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CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF THE WAJIR – KUTULO ROAD

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) STUDY REPORT

APRIL 2018

CONSULTANCY SERVICES FOR DESIGN REVIEW

FOR WAJIR-KUTULO ROAD (A13)

ESIA STUDY REPORT

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LIST OF ACRONYMS AND ABBREVIATIONS

CBO	Community Based Organization
CPP	Consultation and Public Participation
CSR	Corporate Social Responsibility
dB (A)	Decibels of noise measured with A weighted filter
DCC	Deputy County Commissioner
DOSHS	Directorate of Occupational Safety and Health Services
EA	Environmental Audit
EIA	Environmental Impact Assessment
EMC	Environmental Management and Coordination
EMCA	Environmental Management and Co-ordination Act
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental and Social Management and Monitoring Plan
ESO	Environment and Social Officer
FGD	Focused Group Discussion
GoK	Government of Kenya
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immuno Deficiency Syndrome
IDA	International Development Association
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KURA	Kenya Urban Roads Authority
LAPSSET	Lamu Port-South Sudan-Ethiopia-Transport
MDG	Millennium Development Goals
MoTIHUD	Ministry of Transport, Infrastructure, Housing and Urban Development
MTP	Medium Term Plan
NEMA	National Environment Management Authority
NETIP	North-Eastern Transport Improvement Project
NGO	Non- Governmental Organization
NMT	Non-Motorized Transport
NPEP	National Poverty Eradication Plan
OD	Operational Directives
OP	Operational Policy
OSHA	Occupation Safety and Health Act
PAPs	Project Affected Persons
PEC	Poverty Eradication Commission
PPE	Personal Protective Equipment
PRSP	Poverty Reduction Strategy Paper
PSVs	Public Service Vehicles
RE	Resident Engineer
SDGs	Sustainable Development Goals
STD	Sexually Transmitted Diseases
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization
WRA	Water Resources Authority
WSSD	World Summit for Social Development

EXECUTIVE SUMMARY

Introduction

The Government of the Republic of Kenya (GoK), through the Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD) has applied for credit from the International Development Association (IDA) towards the cost of the construction of the North-Eastern Transport Improvement Project (NETIP). A portion of the credit will be allocated to the upgrading of sections of the Isiolo - Mandera Road to bitumen standard. Objectives of NETIP are partly to improve the movement of goods and people along Isiolo – Wajir - Mandera part of the Mombasa – Garissa – Wajir – Mandera - Mogadishu road corridor and to enhance connectivity between other parts of Kenya and the North Eastern region as well as between Kenya and Somalia and Ethiopia. With improved transport connectivity, access to social services and commodities will be made easier and cheaper.

In June 2017, GIBB was commissioned by Kenya National Highways Authority (KeNHA) to undertake the Design Review of Wajir – Kutulo Road (A13) under NETIP. The designs under review were prepared in 2010 for the Wajir – Mandera Road. Wajir – Kutulo Road covers from KM 0+00 to KM 119 of the earlier designs of Wajir - Mandera Road that stretches up to 380km. This ESIA Report has been prepared as part of the design review for the Wajir – Kutulo Road (A13).

The Wajir - Kutulo Road falls within Wajir and Mandera Counties and traverses four sub counties: Wajir East, Tarbaj and Kutulo (in Wajir County); and Mandera Central (in Mandera County). However, vast stretch of the road (113km) is within Wajir county leaving only 6km within Mandera County. The project road is part of a major international link to the Republic of Somalia. The development of the project road will contribute to

- Improved local and regional development and trade;
- Improvement of local security; and
- Provide link to the development of the LAPPSET Corridor.

Study Objective and Approach

The main objective of the ESIA Study was project compliance with EMCA and the World Bank Operational Policies (OP) and related safeguards. The ESIA process involved two stages – Inception and ESIA Study. The inception stage involved the preparation of ESIA Inception Report. During Inception reporting, activities undertaken include: retrieval and review of existing design reports for the project road; Reconnaissance field visit from 7 to 11 September 2017; and Initial stakeholder consultations. The detailed ESIA Study stage was conducted in February and March 2018 and comprised of the following activities:

- Desktop studies of the available information for the project area;
- Baseline ecological surveys involving inventory of flora, avifauna, mammals and herpetofauna known to occur along the project corridor;
- Baseline socio-economic survey through field observations, household survey with a sample of 250 households, Focused Group Discussions, and Key Informant Interviews;
- Meetings with community members and Institutional stakeholders;
- Impact analysis and assessment; and
- Preparation of ESMP and ESMoP.

Insecurity challenges in the project area negatively affected the overall study program. Further to delays in commencing field investigations, public meetings could not be completed as the field team was advised by the local police to suspend field work before a meeting could be held at the last location covering the 6km within Kutulo Mandera section.

Legal and Regulatory Framework

The main law governing environmental management in Kenya is the Environmental Management and Coordination Act (EMCA), 1999 as amended in 2015 and associated regulations. According to EMCA, the proposed project falls under high risk category for which full ESIA study is required. Other key legal provisions of relevance considered include:

- Constitution of Kenya, 2010
- Water Act, 2016
- Kenya Roads Act, 2007
- Traffic Act, 2014
- Occupational Health and Safety Act (OSHA), 2007
- Subsidiary Legislations under OSHA Chapter 514
- Employment Act, 2007
- Work Injury Benefits Act (WIBA) Chapter 236
- Wildlife Conservation and Management Act, 2013
- Public Health Act, Chapter 242
- HIV/AIDS Prevention and Control Act, 2006
- National Construction Authority Act, 2011
- Land Act (No.6 of 2012)
- The National Lands Commission Act, 2012
- The Prevention, Protection and Assistance to Internally Displaced Persons and Affected Communities Act, 2012
- Land Registration Act, 2012
- Land and Environment Court Act, 2012
- Land Laws (Amendment) Act, 2016
- Physical Planning Act, 2007
- Climate Change Act, 2016
- Urban Areas and Cities Act, No. 13 of 2011
- The National Museums and Heritage Act (2006)
- Energy Act, 2006
- Mining Act, 2016
- Intergovernmental Relations Act

The World Bank safeguard policies triggered by the project include: OP/BP 4.01 Environmental Assessment; OP/BP 4.11 Physical Cultural Resources; OP/BP 4.10 Indigenous Peoples; and OP/BP 4.12 Involuntary Resettlement. Field investigations established the need and recommended the realignment the first section of the road in Wajir town (Km 0+000 to Km 0+600) to avoid Horrreys wells site. The site hosts permanent wells, World War II bunkers and religious activities and is also protected by the National Museums of Kenya (NMK). The realignment of this section also reduces the need to resettle an open-air market with several structures. After avoiding the above sections, there is still need to resettle 754 PAPs who are mainly in the urban centres traversed by the road. 529 of these are structure owners. There are 62 tenants of which 58 are business tenants while only 4 are housing tenants.

Further references have been made to IFC Environment, Health and Safety (EHS) Guidelines as well as relevant international environmental protection Treaties and Conventions to which Kenya is a signatory.

Project Description

The Wajir – Kutulo Road covers 119 km and is part of the Wajir - Mandera Road (B9 but currently reclassified as A13) covering 380km. The road starts (Km 0+00) at Wajir town and takes a northerly direction towards Tarbaj and then north-easterly bearing up to Kutulo and beyond. The road traverses a flat and rolling terrain, the carriageway width ranges from 7 to 12m and the horizontal alignment is well engineered up to Tarbaj. The road has a design right of way of 60m and a design speed of 120km/h. some realignments have been proposed on the road at Wajir and Tarbaj townships.

Existing design reports had proposed 60 sites for borrow material, 27 of which fall within the Wajir - Kutulo Road. Four potential stone sources had been identified from rock outcrops along the Wajir – Mandera Road; out of these, two (2) were along the Wajir - Kutulo road section at Km 7 (RQ1), and Km 64.8 (RQ2). Two rivers with sand were sampled and analysed that is Takaba River (about 95Km to the north west of El Wak) and River Daua (two points at Rhamu and Handadu).

Considering the project alternatives, there is no feasible option to complement or to substitute the project road with air, rail, and water transport. The project road is the only faster, cheaper land transportation means. The proposed alignment is an important link between Nairobi and Mandera and also connects with the entire North Eastern region. The alignment follows an existing road and therefore do not require major horizontal or vertical realignment except at few locations (that is Tarbaj and Wajir Town) where realignments have been considered to avoid cultural sites and reduce resettlement impacts. The "No Action" alternative is not environmentally, socially and economically the preferred option. It will require frequent and long-term extraction of material from borrow sites which in the end degrades the environment. The status quo implies that the current road connectivity challenges will persist that stagnate delivery of social services and enforcement of security.

Baseline Environmental and Social Conditions

In terms of physical environment, Wajir county is semi-arid area experiencing bi-modal wet seasons. The annual rainfall is 255mm. On average, relative humidity is 61.8 percent and temperatures range from 30°C to 34°C. The project area is within the Northern Ewaso Ng'iro River Basin. The terrain of the project area is predominantly flat from Wajir up to Wargadud with no permanent river along the entire section. Soils are commonly sandy.

Along the project road, the floral characteristics of the wildlife habitats closely resemble the Somali - Masai *Acacia* - *Commiphora* deciduous woodland/shrubland and thickets (White, 1983). Habitats include:

- Built up areas were characterised by houses and buildings and infrastructures, spread of invasive alien species, garbage sites and planted fence line.
- Water and wetland habitats that were mainly earth dams and attracted shoreline and other water birds such spoonbill, shanks, sandpipers, heron etc
- Vegetation associations include *Acacia* – *Acacia*, *Acacia-Commiphora-Combretum* Associations, *Jatropha* shrubbery, Novel Habitats, *Acacia tortilis* Woodlands and *Commiphora* - *Boswellia* Woodlands.

In terms of flora, a total of 53 species were recorded during field surveys, most of which occur in the *Acacia* – *Commiphora* Associations. A total of 34 mammals, 36 herpetofauna, and 114 avifauna species were listed as known to occur along the project road. There is no protected wildlife area in the immediate vicinity of the road corridor. However, some of the identified free ranging wildlife are listed in the Kenya Wildlife Management and Conservation Act as of conservation significance due to the various degrees of vulnerability. These include striped Hyaena (Endangered), African wild dog (Endangered), Lion (Endangered), Cheetah (Endangered), Spotted Hyaena (Vulnerable), Lesser kudu (Vulnerable) and Ostrich (Protected Species). Key concerns on the wildlife were safety and crossings, human-wildlife as well as unsustainable exploitation of wood resources.

The human population of Wajir County was projected to be 852,963 in 2017, comprising of 55 percent male and 45 percent females. Population density according to administrative units are as follows: Wajir East Sub County (17), Wajir Central Division (595), Tarbaj Division (11) and Kutulo Division (13). Among the majority of Somali clans, the Degodia reside within the project area. Other clans are the Ajauran, Ogaden and Gare. Along the project road, human settlements are sparse and occur as clusters in trading centres that interrupt long stretches of natural vegetation.

The major economic activity is pastoralism. The project area is food insecure and most family may be unable to have the normal three meals a day. Firewood is the major source of energy;

while battery lamps are the main source of lighting. Prevalent diseases in the area are malaria, upper respiratory infections, intestinal worms, skin and eye infections and rheumatism. In Wajir, HIV adult prevalence is 0.9 percent which is lower than the national prevalence rate and among the lowest in the country.

- Literacy level in Wajir County is lower at 23.8 per cent relative to the national level at 71.4%. Communities in the project area are also recognised by the national government as being vulnerable and the area marginalised. Groups identified as marginalised in the project area include women, youth and disabled. Security remains a major concern especially with the porous borders with the neighbouring unstable Somalia.

- Existing water sources as analysed in the Environmental and Social Impact Assessment (ESIA) report include: Shallow Hand Dug Wells; Wajir Minor Water Supply; Army Camp Water Supply; Arid Land Resource Management Project Water Supply; and H.Z. Dam ("Lake Yahudi"). Most of the households rely on hand dug wells.

Stakeholder Engagement

During ESIA studies, various institutional stakeholders consulted and a total of six public meetings held. Issues identified during consultation are as follows:

- Risk related to water use / water use conflict
- Material Use conflicts
- Loss of access to ground water resource
- Livestock crossings
- Risk of population influx
- Sanitation challenges
- Enhancement of project benefits
- Future stakeholder engagement
- Community health and safety
- Impacts on education
- Impacts on local culture
- Road Safety
- Security
- Decommissioning of material sites and environmental restoration
- Potential CSR programs

Impact Assessment

The major positive impacts envisaged during construction include employment opportunities for construction staff who will be engaged for approximately 36 months and business opportunities for local suppliers and service providers. Conversely, anticipated negative construction impacts include:

- Disruption of traffic, public utilities and accesses;
- Disruption of livelihood due to land take and loss of structures. From the draft RAP report, there are 754 PAPs who are mainly in the urban centres traversed by the road. 529 of these are structure owners, 62 are tenants of which 58 are business tenants while only 4 are housing tenants;
- Cultural clash and potential spread of HIV/AIDS and other Sexually Transmitted Diseases (STDs);
- Excessive noise and vibration;
- Contamination by liquid waste and spills;
- Construction Dust;
- Accumulation of Solid Waste;
- Increased Soil Erosion;
- Increased Human-Wildlife Conflicts;
- Vegetation Loss;
- Spread of Invasive and Alien Species;

- Habitat Loss and Disturbance;
- Occupational Safety and Health Hazards;
- Impacts related to High temperature and Humidity Levels

During operation, the main positive impacts envisaged include:

- Cultural Integration due to influx of People
- Spurring local and regional economic development
- Reduced travel time and cost
- Reduced dust pollution
- Improved rainwater channelling and road drainage
- Reduced habitat disturbance

Negative operation Impacts envisaged include

- Cultural Clash
- Over-speeding and Increased Vehicle Accidents
- Inhibited Wildlife and Livestock Movements
- Increased Deadwood Collection and Tree Felling

Conclusion

This report has recommended appropriate enhancement measures for the positive impacts and mitigation measures for the identified negative impacts. Some of the mitigation measures will be incorporated in the final design e.g. realignment to minimize resettlement impacts. RAP has been prepared separately to specifically address project impacts related to relocation and loss of livelihoods and shall be implemented ahead of construction works.

