Commission is a constitutional Commission established by an Act of Parliament in August 2011 with the objectives of promoting gender equality and freedom from discrimination. This commission will be charged with ensuring gender equality and equity throughout the implementation of the project. Representatives will monitor and evaluate gender quality and equity with regards to job provision and harassment cases on site to ensure compliance with the law.

5.9.11 The Supervision (Engineering) Consultant

425. KeNHA will be represented on site by a Supervision Consultant. The Project Supervision Consultant will assist KeNHA to provide a full-time presence on site to manage the contracts. The Project Supervision Consultant will comprise of among others the Resident Engineer who will have a qualified full-time Environmental Expert, Sociologist and inputs from a RAP Expert to guide on matters of land acquisition

426. The Environmentalist and Sociologist will be in charge of ensuring the Contractor implements the measures provided in the ESMP, as well as identifying new impacts and mitigation measures during the construction implementation.

427. The Consultant's team will be in charge of conducting additional designs of features that were not included in the design review.

5.9.12 The Contractor

428. The Contractor will be the implementer of the road works in accordance to the prepared design. In addition during the Construction phase of the project, the Contractor will be the main implementer of the ESMP. He/She will ensure environmental and social sustainability of the project. The Contractor will prepare the Contractor ESMP and have it approved by KeNHA before commencing the works.

429. The Contractor will have an environmental officer, health and safety advisor and social officer to support in managing potential environmental, social, health and safety risks and impacts.

5.9.13 Development partners

430. The Government of the Republic of Kenya (GoK) has applied for credit from the World Bank towards the cost of the North-Eastern Transport Improvement Project ("NETIP"). The World Bank has existing safeguard policies on social and environmental sustainability that calls for positive development outcomes in the public and private sector. To achieve this, the World Bank has set up operational policies on environmental and social sustainability as well as general and industry specific environmental, health and safety guidelines against which projects are reviewed. As such, this project will comply with the World Bank safeguard policies on environmental and social sustainability to the letter.

6 PUBLIC CONSULTATIONS

6.1 LEGAL REQUIREMENTS

6.1.1 Government Policy & World Bank requirements on Public Consultation

431. The overall objective of the Government is to involve communities in policy formulation and implementation at the local level. More specifically, the Community Action Planning Programme objective is to put in place a durable system of intra-community co-operation through collective action, which creates communal discussion forums for the implementation of development activities.
432. Within Kenya, EMCA requires a project proponent to seek the views of persons/communities that may be affected by the project to be consulted, at least explain project potential impacts and obtain oral/written comments, which will be included in the ESIA for implementation by the proponent.
433. Similarly the World Bank through OP 4.01 requires adequate consultation on environment and social aspects with affected groups and local NGOs, and demonstrate to the extent to which the views of such groups are considered in the ESIA.

6.2 STAKEHOLDERS IDENTIFICATION AND MAPPING

434. The consultants identified and mapped stakeholders in the project area. These included
- i. Community members at the trading centers of Isiolo Junction, Gambella, Ndumuru, Kachuru, Kulamawe, Boji and Modogashe.
 - ii. County officials including County Commissioners, Deputy County Commissioners, Chiefs
 - iii. KeNHA representatives in Isiolo and other government departments in the counties
 - iv. Persons affected by physical and economic displacement
 - v. Women, youth and people living with disability along the project road

STAKEHOLDER CONSULTATION

6.2.1 Review of the Initial Stakeholder Consultation

435. The Initial ESIA reports conducted public consultation in the form of:
- i. Household socio-economic survey
 - ii. Meetings with the Client both at the Headquarters
 - iii. Consultation with county governments
 - iv. Key stakeholder interviews with County Officials
 - v. Key stakeholder Meeting (Isiolo and Meru)
 - vi. Public Meetings
 - vii. Focus Group Discussions
436. The consultation process identified that the project road would indeed have positive impacts in the area including improved infrastructure, reduced travel times, increased security, socio-economic benefits. However, the various stakeholders pointed out the negative impacts of the project including: Loss of Grazing land, Increased pressure on existing water resources, Displacement of the communities, Cultural erosion due to labour influx, Increased accident occurrence

437. These concerns have been included in this ESIA baselines, impacts and mitigation measures.

438. The meetings conducted are summarized in the table below:

Table 6-1: Summary of Initial Public Consultation Meetings

No.	Location	No. of Participants			Date
		Male	Female	Total	
1.	Isiolo	111	30	141	15/11/2017
2.	Gambella	106	27	133	14/11/2017
3.	Ndumuru	64	46	110	14/11/2017
4.	Kachuru	118	26	144	13/11/2017
5.	Kulamawe	90	2	92	13/11/2017
6.	Kulamawe	22	3	25	22/11/2017
7.	Boji	19	11	30	22/11/2017
8.	Janju	24	2	26	22/11/2017
9.	Modogashe	25	6	31	21/11/2017

6.2.2 Review Consultant's Stakeholder Consultation

439. Similarly, the review consultant conducted public consultation meetings along the project road in order to verify the views of the local community and obtain their input to the sustainable implementation of the project.

440. The Consultant conducted public consultation meetings in the project area following written and verbal communication with the local administration. The table below summarises the public consultation meetings held.

Table 6-2: Summary of the Consultation meetings

No.	Meeting	Location	Date	No. of Participants		
				Male	Female	Total
1.	Public Consultation Meeting at Isiolo Junction	Isiolo town	21/02/2019	35	11	46
2.	Public Consultation Meeting at Gambella Town	Gambella	22/02/2019	35	21	56
3.	Public Consultation Meeting at Ndumuru	Ndumuru	25/02/2019	20	22	42
4.	Public Consultation Meeting at Kachuru	Kachuru	27/02/2019	36	17	53

No.	Meeting	Location	Date	No. of Participants		
				Male	Female	Total
5.	Public Consultation Meeting at Kulamawe	Kulamawe	28/02/2019	53	5 (the women refused to sign the attendance and were talked to separately)	58
6.	Public Consultation Meeting at Boji	Boji	1/03/2019	19	5	24
7.	Public Consultation Meeting at Modogashe	Modogashe	7/03/2019	18	8	26

441. The participants were made up of village elders, youth representatives, religious leaders, teachers, KeNHA representatives and the local administration. In majority of the meetings both women and men attended and their different issues were included in the meeting minutes. However, in some centres including Kulamawe, women attended the meetings but sat at a distance, for such meetings, the Consultant team split with one member having an informal meeting with these women and their general issues were included in the report.

442. More meetings were scheduled for Janju and Eldera Centres, however following a security meeting in Garbatulla, the Consultant was informed that there had been inter tribe fighting in those two towns between the Somali and Borana Tribes, with several deaths. The Consultant was further informed that there were on-going peacemaking activities in the area which was still highly volatile and any meetings could affect the newly restored balance.

443. Minutes of the meetings are provided in appendix 11.1 of this report.

6.2.3 Findings of the meetings

444. The meetings included a presentation by the Consultant on the proposed design, proposed works, the various environmental and social impacts that may arise from the project including resettlement at along the road corridor. The consultant however pointed out that the Designers had tried their very best to minimize resettlement and that the proposed works would be located within road reserves.

445. Being a public consultation meeting, feedback from the stakeholders was obtained with majority of the stakeholders approving of the project considering their concerns were addressed. The table below provides a summary of the issues raised during the meetings

Table 6-3: Summary of the Issues Raised

No.	Issue	Resolution
1	An alternative loop road at Isiolo Junction through Kambi Garba had been discussed in the previous year between KeNHA and stakeholders for implementation which would have less PAPs in comparison to the current road alignment, whose surface could just be improved, and the alignment be shifted to Kambi Garba	The Consultant considered this option in this ESIA as a more feasible option pending a confirmatory RAP.
2	Loss of community grazing land, would there be compensation to the community?	Compensation or in-kind compensation options would be included in the RAP as a mitigation measure to the loss of natural vegetation in community land
3	Job Opportunities for locals and Sourcing of Material sites locally	Jobs during construction would be provided to the locals unless the required skill is unavailable.
4	Compensation for affected land even though PAP does not have land ownership documents since the area is undergoing adjudication.	Local Administration would be part of the verification process if adjudication is on-going.
5	Provision of Corporate Social Responsibility in the project.	This was noted and would be included in the standalone component for social amenities.
6	Increased risk posed to domestic animals grazing and crossing the project road.	This was noted and would be included in the ESIA
7	Current drainage issues, especially in Boji	This was noted and included in the ESIA
8.	Road Safety particularly increased potential of road accidents	The design had made provisions for road safety including bumps, signs, sensitization and bus stages to reduce this occurrence.
9.	Jobs and employment for locals and equal opportunities for women and vulnerable members	This recommendation was noted and would be included in the ESIA report
10.	Dust and Air Pollution, especially near institutions	Measures would be included in the ESIA report to mitigate these impacts

11.	Pressure on existing water resources	Contractor will source for new water sources, and after use could give them back to the community.
12.	Impacts on wildlife migratory routes	These recommendations would be included in the ESIA to provide wildlife crossing points, in addition during construction discussions with the community for livestock crossing routes
13.	Impact on cultural sites including mosques and churches	Before displacement of churches and mosques, A RAP had been prepared with recommendations for displacement of these sites. With regards to sites that are unknown, chance find procedures would be provided in the ESIA and RAP reports
14.	The locals wanted to know the process on acquiring land for borrow pits and quarry sites	The Contractor would have to conduct a stand alone ESIA for each new borrow pit/quarry site inclusive of compensation and consultation with the land owner(s)

6.3 DISCLOSURE OF THE ESIA

446. Disclosure involves making the ESIA available to the public, and any interested persons. Disclosure of the ESIA report will be done in country at the KeNHA website and in the World Bank external website which can be accessed by interested parties.

447. Since the project area is in a rural area, where majority of the residents have limited access to the Internet, printed reports will be given to the local administration for use by the local community.

6.4 CONSULTATION DURING THE PROJECT DURATION

448. The Consultant also proposes that continuous consultation be carried out throughout the construction phase of the project using focus group discussions to ensure interested stakeholders are aware of construction procedures and provide a forum for feedback and recommendations for implementation in the construction, the consultation will occur during the environmental and social supervision, monitoring, and evaluation which will be carried out every four months. In addition there is a grievance redress procedure which is provided in chapter 8.5 of this report.

7 ENVIRONMENTAL AND SOCIAL IMPACTS OF THE PROPOSED PROJECT

449. This chapter presents the general environmental and social impacts which may result from the proposed project. The emphasis will be initially on the specific impacts that are likely to result from the nature of works including excavation, filling, concrete works and paving works.
450. In general, successful implementation of the project will have high environmental and socio-economic benefits to the people and will contribute to the improvement in the development and the economy of the project area and the Northern Part of the Country in general. Overall, expected negative impacts are related to the earthworks, use of borrow/quarry sites, concrete and paving works, influx of workers, increased construction traffic, occupational and community health and safety, risks associated with HIV/AIDS, impacts on women and children, security, increased pressure on resources leading to conflicts and gender based violence . With the exception of the displacement of people, these impacts are can be mitigated through appropriate mitigation measures. The severity and duration of these impacts can be minimized by ensuring that the excavation and construction works are limited to only the road corridor. Table 7-1: Characterization of Impacts presents a characterization of expected impacts.

Table 7-1: Characterization of Impacts

Aspect	Predicted Impact	Characterization of Impacts								
		Nature		Effect		Time Range			Reversibility	
		Positive	Negative	Direct	Indirect	Short Term	Medium Term	Long Term	Reversible	Irreversible
Traffic	Increased traffic along the project routes	X	X	X		X		X		X
Ambient Air Quality	Increased local pollutant emissions and trace constituents such as VOCs Increased GHG emissions such as CH ₄ and CO ₂		X	X		X		X	X	
	Increased levels of dust and particle emissions from construction vehicles and equipment		X	X			X		X	
soil/water pollution	Contamination of the ground from oil spills during construction		X	X			X	X		X
	Surface water pollution from construction wastes		X	X			X	X	X	
Noise and vibrations	Increase of noise and vibration levels due to construction activities and traffic		X	X		X			X	

Aspect	Predicted Impact	Characterization of Impacts								
		Nature		Effect		Time Range			Reversibility	
		Positive	Negative	Direct	Indirect	Short Term	Medium Term	Long Term	Reversible	Irreversible
Health & Safety	General construction related health and safety risks for workers and residents		X	X		X			X	X
	HIV/AIDS and increased disease risks.		X	X	X	X	X	X		X
Socio-economics	Improvement of local and regional socio-economy due to improved transport network.	X			X			X		
	Employment and job creation during construction and operation phases	X		X		X	X	X		
solid and liquid waste	generation of both solid and liquid waste at the construction camps		X	X		X	X	X	X	
Impacts on Flora and Fauna	Loss of flora and fauna within the project site		X	X			X		X	

Aspect	Predicted Impact	Characterization of Impacts								
		Nature		Effect		Time Range			Reversibility	
		Positive	Negative	Direct	Indirect	Short Term	Medium Term	Long Term	Reversible	Irreversible
	Interference with wildlife due to increased traffic on the project road during and after construction		X	X				X	X	
Resettlement	Demolition of domiciles Loss of livelihood Demolition of structures Loss of trees and lawns Potential loss of cultural sites		X	X				X		X
	Loss of animal grazing land within the road reserve		X	X			X		X	
Gender	Increased harassment of females within and around the site		X	X		X			X	
	Provision of Jobs and hence gender empowerment	X		X				X		X

Aspect	Predicted Impact	Characterization of Impacts								
		Nature		Effect		Time Range			Reversibility	
		Positive	Negative	Direct	Indirect	Short Term	Medium Term	Long Term	Reversible	Irreversible
Crime Management and Security risk	Insecurity around the project sites due to expensive plant and material		X		X		X		X	
	Improved security due to increased activity during construction and operation of the road.	X		X				X		X
	Contractor equipment and staff may be a lure for increased insecurity		X	X			X		X	
Impacts on children	Potential for exploitation of child labour		X	X		X			X	
	Sexual exploitation and abuse for children		X	X		X			X	
Labour influx	Risk of social conflict as a result of increase in influx population		X		X		X		X	
Increased Conflicts	Intercommunity and Intracommunity conflicts due to limited resources		X		X		X		X	

Aspect	Predicted Impact	Characterization of Impacts								
		Nature		Effect		Time Range			Reversibility	
		Positive	Negative	Direct	Indirect	Short Term	Medium Term	Long Term	Reversible	Irreversible
	Conflict between the local communities and the project workers		X	X		X			X	

7.1 IMPACT CATEGORIES

451. First the likely significance of the potential issues of concerns has been determined and ranked according to the following:

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

452. Secondly, the following characteristics have been defined for each impact:

453. Nature:

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

454. Effect:

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

455. Time Range:

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

456. Reversibility:

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

7.2 IMPACTS EMANATING FROM THE PROPOSED PROJECT

457. The impacts are identified at four stages: -

- pre- construction/Planning Phase Impacts
- during construction
- post-construction (operation phase) and
- Decommissioning

7.2.1 Planning Phase Impacts

458. These are commonly associated resettlement of people along the road alignment. Majority of the project road is located within community land whose owners may lose grazing land. Other assets that may be affected and will have to be compensated include:

- i. Domiciles along the road corridor
- ii. Structures along the way leave
- iii. Planted vegetation within the proposed alignment
- iv. Fences within the proposed alignment and
- v. Livelihoods

459. A resettlement action plan has been prepared to identify and quantify the expected resettlement along the road corridor.

Mitigation measures

- Implementation of the RAP
- Incorporation of the Kambi Garba loop road alternative for the project road alignment which will resettle fewer people at the Isiolo Junction.
- The affected persons to be compensated for their losses and provided with alternative resettlement sites
- KeNHA to agree with the local community on the form of compensation for losses in community grazing land.
- The mitigation measures for social impacts are to ensure that the affected persons' living standards are improved or at least restored to previous levels before the construction after implementation of the project.

7.2.2 Construction Phase Impacts

460. Most of the potential environmental and social impacts associated with the construction phase may be negative and temporary and can be mitigated with the use of international and local environmental and social management procedures. The potential social impacts or nuisance will be those typically associated with construction activities involving vehicles, equipment, and workers. The predicted impacts include the following:

1) Increased Traffic along the Project Alignment and Project Routes

461. The project area may see an increase in traffic congestion from site related traffic from Contractor vehicles, along the road alignment, borrow pit, quarry site and construction offices. The project site is located in a remote area with limited vehicular traffic and high domestic animal traffic, as such there is bound to be increased traffic and interaction and potential accidents between the Contractor's vehicles and local communities.

Mitigation measures
<ul style="list-style-type: none"> <input type="checkbox"/> The Contractor will prepare a traffic management plan to provide safety measures for motorists, contractor workers including diversion routes, road signs and barriers. <input type="checkbox"/> Provide traffic controllers/marshals at junctions, active construction sites to man and control the traffic. <input type="checkbox"/> The Contractor will provide temporary legible and reflective road signs or notices to indicate ongoing works; <input type="checkbox"/> The Contractor will effect traffic controls to avoid congestion and accidents on the road; <input type="checkbox"/> The Resident Engineer and Contractor should choose traffic routes to reduce the impact in the neighborhood avoiding, as far as practical any sensitive areas; <input type="checkbox"/> For the site traffic the Contractor has to ensure that they <ul style="list-style-type: none"> Only park in designated parking areas; Don't block pedestrian routes; Don't block traffic routes; Obey the speed limit <p>The resident Engineer has to ensure that the Contractor:</p> <ul style="list-style-type: none"> i) Introduces segregated pedestrian walkways; ii) Introduce and enforce speed limits particularly in the residential areas; iii) Reduces the need for reversing vehicles, by introducing a one way system; iv) Uses a qualified BANKSMAN to control deliveries and reversing vehicles; v) Designates loading/unloading areas. <input type="checkbox"/> Provision of a road safety analysis and campaign, including discussing with the local community on provision of road suitable crossing facilities for domestic animals, children, etc.

2) Site Related Oil Spills

462. During construction, oil spills may result from construction site equipment and storage, which may affect the flora, fauna, soils, and waterways in the area.

Mitigation Measures
<ul style="list-style-type: none"> <input type="checkbox"/> The Contractor will ensure that the employees on site are aware of the company procedures for dealing with spills and leaks from oil storage tanks e.g. using dispersants or adding biological agents to speed up the oil breakdown for the construction machinery through induction and safety training (the contractor will propose a method of cleanup which will be subject to approval);

- In case of spillage the Contractor will isolate the source of oil spill and contain the spillage to the source of leakage before it makes it leaves the affected area, using sandbags, sawdust, absorbent material and/or other materials approved by the Resident Engineer;
- The Resident Engineer and the Contractor will ensure that there is always a supply of absorbent material such as saw dust on site during construction, readily available to absorb/breakdown spill from machinery or oil storage, this can be incinerated after use;
- All vehicles and equipment will be kept in good working order, serviced regularly in accordance to the manufacturers specifications and stored in an area approved by the Resident Engineer;
- Contractor provide for oil/grease interceptors in motor vehicle garages
- Ensure the fuel dispensing areas are paved
- The Contractor will assemble and clearly list the relevant emergency telephone contact numbers for staff, and brief staff on the required procedures.

3) Soil Degradation

463. All construction activities have some form of impact on the soil. In the case of a road, the road surface is primarily an embankment, which will be compacted to for the formation of the different road layers. The compaction of the embankment will reduce the infiltration rate of the soil in these areas. In addition, the roadside slopes can lead to erosion and increased sedimentation in the existing watercourses.
464. Removal of vegetative cover exposes the soil to erosion. In addition works on the various borrow/quarry sites, may lead to an increased risk of erodibility if the sites are not decommissioned, due to the steep slopes and deep pits left behind.

Mitigation Measures

- Provision of adequate drainage facilities to allow water to flow from one side of the road to the other and at all steep slopes to prevent localized erosion
- In cases where it is identified that during construction there is a danger of increased run-off or at the project site, temporary drainage channels along the road
- After completion of the construction works, restoration of the ground by allowing for revegetation and sowing adequate grass cover and planting of trees.
- Planning emergency response measures in case of accidental oil spills.
- The Contractor will prepare and provide a borrow pit/quarry site rehabilitation plan in order to ensure a means of backfilling these sites to reduce their erodibility. In addition, each new borrow pit should undergo an ESIA for each site to analyse the specific impact on these sites.

4) Proliferation of Invasive Species

465. The entire road construction will involve moving materials from one location to another and using it in environments that are not native to the material. These relocations may lead to the proliferation of invasive species in these areas. For example, if an exhausted borrow pit/quarry site is backfilled with spoil from a different location with a different set of plants leading to the proliferation of these plants in an area where they may be harmful to the new environment an example of such a plant is the *Prosopis juliflora* (Mathenge) plant.
466. The areas under threat of this impact include borrow/quarry sites, stockpiled areas and road side slopes which have not been compacted.

Mitigation Measures

- The valuable top soil containing organic material, nutrients as well as seeds and the soil fauna will be excavated separately and piled in an adequate manner for re-use in the original area of use.
- Making use of cut and fill road material within similar homogeneous areas
- Minimal stockpiling periods in order to prevent new species from growing in the stockpiled material.
- Proper storage of stockpiled material in areas free of vegetation and covering to prevent spreading to other areas.
- Manual control by uprooting and burning plants such as the *Prosopis Juliflora* (Mathenge) which are invasive sites to prevent proliferation.

5) Interference with existing Water Resources

467. The various construction activities may have a negative impact on the existing hydrology via natural drainage patterns. Solid as well as liquid waste if not properly disposed of, may make its way into ground water and water courses, thus affecting the water resources in the area.
468. The project road is located within an area that experiences water scarcity, as such use of existing facilities for construction water may increase pressure on water resources.

Mitigation Measures

- Prepare and implement a waste management plan
- Ensure proper solid and liquid wastes disposal mainly from the construction camps, sites and offices.
- Ensure proper measures are in place for collection and disposal of spilled oils and lubricants.
- The Contractor will source for new water sources for construction e.g. Boreholes, pans and rain water harvesting, after construction these facilities can be given back to the communities. All boreholes and water abstraction by the project shall be cleared and approved by the WRA to minimize competition or conflict with existing water rights/ resource uses
- The Contractor will prepare and implement a water sharing plan of any new source with the surrounding community

6) Employment of Locals

469. During construction the project will have clear benefits with regard to local employment opportunities. The project will additionally require various skills and services which may not be available on the local level but certainly on the regional level, e.g. iron workers, concrete workers, etc. for which appropriate personnel will be contracted.
470. The increase in employment will temporarily lead to an overall increase of income directly and indirectly (through increased demand of other local services). Consequently, food vendors will have new opportunities to sell their commodities to the construction workers.
471. Measures to improve the positive impacts include:
- Ensure skilled and unskilled if available is sourced locally.
 - Wherever possible ensure manual labour provide even more job opportunities for locals.
 - Skills transfer for some of the staff to promote learning.
 - With consultation with local communities come up with suitable CSR measures for the community.

Mitigation/Amelioration

- Unskilled construction and skilled (if available) labor to be hired from the local population as far as possible to minimize on influx of foreigners into the community.
- Use of manual labor where possible to ensure more employment of locals and hence ensure project support throughout the construction process.
- The Contractor will prepare an employment plan to manage employment of labour
- Sensitize workers and the surrounding community on awareness, prevention and management of HIV / AIDS through staff training, awareness campaigns, multimedia, and workshops or during community Barazas.
- Provide an onsite clinic to provide VCT services to construction crew and provision of ARVs for vulnerable community members as well as provide first aid services
- The Contractor will enforce and maintain a code of conduct for his employees

7) Air Quality

472. Construction activities of materials delivery, earthworks, concrete works and construction traffic will generate a lot of noise and dust especially during the dry seasons.
473. Vehicular traffic to the proposed site is expected to increase especially during delivery of raw materials. Vehicular traffic emissions will bring about air pollution by increasing the fossil fuel emissions into the atmosphere. All the roads within the project area are either to murrum and earth standards which are bound to experience an increase in dust emissions to the neighbouring areas.

474.

Mitigation:

- Use protective clothing like dust masks on construction crew.
- Daily monitoring of the air quality during the construction to establish any negative changes in the infrastructure using portable equipments.
- Construction sites and transportation routes (those that are murrum and earth standards) will be water-sprayed on regularly up to three times a day, especially if these sites are near sensitive receptors, such as residential areas or institutions (hospitals, etc.).
- All the vehicles and construction machinery will be operated in compliance with relevant vehicle emission standards and manufacturer's specification to minimize air pollution.

8) Noise Pollution

475. Noise and vibration generated during construction by heavy construction machinery, such as excavators, bulldozers, rollers, concrete mixers, and transportation vehicles.

476. Generally, construction noise exceeding a noise level of 70 decibels (dB) has significant impacts on surrounding sensitive receptors within 50m of the construction site. These sensitive receptors include, schools and clinics in the area.

477. In addition, this noise and vibration may have a negative impact on the wildlife near the project road.

Mitigation:

- Avoid night time construction when noise is loudest. Avoid night-time construction using heavy machinery, from 22:00 to 6:00 near residential areas or areas known to have wild animals.
- No discretionary use of noisy machinery within 50 m of residential areas and near institutions, manual labour can be used at this point or notice on the negative impact given to these institutions.
- Good maintenance and proper operation of construction machinery to minimize noise generation.
- Where possible, ensure non mechanized construction to reduce the use of machinery
- Contractor and Supervision Consultants' teams to adopt the use of portable, hand held devises to monitor air quality parameters on daily basis or ad hoc
- Annual noise monitoring.