In overall, the project will have significant benefits to the immediate area and the region and when implemented with due consideration of the proposed mitigation measures and environmental and social management plans, the negative impacts will be either eliminated or reduced to very insignificant levels.

1 INTRODUCTION

1.1 Project Background

The Government of the Republic of Kenya (GoK), through the Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD) has applied for credit from the International Development Association (IDA) towards the cost of the construction of the North-Eastern Transport Improvement Project (NETIP). A portion of the credit will be allocated to the upgrading of sections of the Isiolo - Mandera Road to bitumen standard.

The rationale of the project is founded on the realization that poor road access to the North Eastern part of Kenya constrains the social and economic development prospects of the area. The region is marginalized geographically and is historically underserved. Due to poor road condition, the region is cut-off from the rest of the country during the rainy season while still the journey times during dry season are relatively longer for comparable distances in other parts of Kenya.

Objectives of NETIP are partly to improve the movement of goods and people along Isiolo – Wajir - Mandera part of the Mombasa – Garissa – Wajir – Mandera - Mogadishu road corridor and to enhance connectivity between other parts of Kenya and the North Eastern region as well as between Kenya and Somalia and Ethiopia. With improved transport connectivity, access to social services and commodities will be made easier and cheaper.

The Kenya National Highways Authority (KeNHA) is the implementing agency that will be responsible for design review and update of the project's environmental and social safeguard instruments namely an Environmental and Social Impact Assessment (ESIA) and a Resettlement Action Plan (RAP) for the project road. This is in line with KeNHA's mandate as provided for in the Kenya Roads Act, 2007.

In the year 2010, KeNHA commissioned GIBB Africa Limited to undertake Consultancy Services for the Design Review and update of ESIA and RAP for the Wajir – Kutulo Road, which is a section of Isiolo – Mandera Road.

The Detailed Designs being updated had been prepared and finalized in 2010 by GIBB Africa Ltd and submitted to the client at that time, namely the Ministry of Roads and Public Works. At that time, the only safeguard document that was prepared was an ESIA Study Report.

This ESIA Report provides up to date study findings to allow for the changes that have occurred since the year 2010. For the assessment and management of impacts arising from land take as a result of this project, this ESIA Study Report is supported by a RAP Report that is presented as a separate document.

1.2 Project Location

The project area is located in Wajir County. The county is located in the North Eastern region of Kenya between latitudes 3° N 60'N and 0° 20'N and Longitudes 39° E and 41° E and covers an area of 56,685.9 Km².

The project road is approximately 119km. It starts at Wajir Town and proceeds in a Northerly direction to Lafaley (Km 11) and Tarbaj Town (Km51). It then takes an easterly course through Hungai (Km61), Wargadud (Km81), Kutulo-Wajir (Km110) and ends at Kutulo-Mandera (Km119). The Right of Way for the project road is 60 meters.

In Tarbaj Town, the main road has been aligned to bypass the town centre. The design however provides for a 1.8 km spur through the town centre (Tarbaj Spur). The Right of Way in the spur is 40 meters.

The project road traverses through the administrative units as shown in the table below. map showing the project location is presented in Table 1-1.

Table 1-1: Administrative units along the proposed road alignment

County	Sub-County	Division	Location	Chainage (Km)
Wajir	Wajir East	Wajir Central	Halane	km 0 - Km 6 LHS
			Wagberi	km 0 - Km 6 RHS
			Lafaley	km 10+800 to km 11+500
	Tarbaj	Tarbaj	Tarbaj	Km 50 – Km 53
			Hungai	km 60 to km 62
			Wargadud	Km81-Km 83
			Wajir-Kutulo	km 110+500 to km 113
Mandera	Mandera Central	Kutulo	Kutulo	Kutulo

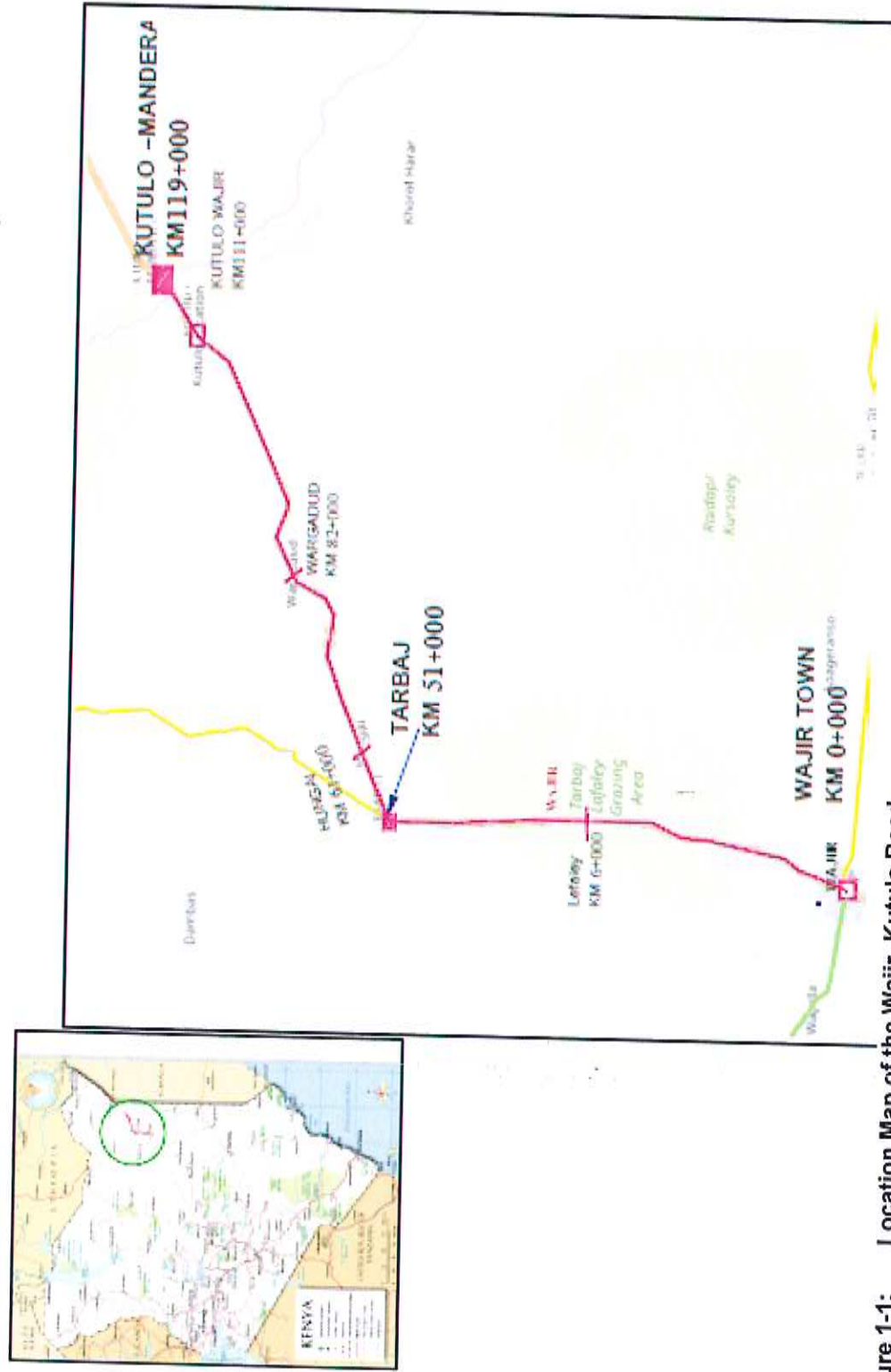


Figure 1-1: Location Map of the Wajir- Kutulo Road

1.3 Objectives of the ESIA Study

The main objectives of this ESIA Study are to update the 2010 ESIA Report through:

- Review and update of all potential significant adverse environmental and social impacts of the proposed project and recommend measures for mitigation measures;
 - Verification of the project's compliance with the environmental regulations and industry's standards through incorporation of changes in the Kenyan Policy Legal and Regulatory Framework since 2010;
 - Generation and update of baseline data on the bio-physical and socio-economic environment within the project area to inform both the impact assessment, proposed mitigation measures and plans and eventually to inform the monitoring and evaluation program through-out the project cycle;
 - Review and update of the costs of the proposed mitigation measures and plans for management of the expected impacts;
 - Provision of guidelines and action plans for participatory management of the project's environmental and social impacts;
 - Preparation of an ESIA Study Report in compliance with:
 - ✓ The Environmental Management and Coordination (EMCA) (Amendment) Act, 2015 and its regulations including the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2016; and
 - ✓ The World Bank Operational Policies (OP) and related safeguards.
-

1.4 Project Justification

The Wajir - Kutulo road (A13) is part of the Wajir - Mandera Road which is the major international link with the Republic of Somalia. It is therefore vital that the road should meet minimum international standards and its importance from a security perspective cannot be over-emphasised. Key highlights of the expected project outcomes are highlighted below.

Improved Local and Regional Development and Trade

Construction of this road to an all-weather standard will open up North Eastern region of the Country.

In addition, considering that over 80% of the livestock in Kenya is found in arid areas, the Government, through the Arid Lands Resource Management Plan (ALRMP) II Strategic Plan, earmarked immediate attention to infrastructure development in North Eastern and other arid regions in the country.

The project road is located in the North-Eastern part of Kenya that has been identified by NETIP as an area experiencing a range of socio economic development setbacks associated with low infrastructural development. Poor road conditions have also contributed to geographic and historical marginalisation of the people in the project area.

At the local level, the population in the immediate project area mainly rely on livestock and trading. The economic potential of livestock keeping and trade is not met as transportation of products as well as materials and resources to support these economic activities is hampered by the poor road network in the region.

During the rainy season, the state of roads in the project area worsens as the roads become impassable thus making travel time longer and further increasing business costs due to high transportation costs and slow movement within the region.

Accordingly, this project falls within the overall Government strategy for economic recovery and poverty eradication in the North-Eastern Region of the Republic. The road project will be of importance to the area as it is expected to bring about the following changes:

- Open up the Counties of Wajir and Mandera in the short term, but in the long run also connect Mandera and Western Somalia to the LAPSSET corridor which will lead to economic growth, employment generation and eventually poverty reduction; in the area;
- Reduce production costs, particularly in the livestock sectors, through faster delivery of livestock produce to the markets. This is expected to have a positive trickle-down effect to the economic potential of the area with regard to improvement of incomes from livestock keeping;
- Reliability and accessibility of extension services will be increased and available at low costs, which have been hampered by poor road condition due to fast and efficient transportation of goods and services to in and out of the project area.

Improved Security

Security is still an issue of concern in most parts of this region and a bitumen road would enable the Government security personnel to offer rapid response whenever peace is threatened, either from within or from across the Kenya/Somalia or Kenya/Ethiopia borders.

There have been several incidences of terrorist's attacks in the area but due to bad roads, more often than not, the security forces are not adequately facilitated to provide rapid response. At the village level therefore, the project will contribute to improved security in the area as the villages will be easily accessible by road in the event of security distress.

Linkage to the Development of the LAPPSET Corridor

With regard to Kenya's Vision 2030, the NETIP will link Wajir and Mandera County as well as western Somalia to the LAPSSET Corridor. The Wajir - Kutulo Road is located within the Wajir Growth Area of the LAPPSET Corridor as shown in Figure 1-2 below.

This component of the project will therefore also contribute to the actualisation of the goals of the LAPSSET Project.