9) Loss of Flora and Fauna

478. During the construction phase of the project, there will be clearance of vegetation along the corridor to pave way for the proposed road. The loss of vegetation within the corridor will also have a trickle effect on the faunal food chain within the project area. Fortunately, the existing road corridor has little to no vegetation as such there will be minimal clearance

of vegetation. Stockpiling of construction materials may lead to loss of naturally existing vegetation.

479. In addition, the proposed road passes through several animal corridors which may be affected by the road construction. Several studies including “When Good Conservation becomes Good Economics: Kenya’s Vanishing Herds” have pointed out that road construction may lead to reduced wildlife due to increased vehicle speeds and potential accidents, human wildlife conflicts, change in land use among others.
480. Construction activities will lead to potential risk of exacerbating human wildlife conflict due to construction staff, including possibility of increased poaching and hunting of wildlife for game meat, biodiversity loss and disturbance (material sites), and wildlife kills. In addition, increased machinery in the area may affect the fauna in the area.
481. Handling of project materials e.g. Cement and oil spills may have a negative impact on the flora surrounding the road corridor.

Mitigation:

- Discuss with the local community and relevant authorities on methods of revegetation or compensation for the lost vegetation.
- Avoid night time construction when noise is loudest. Avoid night-time construction using heavy machinery, from 22:00 to 6:00 near areas known to have wild animals.
- Project will install road signs and speed pumps on the known elephant wildlife crossing points to regulate speed and warn motorist
- Ensure all the Contractor’s camps are sited away from the wildlife corridors to prevent conflicts.
- Construct dual usage box culverts along the project road for the domestic and wildlife animal crossings. The use of these box culverts for use by local livestock owners with their livestock as well as some wildlife .
- Additionally, the study recommends that the a design engineers evaluate various crossing design options for their environmental and social impacts and discuss them with the Borrower, wildlife NGOs , KWS and the Bank before finalizing the design.
- Collaborate with Kenya Wildlife Service to protect wildlife during construction
- The Contractor code of conduct should include conditions on wildlife conservation and measures to be errand workers
- Avian nesting sites found along the road should be relocated before trees are cleared for the road construction
- Avoid fires and smoking of cigarettes in areas with indigenous vegetation as the area is arid and a small spark can cause fire which shall affect vegetation and wildlife
- Stockpiling of construction material in areas that are naturally void of vegetation.

- Spare the vegetation that must not necessarily be removed such as trees.
- All trees uprooted to pave way for road upgrading, material excavation and access routes/roads should be replanted with indigenous trees
- Project sites, camps and vehicles movement should be concentrated in sites with minimal stand of vegetation
- Ensure protection of the flora and fauna by proper handling of construction materials e.g. cement during civil works.
- The Contractor will ensure that the employees on site are aware of the company procedures for dealing with spills and leaks from oil storage tanks e.g. using dispersants or adding biological agents to speed up the oil breakdown for the construction machinery through induction and safety training (the contractor will propose a method of cleanup which will be subject to approval);
- Provide a waste management plan
- Provision of dustbin and sanitation facilities within the Contractor's camp to prevent seepage into the natural environment.

10) Occupational Health and Safety

482. The project works will expose workers to occupational risks due to handling of heavy machinery, construction noise, electromechanical works etc.
483. Construction activities of vegetation clearing, excavation, materials delivery and concrete mixing and construction traffic will generate a lot of dust and this may affect the respiratory system.
484. The high temperatures in the area will expose the workers to difficult working conditions.
485. Construction sites may be a source of both liquid and solid wastes. If these wastes are not well disposed these sites may become a breeding ground for disease causing pests such as mosquitoes and rodents.
486. At the concrete and bitumen mixing plants, the exposure of human skin to these materials may lead to damage of the skin.

Mitigation:

- Provide and implement an occupational health and safety plan.
- Prescreening of staff in sensitive areas
- Provision of first aid facilities in all work sites and an ambulance to serve the project.
- Ensure that all construction machines and equipment are in good working conditions and to manufacturer's specifications to prevent occupational hazards.
- Provide workers with appropriate personal protective equipment (PPE).

- Provide workers with adequate potable water and breaks.
- Provide a fire marshal and a health and safety officer fulltime on site
- Provide workers training on safety procedures and emergency response such as fire, oil and chemical spills, pipe bursts, asbestos interactions and other serious water loss risks.
- Work to minimize or altogether eliminate mosquito breeding sites.
- Provide and implement a waste management plan
- Provision and implementation of an employee code of conduct
- Provide clean toilets for workers, these toilets will be to World Health Organisation standards.

11) Community Health and Safety

487. Some aspects of the road construction activities will interfere with the normal way of life of the local communities including crossing of domestic animals and increased risk of accidents.
488. Construction activities of vegetation clearing, excavation, materials delivery and concrete mixing and construction traffic will generate a lot of dust and this may affect the respiratory system of the surrounding communities.
489. Construction sites may be a source of both liquid and solid wastes. If these wastes are not well disposed these sites may become a breeding ground for disease causing pests such as mosquitoes and rodents.
490. Borrow sites may pose risks to the safety of the surrounding communities who may have accidental falls in these pits.
491. Additionally influx of migrant workers may lead to a series of social impacts which are highlighted in sub chapters 12 to 19 below.

Mitigation:

- Implementation of the stakeholder engagement plan
- Provide and implement an community health and safety plan which will have an aspect of community
- Roads passing through population centers will be water sprayed to reduce dust.
- Work to minimize or altogether eliminate mosquito breeding sites.
- Provide a waste management plan
- Provide and implement a stakeholder engagement plan
- Provide a whistleblower policy to ensure wellbeing of whistleblowers
- Implement a grievance redress mechanism to ensure community concerns are addressed.

- Fence off the sites with security to avoid unauthorized access to the borrow site(s) and hence mitigate potential injuries.

12) Asphalt Batching Plant Impacts

492. The project will require setting up of several asphalt batching plants for use on the road. These plants will store, process and dispose of bitumen and hardcore for the road paving. These sites, if not properly sited and maintained will lead to other impacts including air, noise and dust pollution as well as social impacts including occupational health and safety, community health and safety.
493. NEMA requires a standalone ESIA and license for each proposed batching plant. However, the following mitigation measures should be employed when establishing these sites.

Mitigation

- Asphalt batching plants should be sited away from settlements preferably downwind of these settlements.
- Inclusion of dust suppression in the batching process.
- Good maintenance and proper operation of machinery to minimize noise generation.
- Inclusion of disposal of poor batches, bitumen barrels and other wastes in the waste management plan, including using reuse and recycling. (some communities may benefit from the paving with the poor batches, barrels can be repurposed for road signage)

13) Labour Influx

494. The project construction is bound to attract labour from surrounding counties to meet the needs of the project. In addition, business opportunities may present themselves attracting businessmen and women from surrounding counties. The increase in labour, will lead to pressure on existing resources including water, food, healthcare, accommodation. This coupled with different ways of life of the locals may lead to intercommunity conflicts within the project area.

Mitigation

- Unskilled construction and skilled (if available) labor to be hired from the local population as far as possible to minimize on influx of foreigners into the community.
- Use of manual labor where possible to ensure more employment of locals and hence ensure project support throughout the construction process.
- Prepare a labour influx plan to manage labour influx
- Provide an onsite clinic to provide VCT services to construction crew and provision of ARVs for vulnerable community members as well as provide first aid services
- The Contractor will enforce and maintain a code of conduct for his employees

14) Increase in cases of HIV & AIDS

495. In migration of people from different regions may lead to behavioural influences which may increase the spread of diseases such as HIV/AIDS.

Mitigation:

- Sensitize workers and the surrounding communities on awareness, prevention and management of HIV/AIDS through staff training, awareness campaigns, multimedia and workshops or during community Barazas. Provide information, education and communication about safe uses of drinking water.
- Provide an on-site clinic to provide VCT services to construction crew and provision of ARVs for vulnerable community members
- The Contractor will prepare and implement a HIV/AIDS management plan

15) Disruption of Service Delivery

496. The construction activities will cause disruption of services such as transportation and electricity within the project area. Trucks with heavy loads of construction materials may damage roads and footpaths during the construction process.

Mitigation:

- Provide a traffic management plan which will provide alternative routes, traffic controllers, concrete barriers and speed limits for motorists.
- Provide appropriate signage to warn motorists and other road users of the construction activities, diversion routes to ward off traffic accidents.
- The contractor should communicate any intended disruption of the services to enable the people to prepare and provision of alternative facilities.
- In the event that delivery trucks damage parts of the road, repair the spots in consultation with the local authorities.
- Prepare a stakeholder engagement plan

16) Crime Management and Security Risk

497. The project is located within a generally insecure part of the country, as such the construction works can have both a positive and negative impact on the project.

498. The positive benefit includes increased activity will lead to increased security of the Contractor and his staff leading to general improved security, however on the downside the expensive construction machinery and materials may attract thieves and bandits to the area or even the Contractor's own employees to the area. Employee misconduct in the host communities can also occur.

Mitigation:

- Fencing off the Contractor's camp with plant and materials.
- Working with local committees to provide security within the site in addition to the Contractor's own security.

- Removing any employee who persists in any misconduct or lack of care, carries out duties incompetently or negligently, fails to conform to any provisions of the contract, or persists in any conduct which is prejudicial to safety, health, or the protection of the environment.
- Taking all reasonable precautions to prevent unlawful, riotous or disorderly conduct by or amongst the contractor's personnel, and to preserve peace and protection of persons and property on and near the site.
- Prohibiting alcohol, drugs, arms, and ammunition on the worksite among personnel.
- The contractor and Resident Engineer will 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 Resident Engineer will 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 will include nature of the offense, location, date, time, and all other pertinent details.
- The Contractor will ensure that all of his staff sign a written code of conduct to govern employee behavior on site

17) Increased Community Conflicts

499. The project area is home to several communities relying on limited resources including water and pasture. The project activities are bound to increase the population within the project area, leading to increased pressure on community resources including water, pasture, food and healthcare. In addition removal of vegetation for construction of the road and sourcing of construction materials will lead to increased scarcity on already limited resources.
500. The increased pressure on the resources may lead to conflicts between communities, within communities and between the communities and the Contractor.

Mitigation

- The Contractor will source for new water sources for construction eg. Boreholes, pans and rain water harvesting, after construction these facilities can be given back to the communities.
- Provision of CSR where possible to reduce some of the pressures on resources
- Ensure working grievance redress with the communities within the project area to mitigate any grievances early before escalation to conflict.
- Preparation and conducting a stakeholder engagement plan to ensure continuous communication and discussions of all stakeholders.
- Contractor to prepare and implement the Security Management Plan, induct and train workers on security awareness

18) Impacts on Children

501. The Children Act of Kenya prohibits 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 establish child protection within a code of conduct signed by all employees; that all staff of the contractor must sign, committing themselves towards protecting children, which clearly defines what is and is not acceptable behaviour.

Mitigation:

- Ensure that each employee signs a code of conduct that covers child protection. A sample is provided in appendix 11.4
- 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

19) Project Impacts on Women

502. Construction workers are predominantly younger males. Those who are away from home on the construction job are typically separated from their family and act outside their normal sphere of social control. This can lead to inappropriate and criminal behavior, such as sexual harassment of women and girls, exploitative sexual relations, and illicit sexual relations with minors from the local community. A large influx of male labor may also lead to an increase in exploitative sexual relationships and human trafficking whereby women and girls are forced into sex work.

503. Additionally, an increase in the incomes within the area is bound to cause an increase in alcohol intake leading to an increase in sexual exploitation by the young males.

504. There is need to promote gender equality in all aspects of economic development and more so in construction. Women roles in construction are mainly confined to supply of unskilled labour and vending of foodstuffs to the construction workers. Where available skilled women will be employed. Additionally, there is a risk of women working and their husbands taking the pay on their behalf as well as neglect of the traditional roles of women including taking care of the home.

Mitigation:

- Provide and implement a gender-based violence strategy which will form one of the Contractor’s clauses. The strategy should include:
 - Gender mainstreaming in employment at the worksite with opportunities provided for females to work, in consonance with local laws and customs
 - Gender sensitization of workers (this will be done by the HIV/AIDS services provider; see above)
 - Provision of gender disaggregated bathing, changing, sanitation facilities
- Grievance redress mechanisms including non-retaliation.

- Provide and implement an employee code of conduct a sample is provided in appendix 11.4
- The works contractor will be required, under its contract, to prepare and enforce a No Sexual Harassment and Non-Discrimination Policy, in accordance with national law where applicable.
- Ensure equitable distribution of employment opportunities between men and women
- Ensure flexible work hours for women to ensure minimal interference with their family roles.
- Involvement of women in the periodic dialogues/consultations with contractors and host communities during construction.

20) Liability for loss of life, injury or damage to private property

505. Some of the Construction activities may lead to accidents that may be mild or fatal depending on various factors. During the implementation of the proposed project, accidents could be due to negligence on part of the workers, machine failure or breakdown or accidental falls into the borrow pits. These incidents can be reduced through proper work safety procedures.

506. In addition, during Construction, there may be damage to private property that may not be foreseen by the RAP.

Mitigation:

- Provision of PPE.
- The workers will receive requisite training especially on the operation of the machinery and equipment
- There will be adequate warning and directional signs.
- Ensuring that the prepared code of conduct for staff is followed to prevent accidents.
- Develop a site safety action plan detailing safety equipment to be used, emergency procedures, restriction on site, frequency and personnel responsible for safety inspections and controls.
- Cordon off unsafe areas
- Provide an onsite clinic to provide first aid services to the staff.
- Recording of all injuries that occur on site in the incident register, corrective actions for their prevention are instigated as appropriate.
- Contractor to ensure compliance with the Workmen's Compensation Act, ordinance regulations and union agreements.
- The Contractor to repair any damage done to private property.
- Provision of a grievance redress mechanism to address all complaints and solutions

7.2.3 Impacts during Operation & Maintenance

507. During the operation of the project road, the positive impacts greatly outweigh the negative impacts, and with proper maintenance, potential negative impacts can be mitigated.

1) Positive Environmental and Socio-Economic Impacts

508. The several positive impacts are summarized below:

- ❖ Improved regional road network,
- ❖ Reduced travel time along and across the roads,
- ❖ Enhanced operational efficiency of the road,
- ❖ Promotion of economic growth within the region,
- ❖ Improved safety and reliability for all road users,
- ❖ Attraction of traffic that will foster regional growth,
- ❖ Improved security within the project area,
- ❖ Reduced particulate dust in the area.

509. Provision of community social amenities The positive impacts may be ameliorated through continuous monitoring to ensure that the system is functioning at maximum efficiency to ensure maximum benefit to all.

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

2) Increased Traffic along the Project Alignment

511. The project area will see an increase in traffic congestion due to the improved road surface and shortened travel times, as such there is bound to be increased traffic and interaction and potential accidents between the vehicles and local communities.

Mitigation measures
<input type="checkbox"/> Provision and maintenance of safety signage along the corridor.
<input type="checkbox"/> Periodical road safety audits to establish any issues with the road and establishment of mitigation measures.

3) Increased Human Wildlife Conflict

512. The new road will lead to increased vehicular speeds causing an increased risk of accidents involving vehicles and wildlife that accidentally makes its way onto the highway.

Mitigation measures
<input type="checkbox"/> Partnership with wildlife NGOs and conservation efforts to monitor the any incidences and provision of mitigation measures.
<input type="checkbox"/> Maintenance of established animal crossing infrastructure including signs and structures.
<input type="checkbox"/> Collaboration with the Kenya Wildlife Services on management of wildlife within the construction areas

4) Air Quality

513. The new increased traffic along the project road will have both positive and negative impacts, the positive being reduced dust, however a negative impact will be increased petrol emissions along the project road.

Mitigation:

- Policing of unroadworthy vehicles to reduce air pollution.

5) Road Safety

514. Increased travel speeds if not checked may lead to increased accidents along the project road.

Mitigation:

- Provision and maintenance of safety signage along the corridor.
- Periodical road safety audits to establish any issues with the road and establishment of mitigation measures.

6) Risk of truck drivers stopping along the project area

515. The opening of a major road corridor will lead to increased vehicular traffic along the road including trucks ferrying goods to the Northern Region of the Country. Due to their limited speeds, truck drivers will need to take breaks during the drives to improve on road safety. The design has provided for truck stops at intervals and on both sides of the road, with large enough parking spots. However it will be important to ensure that the trucks actually make use of these stops instead of parking on the sides of the road.

Mitigation measures

- Provision of visible signage showing the truck stops along the road.
- Working with the police to ensure that trucks are actually using the stops instead of the side of the road.
- Encouraging the establishment of businesses near the truck stops including accommodation, sanitation and restaurants to encourage truckers to stop at these locations.

7) Impacts of newcomers to the project area.

516. The improved infrastructure in the area will lead to an increase in the in migration of people to the project area due to increased business opportunities, land availability. This may lead to inter and intra community conflict, due to differences in religion, culture, and ways of life.

Mitigation measures

- KeNHA to work with the County Government on integration between newcomers and host communities.

7.2.4 Impacts during De-commissioning

517. De-commissioning of the Project is not envisaged. However, some aspects of the project will require decommissioning including the material sites and the Contractor's camp. Other project components including the project road will be rehabilitated over time having served their useful life.

518. Before decommissioning, the Contractor will prepare a decommissioning plan for the elements that will require decommissioning.

1) *Decommissioning of exhausted material sites*

519. Following the exhaustion various material sites or completion of works on these sites, the Contractor will be expected to rehabilitate these sites or if the sites e.g. Water sources, can be handed back to the community.

Mitigation measures:

- Provide and implement a decommissioning plan including backfilling, revegetation, disposal of waste material, recycling of recyclable material and hand over to the community or relevant authority in the case of water sources.

2) *Decommissioning of the Contractor's camp*

520. After the completion of the construction of the road, the Contractor will decommission his camp.

Mitigation measures:

- Provide and implement a decommissioning plan including revegetation, disposal of waste material, and recycling of recyclable material.

7.3 CUMULATIVE IMPACTS OF THE PROJECT ROAD

521. Cumulative effects were considered taking into account other projects or actions planned in the study area.

522. Considering that there are a number of proposed projects along the road corridor. The assessment of cumulative impacts along the project road corridor has taken these projects into account. Some of the projects include;

- i. The LAPSSET road project from Lamu to Isiolo to South Sudan and Ethiopia.
- ii. The Garissa – Modogashe A13, which intersects the project road at its end in Modogashe.
- iii. Various road works and on-going road construction projects along the road corridor by KeRRA, the county Governments and the Constituencies through CDF
- iv. Impacts on sourcing of construction materials along the corridor;
- v. Any other initiatives in the project road corridor that may result in positive or negative cumulative impacts were be included in the ESIA Study.

7.3.1 Identification of Potential Cumulative Impacts

523. Table 7-2 provides a summary of the likely potential cumulative impacts that may result from the construction and operation of the proposed road project, services roads,

interchanges and bypass, and in combination with other proposed development described in Section 6-9.

Table 7-2: Summary of the Likely Potential Cumulative Impacts

Environmental Topic	Potential Cumulative Impacts	
	Construction Phase	Operation Phase
Increased Traffic	<p>Cumulative impacts may be considered significant during construction. Bearing in mind that the host population is unaware of traffic regulations.</p> <p>However, the proposed mitigations in the ESMP are adequate need to be strictly adhered to. The impact is considered moderate.</p>	<p>Given that traffic volumes will increase in the project area due to improved road conditions.</p> <p>However, the proposed mitigations need to be strictly adhered to.</p>
Soil Degradation, site related oil spills	<p>Providing adequate mitigation is place, no significant adverse cumulative impacts are anticipated.</p>	
Loss of flora and fauna, proliferation of invasive species	<p>Cumulative impacts will only occur during the construction phase if the construction of other nearby projects coincides with that of the proposed project.</p> <p>If this is the case, even greater attention should be paid to the mitigation measures outlined in order to ensure the cumulative impact will remain of minor adverse significance</p>	<p>Improved road conditions will lead to an influx of people as well as development in the area. Additionally, an increase in road traffic will lead to cumulative impacts on the wildlife in the area, through potential increase in human wildlife conflicts.</p> <p>However, the proposed mitigation measures need to be strictly adhered to in order to mitigate these potential negative impacts.</p>
Air Quality	<p>Cumulative impacts will only occur during the construction phase if the construction of other nearby projects coincides with that of the proposed project.</p> <p>If this is the case, even greater attention should be paid to the mitigation measures outlined in order to ensure the cumulative impact will remain of minor adverse significance</p>	<p>The impacts of the proposed road on regional air quality and greenhouse gases are predicted to be negligible</p>

Environmental Topic	Potential Cumulative Impacts	
	Construction Phase	Operation Phase
Noise and Vibration	There is the potential for cumulative noise impacts of the proposed development in conjunction with other concurrent projects in the vicinity arising from simultaneous demolition and construction works.	
Social Impacts including: Labour influx, Crime, disruption of services, increased conflicts, impacts on children, GBV sexual exploitation and abuse	<p>Cumulative impacts will only occur during the construction phase if the construction of other nearby projects coincides with that of the proposed project.</p> <p>However, the proposed mitigations need to be strictly adhered to.</p>	<p>Given that traffic volumes will increase in the project area due to improved road conditions.</p> <p>However, the proposed mitigations need to be strictly adhered to.</p>
Interference with water resources	<p>Cumulative impacts will only occur during the construction phase if the construction of other nearby projects coincides with that of the proposed project.</p> <p>However, the proposed mitigations need to be strictly adhered to.</p>	

8 ENVIRONMENTAL AND SOCIAL MITIGATION AND MANAGEMENT PLAN (ESMMP)

524. By design, the potential positive impacts of the project can readily be optimised while the potential majority of the negative environmental and social impacts are mostly restricted to the planning and construction period, with the negative impacts experienced during the operation phase of the project mitigated by continuous maintenance of the system. These are assessed and considered as minor to medium, being reversible and short-term and can be managed through well-defined mitigation and monitoring measures.

8.1 POSSIBLE ENHANCEMENT MEASURES

525. Possible enhancement measures of beneficial impacts would include the following:

- ❖ Construction should adhere to recommended best construction practices that make effective and economical use of locally available resources including materials, expertise and labour.
- ❖ Operation of the project should adhere to the operations and maintenance specifications prepared with the design
- ❖ Ensure that the poor and other vulnerable in the project area will be catered for by the project under the RAP.
- ❖ Ensure that social services provide education on appropriate hygienic conditions and taking into consideration gender particular roles and responsibilities.

8.1.1 Design Measures that will Enhance the Project

These are measure that will be included in the project design to enhance the environmental and social features of the project. These design considerations should be included in a design review of the project road. The design considerations include:

- a) Design of the Kambi Garba loop instead of the road passing through the more populated area of Isiolo town.
- b) Collaborate with Kenya Wildlife Services and other stakeholders regarding specific animal friendly crossings including animal bridges, with the underpasses for vehicles to ensure undisturbed animal crossing, with additional fencing provisions if needed.
- c) Design of dual box culverts which will act as both a crossing point for livestock and some wildlife
- d) Road signages and bumps will be erected on the highway to warn motorists when approaching wildlife and livestock crossing points

8.2 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

526. The negative impacts as well as their mitigation measures have already been discussed in Chapter 7.

527. This chapter highlights the various mitigation measures, the party responsible for implementing it and the costs, this data makes up the Environmental and Social Management Plan (ESMP) which is presented in Table 8 1 below.

528. The costs of the proposed mitigation measures some of which will have already been included in the main engineering Bills of Quantities and therefore need not be included in

the Environmental and social mitigation costs, should be included in the Bill of Quantities as the Environmental and Social Mitigation Costs.

Table 8-1: The Environmental and Social Management Plan (ESMP)

Project Phase	Environmental / Social Impact	Mitigation Measure	Responsibility	Cost (K.Shs.)	Frequency of Payments	Total Cost for a 2.5 year construction period
Pre-construction	Loss of Community land along the project road	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Pre-construction	Loss of Domiciles along the road corridor	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Pre-construction	Loss of structures along the way leave	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Pre-construction	Loss of planted vegetation within the proposed alignment	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Pre-construction	Loss of fences within the proposed alignment	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	

Pre-construction	Loss Livelihoods	Implementation of the RAP	NLC & KeNHA	Values as per RAP Report	Lumpsum	
Construction	Increased Traffic	<p>Provide and implement a traffic management plan</p> <p>Provide traffic controllers</p> <p>Provision temporary road signs or notices to indicate ongoing works.</p> <p>Effecting traffic controls to avoid congestion and accidents on roads.</p> <p>Choosing suitable traffic routes to reduce the impact in the neighbourhood.</p> <p>Ensuring no interference with traffic through traffic control, designated parking, speed limits and hiring a banksman.</p> <p>Provision of a road safety analysis and campaign including provision of road crossing facilities for domestic animals and people</p>	Contractor supervised by the Resident Engineer	100,000	Monthly	3,000,000.00
Construction	Site Related Oil Spills	<p>Employee awareness on company procedures for dealing with spills and leaks from oil storage tanks.</p> <p>Containment of leaks.</p> <p>Provision of absorbent material</p> <p>Maintenance of contractor's plant</p> <p>Provision of relevant emergency numbers</p>	Contractor supervised by the Resident Engineer	50,000	Annually	125,000.00
				100,000	Annually	250,000.00
				Included in Contractor's cost		

Construction	Soil Degradation	<p>Provision adequate drainage facilities to channel water from one side of the road to the other.</p> <p>Restoration of the ground by allowing for natural revegetation or sowing adequate grass cover and planting of trees.</p> <p>Planning emergency response measures in case of accidental oil spills.</p> <p>Provision of a borrow pit/ quarry site rehabilitation plan, including standalone ESIA for each new borrow pit/quarry site.</p>	Contractor supervised by the Resident Engineer	<p>Included in Contractor's cost</p> <p>Restoration of ground costs covered under loss of flora and fauna</p> <p>Oil spill costs covered</p> <p>Included in the Contractor's clauses</p>		
Construction	Proliferation of Invasive Species	<p>Re-use of nutrient rich top soil in the areas of origin.</p> <p>Making use of cut and fill road material within similar homogeneous areas</p> <p>Minimal stockpiling periods.</p> <p>Proper storage of stockpiled material.</p> <p>Manual removal of the invasive species such as the Prosopis Juliflora (Mathenge) at material/work sites to prevent proliferation.</p>	Contractor supervised by the Resident Engineer	<p>Included in Contractor's cost</p> <p>500,000</p>	Annually	1,250,000.00
Construction	Interference with existing Water Resources	<p>Provide a waste management plan</p> <p>Proper solid and liquid wastes disposal mainly from the construction camps, sites and offices.</p>	Contractor supervised by the Resident Engineer	<p>Included in the Contractor's clauses</p> <p>250,000</p>	Annually	625,000.00

		<p>Ensuring proper measures are in place for collection and disposal of spilled oils and lubricants.</p> <p>The Contractor will source for new water sources for construction and after construction these facilities can be given back to the communities.</p> <p>The Contractor will prepare and implement a water sharing plan of any new source with the surrounding community</p>		<p>Oil spill costs covered</p> <p>Included in Contractor's costs</p>		
Construction	Employment of Locals	<p>Hiring unskilled construction and skilled (if available) labour from the local population as far as possible.</p> <p>Use of manual labour during excavation and construction works where possible.</p> <p>Prepare a labour influx plan to manage labour influx</p> <p>Prepare an employment plan</p> <p>Sensitizing workers and the surrounding community on awareness, prevention and management of HIV / AIDS.</p> <p>Provide an on-site clinic to provide VCT services.</p> <p>Enforcing and maintaining a code of conduct for his employees</p> <p>Ameliorate positive socio-economic impacts</p>	<p>Contractor supervised by the Resident Engineer</p> <p>Occupational Health</p>	<p>Included in the Contractor's Cost</p> <p>Included in the Contractor's clauses</p> <p>Included in HIV/AIDS Impacts</p> <p>Included in the Contractor's clauses</p>		

Construction	Air Quality	<p>Use of protective clothing like dust masks on construction crew.</p> <p>Daily monitoring of air quality during and after construction to ensure no major negative impacts or come up with mitigation measures</p> <p>Regular water spraying of murrum and earth roads and construction sites</p> <p>Operation and maintenance of contractor's plant in compliance with relevant vehicle emission standards and manufacturer's specification to minimize air pollution.</p> <p>Carrying out annual air quality audits for the project</p>	Contractor supervised by the Resident Engineer	<p>Included in PPE Costs</p> <p>10,000 per sample</p> <p>Included in contractor's cost</p>	Annually	300,000.00
Construction	Noise Pollution	<p>Avoiding night time construction when noise is loudest near residential areas or areas near wildlife.</p> <p>Daily noise levels monitoring on site with the use of portable devises</p> <p>No discretionary use of noisy machinery within 50 m of residential areas and near institutions or use of manual labour in these sections or give notice to these institutions.</p> <p>Good maintenance and proper operation of construction machinery.</p> <p>Where possible, ensure non mechanized construction to reduce the use of machinery</p>	Contractor supervised by the Resident Engineer	<p>Included in Contractor's cost</p> <p>40,000 per sample</p>		1,200,000.00

		Annual noise measurement				
Construction	Loss of Flora and Fauna	<p>Discuss with the local community and relevant authorities on methods of revegetation or compensation for the lost vegetation.</p> <p>Avoid night time construction when noise is loudest near areas known to have wild animals.</p> <p>Project will install road signs and speed pumps on the known elephant and other wildlife crossing points to regulate speed and warn motorist</p> <p>Ensure all the Contractor’s camps are sited away from the wildlife corridors to prevent conflicts.</p> <p>Construct dual usage box culverts along the project road for the domestic and wildlife animal crossings</p> <p>Collaborate with Kenya Wildlife Service and other stakeholders to protect wildlife during construction</p> <p>The Contractor code of conduct should include conditions on wildlife conservation and measures to be errand workers</p> <p>Avian nesting sites found along the road should be relocated before trees are cleared for the road construction</p>	Contractor, Local Administration	10,000,000	Lumpsum	10,000,000.00
			Contractor supervised by the Resident Engineer	<p>Included in Contractor’s cost</p> <p>1,000,000</p> <p>1,500,000</p> <p>Included in Contractor’s cost</p> <p>Included in Contractor’s cost</p> <p>Oil spill costs covered</p> <p>Covered in water resources cost</p>	<p>Lumpsum</p> <p>Per Crossing</p>	<p>1,000,000.00</p> <p>4,500,000</p>

		<p>Avoid fires and smoking of cigarettes in areas with indigenous vegetation as the area is arid and a small spark can cause fire which shall affect vegetation and wildlife</p> <p>Stockpiling of construction material in areas that are naturally void of vegetation.</p> <p>Spare the vegetation that must not</p> <p>Esure all the Contractor’s camps are sited away from the wildlife corridors to prevent conflicts.</p> <p>The Contractor will ensure that the employees on site are aware of the company procedures for dealing with oil spills and leaks</p> <p>Provide a waste management plan</p> <p>Provision of dustbin and sanitation facilities within the Contractor’s camp to prevent seepage into the natural environment.</p>				
Construction	Occupational Health & Safety	<p>Provide and implement an occupational health and safety plan.</p> <p>Ensure that all construction machines and equipment are in good working conditions and to manufacturer’s specifications to prevent occupational hazards.</p> <p>Provide workers with appropriate personal protective equipment (PPE).</p>	Contractor supervised by the Resident Engineer	<p>2,000,000</p> <p>Included in Contractor’s cost</p> <p>4,000,000</p> <p>50,000</p>	<p>Lumpsum</p> <p>Annually</p> <p>Monthly</p>	<p>2,000,000.00</p> <p>10,000,000.00</p> <p>1,500,000.00</p>

		<p>Provide workers with adequate potable water and breaks.</p> <p>Provide a fire marshal and a health and safety officer fulltime on site</p> <p>Provide workers training on safety procedures and emergency response</p> <p>Work to minimize or altogether eliminate mosquito breeding sites.</p> <p>Provide and implement a waste management plan</p> <p>Provision and implementation of an employee code of conduct</p> <p>Provide clean toilets for workers, these toilets will be to World Health Organisation standards.</p>		<p>Included in Contractor's cost</p> <p>50,000</p> <p>500,000</p> <p>100,000</p> <p>Included in the Contractor's clauses</p> <p>500,000</p>	<p>Bi-annually</p> <p>Bi-annually</p> <p>Monthly</p> <p>Annually</p>	<p>2,500,000.00</p> <p>2,500,000.00</p> <p>1,500,000.00</p> <p>1,250,000.00</p>
Construction	Community Health & Safety	<p>Implementation of the stakeholder engagement plan</p> <p>Provide and implement an occupational health and safety plan which will have an aspect of public health and safety.</p> <p>Roads passing through population centers will be water sprayed to reduce dust.</p> <p>Work to minimize or altogether eliminate mosquito breeding sites.</p> <p>Provide a waste management plan</p>	<p>Included in the stakeholder engagement plan</p> <p>Contractor supervised by the Resident Engineer</p>	<p>50,000</p>	<p>Monthly</p>	<p>1,500,000.00</p>

		<p>Provide and implement a stakeholder engagement plan</p> <p>Provide a whistle-blower policy to ensure wellbeing of whistle-blowers</p> <p>Implement a grievance redress mechanism to ensure community concerns are addressed.</p> <p>Fence off the sites with security to avoid unauthorized access to the borrow site(s) and hence mitigate potential injuries.</p>		1,000,000	Annually	2,500,000.00
Construction	Labour Influx	<p>Hiring unskilled construction and skilled (if available) labour from the local population as far as possible.</p> <p>Use of manual labour during excavation and construction works where possible.</p> <p>Prepare a labour influx plan to manage labour influx</p> <p>Sensitizing workers and the surrounding community on awareness, prevention and management of HIV / AIDS.</p> <p>Provide an on-site clinic to provide VCT services.</p> <p>Enforcing and maintaining a code of conduct for his employees</p>	<p>Contractor supervised by the Resident Engineer</p> <p>Public Health Officer</p>	<p>Included in the Contractor's Cost</p> <p>Included in labour influx cost</p> <p>Included in HIV/AIDS Impacts</p>		
Construction	Increase in cases of HIV & AIDS	Sensitizing workers and the surrounding communities on awareness, prevention and management of HIV/AIDS.	Contractor Appointed Health and Safety Officer	350,000	Bi-annually	1,750,000.00

		Provide an on-site clinic to provide VCT services to construction crew and provision of ARVs for vulnerable community members Provide a HIV/AIDS management plan		100,000 Included in the Contractor's clauses	Monthly	3,000,000.00
Construction	Disruption of Service Delivery Impacts	Provide a traffic management plan which will provide alternative routes, traffic controllers, concrete barriers and speed limits for motorists. Communication any intended disruption of the services. Prepare a stakeholder engagement plan Repair of any affected areas in consultation with the local authorities.	Contractor KeNHA & Relevant service provider	Included in traffic costs 10,000 Included in the Contractor's clauses	Monthly	300,000.00
Construction	Crime Management and Security Risk	Fencing off the Contractor's camp with plant and materials. Working with local committees in addition to the Contractor's own security. Removing any employee who persists in any misconduct or lack of care, carries out duties incompetently or negligently, fails to conform to any provisions of the contract, or persists in any conduct which is prejudicial to safety, health, or the protection of the environment.	Contractor supervised by the Resident Engineer	Included in Contractor's cost		

		<p>Taking all reasonable precautions to prevent unlawful, riotous or disorderly conduct by or amongst the contractor's personnel.</p> <p>Prohibiting alcohol, drugs, arms, and ammunition on the worksite among personnel.</p> <p>Logging all events of a criminal nature that occur at the worksite or are associated with the civil works activities.</p> <p>Reporting all activities of a criminal nature on the worksite or by the contractor's employees to the police.</p> <p>Prepare a code of conduct for signing by all staff members</p>		Included in the Contractor's clauses		
Construction	Increased Community Conflicts	<p>After sourcing and making use of new water sources, the Contractor should give them back to the community.</p> <p>Provision of CSR where possible</p> <p>Ensure working grievance redress mechanism.</p> <p>Preparation and implementation of a stakeholder engagement plan</p>	Contractor, RE and KeNHA	<p>Included in Contractor's cost</p> <p>5,000,000.00</p> <p>200,000.00</p> <p>100,000.00</p>	<p>Lumpsum</p> <p>Monthly</p> <p>Monthly</p>	<p>5,000,000.00</p> <p>6,000,000.00</p> <p>3,000,000.00</p>
Construction	Impacts on children	<p>Ensuring than each employee signs a code of conduct that covers child protection</p> <p>Ensuring no children are employed on site in accordance with national labour laws</p>	Contractor supervised by the Resident Engineer Local Administration	Included in the Contractor's clauses		

		Ensuring that any child sexual relations offenses among contractors' workers are promptly reported to the police				
Construction	Project Impacts on women	<p>Provide and implement a gender-based violence strategy which will form the Contractor's clauses and should include:</p> <p>Gender mainstreaming in employment at the worksite with opportunities provided for females to work, in consonance with local laws and customs</p> <p>Grievance redress mechanisms including non-retaliation.</p> <p>Provide and implement an employee code of conduct</p> <p>The works contractor should be required, under its contract, to prepare and enforce a No Sexual Harassment and Non-Discrimination Policy, in accordance with national law where applicable.</p> <p>Ensure equitable distribution of employment opportunities between men and women</p> <p>Ensure flexible work hours for women to ensure minimal interference with their family roles.</p> <p>Involvement of women in the periodic dialogues/consultations with contractors and host communities during construction.</p>	Contractor supervised by the Resident Engineer Local Administration	Included in the Contractor's clauses	Included in the Contractor's clauses	

Construction	Liability for loss of life, injury or damage to private property	<p>Provision of PPE.</p> <p>Training workers on the operation of the machinery and equipment</p> <p>Adequate warning and directional signs.</p> <p>Ensuring that the prepared code of conduct for staff is followed to prevent accidents.</p> <p>Developing a site safety action plan.</p> <p>Cordoning off unsafe areas</p> <p>Provision of first Aid kit within the construction site.</p> <p>Recording of all injuries that occur on site in the incident register, corrective actions for their prevention are instigated as appropriate.</p> <p>Compliance with the Workmen's Compensation Act, ordinance regulations and union agreements.</p> <p>Repairing any damage done to private property.</p> <p>Prepare and implement a grievance redress mechanism</p>	Contractor supervised by the Resident Engineer Appointed Health and Safety Officer	Included in Contractor's cost		
Construction	GRC Facilitation Costs	GRCs will be set up to ensure all potential grievances are logged and resolved and will need a cost which will be included in the implementation costs	Contractor, RE KeNHA, Local administration and NGO	300,00.00	Monthly	9,000,000.00

Construction	Stake Holder Engagement	Implementation of a stakeholder engagement plan throughout the construction phase	Contractor, RE, Local Administration	300,00.00	Monthly	9,000,000.00
Total ESMP Cost during Construction Phase of the Project						84,550,000.00
Operation	Increased Traffic along the Project Alignment	Provision and maintenance of safety signage along the corridor. Periodical road safety audits.	KeNHA	500,000	Annually	
Operation	Increased human wildlife conflict	Partnership with wildlife NGOs and conservation efforts to monitor the any incidences and provision of mitigation measures. Maintenance of animal crossing infrastructure including signs and structures.				
Operation	Air Quality	Policing of unroadworthy vehicles to reduce air pollution.	Police			
Operation	Public Health and Safety	Provision and maintenance of safety signage along the corridor. Periodical road safety audits.	KeNHA	Included in traffic cost		
Operation	Risk of truck drivers stopping along the project area	Provision of visible signage. Working with the police to ensure proper use of truck stops. Encouraging the establishment of businesses near the truck stops to service the truck stops.	KeNHA			
Operation	Impacts of newcomers to the project	KeNHA to work with the County Government on integration between newcomers and host communities.	KeNHA County Governments and Administration	1,000,000.00	Annually	

	area.along the project area					
Decommissioning	Decommissioning of exhausted material sites	Provide and implement a decommissioning plan including backfilling, revegetation, disposal of waste material, recycling of recyclable material and hand over to the community or relevant authority in the case of water sources.	Contractor	300,000.00	Per Site	
Decommissioning	Decommissioning of the Contractor's camp	Provide and implement a decommissioning plan including revegetation, disposal of waste material, and recycling of recyclable material.	Contractor	Included in the Contractor's cost		

8.3 CONTRACTOR CLAUSES

529. This will include various plans and safeguards the Contractor will be expected to prepare and implement during the construction phase of the project. These safeguards will be required as a part of the requirements in the bidding documents. The safeguard documents required will include:

- i. A construction environmental and social management plan
- ii. Occupational health and safety plan
- iii. Waste management plan
- iv. Traffic management plan
- v. Borrow pit and quarry site rehabilitation plan
- vi. Child Protection Strategy
- vii. HIV/AIDS management plan
- viii. Code of Conduct
- ix. Employment plan
- x. Grievance redress mechanism
- xi. Prevention and protection against gender based violence and sexual exploitation
- xii. Labour influx plan
- xiii. Stakeholder engagement plan
- xiv. Whistleblower policy

530. During the bidding process, the Contractor will be expected to include a brief methodology of the implementation of these Environmental and Social Safeguards and attach a cost of implementation of these plans in his proposal bid.

531. In addition, the Contractor will have to provide relevant staff for the implementation of the safeguards including a CLO and EHS expert.

8.4 ENVIRONMENTAL AND SOCIAL MONITORING PLAN

532. The purpose of the Environmental and Social Monitoring Plan for the proposed project is to initiate a mechanism for implementing mitigation measures for the potential negative environmental and social impacts and monitor the efficiency of these mitigation measures based on relevant environmental and social indicators. The Environmental and Social Management Plan in Chapter 8.2 identified certain roles and responsibilities for different stakeholders for implementation, supervision and monitoring. The objectives of the monitoring plan therefore are:

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

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

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534. They are also used to ensure compliance with environmental and social standards, and to facilitate any needed project design or operational changes. A monitoring program, backed up by powers to ensure corrective action when the monitoring results show it necessary, is a proven way to ensure effective implementation of mitigation measures. By tracking the project's actual impacts, monitoring reduces the environmental and social risks associated with the project and allows for project modifications to be made where required.
535. Table 8-2 presents the indicators that will be used to monitor the implementation of the project. The indicators are selected based on the project and major anticipated impacts.

Table 8-2: Proposed Environmental and Social Monitoring Plan

Area	Environmental/Social Component	Performance Indicators	Monitoring Requirements	Frequency of monitoring	Responsibility	Corrective Action
Contractor's Camp	Health and safety	<ul style="list-style-type: none"> • Prevalence rates of common diseases. • Provision of condoms, contraceptives and mosquito nets. • Conduction of campaign meetings on transmission of diseases like HIV/AIDS and other STDs. • Availability of adequate solid waste bins. • System of safe disposal of both solid and liquid waste in place. • Availability of first aid facilities. • Outpatient attendance registers. • Compliance with the Health and Safety Act. 	<ul style="list-style-type: none"> • Physical inspection • Documentation Number of complaints • Interview with residents 	Monthly	Environmental Supervisor	Investigate non-compliance and make recommendations Implement recommendations
	Solid and liquid wastes	<ul style="list-style-type: none"> • Presence of scattered litter. • Signs of obstruction of water courses. 	<ul style="list-style-type: none"> • Physical inspection • Number of complaints. 	Monthly	Environmental Supervisor Contractor	Implement recommendations

Area	Environmental/Social Component	Performance Indicators	Monitoring Requirements	Frequency of monitoring	Responsibility	Corrective Action
	HIV&AIDS	<ul style="list-style-type: none"> Number campaign meetings on transmission of diseases like HIV/AIDS and other STDs. Number of condom dispensers within the site. Number of ARVs provided to vulnerable persons 	<ul style="list-style-type: none"> Inspection of HIV/AIDS prevention services within the site. Number of condoms, ARVs provided. 	Quarterly	Contractor Social Supervisor	Implement recommendations
Project Site and Material Sites	Solid and liquid wastes	<ul style="list-style-type: none"> Scattered litter Signs of obstruction of water ways. Flow of wastewater on the ground surface. Provision of sanitary facilities to the construction crews. 	<ul style="list-style-type: none"> Physical inspection Number of complaints 	Monthly	Environmental Supervisor Contractor	Implement recommendations
	Noise	<ul style="list-style-type: none"> Level of noise generated. Provision of PPE. Compliance with existing noise standard issued by NEMA. 	<ul style="list-style-type: none"> Liaise with other stakeholders. Documentation on complaints about noise 	Monthly	Environmental Supervisor	<ul style="list-style-type: none"> Implement recommendations
	Air pollution	<ul style="list-style-type: none"> Level of dust generated. Provision of PPE. 	<ul style="list-style-type: none"> Physical inspection Interview residents including workers 	Monthly	Environmental Supervisor	<ul style="list-style-type: none"> Implement recommendations

Area	Environmental/Social Component	Performance Indicators	Monitoring Requirements	Frequency of monitoring	Responsibility	Corrective Action
			<ul style="list-style-type: none"> • Liaise with other stakeholders 			
	Flora and Fauna	<ul style="list-style-type: none"> • Amount of vegetation removed • Change in animal behavioural patterns 	<ul style="list-style-type: none"> • Documentation of uprooted trees • Observation • Discussions with KWS 	Quarterly	Environmental Supervisor	<ul style="list-style-type: none"> • Implement recommendations
	Gender Empowerment	<ul style="list-style-type: none"> • Number of female employees • Number of male and female toilets 	<ul style="list-style-type: none"> • Review of company staff records. • Physical Inspection 	Quarterly	Social Supervisor	<ul style="list-style-type: none"> • Implement recommendations
	Crime Management and security	<ul style="list-style-type: none"> • Number of reported crimes • Number of complaints 	<ul style="list-style-type: none"> • Review of records • Interviews with staff and local community 	Monthly	Social Supervisor	<ul style="list-style-type: none"> • Implement recommendations
	Impacts on Children	<ul style="list-style-type: none"> • Record of employees including IDs 	<ul style="list-style-type: none"> • Review of records • Interviews with staff and local community 	Monthly	Social Supervisor	<ul style="list-style-type: none"> • Implement recommendations
	GBV, Sexual Exploitation and Abuse	<ul style="list-style-type: none"> • Number of complaints 	<ul style="list-style-type: none"> • Review of grievance redress forms. • Interviews with local community 	Monthly	Social Supervisor	<ul style="list-style-type: none"> • Implement recommendations
	Loss of Life, Injury and Damage to Private property	<ul style="list-style-type: none"> • Record of accidents and damages done 	<ul style="list-style-type: none"> • Review of records • Interviews with staff and local community. 	Monthly	Environmental Supervisor	<ul style="list-style-type: none"> • Implement recommendations

Area	Environmental/Social Component	Performance Indicators	Monitoring Requirements	Frequency of monitoring	Responsibility	Corrective Action
	Labour Influx	<ul style="list-style-type: none"> Number of grievances Incidences of conflicts 	<ul style="list-style-type: none"> Interviews with local administration on influx and conflicts Complaints log Interviews with grievance committee members 	Monthly	Social Supervisor	<ul style="list-style-type: none"> Implement recommendations
	Increased Conflicts	<ul style="list-style-type: none"> Records of conflicts with local administration Number of grievances Complaints logs 	<ul style="list-style-type: none"> Police incidence reports Grievance/Complaints logs 	Monthly	Social Supervisor	<ul style="list-style-type: none"> Implement recommendations

8.5 GRIEVANCE REDRESS MECHANISMS (GRM)

536. This section outlines a mechanism for receiving, handling and resolving project related complaints/grievances during preparation, implementation and operation of the project. The section reviews the socio-cultural context to conflict resolution in the project area. It then provides certain guidelines and principles that may aid the project in developing a robust grievances redress mechanism.
537. The Northern part of Kenya, has, over a long time, been a major arena for a variety of low-intensity conflicts, some of which are linked to wider cross-border and regional conflicts. The roots of these conflicts vary but a history of economic and social marginalization looms large. There is increased competition over resources, reduced access to land, water, and other natural resources, limited access to credit, markets, and extension services that culminate in poverty and subsequently, increased conflict. Conflicts and violence often take the form of cattle rustling, ethnic violence, displacements, massacres and revenge attacks. Violent Islamist activity has also tended to be clustered in this area.
538. Most conflicts are solved outside the formal legal system through maslaha. The maslaha system works closely with the local chief's office – from which it derives its legitimacy. In most cases, settlement is through compensation. There are also Kadhi courts run by Muslim magistrates who have the power of adjudicating civil disputes according to Islamic law, otherwise referred to as Shariah law. The court's jurisdiction is limited to determination of questions of Muslim law relating to personal status, marriage, divorce or inheritance in proceedings in which all parties are Muslims. Other than that, the ordinary courts, though available to VMGs, are not quite as popular. Most VMGs noted that they have little confidence in the government judicial system, because they feel it is highly compromised. It was also noted that even when women prefer to use ordinary courts, they were held back because they feared reprisal and stigma from the community, for going against traditional norms
539. The grievance process has been adopted from the Social Assessment and with the discussions held with the relevant stakeholders during the ESIA consultations . The stakeholders will be informed by the project of various points of making complaints (if any) and the RE collect the complaints from these points on a regular basis and record them. This is followed by coordinating with the concerned people to address the grievances. The RE will manage the grievance activities at the respective stakeholder's level to address the Grievances and would act as the focal point in this regard.

8.5.1 Possible Sources of Grievances

540. Some of the issues that may elicit disputes in the implementation of the project include:

Project Anticipated grievances

- Land take related conflicts and grievances
- Compensation related grievances (spouse and family)
- Delay in compensation
- Inadequate valuation of land and other assets
- Community safety and health (road accidents, tension with workers)
- Accidents and incidents about the project
- Cultural and religious tensions due to in-migration
- Labour and working conditions

- Lack of engagement in decision making on proposed interventions (road side stations, markets)
- Resource use competition (water, pasture etc.)
- In-migration influx
- Gender and sexual based violence
- Poor Construction methods
- Improper behaviour of the Contractor's staff
- Access to homes and businesses

8.5.2 Parties and Committees Involved in the Grievance Redress Process and the Management Process

541. An effective mechanism to redress grievances will require:

- That grievances do not linger on and become contentious issues between project authorities and the affected community and result in opposition to the project;
- PAHs and the overall community appreciate efforts by the project authorities to reach out to hear concerns, proactively address and resolve issues; and
- PAHs particularly demonstrate willingness to support and benefit from the implementation of proposed mitigation measures.