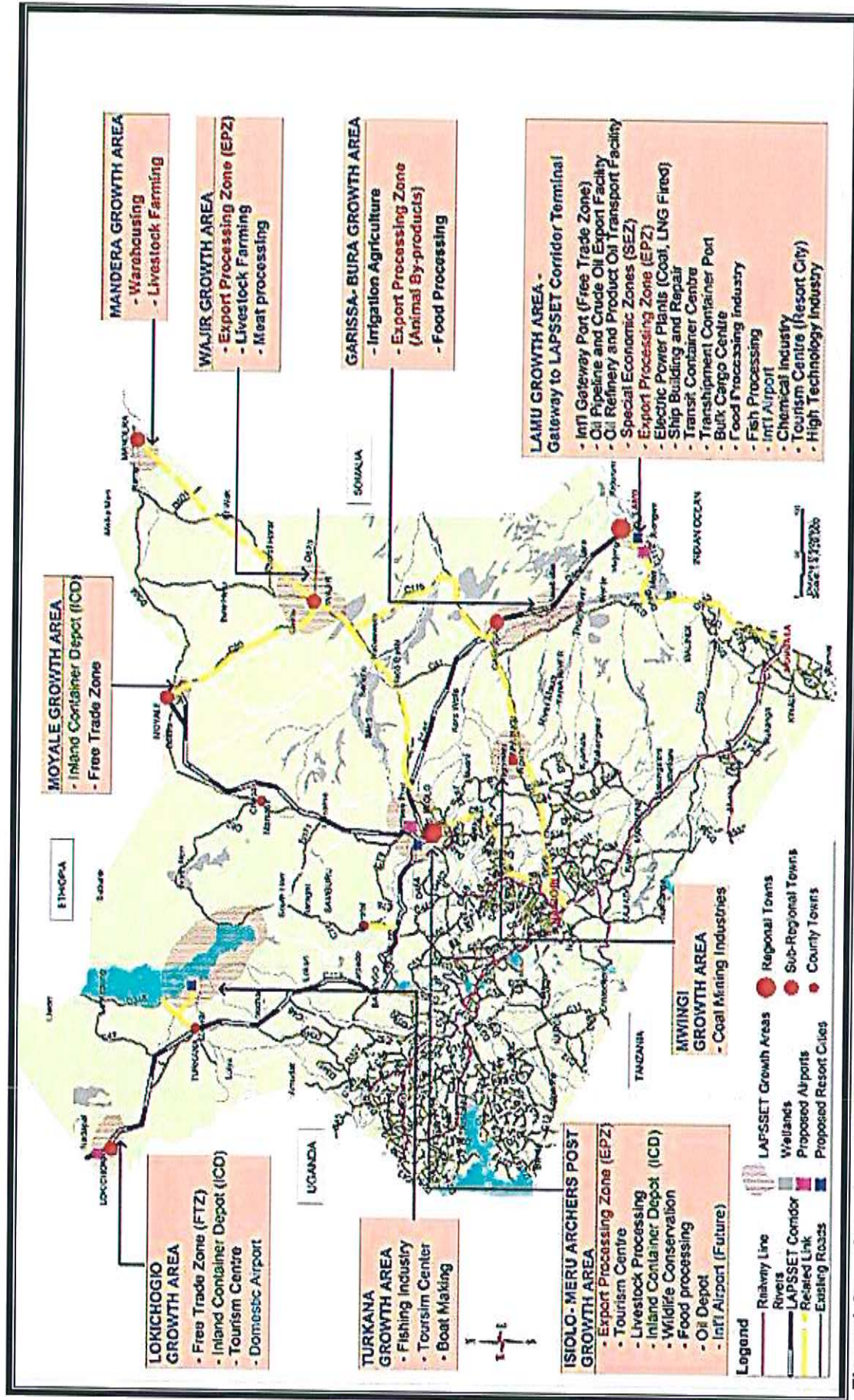


Figure 1-2: Location of the Wajir-Kotulo section with Reference to the LAPSSET Corridor

Source: <http://www.lapsset.go.ke>

1.5 ESIA Methodology

1.5.1 Inception Stage

The ESIA study process commenced with the retrieval and review of existing project documentation as well as a site reconnaissance along the project road. Thereafter an ESIA Study Inception Report was compiled and submitted in December 2017.

Details of the Inception Phase inputs are presented below

(a) Desktop Review

Pre and Post-site visit desk study was done in preparation of the ESIA Study Report. From the pre-site visit desktop study, study team was able to prepare tools to facilitate the reconnaissance field visit. Desk study by the ESIA Study Team began with review of the following project documentary resources:

- Final ESIA Study Inception Reports for Design Review of the Wajir - Kutulo Road, December 2017 prepared by GIBB Africa Ltd;
- Final RAP Study Inception Reports for Design Review of the Wajir - Kutulo Road, December 2017 prepared by GIBB Africa Ltd;
- Inception Report for Design Review of the Wajir - Kutulo Road, September 2017 prepared by GIBB Africa Ltd;
- Final Engineering Report – Phase 2 (May 2010) for the Preliminary and Detailed Design of Wajir - Mandera Road (B9);
- Factual materials report - Phase 2 (May 2010) for the Preliminary and Detailed Design of Wajir - Mandera Road (B9); and
- ESIA Study Report (Final Report, June 2010) for the Preliminary and Detailed Design of Wajir - Mandera Road (B9).

Other technical reports (with focus on the project area) reviewed by the ESIA Team include:

- First County Integrated Development Plan 2013-2017 – Wajir County;
- The 2009 Kenya Population and Housing Census – *Population Distribution by Administrative Units. Volume 1*, August 2010 prepared by KNBS;
- Exploring Kenya's Inequality: *Pulling Apart or Pooling Together?* Prepared for the Wajir County in 2013 by Kenya National Bureau of Statistics (KNBS) and Society for International Development (SID);
- Project Information Document / Integrated Safeguards Data Sheet (PID/ISDS). Prepared on 11 October 2016 for the World Bank North Eastern Transport Improvement Project (P161305).

Moreover legal, policy and regulatory frameworks were also reviewed. Scientific reports, sectoral reports and authoritative online sources were resourced to fill in knowledge gaps on the various thematic areas of the ESIA study. The full list of information sources reviewed during the preparation of ESIA study are provided in the Reference Chapter 11 of this Report.

(b) Site Reconnaissance

The reconnaissance visit was undertaken from 7th to 11th September 2017. During the visits, a rapid assessment of the project area was conducted to identify the following:

- Vegetation mix and fauna activities;
- Terrain formation and physical features within the project area and its zone of influence e.g. land gradient, surface drainage, edaphic characteristics etc;

- Existing land uses and related developments;
- Preliminary identification of receptors of potential project biophysical and socio-economic project impacts.

(c) Initial Stakeholder Consultations

Initial consultations were mainly conducted with officers from the line ministries based on anticipated institutional actors who would play an active role either in the ESIA study or the management of potential project impacts. Table 1-2 below outlines the stakeholders that were consulted at this stage.

Table 1-2: Stakeholders Consulted at the ESIA Inception Phase

Institution	Designation	Area of Jurisdiction
Ministry of Interior and National Coordination	Acting (Ag.) Deputy County Commissioner	Wajir County
	Senior Chief	Kutulo-Wajir
	Senior Chief	Wargadud (including Hungai)
	Assistant Chief	Hungai
	Chief	Lafaley
	Assistant Chief	Tarbaj
	Chief	Wagberi
	Assistant Chief	
County Government of Wajir	Chief Officer Roads and Transport	Wajir County
	County Executive Committee (CEC) Member, Water Energy Environment and Natural Resources	
Ministry of Health	Sub-County Public Health Officer (SC-PHO)	Wajir East Sub-County
Ministry of Agriculture, Livestock and Fisheries	County Director of Veterinary Services	Wajir County
National Environment Management Authority	County Officer of Environment	Wajir County
Kenya Forest Service	Ecosystem Concerns Officer	Wajir County
Kenya Wildlife Service	County Warden	Wajir County
National Drought Management Authority	County Drought Response Officer	Wajir County

An impromptu public meeting was also held at Hungai after the courtesy call with the area Chief.

Stakeholders who were targeted at the Inception Stage but were not available or could not be reached at the time were the officers located within the project area for the organisations listed below:

- Kenya Power and Lighting Company (KPLC);
- National Disaster Management Authority (NDMA);
- Water Resources Authority (WRA), formerly Water Resources Management Authority (WRMA).

1.5.2 ESIA Study Phase

(a) Baseline Ecological / Biological Survey

Sampling plots and transects were laid during the field survey along the project road. Sampling points were mainly devised based on the length of the project road (119km), edaphic properties, vegetation association types and area human activities to achieve a representative approach throughout the site. The following were also factored in the sampling strategy: habitat edge effects, patch dynamics (vegetation cover changes), terrain gradient and (proximity to) unique land features.

Interviews were also conducted with locals on known macro fauna occupying the project area. The interviews generated qualitative data.

Vegetation Survey - Quadrants and Transects

Sampling plots (20MX20M) were randomly chosen along the project road.

Within the chosen plots, flora were surveyed along transect (that is along the project road length) to establish different plant species and their relative abundance. The interval location of sampling was used to quantify the distribution patterns and vegetation dominance for common species. Along the road, common plant species were identified and recorded under the three major life forms i.e. trees, shrubs, herbs and grasses. Moreover, the following observations were also made for individual plants: Height and number of stems sprouting immediately from the ground.

The DAFOR method used to assess the abundance of plants over large area, especially to qualify the colonizers and invasive species. 'DAFOR' involves simply assigning each species as dominant, abundant, frequent, occasional or rare (Sutherland, 2006).

Avifauna Survey

Timed Species Count

Timed species counts yield repeated species lists of indices of relative abundance and are a specific type of listing method. The average time to first observation is thus a crude measure of abundance and can be used to make comparisons both between and within species (Sutherland, 2006). Each count session was more than 50 m apart and lasted 20 minutes from the next. The Timed Species Count were applied in two sites and on each repeat count a species positively identified for the first time is recorded. Each count species was scored according to when they were first recorded, i.e. 6 if in the first ten minutes, 5 if in the next ten minutes and so on. Species not recorded from a survey were given a score of zero for that survey.

Point Transect

Point counts were used to survey different sampling points within the project area to estimate the abundance and species richness. This count is suitable for highly visible or vocal species, often passerines, across the habitats and is particularly suited to dense vegetation (Sutherland, 2006). Point counts were conducted along the project road. The observer waited for 5 minutes before each session began. Bird counts were conducted within a 50m radius.

Other methods employed during the avifauna survey include total counts and opportunistic observations.



Marabou storks perch on the hilly banks of Kutulo Dam (Km 118)

Mammals Survey

This survey targeted larger macrofauna. Easily noticed mammals were directly observed and recorded. Indirect methods (proxies) that indicate the presence of certain animals were used as evidence (such as burrows/dens, spoor, droppings, movement corridors, tracks, nest sites for territorial species). Interviews with locals and identification of photoplate were used to establish other species known to occur in the area.

Herpetofauna Survey

Locals were interviewed on their knowledge on herpetofauna occurring in the area. This involved positive identification of photoplates. These verbal accounts were supplemented by search (with local guides), identification and characterization of habitats that possibly host amphibian and reptiles.

Species of Conservation Importance: The IUCN Redlist of Threatened Species online database was used to cross check the conservation status of the species on the checklists. This involved running scientific names of the species on the online IUCN Redlist of Threatened Species database to confirm the conservation status of the species. Other Authorities database such as KWS and Birdlife International were also sought for comprehensive search on species of conservation interest.

Habitat Requirement for the Species was identified with regard to:

- (i) Species with strict ecological requirements;
- (ii) Rare and endangered species;
- (iii) Endemic species;
- (iv) Species of special interest to local population

(b) Baseline Socio-Economic Survey

Review of Secondary Data

The study team undertook desktop reviews of the project related documentation which empowered the team with adequate background information about the study area. Information from secondary data provided benchmarks against which the study team analysed relevant parameters generated from analysis of data collected during field work.

Field Observations

Site walks were conducted to ensure that the entire study team was well versed with the project area. Participatory transect walks were carried out together with community

leaders as well as some key informants who acted as guides so as to enable collection of qualitative data on the project area. From this walk we were able to map out the physical and cultural resources, social amenities and community assets of importance. This exercise was carried out between 20 February 2018 and 1 March 2018.

Household Survey

Structured household surveys were conducted among the project beneficiaries in order to capture quantitative and some qualitative information at house hold level. The qualitative information was triangulated with information collected from interviews with key informants as well as public meetings.

The Baseline Socio Economic Data was collected through questionnaires that were distributed to randomly selected households in the area by trained enumerators who went from door to door.

Data samples were collected from six different locations spread along the project area. The household survey was carried out between 21st February 2018 to 4th March 2018 with the help of village elders and enumerators from the locality. A sample size of 250 was generated from an estimated population of 1000 households within the project zone of influence.

Stakeholders consultations and public meetings

Stakeholders' consultations and public meetings were conducted through focus group discussions, key informant interviews, meetings with institutional representatives and community meetings as elaborated in Chapter Six.

(c) Assessment of Project Impacts

An environmental impact is any change to the existing condition of the environment caused by human activity or an external influence. Impacts may be:

- Direct or indirect

Direct impacts result from a proposed action and manifest at the present time and place; while indirect impacts are caused by action that manifest at later time or occur remotely from source and are foreseeable.

- Cumulative

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

Moreover, impacts also vary with:

- Duration, that is long-term or short-term;
- Extent of their effect that is in wide-spread or local; and
- Are positive (beneficial) or negative (adverse).

(i) Impact significance

The purpose of this ESIA Study Report is to identify the significant impacts related to the project or activity under consideration and then to determine the appropriate means to avoid or mitigate those which are negative.

Significant impacts are defined, not necessarily in order of importance, as being those which:

- Are subject to legislative control;
- Relate to protected areas or to historically and culturally important areas;
- Are of public concern and importance;
- Are determined as such by technically competent specialists;
- Trigger subsequent secondary impacts;
- Elevate the risk to life threatening circumstances; and
- Affect sensitive environmental factors and parameters.

(ii) Impact identification

In this study, impacts were predicted and evaluated using acceptable standard methods of impact prediction and evaluation. Constant reference to project activities was made and scores were assigned in an assessment table in order to make an objective assessment of how each of the project activities would impact on a particular environmental and social medium. The significance of impacts is subjective, but the value judgments required were best arrived at by use of several approaches such as brainstorming and use of checklists and matrices, to establish the potential impacts from the proposed project activities.

(iii) Impact assessment scoring

The impacts were evaluated using the parameters of magnitude, significance, probability and duration of occurrence. Evaluation of the identified impacts was guided by careful assessment and judgment of anticipated consequences with regard to set standards or pre-development environmental situation of the site. The score of each of the impacts is an average value of scores. Table 1-3 and Table 1-4 show criteria for assessing significance. The assessment and assignment of values to each identified impact was based on the values developed in Table 1-5 which is adapted from the International good practices. Impacts were evaluated by assigning positive or negative scores.