Essentials in Grievance Redress

- Acknowledge dissatisfaction: Accept that the displacement due to a development shall generate grievances, rather than ignore or turn away
- Effective listening: Careful listening to elicit information regarding the grievance shall help to accurately define the problem
- Separate facts from fiction: Ask for facts and record it (preferably by the PAH himself). If illiterate, provide support as necessary;
- Quick turn-around: Take optimum time to analyse ascertain and decide and finally communicate the decision to the PAP. Keep communicating with PAHs in case of delays
- Follow-up: If decision requires a follow up action, take it soonest to instill confidence in the PAP regarding the grievance mechanisms and process

542. Grievance Redress Mechanism Players “The key players in the grievance redress process are:

Box Grievance Redress Mechanism Players

- VMGs and affected parties living in the project area
- Influential persons in the project affected village
- County Government
- National Government

543. The Grievance Mechanism provides affected parties with a mechanism to express any issues and problems that they may have with the project implementation process in a way which is free of cost and without retribution. Affected parties will also have ultimate recourse to the courts in accordance with the provisions of Kenyan law.

8.5.3 The Grievance Management Process

1) The Process for the General Public, Stakeholders and PAPs

544. To ensure that the basic rights and interests of project affected people are protected, that their concerns are adequately addressed and that entitlements are delivered, a grievance procedure is outlined below:

Appointment of Village Grievance Redress Committee Members

545. Membership to committees will be elected by the VMGs except the locational chiefs, sub county administrators, county administrators, contractors, KeNHA who will automatic be members of the team by virtue of their positions. Each committee will elect their chairperson and a secretary. The members of the GRCs will be appointed through an election process by the communities members/VMGs in the project area. The elections will be facilitated by KeNHA and the local administration including national and county government.

Remuneration of Grievance Redress Committee Members

546. All the members of the GRCs established at the different levels will perform their duties on a voluntary basis. There will be no remuneration other than costs associated with transport, communication, meals and sitting allowance.

Capacity-Building for Grievance Committee

547. The Grievance Committee members will also need to be oriented to the grievance management system suggested. The capacities of the Grievance Committee members will also need to be built around issues of conflict identification, conflict information analysis and conflict resolution

548. Below, a 4 tier/level grievance redress structure is provided to ensure amicable review and settlement of grievances that may arise in the project.

- i. **First Level 1: Maslaha:** The Maslaha is a body comprising of village elders that plays a significant role among the local communities and is respected. They have the mandate to resolve conflicts including land related conflicts; natural resources related conflict e.g. pasture; interclan conflicts; among others.

Maslaha

- The Maslaha is composed of village elders of good reputation and who have knowledge of customs and culture of the local communities.
- Village elders forming the Maslaha are not elected, as long as one has a good reputation in the society and is regarded as impartial then he is welcomed in the council. Women are not part of this forum.
- Maslaha decisions are strongly respected. In case a person defies their decision, the person will be fined and/or banned from attending any social functions e.g. burials, marriages or any other function that brings the community together. The person is may be excommunicated from the community.

549. This ESIA recommends this as the first level of grievance or conflict redress. A record of any/all grievances received and handled will be kept at all phases of the implementation process. However, the use of maslaha as an alternative system of dispute and conflict resolution in solving issues of rape and other forms of gender and sexual based violence is not advocated for in this project since the system is recognized as contributing to the rise of such cases due to the nominal compensation required from offenders.

550. The grievance mechanism at the first level provides two options for grievance redress the Maslaha System and the Village Level GRC.

- ii. **First Level 1: Village Grievance Redress Committees** : Parties that are either non-Muslim or have shown a preference for an alternative mechanism will use the Village Level GRC. The village level GRC is categorized with the following membership: -

Composition of Village Grievance Redress Committees

1. Assistant/sub locational chief,
2. One youth
3. One woman
4. One project affected youth,
5. One project affected woman,
6. One project affected male
7. Ward Administrator
8. Contractor representative
9. KeNHA representative
10. Person with disability

- iii. **Second Level: Sub County Grievance Redress and Resettlement Committee**

There will be a mediation committee at the Sub County level to handle grievances that cannot be resolved by the village level committees and membership will include:

Composition of Sub County Grievance Redress Committees

- One representative of the Administration; - National Government
- One representative of County Administration; - County Government
- One representative of the construction contractor,
- One project affected youth
- One project affected female
- Supervision consultant/social specialist
- A representative of NEMA
- A representative of WRMA

- iv. **Third -Level: County Grievance Redress and Resettlement Committee:** There will be a mediation committee at the County level to handle grievances that cannot be resolved by the sub county level committee. This will be a high-level committee constituted on a need basis. It will comprise of KeNHA's project implementation unit and other relevant government agencies called upon depending on the matter under consideration.
- v. **Fourth Level: Formal systems of dispute resolution:** This entails using the courts of Kenya to litigate the dispute.

Table 8-3: Table Showing a Sample Grievance Form

Reference No.	
Contact Information	Address:
Please mark how you wish to be contacted (mail, telephone, e-mail)	Telephone: -
	Email: -
Preferred Language for Communication (Please mark how you wish to be contacted)	English
	Kiswahili
National Identity Number	
Description of Incident or Grievance: What happened? Where did it happen? Who did it happen to? What is the result of the problem	
Date of Incident/ Grievance	
	One time incident/ grievance (date-----) Happened more than once (How many times-----) Ongoing (Currently experiencing problem.....)
What would you like see happen to resolve the problem?	

Signature: Date:

Please return this form to: COMMITTEE

Table 8-4: Sample of a Grievance Resolution Form

Sample Grievance and Resolution Form

Name (Filer of Complaint): _____

ID Number: _____ (PAPs ID number)

Contact Information: _____ (Village; mobile phone)

Nature of Grievance or Complaint:

<u>Date</u>	<u>Individuals Contacted</u>	<u>Summary of Discussion</u>
_____	_____	_____

Signature _____ Date: _____

Signed (Filer of Complaint): _____
 Name of Person Filing Complaint : _____ (if different from Filer)

Position or Relationship to Filer: _____

Review/Resolution

Date of Conciliation Session: _____

Was Filer Present? : Yes No

Was field verification of complaint conducted? Yes No

Findings of field investigation:

Summary of Conciliation Session

Discussion: _____

Issues _____

Was agreement reached on the issues? Yes No

If agreement was reached, detail the agreement below:

If agreement was not reached, specify the points of disagreement below:

Signed (Conciliator): _____ Signed (Filer): _____

Signed: _____ Date: _____

2) Grievance Redress within the Contractor's Staff

551. Grievances among the Contractor's staff will be the responsibility of the supervisors and the Human Resource Manager.
552. These mechanisms are designed with the objective of solving disputes at the earliest possible time which will be in the interest of all parties concerned and therefore implicitly discourages referring such matters to the law courts for resolution which would otherwise take a considerably longer time.
553. If a complaint pattern emerges, the Human Resource Manager will discuss and involve the company managers and attempt to mitigate these occurrences.
554. The procedure for managing grievances under will be as follows:
- i. Whenever any staff feels that he/she has been treated unjustly or has any information/complaint regarding another staff or company operations; he/she should first seek an audience with the immediate supervisor/departmental head.
 - ii. The immediate supervisor and/or departmental head may solve the matter on their own or report it to the Human Resource department for consultation and direction on the matter.
 - iii. The staff is at liberty at any stage to appeal/report to the Human Resource department through the County Employee Relations Office and is not obligated to immediately report to the direct supervisor.
 - iv. The decision taken will be communicated to the staff concerned. If the matter is still unresolved, his/her complaint should go to the Managing Director, through the head of Human Resource Department.
555. Records of the complaints will be initially made by the supervisor in his/her weekly reports and kept in the human resources department as well as measures undertaken to resolve the grievances.
556. The internal grievance redress process is summarized in the figure below:

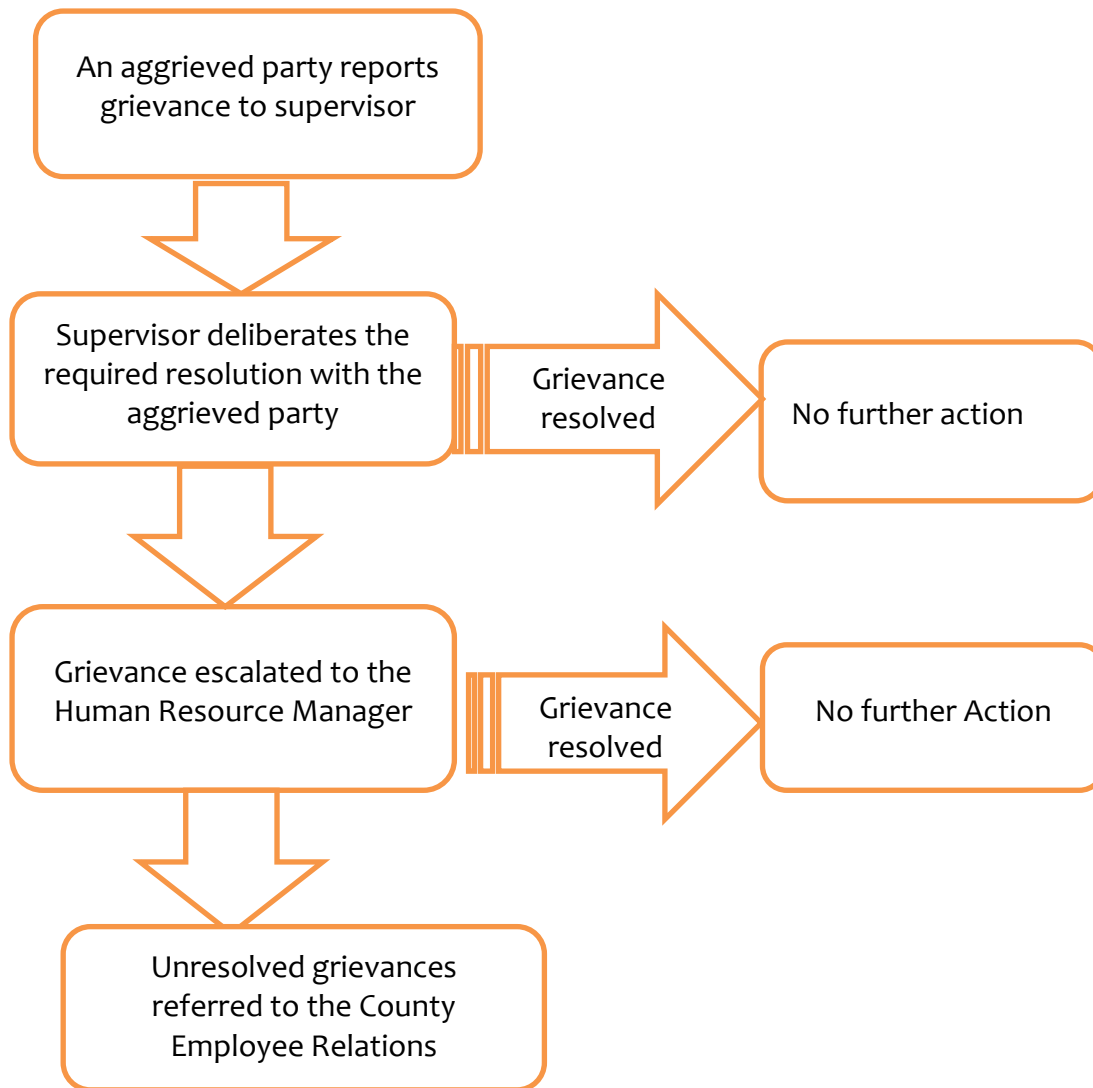


Figure 8-1: Internal Grievance Redress Procedure

8.5.4 GRC Costs

557. The Cost of administration of the GRCs will be met by the Contractor and has been included in the Environmental and Social Management Plan provided in Table 8-1 above

9 CONCLUSIONS AND RECOMMENDATIONS

558. As has been alluded in this report, the following can be said in summary.
559. The improvement of the project road will greatly contribute to the improvement in the socio-economic structure of the Northern Frontier. The project road will act as a major road linking Isiolo county to Wajir, Meru and Garissa Counties, reducing travel times and the improvement in service provision in the project area.
560. The negative impacts identified in this ESIA during the planning, construction, operation and decommissioning phases of the project, including waste generation, air pollution, noise pollution, occupational health and safety impacts, community health and safety impacts, traffic, labour influx and gender impacts can be mitigated using the measures proposed in the ESMP as well as the preparation and implementation of safeguard policies including but not limited to:
- i. Waste Management Plan
 - ii. Labour influx strategy
 - iii. Gender based violence plan
 - iv. Child protection strategy
 - v. Employment plans
 - vi. Occupational Health and Safety Plan
 - vii. Traffic Management Plan
 - viii. Decommissioning Plan
561. Other plans to aid the implementation of the safe project implementation can be included as the project continues.
562. In addition, the recommendations of the public consultation and participation was incorporated into the findings of this report, some of the major issues addressed in the public participation include resettlement, compensation and alternative routes which will be mitigated by implementation of a RAP.
563. The adverse impacts on the physical and natural environment will be significant but can be handled through the recommended mitigation measures. There are incremental costs required to achieve these.

10 REFERENCES

- Republic of Kenya, Environmental Management and Coordination Act (EMCA, Cap 387), Government Printer, Nairobi
- Republic of Kenya, Water Act (2016), Government Printer, Nairobi
- Republic of Kenya, Public Health Act, Cap 242, Government Printer, Nairobi.
- The Constitution of Kenya 2010
- The Land Act, No. 6 of 2012
- International Finance Corporation and World Bank Environmental, Health and Safety (EHS) Guidelines
- Isiolo County Development Plan
- Meru County Development Plan
- Design review report for Isiolo Kulamawe Road by Atkins
- Design review report for Kulamawe Modogashe Road by Atkins
- Environmental and Social Impact Assessment Report for Isiolo Kulamawe Road by Atkins
- Environmental and Social Impact Assessment Report for Kulamawe Modogashe Road by Atkins
- World Bank Operational Policies
- IFC EHS Guidelines

11 APPENDICES

11.1 STAKEHOLDER ENGAGEMENT PLAN

Stakeholder	Participation Strategy	Responsibility	Topics of Discussion	Time/Frequency	Monitoring
PAPs, Residents and representatives of Project affected Communities	Baraza/Public consultation meetings. Door to door consultations Print notice KeNHA website	KeNHA, Consultant	Project development, Information on planned activities, assessed positive and negative impacts and mitigation measures, presentation of grievance mechanism, presentation of recommendation for inclusion in the ESIA	During ESIA fieldwork Regularly on KeNHA website during all phases of the project Ad hoc meetings/publications and notices on a need to basis during construction	Barazas/community meetings conducted including minutes and attendance Number of issues raised versus those that have been addressed or are being addressed or those not yet addressed
Ministries, Regulators, Isiolo and Meru County Governments, National Government Authorities (KeNHA, NEMA, KURA, KeRRA, KWS)	Key Informant Interviews Print notice Official letters/ reports	KeNHA, Consultant	Project development, building a good rapport for project, obtaining specific information regarding project area, sharing and introducing project components and description, obtaining input regarding crucial issues of land acquisition, environmental and social impacts and mitigation, compensation etc.	During ESIA fieldwork Reporting as frequent as required by various authorities. Regularly on KeNHA website during all phases of the project Ad hoc meetings/publications and notices on a need to	Reports conducted ESIA, RAP etc. Key Informant interviews undertaken including notes or questionnaires filled Official correspondences such as letters, notices, approvals etc. Number of issues raised versus those

Stakeholder	Participation Strategy	Responsibility	Topics of Discussion	Time/Frequency	Monitoring
				basis during construction	that have been addressed or are being addressed or those not yet addressed
NGOs/CBOs	Face to face meetings Print notices Official letters Key Informant Interviews	KeNHA, Consultant	Project development, building a good rapport for project, anticipated positive and negative social and environmental impacts and their mitigation measures, recording of recommendations for inclusion in the ESIA.	Regularly on KeNHA website during all phases of the project Ad hoc meetings/publications and notices on a need to basis during construction	Barazas/community meetings conducted including minutes and attendance. Focused Groups discussions conducted including minutes or questionnaires Number of issues raised versus those that have been addressed or are being addressed or those not yet addressed
Vulnerable and marginalized groups	Focus Group meetings. Door to door consultations (personal) Print notice KeNHA website	KeNHA, Consultant	Project development, identified social and environment impacts and their mitigation measures, schedule of activities, grievance mechanism, measures put in place to cater for the vulnerable and	During ESIA fieldwork A Regularly on KeNHA website during all phases of the project	Number of issues raised versus those that have been addressed or are being addressed or those not yet addressed

Stakeholder	Participation Strategy	Responsibility	Topics of Discussion	Time/Frequency	Monitoring
	Publications/Announcements in media (local and/or national)		marginalized, presentation of recommendation for inclusion in the ESIA	Ad hoc meetings/publications and notices on a need to basis during construction	Barazas/community meetings conducted including minutes and attendance. Focused Groups discussions conducted including minutes or questionnaires Inclusion of group specific mitigation into project implementation or its exclusion e.g. gender balancing for labourers
General public	Baraza/Public consultation meetings. Door to door consultations Print notice KeNHA website Publications/Announcements in media.	KeNHA, Consultant	Project development, identified environmental and social impacts and their mitigation, schedule of activities, presentation of recommendation for inclusion in the ESIA	During ESIA fieldwork A Regularly on KeNHA website during all phases of the project Ad hoc meetings/publications and notices on a need to basis during construction	Barazas/community meetings conducted including minutes and attendance. Media (print, audio and visual) awareness campaigns

11.2 SUMMARY OF PUBLIC AND STAKEHOLDER CONSULTATION

11.2.1 Public Consultation Minutes

- 1) Minutes of the Public Consultation Meeting Held on 21st February 2019 at Isiolo Junction/Barrier opposite Ewaso Nyiro North Development Authority Headquarters at 10:30 am

Agenda

1. Preliminaries
2. Disclosure of the project/Project Description
3. Impacts of proposed project and mitigation measures from the community
4. Other Concerns
5. Adjournment

Members Present

The meeting was attended by 70 community members.

Min 1/15/2019: Preliminary

The meeting began at 10:30 am with a word of prayer by Sister Lydia. It was coordinated by the Chief Yusuf and the Assistant Chief.

The Assistant chief welcomed the community to the meeting and welcomed the senior who further invited the Consultant.

The Consultant began by introducing the ESIA team to the community. He explained the purpose of the meeting was to inform about the proposed project, collect views, positive or negative from the general public and any other party who in any way will/ might be affected by the proposed project within its project cycle. Further, he explained that pursuant to Article 10 (2) of the Constitution of Kenya, Section 3 (5a) of EMCA Cap 387 and Section 58 on Environmental and Social Impact Assessment, public participation is an important exercise in the national values and principles of governance; and for achieving the fundamental principles of sustainable development. He added that public participation forms part of the key component in development as also provided in Section 87 & 113 of the County Governments Act, 2012.

Min 2/14/2019: Project Description

a) Project Design:

The Government of the Republic of Kenya (GoK) applied for a credit from the The World Bank towards the cost of the North Eastern Transport Improvement Project (“NETIP”). The GoK intends to use a portion of the proceeds of the credit for the upgrading to bitumen standards of sections of the Isiolo-Modogashe road. The total length of the Isiolo-Modogashe road is 190Km of which selected sections will be part of NETIP.

The project is aimed at enhancing connectivity between the people of this marginalized areas with the rest of the country and the neighbouring countries of Somalia as well as Ethiopia. The Isiolo-Mandera road traverses in a north-easterly direction from Isiolo Town (in Isiolo County) through Meru County, Isiolo County (Second section of this road) Wajir County and Mandera County which are situated in the North Eastern part of Kenya. The Consultant clarified that this meeting was for consultation on the Isiolo-Modogashe road.

The project road starts from Isiolo town, at a T-junction with road A2 approximately 1Km from Isiolo town Central Business District (CBD) and traverses for approximately 3Km in easterly direction within Isiolo County. The alignment then exits Isiolo County into Meru County, curving into a north-easterly direction traversing approximately 63Km to Kachiuru shopping centre in Meru County, where it exits Meru County back to Isiolo to Kulamawe then terminate at modogashe shopping centre. The alignment follows the existing Isiolo – Manderu road, formerly classified as RD B9. Approximately 10km of the Alignment lies within Isiolo County at the start then exits into Meru to Kachuru where it enters Isiolo County again to Modogashe which the boarder with Garisa county. The project road is currently classified as RD A10 from Isiolo to Kulamawe then B84 from Kula mawe to Modogashe junction under the new road classification by Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD).

The Consultant further explained to the public that the current Right of Way (Road Width) of 40m will be changed to 60m since the road is now a class A road.

b) Social infrastructure Component

Quarries, Borrow Pits, Stockpiles and Spoil Areas the Contractor will make available any land for quarries, borrow pits, stockpiles and spoil areas, except for those areas in road reserves specifically approved by the resident engineer. The contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications and for the procurement, mining, haulage to site of these materials and all costs involved therein. Similarly the contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works the Contractor may utilize these subject to the approval of the Engineer.

c) Safety and Public Health Requirements

This is an integral part of the project especially during the construction phase. Warning and advisory notices, drugs and condoms will be provided for throughout the project duration. The contractor shall allow for qualified professionals to conduct lectures to the workers regarding the spread of HIV/Aids.

d) Advantages of the project

The Consultant explained that upon commencement of construction to completion and operation, the Proposed Road is expected to bring the following advantages to the people of the area

- Improve the region's road network,
- Reduce travel time along and across the roads,
- Enhance the operational efficiency of the road,
- Promote economic growth within the region,
- Improve safety and reliability for all road users,
- Attract diverted traffic that will foster regional growth,
- Provide employment opportunities to local inhabitants, among other benefits

e) Some of the disadvantages the project

The Consultant also explained some of the negative effects of the project

- Dust generation during construction.
- Poor disposal of the waste materials from the construction.
- A possible increase in the spread of STDs, i.e. HIV and AIDS.

- Loss of pasture for livestock and wildlife.
- Possible disruption of the water table.
- Increased number of accidents during and after construction. There are wild and domestic animals

Min 3/14/2019: Issues of the Proposed Road and Mitigation Measures as asked by the participants

The following issues were raised on several impacts that are foreseen during the constructional and operational phases of the proposed road.

Q1) Land Acquisition and Involuntary Resettlement/Displacement of persons

The public noted that since the Road Width will be changed to 60m from the current 40m most of their properties will be affected especially at Checheles area. This was aired by Nura Roba and supported by several others. They wanted the road to be shifted to Kambi Garba loop which is about 4KM on the Isiolo-Moyale Road. The community totally disagreed with the demolition of their property at the junction (Checheles area.) The community noted that the current road was just a military road and the original map show that the road is in Kambi Garba.

Response

- *A Resettlement plan was commissioned to check on that and the community confirmed the same.*
- *Property valuation and compensation will take place in case the government sticks with the original plan*
- *The consultant will air their grievances over the matter and propose it as an alternative to the project in the ESIA. In addition the KeNHA representative promised to follow on the same.*

Q2) Social infrastructure/corporate social responsibility

The community asked for the following social infrastructures suggested by the area MCA who was present and supported by others.

- The Youth suggested that a Rehabilitation Centre should be prioritized
- University, Technical Training Institutes and Teachers College
- Boreholes, water pans and dams were also suggested by the community due to water scarcity in the area
- Schools (both Primary and Secondary)
- Hospital
- Market

Response

The Consultant informed the community that there is a CSR component in the project seeking to develop the area since it is a marginalized area. The contractor should undertake some CSR in the area. He then asked the community to list some of the CSR activities that the contractor should consider undertaking:

Q3) Road Safety

Sister Lydia raised an issue on the safety of the road and an increase in accidents during and after construction. The community had an issue on the safety of the road since there are children who use the road when going to school at Checheles and 78 barracks.

Response

The Consultant informed the public that road safety will be ensured through the following measures

- *Erection of road signs and marking of the road properly*
- *Erection of road bumps across the road along market centres, schools, to mitigate accidents.*
- *Bus stages will be constructed on major town centres and markets.*
- *Do public sensitization and training on road use and safety*

Q4) Quality

An Engineer at Ewaso Nyiro Development Authority raised an issue on the poor drainage system in the area. The area floods to an extent it causes accidents and diseases due to stagnating water. Especially during rainy season.

He further added that the area closer to 78 barracks is worse. He proposed broader shoulders with effective drainage system

Response

Concerning drainage, the public were notified that bridges and culverts will be constructed in flood prone areas, engineers have surveyed the area and have sufficient data on the flood prone areas and have factored that in the road design

Q5) Jobs and Employment

John Wiper raised an issue on employment and consideration of the youth and women was seconded by several others. The community suggested that the locals should be given the first priority for jobs. They said that the contractor should not come with foreigners from other places. They wanted all tribes in the area i.e. Meru, Borana, Turkana, Somali to be considered for jobs that may arise during the road construction

Response

The Consultant notified the community that the construction of the road will require skilled i.e. engineers, surveyors, masons, carpenters, welders, plant operators people which if not found among the residents will be sourced from other places. Semi-skilled and unskilled people.

- *Employment of locals will be prioritized*
- *A local committee made up of village elders, women and youth should be formed to assist the contractor during employment*
- *the contractor should exhaust all available locals before looking for employees from other places*

Q6) Dust Emissions/ Pollution (Noise, Air etc.)

Abdi Rashid Dida raised an issue on the noise pollution and dust generation during construction and there schools and young children around. The community wanted to know how these pollutions will be prevented or minimized.

Response

- *The Consultant informed the public that the Contractor will abide by the Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009 Legal Notice No. 61*
- *Avoid noisy activities at night and also close to residential areas, schools, hospitals and areas of worship*
- *Workers will be provided with noise protective Equipment. Noise mapping of critical areas will be conducted.*

- *Dust during construction and in specific near schools and market centres; Consultant suggested that the contractor will have to.*
- *Water spraying on dry and dusty surfaces regularly including the access murrum roads and diversions.*

Q7) Impact/ Participation of Women, Youth and Marginalized Groups

The women, youth and people with disability sought to know what special privileges will be given to them.

The women suggested that they are willing and able to take any form of employment available and they should be considered for tenders

The youth suggested that they should be given priority of employment and tenders, they should be sponsored for training in technical courses and asked for rehabilitation programmes since drug abuse is prevalent

Response

The Consultant told the community that the Kenya 2010 Constitution gives specific attention to women, youth and other vulnerable groups

He thus assured the public that the contractor will give these groups special attention in terms of jobs and tenders that will be available.

The community elders should organize for this process to be done in a transparent and open manner.

Q8) Demand on Water Resources

There was an outcry from the community that the construction of the road will stress the existing water resources since the area is water scarce

Response

The consultant addressed the issue by the following responses:

Since the area is a water scarce area, the existing water resources will be protected by the contractor and will have to consult the community before using it.

The contractor will consult the local community before drilling boreholes or abstracting water for his use. Boreholes can be drilled close to the centres to benefit the local community. The boreholes could be surrendered to the community after construction works

Non potable water for water spraying will be used

Q9) impacts on wildlife migratory routes/accidents

The Assistant Chief raised an issue with the issue of animals crossing the area hence a major concern. The public concurred with that the area traversed by the road has wildlife like elephants, gazelles, zebras, dikdiks, ostrich, hyenas and lions. They said with the exception of elephants which follows specific routes the other animals roam freely along the road corridor moving from Shaba National Reserve to Meru National Park and otherwise.

Response

The consultant responded by notifying the community that the contractor will undertake the following measures to control this accidents.

- *The Contractor to design and construct wildlife migration routes*
- *The contractor will work closely with the community to identify the hotspot crossing areas for wildlife*

- *The Contractor to design and construct wildlife migration routes*
- *Speed-bumps and guard rails will be constructed at wildlife migratory corridors*
- *Signage to be provided at wildlife corridor points*
- *Speed will be restricted by speed limit at these specific points*

Q10) Livestock and Domestic Animals

Hussein Ngure raised the same issue on domestic animals accidents since several parts along the road are used by the community for grazing cows, sheep, goats and camels since they are majorly a pastoralist community. The public further suggested that there are watering points for animals along the road. They suggested that the contractor should mark the road with proper signage, erect bumps along the grazing and watering areas and sensitize the pastoralists on road safety. The Community wanted to know how the accidents on domestic animals will be minimized

Response

The Consultant informed the community that:

- *The Contractor will erect speedbumps, and rumble strips near village centres and livestock crossing points*
- *Side paths and underpasses will be created along the road close to livestock grazing and watering areas to minimize accidents.*
- *Guard rails be put along dangerous places to avoid animals from crossing the road at these places*
- *Signage will be provided throughout the road length and especially in towns and villages*

Q11) Impact on Cultural Resources

The Abdi Rashid Dida raised an issue on cultural resource within the road reserve like graves and churches

Response

The Consultant notified them that any cultural resource encountered during any phase of the project will not be interfered with without consultations with the local community elders.

Min 3/13/2019 Other Concerns

The locals suggested that they want some feeder roads around the area to ease the movement of people and decongestion along the main road.

The community also suggested that they should be furnished with the final report when done through their chief.

Min 4/13/2019 Adjournment

The public were thanked for actively attending and participating in the meeting by the Consultant.

There being no other business the meeting was ended by a word of prayer from Assistant Chief Abdulrahman Golo at 2.00 pm.

Minutes Drafted by: Justus Lemein - ESIA Technical Assistant

Minutes Confirmed by: Dr. Eng Zablun Oonge – ESIA Consultant

PUBLIC CONSULTATION MEETING-
ISILOLO-MODOGASHE ROAD

LIST OF ATTENDANCE

NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Josphat Muriithi Ntiro	24459211	Checheleso	0712960362	[Signature]
2	Boru Karso	21620862	Tulu Roba	0724213702	[Signature]
3	Hussain Zure Mohamed	90841095	Tulakoba	0725220703	[Signature]
4	EPHANTUS K. NJALI	1062024	CHECHELES	0722569802	[Signature]
5	SIMON GATOBU M'KIUGU	3464773	CHECHELES	0724638901	[Signature]
6	Guyo Liband Alero	0799591	CHECHELES	0721990493	[Signature]
7	Asha Hassan Soro	5747078	CHECHELES	0723844921	[Signature]
8	Aban Baba Ilalo	97553209	Tulu Roba	0720955562	[Signature]
9	Leahara Nakingu	0011938	Tulu Roba	0710336907	[Signature]
10	Dani Dabro	2651904	CHECHELES	072226716	[Signature]
11	Adnan ABULA	0079457	Tulu Roba	079026414	[Signature]
12	ALI BANTE	3189271	Tulu Roba	—	[Signature]
13	Buce Sala	13044839	Checheles	0713349593	[Signature]
14	CAROLINE K. MURIITHI	23579907	Checheles	0720170039	[Signature]
15	Nadi HARO	13729162	tulu Roba	072596026	[Signature]

PUBLIC CONSULTATION MEETING-
ISILO-MODOGASHE ROAD

LIST OF ATTENDANCE

NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Dalicha Aalake	0634713	Checheles	0720605364	
2	GALMA BONAYA	0632719	Tulu Roba	0729947006	
3	FIRDA A KADER	12925006	Tulu Roba	0725-896454	
4	STANED KIRIGIA	2364436	Checheles	0727933443	
5	WARIO WAKO	0480567	Checheles	071805020	
6	Angela Mwendu Wale	9854836	Checheles	07967969	
7	Sixan Bonaya	0705774	Checheles	0721-819310	
8	ROBA KOFLE	3644727	Tulu-Roba	071297126	
9	SAD DUBA	1250053	Tulu-Roba	072257333	
10	BISHAY ALI	9162074	Checheles	0721050191	
11	IBRAHIM JUMU	7767939	Checheles	0715357117	
12	LIBAN KUMBI	2227991	ENSO Office	071498214	
13					
14					
15					

PUBLIC CONSULTATION MEETING- ISIOLO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1					
2	LILIAN Mungania	11610169	checheles	0721977365	Mungania
3	HADITA HASSAN	21728010	checheles	0711104500	HADITA
4	WALO TACHA	12754036	checheles	0712910678	
5	ABDI RASHID DIDA ABUKHULA	PGMISSAA02864	BULLU-ROBA	0717314903	ABDI RASHID
6	John Abel Emani	26885372	checheles	0721788043	
7	PATRICK WANTI	246765852	CHICHELESI	0708845177	
8	BADE Halake Golo	8889405	TULLU ROBA	0713219715	Halake
9	JOH LONUP RICHHO			0729817196	
10	Jaji Hadija	29256525	TULLU	0709962882	JE
11	Goliti Madang		T/ROBA		
12					
13					
14					
15					

PUBLIC CONSULTATION MEETING-
ISILO-MODOGASHE ROAD

LIST OF ATTENDANCE

NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	MARIKABUA MUYI	20812938	tulwaba	0734825440	
2	IBRUM KALEMIA	8871572	chezehez	0729817158	
3	NUSA ROBA TADICHA	22945066	TULLU-ROBA	0724628149	
4	RUKIA ADAN	0894778	TULLU-ROBA	0704720351	
5	HUSSEIN BRAHIM (NAME)	22311416	CHECHELESI	0723709560	
6	DALICHA DISA	20146807	TULLU-ROBA	071991464	
7	ADAN WAKO	22992687	CHECHELESI	072979539	
8	EIALMA WAKO	26245510	TULLU-ROBA	0726063017	
9	SORA HALKANO	2678827	TULLU-ROBA	0700812884	
10					
11					
12					
13					
14					
15					

2) Minutes of the Public Consultation Meeting Held on 22nd February 2019 at Gambella Town at 10:30 am

Agenda

1. Preliminaries
2. Disclosure of the project/Project Description
3. Impacts of proposed project and mitigation measures from the community
4. Other Concerns
5. Adjournment

Members Present

The meeting was attended by 50 community members.

Min 1/11/2019: Preliminary

The meeting began at 10:30 am with a word of prayer by Mama Caro. The Assistant County Commissioner introduced the community to meeting and expressed his apology for the few members because many of the residents have travelled to go and sought a land issue and expressed his support for the proposed project.

The Consultant began by introducing the ESIA team to the community. He explained the purpose of the meeting was to inform about the proposed project, collect views, positive or negative from the general public and any other party who in any way will/ might be affected by the proposed project within its project cycle. Further, he explained that pursuant to Article 10 (2) of the Constitution of Kenya, Section 3 (5a) of EMCA Cap 387 and Section 58 on Environmental Impact Assessment, public participation is an important exercise in the national values and principles of governance; and for achieving the fundamental principles of sustainable development. He added that public participation forms part of the key component in development as also provided in Section 87 & 113 of the County Governments Act, 2012.

Min 2/11/2019: Project Description

a) Project Design:

The Government of the Republic of Kenya (GoK) applied for a credit from the The World Bank towards the cost of the North Eastern Transport Improvement Project (“NETIP”). The GoK intends to use a portion of the proceeds of the credit for the upgrading to bitumen standards of sections of the Isiolo-Modogashe road. The total length of the Isiolo-Modogashe road is 190Km of which selected sections will be part of NETIP.

The project is aimed at enhancing connectivity between the people of this marginalized areas with the rest of the country and the neighbouring countries of Somalia as well as Ethiopia. The Isiolo-Mandera road traverses in a north-easterly direction from Isiolo Town (in Isiolo County) through Meru County, Isiolo County (Second section of this road) Wajir County and Mandera County which are situated in the North Eastern part of Kenya. The Consultant clarified that this meeting was for consultation on the Isiolo-Modogashe road.

The project road starts from Isiolo town, at a T-junction with road A2 approximately 1Km from Isiolo town Central Business District (CBD) and traverses for approximately 3Km in easterly direction within Isiolo County. The alignment then exits Isiolo County into Meru County, curving into a north-easterly direction traversing approximately 63Km to Kachiuru shopping centre in Meru County, where it exits Meru County back to Isiolo to Kulamawe then terminate at modogashe shopping centre. The alignment follows the existing Isiolo – Mandera road, formerly classified as RD B9. Approximately 10km of the Alignment lies within Isiolo County

at the start then exits into Meru to Kachuru where it enters Isiolo County again to Modogashe which the boarder with Garisa county. The project road is currently classified as RD A10 from Isiolo to Kulamawe then B84 from Kula mawe to Modogashe junction under the new road classification by Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD).

The Consultant further explained to the public that the current Right of Way (Road Width) of 40m will be changed to 60m since the road is now a class A road.

b) Social infrastructure Component

Quarries, Borrow Pits, Stockpiles and Spoil Areas the Contractor will make available any land for quarries, borrow pits, stockpiles and spoil areas, except for those areas in road reserves specifically approved by the resident engineer. The contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications and for the procurement, mining, haulage to site of these materials and all costs involved therein. Similarly the contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works the Contractor may utilize these subject to the approval of the Engineer.

c) Safety and Public Health Requirements

This is an integral part of the project especially during the construction phase. Warning and advisory notices, drugs and condoms will be provided for throughout the project duration. The contractor shall allow for qualified professionals to conduct lectures to the workers regarding the spread of HIV/Aids.

d) Advantages of the project

The Consultant explained that upon commencement of construction to completion and operation, the Proposed Road is expected to bring the following advantages to the people of the area

- Improve the region's road network,
- Reduce travel time along and across the roads,
- Enhance the operational efficiency of the road,
- Promote economic growth within the region,
- Improve safety and reliability for all road users,
- Attract diverted traffic that will foster regional growth,
- Provide employment opportunities to local inhabitants, among other benefits

e) Some of the disadvantages the project

The Consultant also explained some of the negative effects of the project

- Dust generation during construction.
- Poor disposal of the waste materials from the construction.
- A possible increase in the spread of STDs, i.e. HIV and AIDS.
- Loss of pasture for livestock and wildlife.
- Possible disruption of the water table.
- Increased number of accidents during and after construction. There are wild and domestic animals

Min 3/11/2019: Issues of the Proposed Road and Mitigation Measures as asked by the participants

The following issues were raised on several impacts that are foreseen during the constructional and operational phases of the proposed road.

Q1) Jobs and Employment

James Gatheri raised an issue on employment and consideration of the youth and women was seconded by several others. The community suggested that the locals should be given the first priority for jobs. They said that the contractor should not come with foreigners from other places. They wanted all tribes in the area i.e. Meru, Borana, Turkana, Somali to be considered for jobs that may arise during the road construction.

Response

The Consultant informed the community that the construction of the road will require skilled people such as masons, carpenters, welders, plant operators etc., semi-skilled and unskilled people.

- *Employment of locals will be prioritized*
- *A local committee made up of village elders, women and youth should be formed to assist the contractor during employment*
- *The contractor should exhaust all available locals before looking for employees from other places*

Q2) Impact on People, Property and Public resources

Ann Nduko raised issues regarding the properties that are within the road reserve since the road RoW will be widened from the current 40m to 60m -There were issues with people who did not have title deeds on whether they are going to be compensated without the correct documentation.

Response

- *The Consultant explained to the community that any property or person's land that will be affected by the road widening will be compensated in order to restore/improve their livelihoods since a detailed RAP was conducted and they confirmed the same.*
- *The Consultant explained that all land either with or without a title deed will be compensated. He further enlightened the community that Article 63(2) of the Kenyan Constitution, 2010 Community Land Act, 2016 classifies Community Land and defines the privileges, rights of Community Land and procedures of acquiring it.*
- *Any community facility such as hospitals, schools, mosques will not be touched before consultations with the community elders and compensation will be undertaken on the same.*

Q3) Impact/ Participation of Women, Youth and Marginalized Groups

Elijah sought to know how women, youth and people with disability will get special privileges since they are normally marginalized in the community.

The women suggested that they are willing and able to take any form of employment available

Response

The Consultant told the community that the Kenya 2010 Constitution gives specific attention to women, youth and other vulnerable groups

- *He thus assured the public that the contractor will give these groups special attention and equal opportunities in terms of jobs and tenders that will be available.*

Q4) Social Infrastructure/Corporate Social Responsibility

John Olupa suggested that since most of the people at Gambella are farmers, the contractor should build for them dams and drainage channels to their farms.

He also suggested that a health centre, schools and electricity connections should be given consideration.

Response

The Consultant informed the public that a CSR component would be included in the ESIA seeking to develop the area since it is a marginalized area. He asked the community to list some of the CSR activities that the contractor should consider:

- *A health centre*
- *The community suggested that dams, water pans and irrigation channels should be constructed for the locals so as to assist the farmers during dry seasons.*
- *Schools both Primary and Secondary should be prioritized in this area. These should be constructed with consultations of the local communities (Borana, Meru, Turkana, and Somali)*
- *Training and Scholarship opportunities for the youth*
- *Electricity connection*

Q5) Dust Emissions/ Pollution (Noise, Air etc.)

Mama Caro said that the construction of the road will result to dust emissions and noise pollutions. They wanted to know how these pollutions will be minimized.

Response

The Consultant explained that Noise Pollution will be avoided by the following measures to taken by the contractor:

- *Avoiding noisy activities at night and also close to residential areas*
- *Workers will be provided with noise protective equipment*
- *Noise mapping of critical areas will be conducted.*

Dust during construction and in specific near schools and market centres;

- *Consultant proposed spraying water on dry and dusty surfaces regularly including the access murrum roads and diversions*

Q6) Land Acquisition and Involuntary Resettlement/Displacement of persons

The chairman noted that since the RoW will be changed to 60m from the current 40m most of their agricultural land will be acquired and some of their properties will be affected

Response

The Consultant informed the public that the following measures have been undertaken by the government to prevent people properties.

- *▪ A Resettlement Action Plan (RAP) was commissioned before and community concurred on that.*
- *▪ Property valuation and compensation will follow suit.*
- *▪ A public awareness program will be undertaken when construction commences.*

Q7) Quarries and Borrow pits

The public wanted to know how the contractor will get soil and stones for the construction of the road. The community suggested that locals should be consulted before quarries and borrow pits are excavated.

Response

The consultant notified the public that the contractor in consultation with the community will identify places where quarries and borrow pits will be located.

- *The land owner on whose land the quarries will be located to be compensated; this was affirmed and assured by the Consultant*

Q8) Impact on Cultural Resources (graveyards, shrines and any other significant cultural resource within the project area)

Fatuma Abduda said that there are significant number of baobab trees at Yaqbarsadi area which are engraved with the names of their ancestors.

They suggested that these trees should be protected and not destroyed during construction

Response

The Consultant assured the public that any important cultural resource found in the area and their potential relocation will be done under consultation with the local community and that a chance find procedure will be included in the ESIA report.

Q9) Demand on Water Resources

There was an outcry from the community that the construction of the road will stress the existing water resources since the area is water scarce. The public noted that they use boreholes and water pans for farming and watering of livestock. They suggested that since most of them are farmers the contractor should build dams for them so that they avoid overreliance on rain fed agriculture.

Response

The Consultant respondent to the issues raised by the community by giving the following responses:

- *Since the area is a water scarce area, the existing water resources will be protected and consultation will be undertaken before any interference.*
- *The contractor will consult the local community before drilling boreholes or abstracting water for his use. Boreholes can be drilled close to the centres to benefit the local community. The boreholes could be surrendered to the community after construction works.*
- *The contractor will look on ways that he can help the local farmers on issues to do with drainage*

Q10) Livestock and Domestic Animals/Crossing points/ Water and Pasture areas

James Ekai wanted to know how accidents on domestic animals will be minimized since vehicles will be travelling at a high speed. Several parts along the road are used by the community for grazing cows, sheep, goats and camels since they are majorly a pastoralist community. The public further suggested that there are watering points for animals along the road e.g. Laghlaba river

They suggested that the contractor should mark the road with proper signage, erect bumps along the grazing and watering areas and sensitize the pastoralists on road safety.

Response

The Consultant informed the community that:

- *Crossing points will be created along the road close in consultation with the local community so as to minimize accidents.*
- *Guard rails be put along dangerous places to avoid animals from crossing the road at these places*
- *The Contractor will erect speedbumps, and rumble strips near village centres and livestock crossing points*
- *Signage will be provided throughout the road length and especially in towns and villages*

Q11) Impacts on Wildlife/Migratory routes/Accidents

Aden Roba raised a concern that the area traversed by the road has wildlife like elephants, gazelles, zebras, dikdiks, ostrich, hyenas and lions. They said with the exception of elephants which follows specific routes (close to Ndumuru) the other animals roam freely along the road corridor moving from Shaba National Reserve to Meru National Park and otherwise therefore wanted to know how accidents can be minimized.

Response

The Consultant responded by notifying the community that:

- *The contractor will work closely with the community to identify the wildlife corridors*
- *Speed-bumps and guard rails will be constructed at wildlife migratory corridors*
- *Signage to be provided at wildlife corridor points*
- *Speed will be restricted by speed limit at these points*

Q12) Road Safety & Quality Children crossing points/town centres and villages/ road signage and facilities

Monica Nkirote raised an issue on the safety of the road since there are children who use the road when going to school.

Community elders also noted that there are many drunkards in the area and the road could result to accidents

She also cited the issue of road drainage, they said that most parts of the road are prone to flooding during rainy season.

Response

The Consultant explained that:

- *Road safety infrastructure will be provided at centres and at sensitive areas.*
- *Speed will be restricted by speed limit at these points*
- *A hydrological analysis had been undertaken in the design review to provide for the flooding along the road, however the issue would be raised in the ESIA report.*

Min 3/11/2019 Other Concerns

The locals suggested that electricity connection of the area should be prioritized. This will lead to development of the area.

The community expressed their support for the project since it will improve their businesses and ease transportation

Min 4/11/2019 Adjournment

The public were thanked for actively attending and participating in the meeting by the Consultant.

There being no other business the meeting was ended by a word of prayer from a community elder at 1:30 pm

Minutes Drafted by: Justus Lemein - ESIA Technical Assistant

Minutes Confirmed by: Dr. Eng Zablon Oonge – ESIA Consultant

PUBLIC CONSULTATION MEETING- ISILO-MODOGASHE ROAD					
<i>Gambella</i>					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	FATUMA ABDUBA		GAMBELLA	0704993768	<i>[Signature]</i>
2	Zinab Adan	21503853	GAMBELLA		<i>[Signature]</i>
3	HABIBA SAKOTA		GAMBELLA		
4	FATUMA ABDUBA		GAMBELLA		
5	DABASO HALAKO LOKA	0184216	GAMBELLA		
6	MOHAMED ABDUBA	27241958	GAMBELLA	0717788299	<i>[Signature]</i>
7	Dima Ugrio	06392314	GAMBELLA		<i>[Signature]</i>
8	HADDI DUBA	13867636	GAMBELLA	0729065109	<i>[Signature]</i>
9	madina Godana	13867636	GAMBELLA	0708101063	<i>[Signature]</i>
10	ABDI Kadir Hassan	25278275	GAMBELLA	07576398	<i>[Signature]</i>
11	RUKIAH NAKHIA MWINGIRWA	7872362	"	0721918615	<i>[Signature]</i>
12	JAMES KATHAWE MWIRIA	4516662	"	0727764538	<i>[Signature]</i>
13	MONICAH NKIROTE	31293571	"	0705406127	<i>[Signature]</i>
14	AGNES KATHAWE	9433816	"	0792456194	<i>[Signature]</i>
15	HILARIA MWARI	21136538	"	07085602174	<i>[Signature]</i>

PUBLIC CONSULTATION MEETING- ISIOLO-MODOGASHE ROAD					
<i>Gambella</i>					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	<i>Ky Kyaa</i>	-	<i>Gambella</i>	<i>070392248</i>	
2	<i>Ehnael Stephen</i>		<i>AHir</i>	<i>0701474366</i>	<i>[Signature]</i>
3	<i>Ambrose Kalapat</i>	<i>33 447541</i>	<i>AHir</i>	<i>0795838847</i>	<i>[Signature]</i>
4	<i>James Ekai</i>		<i>AHir</i>	<i>0795137862</i>	
5	<i>Dika utato Gaigallo</i>	<i>30131856</i>	<i>Gambella</i>	<i>0791812603</i>	<i>[Signature]</i>
6	<i>Bonaya Wabito Jillo</i>	<i>07301720030</i>	<i>Gambella</i>	-	<i>[Signature]</i>
7	<i>Abdirahman Adan Golliche</i>	-	<i>Gambella</i>	<i>0792345925</i>	<i>[Signature]</i>
8	<i>Peter Edonga</i>	-	<i>AHir</i>	<i>0712636726</i>	
9	<i>Benjamin Lehwawi</i>	<i>20056799</i>	<i>AHir</i>	<i>0741212490</i>	<i>[Signature]</i>
10	<i>John Loupa Letiro</i>	<i>070619998</i>	<i>AHir</i>	<i>070619998</i>	<i>[Signature]</i>
11	<i>Marco</i>				
12	<i>ISMAEL ABDI BANTE</i>	<i>0076628</i>	<i>GAMBELLA</i>	<i>0716983092</i>	
13	<i>IRRAHIM RACHO DUBA</i>	<i>4819257</i>	<i>GAMBELLA</i>	<i>0741534573</i>	<i>[Signature]</i>
14	<i>ABDULLAH ROBA TEPO</i>	<i>21755488</i>	<i>Gambella</i>	-	<i>[Signature]</i>
15	<i>ADAN ROBA</i>	<i>0002432</i>	<i>Gambella</i>	<i>0706142037</i>	<i>[Signature]</i>

PUBLIC CONSULTATION MEETING- ISILO-MODOGASHE ROAD					
<i>Gambella</i>					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	REBECCA KARIMI	13833502	Gambella	0705619994	
2	STANLEY KIKUNGO	23827928	Gambella	0717453165	
3	ANDU NAIKU	24694156	Gambella	0703298751	
4	MARGRET KANANU	12621353	Gambella	0722517726	
5	WILSON IGWETA		Gambella	0729848191	
6	IRIBAH KANANU		Gambella	0792310572	
7	TIMOTHY GIONGA	23931998	Gambella	0724279855	
8	PAULINE KAMURA	3777072	Gambella	0745535501	
9	ANZI BINTA	25512987	Gambella	0798259866	
10	STEPHEN MUTEITHIA	36281489	Gambella	07111217251	
11	NARSON MUTHOMI	1181193146	Gambella	07	
12	ABEEN NKATHA		Gambella	0723275517	
13	Jonathan Mureithi	13400634	Gambella	0714126758	Jordan
14	Karani Steve	-	Gambella	-	
15	Abate Mwiti	-	Gambella	-	

PUBLIC CONSULTATION MEETING- Gambella ISIOLO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE	DATE		Telephone No/Address	Signature
	Name	Id No.	Village/Institution/ Organisation		
1	Deter Mugambi	3234708	Gambella	072334238	
2	Halima GUYO		Gambella		
3	ABEL ENOY.	13867630	Gambella	070450982	
4	ADAN COLO	23783587	Gambella	070354160	
5	Francis NACHI	90960820	Gambella	070658898	
6	SAFIA DABASO HALALE	20849249	Gambella	0721787137	
7	Abdi Ali	12866179	Gambella	0708498022	
8	Habila Wako	-		0729816870	
9	Amina Hassan	-		0721748663	
10	Fatuma Hagna	-		0706200283	
11	Hadija Oliba	-		0727830127	
12					
13					
14					
15					

3) Minutes of the Public Consultation Meeting Held on 25th February 2019 at Ndumuru Town at 11:30 am

Agenda

1. Preliminaries
2. Disclosure of the project/Project Description
3. Impacts of proposed project and mitigation measures from the community
4. Other Concerns
5. Adjournment

Members Present

The meeting was attended by 133 community members.