Table 1-3: Criteria for assessing significance

SEVERITY OF IMPACT	RATING	CONSEQUENCE
Insignificant / non-harmful / less beneficial	-1/ +1	
Small/ Potentially harmful / Potentially beneficial	-2/ +2	
Significant / slightly harmful / Significantly beneficial	-3/ +3	
Great/ harmful / beneficial	-4/ +4	
Disastrous/ extremely harmful / extremely beneficial	-5/+5	
SPATIAL SCOPE OF IMPACT	RATING	
Activity specific	-1/ +1	
Right – of – way specific (within right – way)	-2/ +2	
Local area (within 5km of the project)	-3/ +3	
Regional	-4/ +4	
National	-5/+5	
DURATION OF IMPACT	RATING	
One day to one month	-1/ +1	
One month to one year	-2/ +2	
One year to ten years	-3/ +3	
Life of operation	-4/ +4	
Post closure	-5/+5	
FREQUENCY OF ACTIVITY / DURATION OF ACTIVITY	RATING	LIKELIHOOD
Annually or less / low	-1/ +1	
6monthly / temporary	-2/ +2	
Monthly / infrequent	-3/ +3	
Weekly/ life operation/ regularly / likely	-4/ +4	
Daily / permanent / high	-5/+5	
FREQUENCY OF IMPACT	RATING	
Almost never/ almost impossible	-1/ +1	
Very seldom / highly unlikely	-2/ +2	
Infrequent / unlikely/seldom	-3/ +3	
Often / regularly/ likely/ possible	-4/ +4	
Daily / highly likely/ definitely	-5/+5	

Table 1-4: Significance rating matrix

CONSEQUENCE (Severity+ Spatial Scope + Duration)															
LIKELIHOOD (Frequency of activity + Frequency of impact)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105
	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150

Table 1-5: Negative and Positive Mitigation Ratings

Significance Ratings	Value	Negative Impact Management Ratings	Positive Impact Management Ratings
Very High	126-150	Improve proposed management	Maintain proposed management
High	101-125	Improve proposed management	Maintain proposed management
Medium-High	76-100	Improve proposed management	Maintain proposed management
Low -Medium	51-75	Improve proposed management	Maintain proposed management
Low	26-50	Improve proposed management	Maintain proposed management
Very low	1-25	Improve proposed management	Maintain proposed management

(d) Preparation of an ESMP and ESMoP

The Environmental and Social Management Plan (ESMP) is developed to demonstrate how site-specific concerns and mitigation measures are addressed during construction and operation of the proposed project development activities. The ESMP has been developed with project knowledge and information available to date. The impacts originating from the project road development (construction, operation and decommissioning phases) have been identified. To ensure that the negative environmental impacts can be controlled and mitigated effectively, a thorough scientific management and monitoring plan has been prepared. This will ensure that all the targets are achieved and that the environmental responsibilities and obligations of ESIA are met during project implementation. As a progressive approach, components of the ESMP may require updating throughout the initiation and scheduling of plans for the project.

The Environmental and Social Monitoring Plan (ESMoP) is prepared with an objective of monitoring to ensure that mitigation measures in the ESMP are implemented and that they are effective. Environmental and social monitoring also enables response to new and developing issues of concern.

1.5.3 Constraints and Limitations

This report presents information that is generally consistent with the data and information gathered through various sources and approaches mentioned above.

The findings and issues presented from the stakeholder and community engagement program are representative of the general views and perceptions of some selected people and stakeholders. As such, they may not cover the specific issues for some unique situations or some individuals affected by the project.

The validity of the secondary data used in this report should be viewed with reference to the data source publication dates. It is therefore necessary to view such information with reference to the time reference and the limitations specific to the publication.

Insecurity challenges in the project areas delayed commencement of detailed field work. During the study, detailed ecological assessments were conducted to the end of the road section in Kutulo Mander (Km 119). However, public meetings were only conducted up to Kutulo Wajir (Km 113). The security personnel who were escorting the study team advised the team to suspend works before meetings could be held with community along the remaining 6km section which fell within Mander County.

1.6 Project Proponent Details

The project proponent is Kenya National Highways Authority (KeNHA).

The KeNHA Contact details are as follows:

Official Address:	Kenya National Highways Authority P.O Box 49712-00100 Nairobi KENYA
Email:	gmsp@kenha.co.ke
Tel:	254-0-20-8013842
Contact Person:	General Manager Special Projects

1.7 Structure of the Report

This report has been prepared under the following chapters:

- Executive summary:** This section presents a summary of the significant findings and recommended actions, with an emphasis on expected impacts.
- Chapter 1: **Introduction:** This chapter gives description of the project background, location, purpose, objectives, NEMA reporting requirements, study methodology and the structure of the report.
- Chapter 2: **Policy, Legal and regulatory framework:** This chapter outlines the overview of legislative regulatory and framework, international guidelines and conventions relevant to this project.
- Chapter 3: **Project description:** This chapter presents the project design and implementation strategies.
- Chapter 4: **Environmental and Social setting:** This chapter gives description of the environmental and social setting of proposed project and surrounding areas, e.g. climate, soils, geology, vegetation, fauna, land use, socio-economic profile and cultural heritage.
- Chapter 5: **Project alternatives:** This chapter gives an analysis of project alternatives including the no-project option.
- Chapter 6: **Consultation and public participation:** This chapter gives description of the objectives, methods used and summary of results of the public consultation activities undertaken during the project report stage.
- Chapter 7: **Potential environmental impacts and mitigation measures:** This chapter presents the analysis of beneficial and adverse impacts of the project on the biophysical and human (social, cultural and economic) environments. The analysis covers anticipated impacts during the construction, operation phases and decommissioning phases and also describes the measures proposed to enhance benefits or prevent, minimize, mitigate or compensate for adverse impacts.
- Chapter 8: **Environmental and Social Management Plans (ESMP):** This chapter presents the proposed ESMP prepared for the project. It also presents strategies for management of specific biophysical and socio-economic management components that should be further developed prior to commencement of the Construction Phase of the Project.
- Chapter 9: **Environmental and Social Monitoring Plans (ESMoP):** This chapter presents the proposed ESMoP for the project.
- Chapter 10: **Conclusions:** The conclusion briefly presents the proposed way forward on the project and key deliverables.
- Chapter 11: **List of References.**

2 POLICY, LEGAL AND REGULATORY FRAMEWORK

2.1 Policy Framework

2.1.1 Environment Policy, 2014

The aim of the Environment Policy (Sessional Paper No.10 of 2014) is to ensure that environmental concerns are part of the national planning and management processes; and that guidelines are provided for environmentally sound development. The policy has seven broad goals under which guiding principles are mainstreamed to achieve conservation and management of the natural resources (forest ecosystems, arid and semi-arid lands ecosystems etc. that have wildlife resources, water resources, grazing lands, minerals, soils therein). Some of the principles outlined in the policy include right to a clean and healthy environment, ecosystem approach, total economic value, sustainable resource use, equity, public participation, precautionary principle, polluter pays principle, international cooperation, community empowerment, benefit sharing and good governance.

Relevance

The policy promotes use of EIA as an innovative environmental management tool. It also calls for the Government of Kenya (GoK) to ensure that all significant development projects are subjected to EIA and regular environmental audits.

This EIA Study Report (and its ESMP that will be subjected to regular audits) was prepared to promote sustainable development as envisaged in the policy.

2.1.2 Vision 2030

Kenya Vision 2030 is the country's new development blue print covering the period 2008 to 2030. The blueprint aims at transforming Kenya into "a newly industrialising, middle-income country providing a high quality of life to all its citizens in a clean and secure environment." The Vision is anchored on three key pillars: Economic; Social; and Political Governance.

The political governance pillar envisages public participation during project development; while social pillar envisages development through equitable social development.

Poor road access to the north-eastern parts of Kenya constraints the social and economic development prospects of the area. The project road is under the North Eastern Transport Improvement Project (P161305) – NETIP under which the government intends to improve the road from Isiolo to Mandera to bitumen standards. This road section is also part of Garissa – Mandera Road, which is listed as part of the flagship projects in the latest briefing under Vision 2030.

The Vision 2030 policy anticipates possible environmental impacts during roll out of flagship projects requiring mitigation measures be put in place in line with the requirements of the Environmental Management and Coordination Act (EMCA), 1999 and the Environmental Management and Coordination (Amendment) Act, 2015. Hence, the project proponent (KeNHA) should ensure environmental care through mitigation of impacts as part of project achievement.

Relevance

The improvement of the existing ESIA for the Wajir – Kutulo Road aims at observance of the principle policy directives of Vision 2030.

2.1.3 National Land Policy, 2009

The policy is presented to provide goals and direction for the current and future management of land in Kenya. It outlines the measures and guidelines which the government shall implement to achieve optimal utilization and management of land, and from which laws governing land administration and management shall be drawn. The Policy and its implementation is guided by the philosophy that land is not just a commodity that can be traded in the market but has multiple values which should be protected by both policy and law.

Clause 51(d) of the policy states that government to establish development control standards, processes and procedures that are efficient, transparent and accountable taking into account International Conventions and national policies relating to the sustainable use of land and the preservation of environmental values.

The policy in Section 3.4.3.4 promotes Environmental Management and Audit as land management tools and encourages public participation in the process.

Relevance

This ESIA has espoused the policy recommendations key among them compliance with EMCA as the harmonised framework for sustainable use of land.

2.1.4 Integrated National Transport Policy (INTP), 2009

The policy scopes the main challenges associated with transport infrastructure planning, development and management, sectoral institutional and regulatory frameworks, safety and security, gender mainstreaming, and environmental considerations, among others.

The policy perceives that currently there are inadequate measures to check on the damage on the environment (gaseous pollution, vibration and noise among others) and that efficient road transport management will minimize pollution by traffic. The policy advocates for use of more energy efficient and less polluting modes of transport. It recognizes the need to enforce EMCA at all stages of road infrastructure development and management that will lead to reduced environmental impacts from road infrastructure provision and operation as well as better utilization of road building materials.

Relevance

The ESIA through the ESMP has scoped foreseeable impacts and corresponding mitigations at construction and operation stages.

2.1.5 Draft policy on aligning the roads sub-sector with the constitution, 2012

The draft policy suggests environmental issues to be looked at holistically. The national and county governments in liaison with the National Land Commission should ensure compliance with the land use and development plans in accordance with existing laws prohibit by law allocation of protected areas reserved for road reserves. The boundaries of such areas shall be clearly delineated and documented, designated and kept in an inventory of all road reserve that will be placed under the National Land Commission (NLC) to hold and manage it in trust for the people of Kenya. The policy recognizes that due to weak adherence to environment requirements, environmental degradation as a result of road transport is rife with activities such as gaseous emissions, noise pollution and oil spills. This has not been adequately addressed both in the urban and rural areas. With the growing levels of urbanization, increased motorization and other transport activities, it is necessary to ensure that the transport system is environmentally friendly.

Relevance:

The policy requires development of the road sector to be environmentally friendly. This ESIA study is addressing both the environmental and social issues by developing environmental

and social management plan that will be adopted during the entire project period.

2.1.6 Guidelines for Prevention and Control of Soil Erosion in Road Works, 2010

The guidelines main objective is to benefit all persons engaged in the road works (Engineers, consultants, contractors and supervisors) and is not informed on the extent of damages caused by uncontrolled run-off from the road corridor. It acknowledges that road works potentially result in environmental hazards through the spillage of carbon products, contaminating the surrounding land, dust and noise pollution, interference with the drainage pattern hence extensive soil erosion. The guidelines therefore focus to minimize the damages to the environment through the use of innovative construction methods and procedures which are less damaging to the environment in controlling soil erosion. The guidelines discuss several issues on the soil and water conservation principles which entail:

- The design and construction of water ways and soil erosion control measures in road drainage systems;
- Soil erosion control measures needed in upper and lower catchment areas;
- Soil erosion and their mitigation measures against anticipated damages from the road drainage discharge;
- Use of vertiver grass to stabilize and heal erosion damages; and
- Indicative cost of soil and water conservation measures for planning purposes

Relevance

The guidelines are applicable to this project as they provide some of the mitigation measures to alleviate environmental degradation expected such as soil erosion especially during the construction phase of the project.

2.1.7 The National Biodiversity Strategy, 2007

The overall objective of the National Biodiversity Strategy and Action Plan (NBSAP) is to address the national and international undertakings elaborated in Article 6 of the Convention on Biological Diversity (CBD). It is a national framework of action to ensure that the present rate of biodiversity loss is reversed and the 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.

Relevance

The project falls where there is no protected habitats. However, there are some wildlife outside the protected areas and should the project encounter endangered flora and fauna then their conservation is of primary importance.

2.1.8 Gender Policy, July 2011

The objective of this policy is to mainstream gender perspectives in the national development process in order to improve equality and related social, legal/civic, economic and cultural conditions in Kenya. The policy encourages integration of measures that ensure gender-specific vulnerabilities and capacities of men and women are systematically identified and addressed.

The implementation of project will create job opportunities; through gender mainstreaming the problem of marginalizing women during employment may be addressed. Economic empowerment of women in Wajir is a concern as most of them are usually housewives (First CIDP 2013–2017, Wajir County).

2.1.9 World Bank Safeguard Policies

These safeguard policies include:

- OP/BP 4.01 Environmental Assessment;
- OP/BP 4.04 Natural Habitats;
- OP/BP 4.36 Forests;
- OP/BP 4.09 Pest Management;
- OP/BP 4.11 Physical Cultural Resources;
- OP/BP 4.10 Indigenous Peoples;
- OP/BP 4.12 Involuntary Resettlement;
- OP/BP 4.37 Safety of Dams;
- OP/BP 7.50 Projects in International Waters; and
- OP/BP 7.60 Projects in Disputed Areas.

The safeguard policies are intended to support Borrowers' projects by ensuring protection of people and environment from adverse impacts, reduce and manage project risks; enhance sound and sustainable operations in regard to the project.

THE following policies are triggered by the project.

(a) OP / BP 4.01 Environmental Assessment

The policy aims to ensure investment projects are environmentally and socially sound and sustainable achieved through appropriate analysis of project activities and subsequent potential environmental impacts. And further advances integration of environmental and social aspects of project into the decision-making process. OP 4.01 covers impacts on the natural environment (air, water and land); human health and safety; physical cultural resources; and trans-boundary and global environment concerns.

Environmental and social assessment and environmental and social management plan (ESMP) are some of the instruments identified as applicable. Other instruments include environmental and social audits, hazard or risk assessment. It behoves the project proponent to undertake environmental assessment.

In accordance with the Bank's Project Information Document, NETIP has been assigned as Category B project since anticipated impacts are not expected to be sensitive, irreversible and unprecedented; they are likely to be localized, not cumulative and easily manageable.

(b) OP/BP 4.04 Natural Habitats

The policy promotes developments that are environmentally sustainable by advancing the protection, conservation, maintenance, and rehabilitation of natural habitats and their functions. Natural habitats are diverse including terrestrial, freshwater, coastal, and marine ecosystems. Due to human activities, these habitats may be modified; nonetheless the remnants may still support critical ecosystem functions and harbor native species. The Bank recognizes that environmentally sustainable development can enhance natural habitats through conservation practices that apply a precautionary approach.

The project road traverses a mixed-use arid and semi-arid wildlife area. The dominant natural habitat in the project area is the *Acacia-Commiphora* thorn bush. Some of the wildlife (such as the Lesser Kudu) are specialists of the *Acacia-Commiphora* habitats and rarely moves from cover but avoids open spaces and long grass. Significant degradation of such habitats may lead to population decline or local extinction of such species that are already listed in the IUCN RedList database to be of conservation concern.

(c) OP/BP 4.11 Physical Cultural Resources

The Bank defines physical cultural resources as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or under water. Their cultural interest may be at the local, provincial or national level, or within the international community (The World Bank Group, 2017).

Along the project road alignment, the following features of local cultural significance were identified through consultations with the community members and key informants:

- Within Wajir town (Km 0+000 to Km 0+600) There is a reported heritage site (hosting wells, World War II bunkers and religious activities) protected by the National Museums of Kenya (NMK) within this section. However, official protection status is yet to be confirmed by NMK;
- At Tarbaj (Km50-53) a communal grave yard which had been used up to late 2017 was identified to be partly affected by the proposed alignment. Though no longer in use, realignment is being considered to avoid the grave yard. Exhumation is unacceptable by the community.

This study has recommended realignment of the road to avoid the above features. The realignment will be affected in the final design.

The project road passes through settlements and some proposed road alignment sections require land acquisitions such as the Tarbaj centre (KM 51). Moreover, presence of religious places (Mosque) in the centres triggers the relevance of the policy and therefore should be conserved and surroundings properly managed.

(d) OP/BP 4.10 Indigenous Peoples

This policy aims to ensure any project development fully respect the dignity, human rights, economies, and cultures of Indigenous Peoples; thus, need for prior and informed consultation. This will assist in avoiding potentially adverse effects on the peoples' communities; or minimize, mitigate, or compensate for such effects. Some of the impacts associated with indigenous people include loss of identity, culture, and customary livelihoods, as well as exposure to disease. Impacts can complicate the gender and intergenerational issues among the affected. Moreover, as part of the national social groups, indigenous peoples are frequently among the most marginalized and vulnerable segments of the population.

This policy is triggered by the project. Wajir County, where the project is located, is dominated by Somali people that have preserved their pastoralist culture while maintaining a mobile lifestyle. Vulnerable and Marginalized Groups Framework (VMGF) prepared by the State Department for Planning identified pastoralist groups in northern Kenya that are marginalized and vulnerable and include Somali occurring at the border with Somalia; the Borana, the Rendile, and the Gabra, among others.

(e) OP/BP 4.12 Involuntary Resettlement

This policy ensures that prior planning is done before any resettlement activities and subsequent implementation of the project. The policy (i) avoids or minimizes involuntary resettlement where feasible, exploring all viable alternative project designs; (ii) assists displaced persons in improving their former living standards, income earning capacity, and production levels, or at least in restoring them; (iii) encourage community participation in planning and implementing resettlement; and (iv) provide assistance to affected people regardless of the legality of land tenure.

The project road mainly follows an existing alignment and efforts have been made to follow the existing road reserve. For instance, in Wajir town (Km 0+000 to km 0+400), after field work established that the road was going to affect a huge number of traders and an area concurrently regarded as an important dry season water source for the town, reported as having cultural heritage significance and hosting a mosque, a realignment has been proposed. However, there are realignments in some sections to achieve the road design standards and safety requirements rendering complete avoidance of resettlement impossible. Thus, the road development will affect some roadside properties and settlements such as at Wajir town, Lafaley, Hungai, Wargadud, Tarbaj and Kutulo This and other realignments has necessitated the undertaking of a Resettlement Action Plan (RAP).

The following Bank's OPs are not triggered by the project:

- OP/BP 4.09 Pest Management: The construction and operation of the project road will not involve pest control and management or application of pesticides.
- OP/BP 4.36 Forests: the project corridor does not interact with any forested area
- OP/BP 4.37 Safety of Dams: The current design project will not include any designs/works for new dam or an existing dam; and
- OP/BP 7.50 Projects in International Waters: The current project road will not involve any international waters

2.1.10 IFC Environment, Health and Safety (EHS) Guidelines

The following IFC guidelines have also be used in the assessment.

- EHS Guidelines: General
- EHS Guidelines: Wastewater and Ambient Water Quality
- EHS Guideline: Air Emissions and Ambient Air Quality
- EHS Guideline: Occupational Health and Safety.
- EHS Guideline: Noise.
- EHS Guidelines: Construction materials extraction
- EHS Guidelines: Toll roads

Relative to the existing Kenyan guidelines, the guidelines or standards with the higher thresholds will be adopted in the project implementation.

2.2 Legal Framework

2.2.1 The Constitution of Kenya, 2010

The Constitution of Kenya, 2010; in Part 2 - Environment and Natural Resources stipulates the obligation of the State in respect of the environment. According to Article 69, the State shall:

- Ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits;
- Work to achieve and maintain a tree cover of at least ten per cent of the land area of Kenya;
- Protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities;
- Encourage public participation in the management, protection and conservation of the environment;
- Protect genetic resources and biological diversity;
- Establish systems of environmental impact assessment, environmental audit and monitoring of the environment;

- Eliminate processes and activities that are likely to endanger the environment; and
- Utilize the environment and natural resources for the benefit of the people of Kenya.

"Every person has the right to a clean and healthy environment", which includes:

- The right to have the environment protected for the benefit of present and future generations through legislative and other measures, particularly those contemplated in Article 69: and
- The right to have obligations relating to the environment fulfilled under Article 70".

Thus, every activity or project undertaken within the republic must be in accordance with the Constitution as well as adherence to the entitlement of every individual to a clean and healthy environment, as envisaged in the Constitution.

This Report seeks to ensure prior identification and adoption of mitigation strategies against impacts to ensure protection of citizen's right to a clean and healthy environment under the Bill of Rights.

2.2.2 Environmental Management and Coordination Act (EMCA)

EMCA, 1999 (The principal Act) and the Environmental Management and Coordination (Amended) Act, 2015 provide the main legal and institutional framework under which the environment in general is to be managed. EMCA is implemented by the guiding principle that every person has a right to a clean and healthy environment and can seek redress through the High court if this right has been, is likely to be or is being contravened.

Section 58 of the Act makes it a mandatory requirement for an EIA study to be carried out by proponents intending to implement projects specified in the Second Schedule of the Act. Such projects have a potential of causing significant impacts on the environment. Similarly, section 68 of the same Act requires operators of existing projects or undertakings to carry out Environmental Audits (EA) in order to determine the level of conformance with statements made during the EIA study. The proponent is required to submit the EIA and EA reports to NEMA for review and necessary action.

The Environmental Management and Co-ordination (Amendment) Act, 2015 has repealed some of the sections in the principal Act. EMCA provides for the establishment of appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto. EMCA outlines the requirements for EIA, environmental audits, monitoring procedures and environmental-quality standards.

This ESIA Report has been prepared in accordance with the provisions of EMCA. The following regulations under EMCA operationalize various provisions under the Act.

(a) Environmental (Impact Assessment and Audit) Regulations, 2003 and Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2016

Regulation 3 of the Environmental (Impact Assessment and Audit) Regulations state that "the Regulations should apply to all policies, plans, programmes, projects and activities specified in Part III and V of the Regulations". The road construction project falls under the High-Risk Project (4) Transportation and related infrastructure projects including— (a) all new major roads including trunk roads. It is under this premise that this ESIA Report was prepared for submission to NEMA.

(b) Environmental Management and Coordination (Air Quality) Regulations, 2014

These Regulations cover air quality standards that are requisite to protect human health and allow an adequate margin of safety. These Regulations specify priority air pollutants, mobile and stationary sources as well as stipulates emission standards.

The emissions/pollution likely to result from road construction activities (such dust and exhaust emissions from running vehicle and equipment engines) have the potential of polluting the immediate atmospheric environment. Bush clearing, earthworks and bulk delivery of construction material, if unmanaged may result in generation of dust. Thus, need for strict adherence to these Regulations and standards therein in preventing/monitoring possible pollutants and managing sources.

(c) Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009

These Regulations provide thresholds within specified environments for noise and excessive vibrations. It includes provisions on noise from related sources such as machinery, motor vehicles and construction at night.

Sensitive areas such as mosques, schools occur along the project road and may be affected by noisy activities during road construction phase. Construction, movements of various mobile construction equipment (such as mixing plant) as well as powering generator (at night) have a potential of exceeding permitted levels for residential and mixed residential areas as per Regulation.

Measures should be put in place to ensure the permissible noise levels by the regulation are not exceeded by the project road implementation activities.

(d) Environmental Management and Coordination (Waste Management) Regulations 2006

These Regulations basically cover all categories of wastes that include solid waste, Industrial waste, hazardous waste, toxic substances and waste, biomedical waste and radio-active substances. These Regulations also vest responsibilities to the generator of the wastes especially with regards to any consequent environmental impacts.

Construction of project road will generate waste at different forms and quantities such as form woodwork, empty bitumen drums, excavated spoil material, wrappers, plastic containers, cuttings (plastic/metal), used vehicle tyres, among others. Wash-down from equipment and vehicle maintenance, waste from septic facilities and used oil and chemical substances are some of the liquid waste expected to be generated at project construction stage. The wastes generated from the activities have the potential of contaminating the immediate ground surfaces and atmosphere; thus, need for strict adherence to these Regulations in dealing with all the wastes and handling of waste streams.

(e) Environmental Management and Coordination (Water Quality) Regulations 2006

The regulation provides for sustainable management of water resources including prevention of water pollution and protection of water sources (lakes, rivers, streams, springs, wells and other water sources). It is an offence under Regulation No. 4 (2), for any person to throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution. Regulation No. 11 further makes it an offence for any person to discharge or apply any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants or permit the dumping or discharge of such matter into the aquatic environment unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards for effluent discharge into the environment.

The proposed road project will require water and also generate some waste water from vehicles oil, asphalt plant, asphalt products and at the batching site. In addition, the camp sites may also produce waste water in form of effluents and kitchen waste water. There are numerous seasonal water crossings along the project road that are in need of protection from pollution through compliance with the waste water discharge standards specified in this regulation.

2.2.3 Water Act, 2016

The Water Act 2016 provides for the management, conservation, use and control of water resources and for acquisition and regulation of rights to use water; to provide for the regulation and management of water supply and sewerage services. Under this Act, ownership of water resources is vested and held in trust with the national government. Nonetheless, every person has a right to access water resources that is administered by the national government.

Road construction activities will need bulk supply of water for mixing and curing concrete, suppressing dust, cleaning and maintenance of equipment, among others. The Act promotes water resources management through soil and water conservation, protection, development and utilization of water resources. The construction of the project road will have to apply water resource management measures since the project area is predominantly arid.

Various permits from Water Resources Authority (WRA) will be required for proposed water abstraction methods, whether surface or ground water.

2.2.4 Kenya Roads Act, 2007

Provides for the establishment of the Kenya National Highways Authority, the Kenya Urban Roads Authority and the Kenya Rural Roads Authority, to provide for the powers and functions of the authorities and for connected purposes.

The functions of KeNHA include 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).

Part IV, Sections 22 to 28 provides for the powers of the authority as a statutory body to; -

- (a) Maintain, operate, improve and manage the roads under its jurisdiction;
- (b) Construct new roads;
- (c) Measure and assess the weights, dimensions and capacities of vehicles using any road and provide measures to ensure compliance with rules relating to axle load control, other provisions of the Traffic Act (Cap. 403) and any regulations under this Act; and
- (d) Provide such amenities or facilities for persons making use of the services or facilities provided by the Authority as may appear to the Authority necessary or desirable.

Part IV (29) on compensation further emphasizes that in exercising the powers conferred by sections 23, 24, 25, and 26, an Authority shall do as little damage as possible, and, where any person suffers damage, no action or suit shall lie against the Authority, but he shall be entitled to such compensation there for as may be agreed between him and the concerned Authority, or, in default of agreement, as may be determined by an arbitrator appointed by the Chief Justice.