Min 1/12/2019: Preliminary

The meeting began at 11.30 am with a word of prayer from Joseph Kireria. The Assistant Chief introduced the community to meeting and expressed his full support for the project and sought the support of the people.

The Consultant began by introducing the ESIA team to the community. He explained the purpose of the meeting was to inform about the proposed project, collect views, positive or negative from the general public and any other party who in any way will/ might be affected by the proposed project within its project cycle. Further, he explained that pursuant to Article 10 (2) of the Constitution of Kenya, Section 3 (5a) of EMCA Cap 387 and Section 58 on Environmental Impact Assessment, public participation is an important exercise in the national values and principles of governance; and for achieving the fundamental principles of sustainable development. He added that public participation forms part of the key component in development as also provided in Section 87 & 113 of the County Governments Act, 2012.

Min 2/12/2019: Project Description

a) Project Design:

The Government of the Republic of Kenya (GoK) applied for a credit from the The World Bank towards the cost of the North Eastern Transport Improvement Project (“NETIP”). The GoK intends to use a portion of the proceeds of the credit for the upgrading to bitumen standards of sections of the Isiolo-Modogashe road. The total length of the Isiolo-Modogashe road is 190Km of which selected sections will be part of NETIP.

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which the boarder with Garisa county. The project road is currently classified as RD A10 from Isiolo to Kulamawe then B84 from Kula mawe to Modogashe junction under the new road classification by Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD).

The Consultant further explained to the public that the current Right of Way (Road Width) of 40m will be changed to 60m since the road is now a class A road.

b) Social infrastructure Component

Quarries, Borrow Pits, Stockpiles and Spoil Areas the Contractor will make available any land for quarries, borrow pits, stockpiles and spoil areas, except for those areas in road reserves specifically approved by the resident engineer. The contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications and for the procurement, mining, haulage to site of these materials and all costs involved therein. Similarly the contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works the Contractor may utilize these subject to the approval of the Engineer.

c) Safety and Public Health Requirements

This is an integral part of the project especially during the construction phase. Warning and advisory notices, drugs and condoms will be provided for throughout the project duration. The contractor shall allow for qualified professionals to conduct lectures to the workers regarding the spread of HIV/Aids.

d) Advantages of the project

The Consultant explained that upon commencement of construction to completion and operation, the Proposed Road is expected to bring the following advantages to the people of the area

- Improve the region's road network,
- Reduce travel time along and across the roads,
- Enhance the operational efficiency of the road,
- Promote economic growth within the region,
- Improve safety and reliability for all road users,
- Attract diverted traffic that will foster regional growth,
- Provide employment opportunities to local inhabitants, among other benefits

e) Some of the disadvantages the project

The Consultant also explained some of the negative effects of the project

- Dust generation during construction.
- Poor disposal of the waste materials from the construction.
- A possible increase in the spread of STDs, i.e. HIV and AIDS.
- Loss of pasture for livestock and wildlife.
- Possible disruption of the water table.
- Increased number of accidents during and after construction. There are wild and domestic animals

Min 3/12/2019: Issues of the Proposed Road and Mitigation Measures as asked by the participants

The following issues were raised on several impacts that are foreseen during the constructional and operational phases of the proposed road.

Q1) Jobs and Employment

Daniel makutho suggested that the locals should be given the first priority for jobs. He said that at least 40% of the works should be from the area. They said that the contractor should not come with foreigners from other places since they will resist.

Response

The Consultant informed the community that the construction of the road will require skilled people such as masons, carpenters, welders, plant operators etc., semi-skilled and unskilled people.

- *Employment of locals will be prioritized*
- *A local committee made up of village elders, women and youth should be formed to assist the contractor during employment*
- *The contractor should exhaust all available locals before looking for employees from other places*

Q2) Impacts on Wildlife Migratory routes/Accidents

Stephen Ekiru raised a concern that the area is traversed by the road has wildlife like elephants, gazelles, zebras, dikdiks, ostrich, hyenas and lions.

They said with the exception of elephants which follows specific routes the other animals roam freely along the road corridor moving from Shaba National Reserve to Meru National Park and otherwise.

Response

The Consultant responded by notifying the community that:

- *The contractor will work closely with the community to crossing areas for wildlife*
- *Speed-bumps and guard rails will be constructed at wildlife migratory corridors*
- *Signage to be provided at wildlife corridor points*
- *Speed will be restricted by speed limit at these points*

Q3) Livestock and Domestic Animals/Crossing points/ Water and Pasture areas

The Community wanted to know since how accidents on domestic animals will be minimized. Several parts along the road are used by the community for grazing cows, sheep, goats and camels since they are majorly a pastoralist community. The public further suggested that there are watering points for animals along the road e.g. Laghlabo river

They suggested that the contractor should mark the road with proper signage, erect bumps along the grazing and watering areas and sensitize the pastoralists on road safety.

Response

The Consultant informed the community that:

- *The ESIA would incorporate crossing points for livestock in consultation with the community.*
- *Guard rails be put along dangerous places to avoid animals from crossing the road at these places*

- *The Contractor will erect speedbumps, and rumble strips near village centres and livestock crossing points*
 - *Signage will be provided throughout the road length and especially in towns and village*
- Q4) Demand on Water Resources

Halima Galicha raised an issue on the usage of water and suggested that the contractor should construct boreholes to relief stress on the existing resources.

There was an outcry from the community that the construction of the road will stress the existing water resources since the area is water scarce.

Response

The Consultant explained that:

- *Since the area is a water scarce area, the existing water resources will be protected.*
- *The contractor will consult the local community before drilling boreholes or abstracting water for his use. Boreholes can be drilled close to the centres to benefit the local community. The boreholes could be surrendered to the community after construction works.*

Q5) Social infrastructure/corporate social responsibility

Peninah Kari raised an issue that this is a marginalized community and requires a lot infrastructure to develop hence he made a plea to the government to consider building the following infrastructure alongside the road construction to open up this area and have the country move forward as one.

Education-Schools (both Primary and Secondary) are required in the area education is in a pathetic state in the area. He include that this will reduce insecurity in the area.

University, Technical Training Institutes and Teachers College Water-Boreholes, water pans and dams were also suggested by the community due to water scarcity in the area in the area. He insisted that the area is very dry and water ids a big issues which normally bring conflict and causes the death of many animals.

Hospital. He also insisted on building of good hospitals in the area since the town is growing at a fast rate and the population is inserting pressure on the existing facilities.

Market. Ibrahim Mohamed insisted on a good market place for the animals and other products.

Response

The Consultant informed the public a CSR component would be proposed in the ESIA the project seeking to develop the area since it is a marginalized area.

- *He told them that the contractor has an obligation to help develop some social infrastructural facilities in the area.*
- *He asked the community to list some of the CSR activities that the contractor should consider because he might not be able to meet all of them but has to do at least some. The community elders and chiefs should deliberate on this matter and set aside sites for this infrastructure.*

Q6) Dust Emissions/ Pollution (Noise, Air etc.)

Abdi Rashid Dida raised an issue on the noise pollution and dust generation during construction and there schools and young children around. The community wanted to know how these pollutions will be minimized.

Response

Noise Pollution and dust control

- *The public were notified that the Contractor will abide by the Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations, 2009 Legal Notice No. 61*
- *Avoid noisy activities at night and also close to residential areas, schools, hospitals and areas of worship*
- *Workers will be provided with noise protective Equipment*

Dust during construction and in specific near schools and market centres; Consultant suggested

- *Water spraying on dry and dusty surfaces regularly including the access murrum roads and diversions*

Q7) Impact on Cultural Resources (graveyards, shrines and any other significant cultural resource within the project area)

Fatuma Abduda said that there are significant number of baobab trees at Yaqbarsadi area which are engraved with the names of their ancestors.

They suggested that these trees should be protected and not destroyed during construction

Response

The Consultant assured the public that any important cultural resource found in the area and their potential relocation will be done under consultation with the local community and that a chance find procedure will be included in the ESIA report.

Q8) Demand on Water Resources

Regina Gitaru raised a concern that the construction of the road will stress the existing water resources since the area is water scarce. The public noted that they use boreholes and water pans for farming and watering of livestock. They suggested that since most of them are farmers the contractor should build dams for them so that they avoid overreliance on rain fed agriculture.

Response

The Consultant respondent to the issues raised by the community by giving the following responses:

- *Since the area is a water scarce area, the existing water resources will be protected and consultation will be undertaken before any interference.*
- *The contractor will consult the local community before drilling boreholes or abstracting water for his use. Boreholes can be drilled close to the centres to benefit the local community. The boreholes could be surrendered to the community after construction works.*

Min 3/12/2019 Adjournment

The Consultant thank the public for coming out in large numbers to attend the meeting thanked them also for actively participating in the meeting.

There being no other business the meeting was ended by a word of prayer from the sheikh at 2:00 pm

Minutes Drafted by: Justus Lemein - ESIA Technical Assistant

Minutes Confirmed by: Dr. Eng Zablon Oonge – ESIA Consultant

PUBLIC CONSULTATION MEETING- ISILOLO-MODOGASHE ROAD					
<i>Domulo'</i>					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Jesse Thiridi	13181358	Ndurumu	0714 243506	
2	Joseph Lutema	2374828	Ndurumu	0703818213	
3	Maqret Thiridi	—	"	0798504981	
4	Beatrice Kandi	30747918	Ndurumu	0704436346	
5	Daniel Makutho	7784672	Ndurumu	—	
6	Stanley Xigore	13885797	Ndurumu	0791791168	
7	Stephen Eliriki	304571068	Ndurumu	—	
8	Aelen Mohamed	3029442 309442	Ndurumu	079387304	
9	Kiilo m'mwetu	2538111	xidurumu	0703570708	
10	Maqret Thiridi	—	"		
11	Bernard Kaibi	36365003	"	—	
12	Patrick Gitonga	22538194	"	0795670405	
13					
14					
15					

PUBLIC CONSULTATION MEETING-
ISIOLO-MODOGASHE ROAD

LIST OF ATTENDANCE

NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	PENINAH KAARI	31575906	NDOMURU	0708257530	<i>[Signature]</i>
2	SUSAN KAARI	35350170	NDOMURU	0706773761	<i>[Signature]</i>
3	WINEREA MUKAMI	3522945	NDOMURU	0796676857	<i>[Signature]</i>
4	ANN MAIGERIT	26463359	NDOMURU	070786492	<i>[Signature]</i>
5	LUCY KEMDI	30510330	NDOMURU	07	
6	Simon Isigato	30510330 30510330	NDOMURU NDOMURU	07113362966	<i>[Signature]</i>
7	Doris Nkomo	314937296	NDOMURU	0791219267	<i>[Signature]</i>
8	Florence Nkoro	33589143	NDOMURU	0707627921	<i>[Signature]</i>
9	SADINA NKIROH	36567955		0791264455	
10	MORICA MAMI	36637083	NDOMURU		<i>[Signature]</i>
11	Zakayo Mutuma	11A90608	NDOMURU		<i>[Signature]</i>
12	Mwendu MUMUNYA	210113560	NDOMURU		<i>[Signature]</i>
13	Regina Gitura	21051938	NDOMURU	0714892549	<i>[Signature]</i>
14	Mark Mutuma			079606062	<i>[Signature]</i>
15	Grace Kanana	-	11	-	

Domuho

**PUBLIC CONSULTATION MEETING-
ISIOLO-MODOGASHE ROAD**

LIST OF ATTENDANCE

NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	SUSAN KAAU	35356170		6706773761	<i>[Signature]</i>
2	M Thuranira Kalane	36570885	Ndumura	—	<i>[Signature]</i>
3	Jerusa NCCoro	8863692	11	—	
4	Zippora M'	31716797	11	—	<i>[Signature]</i>
5	Ameco Ngakai	3127130		0723039191	
6	John Kaberi	19513451	11	0745742944	<i>[Signature]</i>
7	Purity Kagendo	20499420		070610645484	
8	Heran Katuru	13181366	11	0719171423	<i>[Signature]</i>
9	Fridal Mwendu	35571298		0718488084	<i>[Signature]</i>
10	Amos Kinyua	—	1	0748749533	<i>[Signature]</i>
11	Moris Mathami	34897764		07524252	<i>[Signature]</i>
12	Jeremiah Muriungi	—	11	—	
13	Stephen Mugaambi	28857427 2894228	11	—	<i>[Signature]</i>
14	Mercy Mainj	21521022	11	0715513924	<i>[Signature]</i>
15	Sabella Rima	12692339	11	0700660395	<i>[Signature]</i>

4) Minutes of the Public Consultation Meeting Held on 27th February 2019 at Kachuru Town at 12:30 pm

Agenda

1. Preliminaries
2. Disclosure of the project/Project Description
3. Impacts of proposed project and mitigation measures from the community
4. Other Concerns
5. Adjournment

Members Present

The meeting was attended by 53 community members.

Min 1/15/2019: Preliminary

The meeting began at 12:30 pm with a word of prayer by Wario Mohamed. The Assistant Chief introduced the community to meeting and expressed his full support for the project and sought the support of the people and thanked the community creating time for the meeting even it was a market day.

The Consultant began by introducing the ESIA team to the community. He explained the purpose of the meeting was to inform about the proposed project, collect views, positive or negative from the general public and any other party who in any way will/ might be affected by the proposed project within its project cycle. Further, he explained that pursuant to Article 10 (2) of the Constitution of Kenya, Section 3 (5a) of EMCA Cap 387 and Section 58 on Environmental Impact Assessment, public participation is an important exercise in the national values and principles of governance; and for achieving the fundamental principles of sustainable development. He added that public participation forms part of the key component in development as also provided in Section 87 & 113 of the County Governments Act, 2012.

Min 2/15/2019: Project Description

a) Project Design:

The Government of the Republic of Kenya (GoK) applied for a credit from the The World Bank towards the cost of the North Eastern Transport Improvement Project (“NETIP”). The GoK intends to use a portion of the proceeds of the credit for the upgrading to bitumen standards of sections of the Isiolo-Modogashe road. The total length of the Isiolo-Modogashe road is 190Km of which selected sections will be part of NETIP.

The project is aimed at enhancing connectivity between the people of this marginalized areas with the rest of the country and the neighbouring countries of Somalia as well as Ethiopia. The Isiolo-Mandera road traverses in a north-easterly direction from Isiolo Town (in Isiolo County) through Meru County, Isiolo County (Second section of this road) Wajir County and Mandera County which are situated in the North Eastern part of Kenya. The Consultant clarified that this meeting was for consultation on the Isiolo-Modogashe road.

The project road starts from Isiolo town, at a T-junction with road A2 approximately 1Km from Isiolo town Central Business District (CBD) and traverses for approximately 3Km in easterly direction within Isiolo County. The alignment then exits Isiolo County into Meru County, curving into a north-easterly direction traversing approximately 63Km to Kachiuru shopping centre in Meru County, where it exits Meru County back to Isiolo to Kulamawe then terminate at modogashe shopping centre. The alignment follows the existing Isiolo – Mandera road, formerly classified as RD B9. Approximately 10km of the Alignment lies within Isiolo County

at the start then exits into Meru to Kachuru where it enters Isiolo County again to Modogashe which the boarder with Garisa county. The project road is currently classified as RD A10 from Isiolo to Kulamawe then B84 from Kula mawe to Modogashe junction under the new road classification by Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD).

The Consultant further explained to the public that the current Right of Way (Road Width) of 40m will be changed to 60m since the road is now a class A road.

b) Social infrastructure Component

Quarries, Borrow Pits, Stockpiles and Spoil Areas the Contractor will make available any land for quarries, borrow pits, stockpiles and spoil areas, except for those areas in road reserves specifically approved by the resident engineer. The contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications and for the procurement, mining, haulage to site of these materials and all costs involved therein. Similarly the contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works the Contractor may utilize these subject to the approval of the Engineer.

c) Safety and Public Health Requirements

This is an integral part of the project especially during the construction phase. Warning and advisory notices, drugs and condoms will be provided for throughout the project duration. The contractor shall allow for qualified professionals to conduct lectures to the workers regarding the spread of HIV/Aids.

d) Advantages of the project

The Consultant explained that upon commencement of construction to completion and operation, the Proposed Road is expected to bring the following advantages to the people of the area

- Improve the region's road network,
- Reduce travel time along and across the roads,
- Enhance the operational efficiency of the road,
- Promote economic growth within the region,
- Improve safety and reliability for all road users,
- Attract diverted traffic that will foster regional growth,
- Provide employment opportunities to local inhabitants, among other benefits

e) Some of the disadvantages the project

The Consultant also explained some of the negative effects of the project

- Dust generation during construction.
- Poor disposal of the waste materials from the construction.
- A possible increase in the spread of STDs, i.e. HIV and AIDS.
- Loss of pasture for livestock and wildlife.
- Possible disruption of the water table.
- Increased number of accidents during and after construction. There are wild and domestic animals

Min 3/15/2019: Issues of the Proposed Road and Mitigation Measures as asked by the participants

The following issues were raised on several impacts that are foreseen during the constructional and operational phases of the proposed road.

Q1) Demand on Water Resources

Peter Murunge raised an issue that the construction of the road will stress the existing water resources since the area is water scarce. The public noted that they use boreholes and water pans for farming and watering of livestock. They suggested that since most of them are farmers the contractor should build dams for them so that they avoid overreliance on rain fed agriculture.

Response

The Consultant responded to the issues raised by the community by giving the following responses:

- *Since the area is a water scarce area, the existing water resources will be protected and consultation will be undertaken before any interference.*
- *The contractor will consult the local community before drilling boreholes or abstracting water for his use. Boreholes can be drilled close to the centres to benefit the local community. The boreholes could be surrendered to the community after construction works.*
- *The contractor will look on ways that he can help the local farmers on issues to do with drainage*

Q2) Dust Emissions/ Pollution (Noise, Air etc.)

Silas Kabuya raised an issue on the noise pollution and dust generation during construction and there schools and young children around. The community wanted to know how these pollutions will be minimized.

Response

The Consultant explained that Noise Pollution will be avoided by the following measures to taken by the contractor:

- *Avoiding noisy activities at night and also close to residential areas*
- *Workers will be provided with noise protective equipment*

Dust during construction and in specific near schools and market centres;

- *Consultant proposed spraying water on dry and dusty surfaces regularly including the access murram roads and diversions*

Q3) Jobs and Employment

Wario Mohammed suggested that the locals should be given the first priority for jobs. He said that at least 40% of the works should be from the area. They said that the contractor should not come with foreigners from other places since they will resist.

Response

The Consultant informed the community that the construction of the road will require skilled people such as masons, carpenters, welders, plant operators etc., semi-skilled and unskilled people.

- *Employment of locals will be prioritized*

- A local committee made up of village elders, women and youth should be formed to assist the contractor during employment
- The contractor should exhaust all available locals before looking for employees from other places

Q4) Impact/ Participation of Women, Youth and Marginalized Groups

The women, youth and people with disability sought to know what special privileges will be given to them.

The women suggested that they are willing and able to take any form of employment available and they should be considered for tenders

The youth suggested that they should be given priority of employment and tenders, they should be sponsored for training in technical courses and asked for rehabilitation programmes since drug abuse is prevalent.

Response

The Consultant told the community that the Kenya 2010 Constitution gives specific attention to women, youth and other vulnerable groups

He thus assured the public that the contractor will give these groups special attention and equal opportunities in terms of jobs and tenders that will be available.

Q5) Impacts on Wildlife/Migratory routes/Accidents

Silas Kabuya noted that the road has various wildlife species - elephants, gazelles, dik diks, ostrich, buffalos, giraffes, hyenas, lions and leopards -which could result to wildlife being knocked down by vehicles.

The participants expressed that there is an existing elephant corridor / crossing point near Kulamawe Centre with elephants moving from Shaba National Reserve to Meru National Park and vice-versa.

Response

The Consultant responded by notifying the community that:

- *The contractor will work closely with the community to identify the wildlife corridors*
- *Speed-bumps and guard rails will be constructed at wildlife migratory corridors*
- *Signage to be provided at wildlife corridor points*
- *Speed will be restricted by speed limit at these points*

Min 3/15/2019 Other Concerns

The locals suggested that electricity connection of the area should be prioritized. This will lead to development of the area.

The community expressed their support for the project since it will improve their businesses and ease transportation cost and time

Min 4/15/2019 Adjournment

The Consultant thank the public for coming out in large numbers to attend the meeting thanked them also for actively participating in the meeting.

There being no other business the meeting was ended by a word of prayer from the sheikh at 3:30 pm

Minutes Drafted by: Justus Lemein - ESIA Technical Assistant

Minutes Confirmed by: Dr. Eng Zablon Oonge – ESIA Consultant

KACHURU

PUBLIC CONSULTATION MEETING-
ISILO-MODOGASHE ROAD

LIST OF ATTENDANCE

NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Japhet Muriu	43490938	Kachuru	0723963175	
2	Grace Mukie	24644503	"	0723643470	
3	Mohamed HILLO	25829909	"	-	
4	Isack Hassan	22700717	"	0727852048	
5	Janso Sibig	-	"	-	
6	Andrew Kiyuki	-	"	0703709976	
7	Mohamed Ali	34398955	"	0704750471	
8	Abdulah Kadubo	32904605	"	070159013	
9	Hassan Abdi	12874179	"	4726	
10	Aden Kadubo	32196633	"	0720130657	
11	Huka Abanobg	-	"	070573439	
12	Salac Hussein	-	"	0799891267	
13	Hussein Salacg	-	"	0741714861	
14	Hassan olo	-	"	-	
15	Tarim Mandersg	-	"	0731431371	

PUBLIC CONSULTATION MEETING-
ISILO-MODOGASHE ROAD

KACHURU

LIST OF ATTENDANCE

NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Mohamed ahmed	—	Kachuru	0720314988	<i>[Signature]</i>
2	Yussuf Francis mukiri	23420261	"	0706055288	<i>[Signature]</i>
3	Abkano Kipyi	0081990	"	0710919101	<i>[Signature]</i>
4	Oiba abduraman	32904491	"	0726881860	<i>[Signature]</i>
5	Alex Mwezi	—	—	—	<i>[Signature]</i>
6	Amira Hassan	—	—	—	<i>[Signature]</i>
7	Lilian Ncabani	28150613	"	0717042572	<i>[Signature]</i>
8	Alice Kanario	—	"	0759612242	<i>[Signature]</i>
9	Sabera Mukoti	13527417	"	074127520	<i>[Signature]</i>
10	Halima Abdi	32904619	"	0 —	<i>[Signature]</i>
11	Balwako abukula	51056825	"	0713585825	<i>[Signature]</i>
12	Rukim Tulachg	31056773	"	0706816147	<i>[Signature]</i>
13	Rogina Mukoti	21471124	"	0714241109	<i>[Signature]</i>
14	Elizabeth Kaari	12888888 0743	"	0713216257	<i>[Signature]</i>
15	Garow Jillo	—	"	—	<i>[Signature]</i>

PUBLIC CONSULTATION MEETING- KACHURU ISILO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE	DATE		Telephone No/Address	Signature
	Name	Id No.	Village/Institution/ Organisation		
1	Silas Alesio		Kachuru		
2	Ibrahim Gallo	-	"	-	us.
3	Abdi Abdurahman	37559189	"	0729628971	us.
4	Duncan Mwasi	-	"	0757918077	us.
5	Galgallo Guyoo	-	"	0792031736	us.
6	Ali Gallo	23373101	"	0742926449	us.
7	Mohamed wario	20665976	"	0711428449	us.
8	Hussien Abdelahi	36372874	"	0740798849	us.
9	Didq Galgalo	0366561	"	-	us.
10	Shukri Ahmed	26324313	"	0723475588	us.
11	Silas Alesio	2379325	"	0710987372	us.
12	Dunglas KiMathi	-	"	0707669151	us.
13	Mutuma Jashug	-	"	-	us.
14	Abdirisack Ibrahim	37379742	"	0790774419	us.
15	Ether Karamby	-	"	0715070622	us.

PUBLIC CONSULTATION MEETING- ISIOLO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Khalid Kadubo	—	Kachiuru	0703310566	<i>[Signature]</i>
2	Durig Gollo	—	"	—	<i>[Signature]</i>
3	Sarah Alako	32904623	"	—	<i>[Signature]</i>
4	Tunu Abdulahi	25827897	"	—	<i>[Signature]</i>
5	Peter Kambiritho	—	—	—	<i>[Signature]</i>
6	Patrick Gitema	22158533	"	—	<i>[Signature]</i>
7	Sarah Seriff	—	—	—	<i>[Signature]</i>
8	Abeshno Ntonjira	2436569	"	—	<i>[Signature]</i>
9					
10					
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5) Minutes of the Public Consultation Meeting Held on 28th February 2019 at Kulamawe Town at 2.00 pm

Agenda

1. Preliminaries
2. Disclosure of the project/Project Description
3. Impacts of proposed project and mitigation measures from the community
4. Other Concerns
5. Adjournment

Members Present

The meeting was attended by several community members.

Min 1/16/2019: Preliminary

The meeting was opened at 2PM by a word of prayer from the Sheikh. Kulamawe Chief – Mr. Wario Halakhe and assistant Chief – Ali Olobe welcomed the members and Guests present. The Chief thanked the members for being calm and attending the meeting in large numbers.

The Consultant began by introducing the ESIA team to the community. He explained the purpose of the meeting was to inform about the proposed project, collect views, positive or negative from the general public and any other party who in any way will/ might be affected by the proposed project within its project cycle. Further, he explained that pursuant to Article 10 (2) of the Constitution of Kenya, Section 3 (5a) of EMCA Cap 387 and Section 58 on Environmental Impact Assessment, public participation is an important exercise in the national values and principles of governance; and for achieving the fundamental principles of sustainable development. He added that public participation forms part of the key component in development as also provided in Section 87 & 113 of the County Governments Act, 2012.

Min 2/16/2019: Project Description

a) Project Design:

The Government of the Republic of Kenya (GoK) applied for a credit from the The World Bank towards the cost of the North Eastern Transport Improvement Project (“NETIP”). The GoK intends to use a portion of the proceeds of the credit for the upgrading to bitumen standards of sections of the Isiolo-Modogashe road. The total length of the Isiolo-Modogashe road is 190Km of which selected sections will be part of NETIP.

The project is aimed at enhancing connectivity between the people of this marginalized areas with the rest of the country and the neighbouring countries of Somalia as well as Ethiopia. The Isiolo-Mandera road traverses in a north-easterly direction from Isiolo Town (in Isiolo County) through Meru County, Isiolo County (Second section of this road) Wajir County and Mandera County which are situated in the North Eastern part of Kenya. The Consultant clarified that this meeting was for consultation on the Isiolo-Modogashe road.

The project road starts from Isiolo town, at a T-junction with road A2 approximately 1Km from Isiolo town Central Business District (CBD) and traverses for approximately 3Km in easterly direction within Isiolo County. The alignment then exits Isiolo County into Meru County, curving into a north-easterly direction traversing approximately 63Km to Kachiuru shopping centre in Meru County, where it exits Meru County back to Isiolo to Kulamawe then terminate at modogashe shopping centre. The alignment follows the existing Isiolo – Mandera road, formerly classified as RD B9. Approximately 10km of the Alignment lies within Isiolo County at the start then exits into Meru to Kachuru where it enters Isiolo County again to Modogashe which the boarder with Garisa county. The project road is currently classified as RD A10 from

Isiolo to Kulamawe then B84 from Kula mawe to Modogashe junction under the new road classification by Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD).

The Consultant further explained to the public that the current Right of Way (Road Width) of 40m will be changed to 60m since the road is now a class A road.

b) Social infrastructure Component

Quarries, Borrow Pits, Stockpiles and Spoil Areas the Contractor will make available any land for quarries, borrow pits, stockpiles and spoil areas, except for those areas in road reserves specifically approved by the resident engineer. The contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications and for the procurement, mining, haulage to site of these materials and all costs involved therein. Similarly the contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works the Contractor may utilize these subject to the approval of the Engineer.

c) Safety and Public Health Requirements

This is an integral part of the project especially during the construction phase. Warning and advisory notices, drugs and condoms will be provided for throughout the project duration. The contractor shall allow for qualified professionals to conduct lectures to the workers regarding the spread of HIV/Aids.

d) Advantages of the project

The Consultant explained that upon commencement of construction to completion and operation, the Proposed Road is expected to bring the following advantages to the people of the area

- Improve the region's road network,
- Reduce travel time along and across the roads,
- Enhance the operational efficiency of the road,
- Promote economic growth within the region,
- Improve safety and reliability for all road users,
- Attract diverted traffic that will foster regional growth,
- Provide employment opportunities to local inhabitants, among other benefits

e) Some of the disadvantages the project

The Consultant also explained some of the negative effects of the project

- Dust generation during construction.
- Poor disposal of the waste materials from the construction.
- A possible increase in the spread of STDs, i.e. HIV and AIDS.
- Loss of pasture for livestock and wildlife.
- Possible disruption of the water table.
- Increased number of accidents during and after construction. There are wild and domestic animals

Min 3/16/2019: Issues of the Proposed Road and Mitigation Measures as asked by the participants

The following issues were raised on several impacts that are foreseen during the constructional and operational phases of the proposed road.

Q1) Jobs and Employment

The community was optimistic that the project would create numerous employment opportunities for both skilled and unskilled labour alike during the construction and operational phases.

The community noted that there are all types of needed skills within the area. Such skills include; masons, carpenters, welders, plant operators and hence they should be prioritized. They however expressed fears that the contractor would employ people from other regions hence leaving them with no benefits. Members also expressed concerns that the project should not benefit members of only one ethnic tribe and therefore suggested formation of a local committee to assist the contractor.

The people also expressed hope that they would be able to access employment once the project commences mostly as casual workers.

Response

The Consultant informed the community that the construction of the road will require skilled people such as masons, carpenters, welders, plant operators etc., semi-skilled and unskilled people.

- *Employment of locals will be prioritized*
- *A local committee made up of village elders, women and youth should be formed to assist the contractor during employment*
- *The contractor should exhaust all available locals before looking for employees from other places*

Q2) Impact on People, Property and Public resources

The community expressed fears regarding the properties that are within the road reserve since the road RoW will be widened from the current 40m to 60m.

Further community expressed concerns that key social / religious facilities such as mosques could be destroyed.

The residents also feared that since they do not have title deeds, they were going to lose their land to the road project.

Response

- *A Resettlement Action Plan (RAP) was commissioned to ensure property valuation and compensation and the community confirmed the same.*
- *Adequate community consultations with the elders will be conducted before demolitions are done.*
- *Article 63 of the Constitution of Kenya, 2010 (the Constitution) provides for classification of land known as Community land providing for the recognition, protection and registration of community land rights hence land under community is protected.*

Q3) Quarries and Borrow pits

The public wanted to know how the contractor will get soil and stones for the construction of the road. The community suggested that locals should be consulted before quarries and borrow pits are excavated.

Response

The consultant notified the public that the contractor in consultation with the community will identify places where quarries and borrow pits will be located.

The land owner on whose land the quarries will be located to be compensated; this was affirmed and assured by the Consultant

Q4) Dust Emissions/ Pollution (Noise, Air etc.)

The participants expressed concern over possibility of generation of large amounts of dust which would affect schools and markets within the project site and surrounding areas because of demolition, excavation works and transportation of building materials.

Response

The Consultant explained that Noise Pollution will be avoided by the following measures to taken by the contractor:

- *Avoiding noisy activities at night and also close to residential areas*
- *Workers will be provided with noise protective equipment*

Dust during construction and in specific near schools and market centres;

- *Consultant proposed spraying water on dry and dusty surfaces regularly including the access murrum roads and diversions*

Q5) Social infrastructure/corporate social responsibility

The following CSR activities were highlighted by community as their needs;

- **Dispensary** – The area requires a healthcare facility that can reduce distance travelled to seek medical attention. Further the health care should offer maternity care
- **Security-** Community need a vehicle that can be used to facilitate security operation in the region
- **Water** – the existing (incomplete borehole in Kulamawe) should be completed to assist the local people and their livestock access water
- **Scholarships** – Youth should be offered scholarships for training in technical courses.

Response

The Consultant informed the public a CSR component would be proposed in the ESIA the project seeking to develop the area since it is a marginalized area.

Q6) Impact/ Participation of Women, Youth and Marginalized Groups

The locals expressed concern on whether women, youth and other marginalized groups would benefit from the project. They expressed that women can handle all kind of jobs.

A youth expressed fears on whether they would be offered jobs.

Response

The Consultant told the community that the Kenya 2010 Constitution gives specific attention to women, youth and other vulnerable groups

He thus assured the public that the contractor will give these groups special attention and equal opportunities in terms of jobs and tenders that will be available.

Q7) Road Safety & Quality

The community feared that since the proposed road will be used by vehicles on high speed, there would be high number of accidents at market centres. They also expressed fears over how their school going children would cross the roads.

The residents were concerned that the current road is prone to flooding and hence this would affect the new road leading to its destruction by floods.

Response

The Consultant explained that:

- *Road safety infrastructure will be provided at centres and at sensitive areas.*
- *Speed will be restricted by speed limit at these points*
- *A hydrological analysis had been undertaken in the design review to provide for the flooding along the road, however the issue would be raised in the ESIA report.*

Q8) Impact on Cultural Resources (graveyards, shrines and any other significant cultural resource within the project area)

The community feared that mosques close to the road especially at Kachuru and Kulamawe would be destroyed.

Response

The Consultant assured the public that any important cultural resource found in the area and their potential relocation will be done under consultation with the local community and that a chance find procedure will be included in the ESIA report.

Q9) Livestock and Domestic Animals/Crossing points/ Water and Pasture areas

The local community / inhabitants along the road project are mainly pastoralists. They noted that their livestock (cows, camels, goats, sheep and donkeys) graze along the road periphery especially at Kulamawe, Ndumuru, Gambella and Kachuru areas. Based on this, the community expressed fears that speeding vehicles might hit and kill their livestock. They also noted that the road has sharp hills along which their livestock graze hence high likelihood of speeding vehicles hitting their livestock.

The community further expressed fears that there are at least six (6) key livestock crossing points between Kachuru and Kulamawe and hence livestock could be hit.

Response

The Consultant informed the community that:

- *The ESIA would incorporate crossing points for livestock in consultation with the community.*
- *Guard rails be put along dangerous places to avoid animals from crossing the road at these places*
- *The Contractor will erect speedbumps, and rumble strips near village centres and livestock crossing points*
- *Signage will be provided throughout the road length and especially in towns and village*

Q10) Impacts on Wildlife/Migratory routes/Accidents

The community noted that the road has various wildlife species - elephants, gazelles, dik diks, ostrich, buffalos, giraffes, hyenas, lions and leopards -which could result to wildlife being knocked down by vehicles.

The participants expressed that there is an existing elephant corridor / crossing point near Kulamawe Centre with elephants moving from Shaba National Reserve to Meru National Park and vice-versa.

Response

The Consultant responded by notifying the community that:

- *The contractor will work closely with the community to identify the wildlife corridors*
- *Speed-bumps and guard rails will be constructed at wildlife migratory corridors*

- *Signage to be provided at wildlife corridor points*
- *Speed will be restricted by speed limit at these points*

Min 3/16/2019 Other Concerns

The locals suggested that electricity connection of the area should be prioritized. This will lead to development of the area.

The community expressed their support for the project since it will improve their businesses and ease transportation cost and time

Min 4/16/2019 Adjournment

The Consultant thank the public for coming out in large numbers to attend the meeting thanked them also for actively participating in the meeting.

There being no other business the meeting was ended by a word of prayer from the sheikh at 3:30 pm

Minutes Drafted by: Justus Lemein - ESIA Technical Assistant

Minutes Confirmed by: Dr. Eng Zablon Oonge – ESIA Consultant

PUBLIC CONSULTATION MEETING- ISIOLO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Hassan Ali				
2	Ibrahim Buke				
3	Mohamed Godo				
4	Barzhi Jaldesa				
5	Guyo Gufu				
6	Hassan Roba				
7	Muhamud Halkan				
8	Sheikh Hussein				
9	Ibrahim Ali				
10	Abdullahi Abkula				
11	Ali' Mola				
12	Abduba Nura				
13	Wako Guyo				
14	Yusuf Shufgi				
15	Abdi' Borte				

PUBLIC CONSULTATION MEETING- ISILO-MODOGASHE ROAD						
LIST OF ATTENDANCE						
NO:	VENUE		DATE			
	Name		Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Huka	wario				
2	Bovu	Bidu				
3	Fugicha	Denge				
4	Musa	Buke				
5	Godo	Jattani				
6	Husseini	Farso				
7	wako	Jillo				
8	Gollo	Duba				
9	Dida	Dina				
10	Godana	Sama				
11	Faldesa	Hapite				
12	Shuku	Abduba				
13	Hassen	Bonaya				
14	Ibrahim	Abkaro				
15	Abdullahi	Gollo				

PUBLIC CONSULTATION MEETING- ISIOLO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE		DATE		
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Abelinoor	Ali'			
2	Godana	Jullo			
3	Hossein	Salasa			
4	Salad	Gufu			
5	Wans	Ganjobe			
6	Salo	Halkaro			
7	Boru	Gods			
8	Abdikarim	Salasa			
9	Kara	Abdulba			
10	Madera	Bonayq			
11	Hassan	Gods			
12	Nussuf	Ali			
13	Hadifa	Hussein			
14					
15					

PUBLIC CONSULTATION MEETING- ISIOLO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Kula Mawe Mohamed Hallo				
2	Happi Abato				
3	Hallo Huka				
4	Guyo Dulacha				
5	Ali Umwi				
6	Mohdnoor Hassan				
7	Hossein Jama				
8	Roba Ali				
9	Salo Huka				
10	Roba Galgalo				
11	Roba Ali				
12	Abduba Moku				
13	Abdullahi Guyo Tobi				
14	Mohdnoor Osman				
15	Osman Dima				

6) Minutes of the Public Consultation Meeting Held on 1st March 2019 at Boji Town at 10.00am

Agenda

1. Preliminaries
2. Disclosure of the project/Project Description
3. Impacts of proposed project and mitigation measures from the community
4. Other Concerns
5. Adjournment

Members Present

The meeting was attended by several community members.

Min 1/17/2019: Preliminary

The meeting was opened at 10.00am by a word of prayer from Elder Salad Buke. Boji Chief – Aden Ibrahim welcomed the members and guests present. The Chief thanked the members for being calm and patient despite the delay experienced in starting off the meeting..

The Consultant began by introducing the ESIA team to the community. He explained the purpose of the meeting was to inform about the proposed project, collect views, positive or negative from the general public and any other party who in any way will/ might be affected by the proposed project within its project cycle. Further, he explained that pursuant to Article 10 (2) of the Constitution of Kenya, Section 3 (5a) of EMCA Cap 387 and Section 58 on Environmental Impact Assessment, public participation is an important exercise in the national values and principles of governance; and for achieving the fundamental principles of sustainable development. He added that public participation forms part of the key component in development as also provided in Section 87 & 113 of the County Governments Act, 2012.

Min 2/17/2019: Project Description

a) Project Design:

The Government of the Republic of Kenya (GoK) applied for a credit from the The World Bank towards the cost of the North Eastern Transport Improvement Project (“NETIP”). The GoK intends to use a portion of the proceeds of the credit for the upgrading to bitumen standards of sections of the Isiolo-Modogashe road. The total length of the Isiolo-Modogashe road is 190Km of which selected sections will be part of NETIP.

The project is aimed at enhancing connectivity between the people of this marginalized areas with the rest of the country and the neighbouring countries of Somalia as well as Ethiopia. The Isiolo-Mandera road traverses in a north-easterly direction from Isiolo Town (in Isiolo County) through Meru County, Isiolo County (Second section of this road) Wajir County and Mandera County which are situated in the North Eastern part of Kenya. The Consultant clarified that this meeting was for consultation on the Isiolo-Modogashe road.

The project road starts from Isiolo town, at a T-junction with road A2 approximately 1Km from Isiolo town Central Business District (CBD) and traverses for approximately 3Km in easterly direction within Isiolo County. The alignment then exits Isiolo County into Meru County, curving into a north-easterly direction traversing approximately 63Km to Kachiuru shopping centre in Meru County, where it exits Meru County back to Isiolo to Kulamawe then terminate at modogashe shopping centre. The alignment follows the existing Isiolo – Mandera road, formerly classified as RD B9. Approximately 10km of the Alignment lies within Isiolo County at the start then exits into Meru to Kachuru where it enters Isiolo County again to Modogashe which the boarder with Garisa county. The project road is currently classified as RD A10 from

Isiolo to Kulamawe then B84 from Kula mawe to Modogashe junction under the new road classification by Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD).

The Consultant further explained to the public that the current Right of Way (Road Width) of 40m will be changed to 60m since the road is now a class A road.

b) Social infrastructure Component

Quarries, Borrow Pits, Stockpiles and Spoil Areas the Contractor will make available any land for quarries, borrow pits, stockpiles and spoil areas, except for those areas in road reserves specifically approved by the resident engineer. The contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications and for the procurement, mining, haulage to site of these materials and all costs involved therein. Similarly the contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works the Contractor may utilize these subject to the approval of the Engineer.

c) Safety and Public Health Requirements

This is an integral part of the project especially during the construction phase. Warning and advisory notices, drugs and condoms will be provided for throughout the project duration. The contractor shall allow for qualified professionals to conduct lectures to the workers regarding the spread of HIV/Aids.

d) Advantages of the project

The Consultant explained that upon commencement of construction to completion and operation, the Proposed Road is expected to bring the following advantages to the people of the area

- Improve the region's road network,
- Reduce travel time along and across the roads,
- Enhance the operational efficiency of the road,
- Promote economic growth within the region,
- Improve safety and reliability for all road users,
- Attract diverted traffic that will foster regional growth,
- Provide employment opportunities to local inhabitants, among other benefits

e) Some of the disadvantages the project

The Consultant also explained some of the negative effects of the project

- Dust generation during construction.
- Poor disposal of the waste materials from the construction.
- A possible increase in the spread of STDs, i.e. HIV and AIDS.
- Loss of pasture for livestock and wildlife.
- Possible disruption of the water table.
- Increased number of accidents during and after construction. There are wild and domestic animals

Min 3/17/2019: Issues of the Proposed Road and Mitigation Measures as asked by the participants

The following issues were raised on several impacts that are foreseen during the constructional and operational phases of the proposed road.

Q1) Land Acquisition and Involuntary Resettlement/Displacement of persons

The public noted that since the Road Width will be changed to 60m from the current 40m most of their properties will be affected hence asking the government to compensate them in an open and transparent manner.

Response

- *A Resettlement Action Plan (RAP) was commissioned to ensure property valuation and compensation and the community confirmed the same.*
- *Adequate community consultations with the elders will be conducted before demolitions are done.*
- *Article 63 of the Constitution of Kenya, 2010 (the Constitution) provides for classification of land known as Community land providing for the recognition, protection and registration of community land rights hence land under community is protected.*

Q2) Social infrastructure/corporate social responsibility

Chief Aden Ibrahim highlighted The following CSR activities as the needs in the community and was supported by the community members:

- ▪ Youth-The Youth suggested that a Rehabilitation Centre should be prioritized
- ▪ University, Technical Training Institutes and Teachers College
- ▪ Water-Boreholes, water pans and dams were also suggested by the community due to water scarcity in the area
- ▪ Education-Schools (both Primary and Secondary)
- ▪ Hospital
- ▪ Market

Response

The Consultant informed the public a CSR component would be proposed in the ESIA the project seeking to develop the area since it is a marginalized area.

Q3) Road Safety & Quality

Amina Ibrahim raised an issue on the safety of the road since the vehicles will be moving at high speed when the road is constructed, there are children and people along the road hence accidents will be ramped.

She also cited the issue of road drainage, they said that the area is prone to flooding during rainy season almost the entire area is flooded due to the poor soil and the bedrock is almost on the surface hence good drainage system since the road will worsen the situation if not taken care of.

Response

The Consultant explained that:

- *Road safety infrastructure will be provided at centres and at sensitive areas.*
- *Speed will be restricted by speed limit at these points*
- *A hydrological analysis had been undertaken in the design review to provide for the flooding along the road, however the issue would be raised in the ESIA report.*

Q4) Jobs and Employment

The community suggested that the locals should be given the first priority for jobs. They said that the contractor should not come with foreigners from other places.

They wanted all tribes in the area i.e. Meru, Borana, Turkana, Somali to be considered for jobs that may arise during the road construction.

Response

The Consultant informed the community that the construction of the road will require skilled people such as masons, carpenters, welders, plant operators etc., semi-skilled and unskilled people.

- *Employment of locals will be prioritized*
- *A local committee made up of village elders, women and youth should be formed to assist the contractor during employment*
- *The contractor should exhaust all available locals before looking for employees from other places*

Q5) Dust Emissions/ Pollution (Noise, Air etc.)

Hassan Guyo raised an issue with dust generation and noise pollution in the area during construction He noted that the construction of the road will result to dust emissions and noise pollutions. They wanted to know how these pollutions will be minimized to the lowest level since the area is dry and the soil is dusty.

Response

The Consultant explained that Noise Pollution will be avoided by the following measures to taken by the contractor:

- *Avoiding noisy activities at night and also close to residential areas*
- *Workers will be provided with noise protective equipment*

Dust during construction and in specific near schools and market centres;

- *Consultant proposed spraying water on dry and dusty surfaces regularly including the access murrum roads and diversions*

Q6) Impact/ Participation of Women, Youth and Marginalized Groups

The locals expressed concern on whether women, youth and other marginalized groups would benefit from the project. They expressed that women can handle all kind of jobs.

A youth expressed fears on whether they would be offered jobs.

Response

The Consultant told the community that the Kenya 2010 Constitution gives specific attention to women, youth and other vulnerable groups

He thus assured the public that the contractor will give these groups special attention and equal opportunities in terms of jobs and tenders that will be available.

Q7) Demand on Water Resources

There was an outcry from the community that the construction of the road will stress the existing water resources since the area is water scarce hence wanted to know how this can be avoided or minimized

Response

The Consultant respondent to the issues raised by the community by giving the following responses:

- *Since the area is a water scarce area, the existing water resources will be protected and consultation will be undertaken before any interference.*
- *The contractor will consult the local community before drilling boreholes or abstracting water for his use. Boreholes can be drilled close to the centres to benefit the local community. The boreholes could be surrendered to the community after construction works.*
- *The contractor will look on ways that he can help the local farmers on issues to do with drainage*


Min 4/17/2019 Adjournment

The Consultant thank the public for coming out in large numbers to attend the meeting thanked them also for actively participating in the meeting.

There being no other business the meeting was ended by a word of prayer from the sheikh at 12:30 pm

Minutes Drafted by: Justus Lemein - ESIA Technical Assistant

Minutes Confirmed by: Dr. Eng Zablon Oonge – ESIA Consultant

PUBLIC CONSULTATION MEETING- ISILO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	JAFFAR JIRMA	244/3707		0718 793 962	
2	ASHA KOROPU			0725242210	
3	KARIM HAJJ KADY	0081903		0703831062	
4	ABDI KUNCHA	8053410		07	
5	ABDI ARI JARSO	22373535		0720975659	
6	JILLO DIBA	20634578		0792227555	
7	OSMAN AHMED	25077058			
8	Mohamed MOKHAMMAD	24022979		0713139926	
9	FASSAN TWE	33388727		0742924083	
10					
11					
12					
13					
14					
15					

PUBLIC CONSULTATION MEETING- ISIOLO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	BOJI HUSEIN AKI JARSO	12874019		0701673722	
2	MOTAMED ADAN HALAKE	24432298		0717166731	
3	AMINA IBRAHIM SAMA	263010217		0701201161	
4	FUNAN WALE			0704366245	
5	HASSAN GULO	11275911		0715134549	1/10/19
6	ALI KULICHA	7872085		0745561385	
7	ABDULLATI GURACHO				
8	GUYO GOROMPO	12874992		0711240786	
9	SALAD BUKE	008153		0726448358	
10	YUSUF DIMA	27742620		0702242547	
11	SALAD HOWE	32056171		0718252590	
12	HUSEIN ADAN	27667830		072014452	Handwritten signature
13	GUYO MOHY			0720564407	
14	HASSAN GUYO	11274989		0710534752	
15	BISHAR AHMED	23121711		0716551336	Handwritten signature

7) Minutes of the Public Consultation Meeting Held on 7th March 2019 at Modogashe Town at 12.00 noon

Agenda

1. Preliminaries
2. Disclosure of the project/Project Description
3. Impacts of proposed project and mitigation measures from the community
4. Other Concerns
5. Adjournment

Members Present

The meeting was attended by 50 community members.

Min 1/18/2019: Preliminary

The meeting began at 10:10 am with a word of prayer by a community member. It was coordinated by the Chief Yusuf and the Assistant County Commissioner (ACC).

The Consultant began by introducing the ESIA team to the community. He explained the purpose of the meeting was to inform about the proposed project, collect views, positive or negative from the general public and any other party who in any way will/ might be affected by the proposed project within its project cycle. Further, he explained that pursuant to Article 10 (2) of the Constitution of Kenya, Section 3 (5a) of EMCA Cap 387 and Section 58 on Environmental Impact Assessment, public participation is an important exercise in the national values and principles of governance; and for achieving the fundamental principles of sustainable development. He added that public participation forms part of the key component in development as also provided in Section 87 & 113 of the County Governments Act, 2012.