Relevance

In respect to the above Act, the proposed road is under the jurisdiction of KeNHA. It has identified the proposed road project as a priority project. This will focus on reducing linking up the neighbouring counties and nations which will eventually contribute towards the growth of the national economy. Further to this, KeNHA has adhered to the provisions of Part IV (29) of the Act by requesting for the design consultants to limit the road design, as far as feasible, within the existing road alignment in order to minimize damage on personal or public property along the project roads.

2.2.5 Traffic Act, 2014

The Traffic Act relates to traffic rules and management of traffic on all public roads. Towards ensuring safety on the roads, the following permits/licenses will be relevant especially for the contractor's compliance during the construction phase.

- Drivers licenses;
- Automobile insurance covers; and
- Permit to transport abnormal loads.

2.2.6 Occupational Health and Safety Act (OSHA), 2007

This Act covers the health, safety and welfare of persons lawfully present at workplaces. Provisions in the Act are designed to allow measures against potential hazards and the absence of risks to health at the workplace. Provisions on health include cleanliness, overcrowding, ventilation and lighting. Those on welfare are supply of drinking water, washing facilities. Machinery safety includes safe use of plant, machinery and equipment. Chemical safety covers handling, transportation and disposal of chemicals and other hazardous substances including waste that may be generated at the workplace. This Act states that before any premises are occupied or used a certificate of registration must be obtained from the Director. The occupier must keep a general register.

During the implementation of the project road, the project contractor will occupy construction camps, mobilize equipment and hire construction workforce. Specific health, safety and welfare measures to be installed include:

- Avail required personal protective equipment (PPE) at workplaces such as hand gloves, safety boots, reflective jackets, nose mask and helmet.
- Inspection of construction equipment to ensure that they are in good working condition before beginning a job. In addition, the contractor/proponent will ensure that regular inspections and maintenance of the equipment are conducted accordingly.

2.2.7 Subsidiary Legislations under OSHA Chapter 514

(a) The Factories and Other Places of Work (Hazardous substances) Rules 2007

These Rules are prepared to:

- Mitigate against workplace exposure of persons to potentially hazardous substances;
- Put in place safety standards against hazardous exposure; and
- Lower performance of work in hazardous conditions or circumstances.

There is need to properly handle all the hazardous Substances that result from the construction activities of the project road. The provisions will help to curb against health hazards arising from any of the harmful substances that may be in use.

(b) The Factories and Other Places of Work (Noise Prevention and Control) Rules L.N 25 Of 2005

These Rules make a provision for the noise levels that a worker should be subjected to at the workplace. Further, the Rules provide for noise prevention program where noise levels exceed 85 dB (A) at the workplace. In situations where the noise levels exceed permissible levels, the occupier is required to develop, rollout and implement a written hearing conservation program.

Deployment of earth moving machines and vehicles at the onset of implementation of project road (during clearing works and bulk delivery of material) has the potential emitting noise. This legislation provides mitigation to excessive noise levels especially those beyond 85 dB(A) at the workplace.

(c) The Factories and Other Places of Work (Medical Examinations Rules) Rules L.N.24 of 2005

These Rules provide for the conducting of medical exams on various occupations including work involving exposure to noise. There should be Pre-employment and annual repeat examinations within two weeks where abnormal examination results are noted. This is to ensure consistency. Examinations are to involve clinical examinations, biological monitoring and other necessary tests depending on the type of exposure.

The regulations and OSHA prescribe the activities under which workers shall undergo medical examination. These include noisy workplaces exceeding threshold limits, and work involving exposure to tar pitch, bitumen and creosote.

(d) The Factories and Other Places of Work (Fire Risk Reduction) Rules L.N.59/2007

These Rules seek to promote fire safety measures at every workplace, process and operations by:

- Vesting some responsibilities to the occupier;
- Recommendations on flammable substances on storage, marking and labelling, handling, monitoring (flammable substances), ventilation;
- Housekeeping as well as removal of products and waste;
- Machinery/equipment layout as well as Fire escape exits;
- Control of spread of smoke;
- Means of evacuation;
- Formation of fighting teams;
- Training in fire safety;
- Functions of firefighting team;
- Fire detection system; and
- Maintenance inspection & testing of cylinders.

During implementation of the project road, the employer/contractor will be required to comply with these regulations by conducting annual fire audits (site offices, camps and establishments), acquiring fire safety certificates, provision of trained fire marshals and conduct of annual fire drills of the resident workforce will have more than 100 staff including the employer's representative; the contractor is expected to form representative SHE committees to perform their roles in accordance with the Rules.

2.2.8 Employment Act, 2007

The Act declares and defines the fundamental rights of employees, to provide basic conditions of employment of employees, to regulate employment of children, and to provide for matters connected with the foregoing. The provides the basic minimum conditions for employment to include hours of work, water (for use at the place of work), food (employee properly fed) and medical attention.

At construction stage, the project contractor will hire both full-time and casual staff and the prevailing basic minimum conditions of employment will have to observed.

2.2.9 Work Injury Benefits Act (WIBA) Chapter 236

This Act provides for compensation to employees for work related injuries and diseases contracted in the course of their employment and for connected purposes.

In the event of injury, during the implementation of the project road, the employer/contractor will be required to compensate workers in accordance with the Act. The contractor must therefore obtain and maintain relevant insurance policies in respect of this liability.

2.2.10 Wildlife Conservation and Management Act, 2013

This Act through rules and regulations seeks to promote the protection, sustainable conservation and management of wildlife resources within the Country and related matters. The Act recognizes and vests a range of responsibilities to different agencies associated with management of biodiversity and their refugia. The Act takes cognisance that the conservation, protection and management of the wildlife environment shall be in conformity with the provisions of the Environmental Management and Coordination Act. In addition, the Act in its schedules have listed legally protected areas and various species of wildlife under differing categories of conservation significance (i.e. vulnerable, endangered etc.) and whose handling requires authority from the Kenya Wildlife Service (KWS).

Although there is no legally protected wildlife area in the immediate project alignment, sections of the road traverse areas with wild vegetation and inhabited by wildlife species. The KWS office in Wajir County have identified high wildlife concentration areas that include Lafaley, Four Miles and Tarbaj. These areas are of interest with regard to wildlife conservation and protection.

2.2.11 Public Health Act, Chapter 242

The Act seeks to protect and promote human health as well as prevent, restrain or suppress infectious, communicable or preventable diseases throughout the Country. This Act provides the impetus for a healthy environment and gives regulations to waste management, pollution and human health.

The Act makes it an offence for any landowner or occupier to allow nuisance or any other condition liable to be injurious or dangerous to health to prevail on his land. This would include effluent and solid waste as sources of nuisance.

(a) The Public Health (Drainage and Latrine) Rules

Rule 85 provides that every owner or occupier of every workshop, workplace or other premises where persons are employed shall provide proper and sufficient latrines for use by employees.

Rule 87 requires every contractor, builder or other person employing workmen for the demolition, construction, reconstruction or alteration of any building or other work in any way connected with building to provide in approved position sufficient and convenient temporary latrines for use by such workmen. Rule 91 provides that no person shall construct a latrine in connection with a building other than a water closet or a urinal, where any part of the site of such building is within 200 feet of a sewer belonging to the local authority which is at a suitable level, and where there is sufficient water supply.

The project appointed contractor is expected to observe these provisions including ensuring adequate temporary sanitation facilities for workers.

2.2.12 HIV/AIDS Prevention and Control Act, 2006

This law requires HIV/AIDS education to be conducted in the work place. Road construction works by their nature increase risks of HIV/AIDS spread between workers and host communities and even among workers themselves in camps.

The project appointed contractor is expected to institute HIV/AIDS awareness and prevention plan among his staff and the host communities through service providers approved by the local public health departments. This requirement shall be incorporated in the tender documents to ensure compliance is achieved by bidders.

2.2.13 National Construction Authority Act, 2011

This Act establishes the National Construction Authority (NCA), meant to oversee the construction industry and coordinate its development. The authority is meant to promote quality assurance of the construction industry; accredit and register contractors as well as accredit and certify skilled construction workers and construction site supervisors.

During project implementation, the appointed contractor and conduct of construction works will be required to meet registration and approval requirements with NCA.

2.2.14 Land Act (No.6 of 2012)

This Act is intended to create harmony among the land laws to allow for a sustainable administration and management of land and related resources such as environmentally sensitive areas, heritage sites within public land. As part of environmental management of land resources in areas earmarked for development, the Act requires an Environmental Impact Assessment as per EMCA Act.

The pastoralist lifestyle of the locals in the project area and the reliance on land resources (pasture and water sources) in an arid environment makes it primary to sustainably utilize the resources during project activities especially identified material sites and water sources.

2.2.15 The National Lands Commission Act, 2012

This is an Act of Parliament to make further provisions as to the functions and powers of the National Land Commission (NLC), qualifications, and procedures for appointments to the commission; to give effect to the objects and principles of devolved government in land management and administration, and for connected purposes.

Compulsory land Acquisition in Kenya is handled by the NLC. Other mandates of the Commission include management of public land on behalf of the national and county governments.

The Act also mandates the Commission to:

- ensure that public land and land under the management of designated state agencies are sustainably managed for their intended purpose and for future generations;
- administer all unregistered trust land and unregistered community land on behalf of the county government;
- initiate investigations, on its own initiative or on a complaint, into present or historical land injustices, and recommend appropriate redress. To this end, it is empowered to encourage the application of traditional dispute resolution mechanisms in land conflicts

These roles are all relevant to the planning, implementation, monitoring and evaluation of the envisaged project resettlement process and are elaborated in the separate project RAP document.

2.2.16 The Prevention, Protection and Assistance to Internally Displaced Persons and Affected Communities Act, 2012

This is an Act of parliament that applies to all internally displaced and affected communities by the development projects or programmes. The prevention, protection and assistance to internally displaced persons and affected communities are outlined in the following sections of the Act;

Part II: Principle of prevention, protection and assistance; The Government and any other organization, body or individual when responding to a situation of internal displacement and the needs of internally displaced persons under this Act, shall take into account their rights and freedoms as set out in the Bill of Rights of the Constitution.

Part IV: Public awareness, sensitization, training and education; The national Government, in order to prevent future instances of internal displacement in Kenya, shall promote public awareness about the causes, impact, and consequences of internal displacement as well as on means of prevention, protection and assistance to internally displaced persons through a comprehensive nation-wide education and information campaign.

Part V: Provisions relating to development and displacement; 21. (1) Subject to the Constitution, the Government shall abstain from displacement and relocation due to development projects or projects to preserve the environment and protect persons from displacement by private actors. Finally, (4) The Government shall ensure that the displacement is carried out in manner that is respectful of the human rights of those affected; taking in particular into account the protection of community land and the special needs of women, children and persons with special needs. This requires in particular-(a) Full information of those affected and their effective participation, including by women, in the planning, management of the displacement, and in defining suitable durable solutions; and (b) Provision of safe, adequate and habitable sites.

The proposed project will result in some unavoidable land take and displacement of individuals. The RAP study and implementation shall consider provisions of this Act in addition to the relevant World Bank guidelines.

2.2.17 The Land Registration Act, 2012

This is an Act of Parliament intended to revise, consolidate and rationalize the registration of titles to land, to give effect to the principles and objects of devolved government in land registration, and for connected purposes.

The project is envisaged to affect some private properties and communal land. Provisions under this Act are essential to the project RAP as it is expected that the documentation for the affected land parcels will have to be updated in line with the laws of Kenya to show the changes due to the sections acquired for the road implementation. Such provisions are elaborated separately in the project RAP report.

2.2.18 Land and Environment Court Act, 2012

A Land and Environment Court is established under section 4 of the Environment and Land Court Act No. 19 of 2011. The court has the jurisdiction to hear any other dispute relating to environment and land. 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 is also empowered to hear cases relating to public, private and community land and contracts, choses in action or other instruments granting any enforceable interests in land.

Relevance

in matters relating to land disputes that may arise between KeNHA and the local community or county government during requisite private or community land acquisition for the road development or local material sites, the court has powers to deal with such disputes relating to land administration and management.

2.2.19 Land Laws (Amendment) Act, 2016

This Act amends the laws relating to land to align them with the Constitution, to give effect to Articles 68(c)(i) and 67(2)(e) of the Constitution, to provide for procedures on evictions from land, and for connected purposes. The Act has repealed sections of the following Acts:

- Land Registration Act, 2012
- Land Act, 2012
- National Land Commission Act, 2012

At implementation stage, the project proponent will adhere to land requirements under the Act especially where land take is necessary from private owners.

2.2.20 Physical Planning Act, 2007

This is the main Act that governs land planning and it is required that all proposed developments must be approved by the respective local authority and certificate of compliance issued accordingly. Section 30(1) requires a developer in any local authority to be granted development permission by the respective local authority, failure to which heavy fines will ensue; and the land registrar shall decline to register such a document. No sub-division of private land shall take place within a local authority unless the sub-division is in accordance with the requirements of an approved local physical development plan.

The project appointed contractor will seek approval for the construction of the temporary camp (s) KeNHA will be required to discuss its development plans (road designs) with the respective County Physical Planning Officers, Liaise with the local governments in development control along the corridor.

2.2.21 Climate Change Act, 2016

This is an Act of Parliament to provide for a regulatory framework for enhanced response to climate change, to provide for mechanism and measures to achieve low carbon climate development, and for connected purposes. Part IV section 15 provides on how Climate change should be integrated in every public-sector entity. A public entity is expected to observe the Act together with provisions of the National Climate Change Action Plan. The National Climate Change Action Plan Section 4.3.1 (d) has specified how the road infrastructure sector can contribute towards the achievement of low carbon climate resilient sustainable development.

Relevance

KeNHA will be required to work closely with Wajir County to ensure that the project is in line with the set-out strategies by the county in mitigating climate change as per the Act.

2.2.22 Urban Areas and Cities Act, No. 13 of 2011

In Sections 27 and 28, the Act empowers County Government to appoint a Manager to manage or prohibit all places of work that by reason of smoke, fumes, or chemical gases, dust smell, noise or vibration or other cause may be a source of danger, discomfort, or annoyance to the neighbourhood, and to prescribe the conditions subject to which businesses, factories and workshops shall be carried on.

The county government of Wajir will thus be instrumental, with mandates derived from this Act, in monitoring works to ensure that environmental nuisances are controlled.

2.2.23 The National Museums and Heritage Act (2006)

Provides 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.

The Act also establishes a notification of discovery requirement and sets restrictions on moving objects of archaeological or paleontological interest. It is administered by the National Museums of Kenya (NMK).

Authority to move any encountered objects of archaeological importance or the implementation of a chance find procedure must be done in liaison with NMK.

2.2.24 Energy Act, 2006

Energy Act makes provisions that shall apply to every person or body of persons importing, exporting, generating, transmitting, distributing, supplying, using electrical energy, importing, exporting, transporting refining, storing and selling petroleum or petroleum products, producing, transporting, distributing and supplying of other forms of energy, and to all works or apparatus for any or all of these purposes".

This Act also creates the Energy Regulatory Commission (ERC) whose functions and powers include issuance of licences, permits and exemptions for electric power and petroleum undertakings, review and approval of the electric power tariffs, imposition and collection of penalties and fines for non- compliance in the energy sector, investigation and resolution of conflicts, formulation of regulations and enforcement of standards in the Energy Sector, formulation and co- ordination of a disaster preparedness plan for the energy sector, ensuring fair play and competition within the Energy sector.

Given the heavy use of fuel for construction works and remote location of project road relative to major points of fuel supply, the contractor will require bulk storage of fuel on site. Permit for Bulk fuel storage on site from ERC shall be required in line with this Act.

2.2.25 Mining Act, 2016

This Act regulates the development of the mining and mineral (including construction minerals) industry including health, safety and environment issues related to mining.

The proposed road is expected to place a lot of demand on natural resources to be mined at quarries and borrow sites. In some instances, rock blasting may be required. The mining of these natural resources is regulated by this act among other legislations. Some of the permits/license triggered by this project under the mining act include:

- Rock mining permit; and
- Permits for blasting and storage of mining explosives from Department of Mines

2.2.26 Intergovernmental Relations Act

The Intergovernmental Relations Act of Parliament to establish a framework for consultation and cooperation between the national and county governments and amongst county governments; to establish mechanisms for the resolution of intergovernmental disputes pursuant to Articles 6 and 189 of the Constitution, and for connected purposes.

The objects and purposes of this act are to:

- Provide a framework for consultation and cooperation between the national and county governments;
- Provide a framework for consultation and cooperation amongst county governments;
- Establish institutional structures and mechanisms for intergovernmental relations;
- Provide a framework for the inclusive consideration of any matter that affects relations between the two levels of government and amongst county governments;
- Give effect to Articles 187 and 200 of the Constitution, in respect of the transfer of functions and powers by one level of government to another, including the transfer of legislative powers from the national government to the county governments; and
- Provide mechanisms for the resolution of intergovernmental disputes where they arise.

Relevance

This project section starts in Wajir town in Wajir county and terminates at a border town spanning both Wajir and Mandera counties. It will be necessary for KeNHA to work with both county governments consistently throughout the project period as the act may require.

2.3 Institutional framework

The main administrative structures are described in the following sections.

2.3.1 The Ministry of Transport, Infrastructure, Housing and Urban Development

The Ministry has three Departments relevant for road transport development namely; State Department of Transport, State Department of Infrastructure and State department for public works. Ministry is mandated to perform the following functions:

- National Roads Development Policy Management
- Transport Policy Management
- Rail Transport and Infrastructure Management
- Development, Standardization and Maintenance of Roads
- Mechanical and Transport Services
- Enforcement of Axle Load Control
- Materials Testing and Advice on Usage
- Standardization of Vehicles, Plant and Equipment
- Registration of Roads Contractors
- Protection of Road Reserves
- Maintenance of Security in Roads
- National Road Safety Management
- National Transport and Safety Policy

Relevance

All the functions listed above are relevant to the project's construction and operation phases.

2.3.2 Kenya National Highways Authority

KeNHA was established by the Kenya Roads Act 2007. It is an autonomous road agency. The functions of KeNHA include 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).

The main functions of KeNHA are:

- Constructing, upgrading, rehabilitating and maintaining roads Class A, B, C roads
- Implementing road policies in relation to national roads
- Ensuring adherence to the rules and guidelines on axle load control prescribed under the traffic act and any regulations under this act
- Ensuring that the quality of roads works is in accordance with such standards as may be defined by the minister
- Collecting and collating all such data related to the use of national roads as may be necessary for efficient forward planning under the Act

KeNHA has established Planning and Environment Department headed by a director and has, among others, the following functions:

- Implementation of policies for the efficient planning, survey services, road reserve protection, monitoring, evaluation and socio-environmental management for the roads under the Authority;
- Preparation of the annual work programmes and budgets for road planning, surveying, road reserves protection and socio-environmental management;
- Preparation and monitoring of the road investment programme for the road network

- under the Authority;
- Undertaking studies, designs and preparation of tender documentation for operations relating to planning, surveying, road reserve protection and socio-environmental management;
- Effectively supervising works and consultancies relating to road planning, surveying, road reserve protection and socio-environmental management and ensuring the works and services are executed in accordance with the standards and specifications;
- Administering and protecting road reserves;
- Liaison with Ministry for the time being responsible for road safety;
- Undertaking of road safety audits for road designs and implementation of road safety measures;
- Coordination of the Performance Contracts of the Authority;
- Monitoring and evaluation of road projects;
- Preparation and collection of economic, environmental and social data and information;
- Liaison with internal and external financing agencies;
- Preparation of monthly, quarterly, twice yearly, annual and ad-hoc reports for the Department

In regards to this project, this department will be highly important in setting standards for compliance with the Environment and Social Management Plan (ESMP) produced in this Report.

2.3.3 The National Environment Management Authority

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

In addition to NEMA, the Act provides for the establishment and enforcement of environmental quality standards to be set by the Cabinet Secretary in consultation with the Authority, which will govern the discharge limits to the environment by the proposed project.

Relevance

NEMA must approve the project through issuance an EIA license before implementation It will also participate in subsequent stages of construction environmental management and annual audits review.

2.3.4 Water Resource Authority (WRA), formerly WRMA

WRA is responsible for regulation of water resources through water allocation, source protection and conservation, water quality management and pollution control and international waters. Its roles and responsibilities are as follows:

- Planning, management, protection and conservation of water resources;
- Planning, allocation, apportionment, assessment and monitoring of water resources;
- Issuance of water permits;
- Water rights and enforcement of permit conditions;
- Regulation of conservation and abstraction structures;
- Catchment's and water quality management;
- Regulation and control of water use; and
- Coordination of the Integrated Water Resource Management(IWRM) Plan.

Relevance

Project construction will require substantive water inputs. The contractor will need to get authorisation from WRA to abstract any underground or surface water resources.

2.3.5 National Transport and Safety Authority

The National Transport and safety Authority (NTSA) was established through an Act of Parliament; Act Number 33 on 26 October 2012. The objective of forming the Authority was to harmonize the operations of the key road transport departments and help in effectively managing the road transport sub-sector and minimizing loss of lives through road accidents. Some of its key mandates are the development of road safety strategies and facilitating education of the general public on road safety.

Relevance

NTSA has set various road safety standards, rules and motor vehicle licensing requirements which the contractors vehicles and drivers are expected to adhere to. In addition, all vehicles which will be using the road will be required to adhere to the set rules.

Similarly, KeNHA should liaise with NTSA in conducting road safety education along the project corridor, given the area has had no bitumen standard road before this project.

2.3.6 Kenya Roads Board

The main objective of KRB is to oversee the road network in Kenya and thereby coordinate its development, rehabilitation and maintenance and is the principal adviser to the Government on all matters related development, rehabilitation and maintenance. It ensures prudent Sourcing and Optimal Utilization of Resources for Socio-economic Development.

Relevance

It is necessary that KeNHA and the Contractor incorporate the principles integrated National transport policy in the construction and maintenance of the road.

2.3.7 Wajir County Government

The County Government is a creation of the Constitution of Kenya 2010 and successor of the defunct Municipal authorities. It operates under the auspices of the Cities and Urban Areas Act, The Devolved Governments Act and a host of other Acts.

Wajir County Government is charged, among others, with the responsibility of providing a variety of services to residents within its area of jurisdiction. These include the services that were hitherto provided by the defunct County Council and the ones that have been transferred from the national government. The former includes Physical Planning, Public Health, Social Services and Housing, Primary Education Infrastructure, Inspectorate Services, Public Works, Environment Management while the latter include Agriculture, Livestock Development and Fisheries, Trade, Industrialization, Corporate Development, Tourism and Wildlife, Public Service Management.

The Fourth Schedule of the Constitution of Kenya 2010 Part 2 (3) provides for devolved environmental functions to be undertaken by the County Governments and includes; control of air pollution, noise pollution, and other public nuisances.

Relevance

The county government will thus be crucial in issuing trade licences to the contractor (s), issuing temporary facilities construction plan approvals, monitoring environment protection within the project, and general development control along the road.

2.3.8 Directorate of Occupational Safety and Health Services (DOSHS)

DOSHS is responsible for the enforcement of Occupational Safety and Health Act (OSHA), 2007 and associated regulations. Construction sites must be registered with the Directorate and safety management plans, training and emergency preparedness done in accordance with the relevant guidelines issued by DOSHS.

Relevance

The contractor should be required to register construction sites with this authority as work places before the commencement of the construction works. DOSHS will also undertake workers safety and health inspections at its own initiative or upon receiving reports on any associated issues.

2.4 International Treaties and Conventions

A treaty is a binding agreement under International Law concluded by subjects of International Law, namely states and international organizations. Treaties can be called by many names including; International Agreements, Protocols, Covenants, Conventions, Exchanges of Letters, Exchanges of Notes, etc. However, all of these are equally treaties and the rules are the same regardless of what the treaty is called.

Treaties can be loosely compared to contracts; both are means of willing parties assuming obligations among themselves, and a party to either that fails to live up to their obligations can be held legally liable for that breach. The central principle of treaty law is expressed in the maxim *pacta sunt servanda*, translated as "pacts must be respected."

Kenya has ratified the following Project-relevant international conventions:

2.4.1 The 1985 Vienna Convention for the protection of the Ozone Layer

The Vienna Convention for the Protection of the Ozone Layer, 1985 was adopted after consensus was reached on 22 March 1985. Kenya ratified the convention on November 9 1988. The overall objective of the Vienna Convention is to protect human health and the environment against the effects of ozone depletion. As a framework convention, it does not establish any specific controls on ozone depleting substances. Instead, it establishes a general obligation upon the parties to protect the ozone layer (article 2) and emphasizes the need for international cooperation. For instance, Green House Gases might be released from the asphalt fumes at the asphalt plants.

Relevance

KenHA and the contractor will be required to observe the above convention in all its operations throughout the project cycle in reducing emission of Greenhouse Gasses.

2.4.2 The 1987 Montreal Protocol on Substances that Deplete the Ozone Layer

The Montreal Protocol on Substances that Deplete the Ozone Layer was adopted on December 7 1944 and is a significant milestone in international environmental law. It came into force on April 4 1947 and ratified by Kenya on May 1 1964. It establishes firm targets for reducing and eventually eliminating consumption and production of a range of ozone depleting substances. These substances are enumerated in Annexes A-E to the Protocol and are to be phased out within the schedule given in article 2A-2I.

Relevance

The appointed project contractor will be required to observe the above convention in all its operations throughout the project cycle in reducing emission of Ozone Depleting Substances (ODS).

2.4.3 The United Nations Convention on Climate Change ("1992 UNFCCC")

The objective of the 1992 UNFCCC is to tackle the negative effects of climate change. The Conventions' stated aim is to stabilize greenhouse gas concentrations at a level that allows ecosystems to adapt naturally to climate change so that food production is not threatened, while enabling economic development to proceed in a sustainable manner (article 2).

Kenya signed the UNFCCC on 12 July 1992, ratified it on 30 August 1994 and started enforcing it on 2 November 1994. In 2016, Kenyan parliament passed a law on Climate change, the Climate Change Act further reiterating the country's commitment to this convention.

Relevance

KeNHA and the contractor will be required to observe the above convention in all its operations throughout the project cycle in reducing emission of Green House Gasses leading to climate change.

2.4.4 The Kyoto protocol

The Kyoto Protocol was adopted in December 1997 at the Third Conference of the Parties held in Kyoto. The Kyoto Protocol requires stronger commitments from Annex 1 parties to achieve quantified emission reductions within a specific timeframe. These commitments cover the six Green House Gases (GHGs) listed in Annex A of the Kyoto Protocol (Carbon dioxide, Methane, Nitrous oxide, Hydrochlorocarbons, Perfluorocarbons and Sulphur hexafluoride). Each Annex 1 party particular 'quantified emission reduction target' is listed in Annex B.

Kenya's accession was presented on 25 February 2005 and the Protocol acceded on 26 May 2005.