Min 2/18/2019: Project Description

a) Project Design:

The Government of the Republic of Kenya (GoK) applied for a credit from the The World Bank towards the cost of the North Eastern Transport Improvement Project (“NETIP”). The GoK intends to use a portion of the proceeds of the credit for the upgrading to bitumen standards of sections of the Isiolo-Modogashe road. The total length of the Isiolo-Modogashe road is 190Km of which selected sections will be part of NETIP.

The project is aimed at enhancing connectivity between the people of this marginalized areas with the rest of the country and the neighbouring countries of Somalia as well as Ethiopia. The Isiolo-Mandera road traverses in a north-easterly direction from Isiolo Town (in Isiolo County) through Meru County, Isiolo County (Second section of this road) Wajir County and Mandera County which are situated in the North Eastern part of Kenya. The Consultant clarified that this meeting was for consultation on the Isiolo-Modogashe road.

The project road starts from Isiolo town, at a T-junction with road A2 approximately 1Km from Isiolo town Central Business District (CBD) and traverses for approximately 3Km in easterly direction within Isiolo County. The alignment then exits Isiolo County into Meru County, curving into a north-easterly direction traversing approximately 63Km to Kachiuru shopping centre in Meru County, where it exits Meru County back to Isiolo to Kulamawe then terminate at modogashe shopping centre. The alignment follows the existing Isiolo – Mandera road, formerly classified as RD B9. Approximately 10km of the Alignment lies within Isiolo County at the start then exits into Meru to Kachuru where it enters Isiolo County again to Modogashe which the boarder with Garisa county. The project road is currently classified as RD A10 from Isiolo to Kulamawe then B84 from Kula mawe to Modogashe junction under the new road

classification by Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD).

The Consultant further explained to the public that the current Right of Way (Road Width) of 40m will be changed to 60m since the road is now a class A road.

b) Social infrastructure Component

Quarries, Borrow Pits, Stockpiles and Spoil Areas the Contractor will make available any land for quarries, borrow pits, stockpiles and spoil areas, except for those areas in road reserves specifically approved by the resident engineer. The contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications and for the procurement, mining, haulage to site of these materials and all costs involved therein. Similarly the contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works the Contractor may utilize these subject to the approval of the Engineer.

c) Safety and Public Health Requirements

This is an integral part of the project especially during the construction phase. Warning and advisory notices, drugs and condoms will be provided for throughout the project duration. The contractor shall allow for qualified professionals to conduct lectures to the workers regarding the spread of HIV/Aids.

d) Advantages of the project

The Consultant explained that upon commencement of construction to completion and operation, the Proposed Road is expected to bring the following advantages to the people of the area

- Improve the region's road network,
- Reduce travel time along and across the roads,
- Enhance the operational efficiency of the road,
- Promote economic growth within the region,
- Improve safety and reliability for all road users,
- Attract diverted traffic that will foster regional growth,
- Provide employment opportunities to local inhabitants, among other benefits

e) Some of the disadvantages the project

The Consultant also explained some of the negative effects of the project

- Dust generation during construction.
- Poor disposal of the waste materials from the construction.
- A possible increase in the spread of STDs, i.e. HIV and AIDS.
- Loss of pasture for livestock and wildlife.
- Possible disruption of the water table.
- Increased number of accidents during and after construction. There are wild and domestic animals

Min 3/18/2019: Issues of the Proposed Road and Mitigation Measures as asked by the participants

The following issues were raised on several impacts that are foreseen during the constructional and operational phases of the proposed road.

Q1) Jobs and Employment

The Chief Musa Daudi suggested that the locals should be given the first priority for jobs. He said that at least 70% of the works should be from the area. They said that the contractor should not come with foreigners from other places since they will resist.

They wanted all tribes in the area i.e Meru, Borana, Turkanas, Somali to be considered for jobs that may arise during the road construction and should be shared equally in clear and transparent manner

Response

The Consultant informed the community that the construction of the road will require skilled people such as masons, carpenters, welders, plant operators etc., semi-skilled and unskilled people.

- *Employment of locals will be prioritized*
- *A local committee made up of village elders, women and youth should be formed to assist the contractor during employment*
- *The contractor should exhaust all available locals before looking for employees from other places*

Q2) Impacts on Wildlife/Migratory routes/Accidents

Salat boni raised a concern that the area is traversed by the road has wildlife like elephants, gazelles, zebras, dikdiks, ostrich, hyenas and lions.

They said with the exception of elephants which follows specific routes the other animals roam freely along the road corridor moving from Shaba National Reserve to Meru National Park and otherwise.

Response

The Consultant responded by notifying the community that:

- *The contractor will work closely with the community to identify the wildlife corridors*
- *Speed-bumps and guard rails will be constructed at wildlife migratory corridors*
- *Signage to be provided at wildlife corridor points*
- *Speed will be restricted by speed limit at these points*

Q3) Demand on Water Resources

Halima Galicha raised an issue on the usage of water and suggested that the contractor should construct boreholes to relief stress on the existing resources.

There was an outcry from the community that the construction of the road will stress the existing water resources since the area is water scarce.

Response

The Consultant respondent to the issues raised by the community by giving the following responses:

- *Since the area is a water scarce area, the existing water resources will be protected and consultation will be undertaken before any interference.*
- *The contractor will consult the local community before drilling boreholes or abstracting water for his use. Boreholes can be drilled close to the centres to benefit the local community. The boreholes could be surrendered to the community after construction works.*
- *The contractor will look on ways that he can help the local farmers on issues to do with drainage*

Q4) Livestock and Domestic Animals/Crossing points/ Water and Pasture areas

Abdi Haji boru wanted to know how accidents will be minimized since accidents on domestic animals will increase due to the high speed of vehicles. Several parts along the road are used by the community for grazing cows, sheep, goats and camels since they are majorly a pastoralist community.

The public further suggested that there are watering points for animals along the road which need to be considered.

They suggested that the contractor should mark the road with proper signage, erect bumps along the grazing and watering areas and sensitize the pastoralists on road safety.

Response

The Consultant informed the community that:

- *Their recommendations would be incorporated in the ESIA*
- *The ESIA would incorporate crossing points for livestock in consultation with the community.*
- *Guard rails be put along dangerous places to avoid animals from crossing the road at these places*
- *The Contractor will erect speedbumps, and rumble strips near village centres and livestock crossing points*
- *Signage will be provided throughout the road length and especially in towns and village*

Q5) Dust Emissions/ Pollution (Noise, Air etc.)

Ali Wario raised an issue on construction of the road will result to dust emissions and noise pollutions which is a nuisance. Dust causes eye irritation and diseases. They wanted to know how these pollutions will be minimized.

Response

The Consultant explained that Noise Pollution will be avoided by the following measures to taken by the contractor:

- *Avoiding noisy activities at night and also close to residential areas*
- *Workers will be provided with noise protective equipment*

Dust during construction and in specific near schools and market centres;

- *Consultant proposed spraying water on dry and dusty surfaces regularly including the access murrum roads and diversions*

Q6) Road Safety & Quality

Abdi Haji Boru had an issue on the safety of the road since there are children who use the road in all the points especially near schools and the mosque hence he asked how this issue can be mitigated.

The community also cited the issue of road drainage, they said that most parts of the area is flat and prone to flooding during rainy season hence with construction of the road the situation might worsen .hence the community was asking on ways to mitigate this scenario.

Response

The Consultant explained that:

- *Road safety infrastructure will be provided at centres and at sensitive areas.*
- *Speed will be restricted by speed limit at these points*

- A hydrological analysis had been undertaken in the design review to provide for the flooding along the road, however the issue would be raised in the ESIA report.

Q7) Impact on Cultural Resources

The locals said that there was a grave yard which might be affected by the construction of the road and according to muslim culture no one is allowed to touch the graveyards. It's a taboo and against the community norms and culture. So they suggested that it is important for the government to look for solutions to this before construction commences.

Suggested that if possible the road should be shifted a bit.

Response

The Consultant assured the public that any important cultural resource found in the area and their potential relocation will be done under consultation with the local community and that a chance find procedure will be included in the ESIA report.

Q8) Social infrastructure/corporate social responsibility

The Assistant Chief Dida Abdi raised an issue that this is a marginalized community and requires a lot infrastructure to develop hence he made a plea to the government to consider building the following infrastructure alongside the road construction to open up this area and have the country move forward as one.

- Education-Schools (both Primary and Secondary) are required in the area education is in a pathetic state in the area. He include that this will reduce insecurity in the area.
- University, Technical Training Institutes and Teachers College Water-Boreholes, water pans and dams were also suggested by the community due to water scarcity in the area in the area. He insisted that the area is very dry and water ids a big issues which normally bring conflict and causes the death of many animals.
- Hospital. He also insisted on building of good hospitals in the area since the town is growing at a fast rate and the population is inserting pressure on the existing facilities.
- Market. Ibrahim Mohamed insisted on a good market place for the animals and other products.

Response

The Consultant informed the public a CSR component would be proposed in the ESIA the project seeking to develop the area since it is a marginalized area.

Min 3/18/2019 Adjournment

The Consultant thank the public for coming out in large numbers to attend the meeting thanked them also for actively participating in the meeting.

There being no other business the meeting was ended by a word of prayer from the sheikh at 3:30 pm

Minutes Drafted by: Justus Lemein - ESIA Technical Assistant

Minutes Confirmed by: Dr. Eng Zablon Oonge – ESIA Consultant

PUBLIC CONSULTATION MEETING-
ISIOLO-MODOGASHE ROAD

LIST OF ATTENDANCE

NO.	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Barwako Ali		Modogashe	0726262815	
2	Banata A Wiza	25882597	Modogashe	0724433184	
3	DIDA ABDI	20092191	ASSISTANT CHIEF	0722606076	
4	JALITA KANA	0358346	Modogashe	0720915853	
5	Musa Daudi	23461140	ASSI CHIEF	0723155223	
6	ABDIRAHMAN MSHAMED	22512615	Modogashe	0720094982	
7	Mohamed Haka.	8052798	Maelobekle	0728719711	
8	Abdullahi Uche	27104578	Modogashe	0723922441	
9	Filuma Anyu	8889857	Modogashe	0710689082	
10	Halaba Halakhe		Modogashe	0726613788	
11	Hahina Wario				
12					
13					
14					
15					

PUBLIC CONSULTATION MEETING- ISIOLO-MODOGASHE ROAD					
LIST OF ATTENDANCE					
NO:	VENUE	DATE			
	Name	Id No.	Village/Institution/ Organisation	Telephone No/Address	Signature
1	Hassan Adji	25137833	Modogashe	0725037666	[Signature]
2	Adon			07	
3	Ali Wario	98541200	Modogashe	072443692	[Signature]
4	Abdi Haji Bon	03648278	Modogashe	0727418851	[Signature]
5	Halima Bokyo	24570264	Modogashe	0728277590	HDJ
6	PETER E. OKOYO	11274369	modogashe	0728411597	[Signature]
7	Halima Gai'cha			0703169379	
8	Salat Bon	0365897	Modogashe	072782278	[Signature]
9	Mohamed Kone	037767542	Modogashe	0729347711	[Signature]
10	Hassan H. Kadubo	0365874	Modogashe	072506417	[Signature]
11	Musa Bone	29811194	Modogashe	0728227101	[Signature]
12	Bony Abdi Abeyo		Modogashe	0702148024	[Signature]
13	Bony ASHAKMA				
14	ABDIKADIR ABU/LAHY ABUBA	22253403	Modogashe	072217535	[Signature]
15	Dekou Wario	9855902	Modogashe	0728583400	[Signature]

11.2.2 Public Participation Photos



Figure 11-1: Public Consultation Meeting at Isiolo



Figure 11-2: Stakeholder Feedback during the Isiolo Meeting



Figure 11-3: Public Consultation Meeting in Gambella



Figure 11-4: Community Feedback during Gambella Meeting



Figure 11-5: Public Consultation in Ndumuru



Figure 11-6: Stakeholder Feedback during Ndumuru Meeting



Figure 11-7: Kachuru Public Consultation Meeting



Figure 11-8: Public Consultation in Kulamawe



Figure 11-9: Public Consultation Meeting in Boji

11.3 CHANCE FIND PROCEDURES

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

- If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves 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 Project 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);

Ideally the Ministry of State for National Heritage and Culture would be in charge of any potential physical and cultural site, however due to the location and accessibility of the project area, the responsibility will be held by local authorities and religious leaders in the protection and preservation of 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.

11.4 SAMPLE CODE OF CONDUCT

Individual Code of Conduct

I, _____, acknowledge that adhering to environmental, social health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing gender based violence (GBV) and violence against children (VAC) is important.

The Contractor considers that failure to follow ESHS and OHS standards, or to partake in GBV or VAC activities be it on the work site, the work site surroundings, at workers' camps, or the surrounding communities constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment by a The Contractor worker. Prosecution by the Police of those who commit GBV or VAC may be pursued where applicable and appropriate.

I accept that while working on the project, I will:

1. Attend and actively partake in training courses related to ESHS, OHS, HIV/AIDS, GBV and VAC as requested by my employer.
2. Will wear my personal protective equipment (PPE) at all times when at the work site or engaged in project related activities.
3. Take all practical steps to implement the The Contractor's environmental and social management plan (CESMP).
4. Implement the OHS Management Plan.
5. Adhere to a Zero-Alcohol policy during working hours, and refrain from the use of narcotics or other substances which can impair my reasoning capacities at all times.
6. Consent and produce Police code of good contact when asked to provide one.
7. Treat women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
8. Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
9. Not engage in sexual harassment for instance, making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct, of sexual nature, including subtle acts of such behavior (e.g. looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; giving free rides to minors or any form of personal gifts; making comments about somebody's sex life).
10. Not engage in sexual favors for instance, making promises or favorable treatment dependent on sexual acts or other forms of humiliating, degrading or exploitative behavior.
11. Not participate in sexual contact or activity with children including grooming, or contact through digital media. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.

12. Unless there is the full consent by all parties involved, I will not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex such sexual activity is considered “non-consensual” within the scope of this Code.

13. Consider reporting through the GRM or to my manager any suspected or actual GBV or VAC by a fellow worker, or any breaches of this Code of Conduct.

With regard to children under the age of 18:

14. Wherever possible, ensure that another adult is present when working in the proximity of children.

15. Not invite unaccompanied children into my home, unless they are at immediate risk of injury or in physical danger and where this happens, an entry into the occurrence book is made giving all particulars and circumstances.

16. Not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor's permission, and ensure that another adult is present if possible.

17. Use any computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children or to access child pornography through any medium (see also “Use of children's images for work related purposes”).

18. Refrain from physical punishment or discipline of children).

19. Refrain from hiring children for domestic or other labor which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.

20. Comply with all relevant local legislation, including labor laws in relation to child labor.

21. Use of children's images for work related purposes.

22. When photographing or filming a child for work related purposes, I must:

Before photographing or filming a child, assess and endeavor to comply with local traditions or restrictions for reproducing personal images.

- Before photographing or filming a child, obtain informed consent from the child and a parent or guardian of the child. As part of this I must explain how the photograph or film will be used.

- Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner.

- Children should be adequately clothed and not in poses that could be seen as sexually suggestive.

- Ensure that the photographing or filming is within an environment that does not contribute to or infringe on the safety, security, personality or any other rights of children or in contravention of local and international standards of ethics relating to children.

23. Ensure images are honest representations of the context and the facts.

- 24. Ensure file labels do not reveal identifying information about a child when sending images electronically.
- 25. Refrain from engaging in any form of purchases/ trade on merchandise from minors, be it food or otherwise to ensure no labour is sourced from children to prepare or distribute the merchandise.

I understand that the onus is on me to use common sense and avoid actions or behaviors that could be construed as GBV or VAC or breach this code of conduct.

Sanctions

I understand that if I breach this Individual Code of Conduct, my employer will take disciplinary action which could include but not limited to:

- 1. Informal warning.
- 2. Formal warning.
- 3. Additional Training or referral to behavior correction institution(s).
- 4. Loss of up to one week's salary.
- 5. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
- 6. Summary termination of employment.
- 7. Report to and arrest by the Police if warranted.
- 8. Prosecution and sentencing as per the law.

I understand that it is my responsibility to ensure that the environmental, social, health and safety standards are met. That I will adhere to the occupational health and safety management plan. That I will avoid actions or behaviors that could be construed as GBV or VAC. Any such actions will be a breach of this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do accept and agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, GBV and VAC issues. I understand that any action inconsistent with this Individual Code of Conduct or failure to act as mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Company name: _____

Title: _____

Name: _____

Signature: _____

ID No/Passport No. _____

Date: _____

Manager's Code of Conduct

ICT Managers at all levels have a responsibility to uphold the company's commitment of implementing the ESHS and OHS standards, and preventing and addressing GBV and VAC. This means the managers have an important role in creating and maintaining an environment which prevents GBV and prevents VAC. They need to support and promote the implementation of the Company and Individual Codes of Conduct. To that end, the managers must adhere to this Manager's Codes of Conduct and sign the individual code of conduct. This commits them to supporting the implementation of the CESMP and the OHS Management Plan, and developing systems that facilitate implementation of GBV and VAC Action Plan. They need to maintain a safe workplace, as well as a GBV and VAC free environments both at the workplace and in the local community. These responsibilities include but are not limited to:

Mobilization

1. Establish a GBV and VAC Compliance Team (GCCT) from the contractor's and consultant's staff to write an Action Plan that will implement the GBV and VAC Codes of Conduct.
2. The Action Plan shall, as a minimum, include the
 - a. Standard Reporting Procedure to report GBV and VAC issues through the project Grievance Response Mechanism (GRM);
 - b. Accountability Measures which will be taken against perpetrators; and,
 - c. Response Protocol applicable to GBV survivors/survivors and perpetrators.
3. Coordinate and monitor the development of the Action Plan and submit for review to the contractor and consultant's safeguards teams, as well as the World Bank prior to mobilization.
4. Update the Action Plan to reflect feedback and ensure the Action Plan is carried out in its entirety.
5. Provide appropriate resources and training opportunities for capacity building so members of the GCCT feel confident in performing their duties. Participation in the GCCT will be recognized in employee's scope of work and performance evaluations.
6. Ensure that contractor, consultant and client staff is familiar with the GRMC and that they can use it to anonymously report concerns over GBV and VAC.
7. Hold quarterly update meetings with the GCCT to discuss ways to strengthen resources and GBV and VAC support for employees and community members.

Implementation

1. To ensure maximum effectiveness of the company and individual code of conduct by ensuring the following:
 - I. Prominently displaying the company and Individual Codes of Conduct in clear view at workers' camps, offices, and in public areas of the work space. Examples of areas include waiting, rest and lobby areas of sites, canteen areas and health clinics.
 - II. Ensuring all posted and distributed copies of the company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language
 - III. Verbally and in writing explain company and Individual Codes of Conduct to all staff.

Ensure that:

1. All employees sign the 'Individual Code of Conduct', including acknowledgment that they have read and accept and agree with the Code of Conduct.
2. Staff lists and signed copies of the Individual Code of Conduct are provided to the Resident Engineer, and the Client (KeNHA).
3. Participate in planned trainings.
4. Put in place a mechanism for staff to:
 - Report concerns on ESHS or OHS compliance; and,
 - Confidentially report GBV or VAC incidents through the Grievance Redress Mechanism (GRM)
5. Staff are encouraged to report suspected or actual ESHS, OHS, GBV or VAC issues, emphasizing the staff's responsibility to company and the Project, and emphasizing the respect for confidentiality. In compliance with applicable laws and to the best of your abilities, prevent perpetrators of sexual exploitation and abuse from being hired, re-hired or deployed. Use Police code of good conduct as reference checks for all employees.
6. Ensure that when engaging in partnership, sub-contractor, supplier or similar agreements, these agreements should be considered:
 - I. Incorporate the ESHS, OHS, GBV and VAC Codes of Conduct as an attachment.
 - II. Include the appropriate language requiring such contracting entities and individuals, and their employees and volunteers, to comply with the Individual Codes of Conduct.
 - III. Expressly state that the failure of those entities or individuals, as appropriate, to ensure compliance with the ESHS and OHS standards, take preventive measures against GBV and VAC, to investigate allegations thereof, or to take corrective actions when GBV or VAC has occurred, shall not only constitute grounds for sanctions and penalties in accordance with the Individual Codes of Conduct but also termination of contracts to work on or supply the project.
 - IV. Provide support and resources to the GRM to create and disseminate internal sensitization initiatives through the awareness-raising strategy under the GBV and VAC Action Plan.
7. Ensure that any GBV or VAC issue warranting Police action is reported to the Police, the client immediately.
8. Report any suspected or actual acts of GBV and/or VAC to the Project Manager and Resident Engineer.

9. Ensure that any major ESHS or OHS incidents are reported to the Resident Engineer and Client immediately.

Training

1. The managers are responsible for:

i. Ensuring that the OHS Management Plan is implemented, with suitable training required for all staff, including sub-contractors and suppliers; and,

ii. Ensuring that the staff have a correct understanding of the CESMP and are trained as appropriate to implement the CESMP requirements.

2. All managers are required to attend an induction manager training course prior to commencing work on site to ensure that they are familiar with their roles and responsibilities in upholding the GBV and VAC elements of the Codes of Conduct. This training will be separate from the induction training course required of all employees and will provide managers with the necessary understanding and technical support needed to begin to develop the Action Plan for addressing GBV and VAC issues.

3. Provide time during work hours to ensure that direct reports attend the mandatory facilitated induction GBV and VAC training required of all employees prior to commencing work on site.

4. Ensure that direct reports attend the monthly mandatory training course required of all employees to combat increased risk of GBV and VAC during civil works.

5. Managers are required to attend and assist with the project facilitated monthly training courses for all employees. Managers will be required to introduce the trainings and announce the self-evaluations.

14. .Collect satisfaction surveys to evaluate training experiences and provide advice on improving the effectiveness of training.

15. Ensure that time is provided during work hours and that staff prior to commencing work on site attend the mandatory project facilitated induction training on:

I. OHS and ESHS; and,

II. GBV and VAC required of all employees.

16. During Civil Works, ensure that the staff attend ongoing OHS and ESHS training, as well as the monthly mandatory refresher training course required of all employees to combat increased risk of GBV and VAC.

Prevention

17. All managers and employees shall receive a clear written statement of the company's requirements with regards to preventing GBV and VAC in addition to the training.

18. Managers must verbally and in writing explain the company and individual Codes of Conduct to all direct reports.

19. All managers and employees are to sign the individual 'Code of Conduct for GBV and VAC, including acknowledgment that they have read and agree with the code of conduct.

20. To ensure maximum effectiveness of the Codes of Conduct, managers are required to prominently display the Company and Individual Codes of Conduct in clear view in public

areas of the work space. Examples of areas include waiting, rest and lobby areas of sites, canteen areas, health clinics.

21. All posted and distributed copies of the Company and Individual Codes of Conduct should be translated into the appropriate language of use in the work site areas (ex. Kiswahili, English).

22. Managers will encourage employees to notify the GRM of any acts of threats or violence to women or children they have witnessed or received, or have been told that another person has witnessed or received, or any breaches of this Code of Conduct.

23. Managers should also promote internal sensitization initiatives (e.g. workshops, campaigns, on-site demonstrations etc.) throughout the entire duration of their appointment in collaboration with the GCCT and in accordance to the Action Plan.

24. Managers must provide support and resources to the GCCT to create and disseminate the internal sensitization initiatives through the Awareness-raising strategy under the Action Plan.

Response

25. Managers will be required to take appropriate actions to address any ESHS or OHS incidents.

26. With regard to GBV and VAC:

i. Provide input to the GBV and VAC Allegation Procedures and Response Protocol developed by the GRM as part of the final cleared GBV and VAC Action Plan.

ii. Company managers will uphold the Accountability Measures set forth in the GBV and VAC Action Plan to maintain the confidentiality of all employees who report or (allegedly) perpetrate incidences of GBV and VAC (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law).

iii. Where a manager develops concerns or suspicions regarding any form of GBV or VAC by one of his/her employee s/he is required to report the case using the GRM.

iv. Once a sanction has been determined, the relevant manager is expected to be personally responsible for ensuring that the measure is effectively enforced, within a maximum timeframe of 14 days from the date on which the decision to sanction was made

v. Where a Manager has a conflict of interest due to personal or familial relationships with the survivor and/or perpetrator, he/she must notify the company and the GRM. the company will be required to appoint another manager without a conflict of interest to respond to complaints.

vi. Ensure that any GBV or VAC issue warranting Police action is reported to the Police, the Resident Engineer, Client and the World Bank immediately.

27. Managers failing to address ESHS or OHS incidents, or failing to report or comply with the GBV and VAC provisions may be subject to disciplinary measures, to be determined and enacted by company Project Manager. Those measures may include:

i. Informal warning.

ii. Formal warning.

iii. Additional Training.

- iv. Loss of up to one week's salary.
- v. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
- vi. Termination of employment.
- vii. Prosecution as per the law

28. Ultimately, failure to effectively respond to ESHS, OHS, GBV and VAC cases on the work site by company CEO or the Project Manager may provide grounds for legal actions by the relevant authorities.

I do hereby acknowledge that I have read the Foregoing Manager's Code of Conduct, do accept and agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, GBV and VAC requirements. I understand that any action inconsistent with this Manager's Code of Conduct or failure to act as mandated by this Manager's Code of Conduct may result in disciplinary action.

Company name: _____

Title: _____

Name: _____

Signature: _____

ID No/Passport No. _____

Date: _____