Relevance

The contractor will be required to carry out regular inspection and maintenance of construction equipment in order to reduce the levels of GHGs emissions into the atmosphere.

2.4.5 Convention on Biological Diversity

The Convention entered into force on 29 December 1993, which was 90 days after the 30th ratification. The first session of the Conference of the Parties was scheduled for 28 November – 9 December 1994 in the Bahamas. Kenya is a signatory of the convention which has three main goals; namely;

- Conservation of biological diversity (or biodiversity)
- Sustainable use of its components; and
- Fair and equitable sharing of benefits arising from genetic resources

Relevance

The contractor and KeNHA should look out for species of conservation importance as established in the baseline environmental study in liaison with Kenya wildlife Service.

3 PROJECT DESCRIPTION

3.1 Existing road condition

3.1.1 Alignment and Geometry

- The road is on flat and rolling terrain;
- The carriageway width is not uniform and ranges from 7m to 12m. However, the formation is at least 10m over long sections of the road;
- The horizontal alignment from Wajir to Tarbaj (Km 51) is well engineered;
- The horizontal alignment from Tarbaj to Kutulo (Km 119) is not clearly defined; there are several detours on this section

3.1.2 Existing Pavement Condition

- The condition of the road alternates between earth and gravel surface between Wajir and Kutulo. The section has a poor cross section with no ditches and the roadway is generally lower than the original ground level;
- The road width is not defined over the earth sections. The average carriageway width at the gravelled sections is approximately 6 m wide with 2 m wide shoulders;
- In-between the improved gravel sections, spot gravelling has been carried out.
- It is clear that approximately 75% of the road have a gravel wearing course and well-engineered but the width may be inadequate depending on the final vertical alignment and the adopted road cross-section.

3.1 Proposed general works

The Wajir – Kutulo Project Road covers approximately 119 km of single carriageway, two-lane 6.5 m wide, bitumen surfaced road with 1.5 m shoulders on each side. The major items of Works to be executed under the Contract include the following:

- Setting out, referencing and taking cross sections;
- Site clearance and removal of top soil;
- Earthworks;
- Constructing drainage structures (box and pipe culverts including protection works);
- Construction of pavement comprising bitumen surfacing, cement stabilised base and improved material subbase;
- Works necessary to effect the safe and convenient passage of traffic through the Works;
- Provision of road furniture e.g. signs, guardrails, marker posts, wire fencing, etc.;
- Operations ancillary to the main Works such as the construction of offices, laboratories and staff housing, accommodation works, diversion of services, the operations in quarries and borrow areas, the provision of water supply, the diversion of existing services.

The design of the road includes facilities such as lay-bays, bus bays and widening at market centres along the road.

3.2 Design Speed and Standards

The terrain allows suitable design speed of 120km/hr along Wajir –Kutulo road. The requisite geometric design standards for the project road are summarised in the Table 3-1.

Table 3-1 Wajir-Kutulo Road Design Standards

Description	Wajir - Kutulo
Terrain	Flat
Design speed (Km/hr)	120
Carriageway width (m)	6.5
Shoulder width (m)	1.5
Minimum horizontal radius (m)	1000
Maximum super-elevation	6%
Maximum grade	3%
Minimum lengths of sag and crest curves	240

3.3 Pavement Design

The proposed pavement cross section is shown Figure 3-1 below

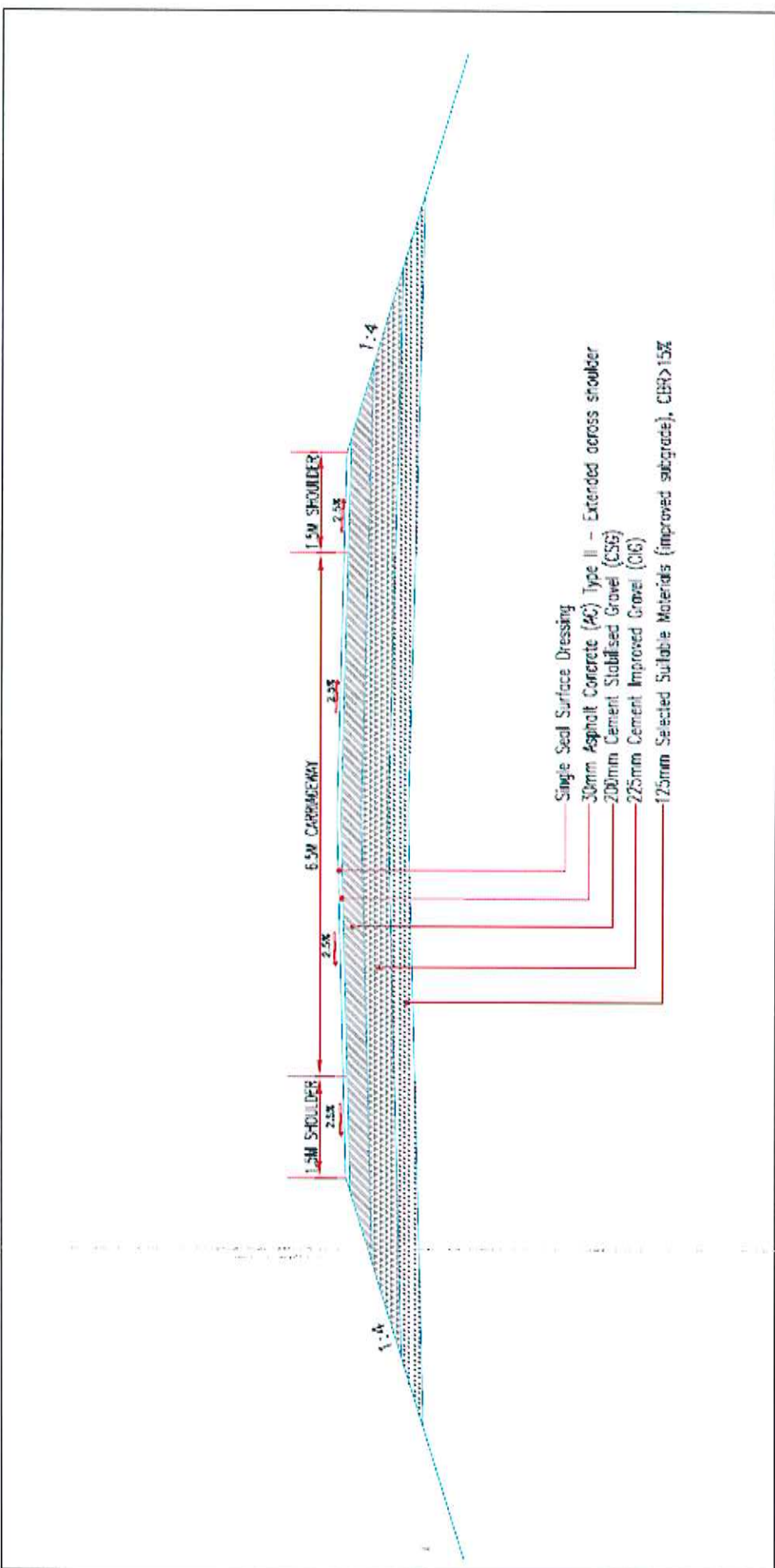


Figure 3-1: Proposed Pavement cross-section

3.4 Other design features

3.4.1 Shoulders

Pavement layers, both subbase and base extend to the outer edges of the shoulder. The shoulders will be sand sealed. Shoulders will be widened by 0.5m to accommodate guardrails in high fills i.e. where the fill is greater than 3m.

3.4.2 Crossfalls and slopes

The carriageway crossfall of 2.5% has been maintained. Shoulder cross fall is 4%. Embankment slopes (ratio of vertical to horizontal distances) of 1:4 is recommended for fills less than 1m and 1:2 for fills greater than 1 m and up to 3 m. For fills greater than 3m, the side slope is 1:1.5.

3.4.3 Side drains and cut slopes

Scraper drains 2.5 m wide (Type B3) have been adopted as side ditch generally in flat terrain. The width of the drain shall be reduced to 1.0 m where hard material is encountered. Minimum depth of side drains from the edge of the shoulder has been maintained at 1.0 m.

The ditch back slope shall depend on the height of cut, erosion conditions and the need of borrow material from the area. Side slopes of 1:3 have been adopted for cuts up to 1 m, 1:2 for cut heights between 1 and 3m and 1:1.5 for heights greater than 3m. A slope of 5:1 shall be used for cuts in rock material, depending on the material type.

3.4.4 Junctions

A roundabout is the most viable junction at the start of the project. This will accommodate a transition from the Garissa end of the project and also allow the town's monuments to be retained for aesthetic and cultural reasons. Another roundabout with the A2 to Moyale is seen as the only viable junction type in Wajir. Another major junction on the route is Km 51 B9/D500 at Tarbaj.

The junctions will be either Type B or C depending on the class of the minor road.

3.4.5 Road reserves

The right of way is 60m and shall be cleared in its entirety for safety and security reasons. The minimum recommended road reserve of 40m will still require that a number of buildings on both sides of the road be demolished in most urban centres. Accordingly, the urban cross section has been amended to reflect the constrained road reserve of 21m.

3.4.6 Temporary works

In addition to the permanent works described above, some temporary works will be undertaken to facilitate construction. These include:

- Diversion roads to allow passage of traffic to be maintained along the full length of the construction works;
- A work camp for accommodation, offices, services, stores, workshops and parking of vehicles;
- Production facilities such as concrete precast yard, timber and reinforced steel bending yards;
- Temporary stockpile areas to be set aside for delivered or double-handled materials such as aggregates and sand;
- Spoil areas for disposal of unsuitable or surplus materials.

3.5 Material Investigations

3.5.1 Borrow Material

A total of 27 borrow areas have been investigated along the Wajir - Kutulo Road. Summary details on the 27 sites fall have been presented in the Table 3-2.

Table 3-2: Material Sites

Road Chainage	Material Description
MS-WML/1 (KM0+000) LHS	Predominantly silty gravel weathered coral limestone pebbles
MS-WMR/2 (KM0+000) LHS	Predominantly silty gravel within weathered coral limestone pebbles
MS-1R (KM9+700) LHS	Weathered silty calcerous gravel and sandy gravel
MS-1L (KM9+700) LHS	Weathered silty calcerous gravel with weathered sandy gravel
MS-2 (KM16+200) LHS	Weathered sandy gravel with traces of weathered silty gravel
MS-3 (KM20+900) LHS	Weathered sandy gravel with traces of weathered silty gravel
MS-4 (KM24+100) RHS	Weathered silty calcerous gravel with traces of weathered silty gravel
MS-4A Right (KM40+700) RHS	Weathered silty calcerous gravel
MS-5 (KM42+000) RHS	Iron stained weathered sandy gravel with traces of weathered quartzitic gravel
MS-5A (KM51+100) RHS	Iron stained weathered sandy gravel with traces of weathered quartzitic gravel
MS-5B Right (KM49+800) RHS	Weathered sandy gravel and weathered quartzitic sandy gravel
MS-5C Left (KM51+900) LHS	Weathered calcerous gravel and weathered quartzitic gravel
MS-5D Left (KM50+800) LHS	Not sampled
MS-5E Left (KM51+800) LHS	Iron stained weathered sandy gravel with traces of weathered quartzitic gravel
MS-6 (KM64+800) RHS	Weathered silty calcerous gravel, weathered coral limestone rocks and fine-grained mudstones
MS-6B Right (KM66+600) RHS	Weathered calcerous gravel and weathered mudstones mostly over weathered coral limestone rocks
MS-6A (KM63+500) LHS	Weathered silty calcerous gravel, weathered coral limestone rocks and weathered fine mudstones
MS-7 (KM69+200) RHS	Weathered silty calcerous gravel, weathered coral limestone rocks and grained mudstones
MS-8 (KM77+800) RHS	Weathered coral limestone rocks, weathered silty calcerous gravel and fine-grained mudstones
MS-8A Right (KM83+000) RHS	Weathered coral limestone rocks, weathered silty calcerous gravel
MS-8B (KM83+500) RHS	Weathered calcerous gravel
MS-9 (KM97+800) RHS	Weathered silty calcerous gravel and fine-grained pebbles
MS-10 (KM106+300) RHS	Weathered silty calcerous gravel with traces of quartzitic gravel
MS-11 (KM106+300) RHS	Weathered silty calcerous gravel with traces of quartzitic gravel
MS-11A Left (KM111+600) LHS	Weathered calcerous gravel and weathered quartzitic gravel
MS-11B Left (KM112+500) LHS	Weathered calcerous gravel with traces of weathered fine coral limestone rocks
MS-12 (KM119+700) RHS	Weathered silty calcerous gravel with traces of quartzitic gravel

3.5.2 Rock Sources

Two potential stone sources have been identified from rocks outcrops along the rject Road; at Km7 (RQ1) and Km64.8 (RQ2). The sources were accessible and samples were collected and analysed.

3.5.3 Sand Sources

In the Design studies finalized in 2010, two rivers with sand were sampled and analysed that is Takaba River (about 95Km to the north west of El Wak) and River Daua (two points at Rhamu and Handadu).

4 ENVIRONMENTAL AND SOCIAL SETTING

4.1 Physical Environment

4.1.1 Climate

The project road falls within a semi-arid area that is classified under ecological zone V-VI. The area has two wet seasons; the long rains which peak in November and the short rains which peak in March. June is the driest month while April is the wettest. The mean annual rainfall is below 255mm. Wajir has an annual average relative humidity of 61.8 percent that fluctuates from 56 percent in February to 68 percent in June (First CIDP 2013–2017, Wajir County).

The area has a maximum temperature ranging from 30°C to 34°C and a minimum annual of over 22°C. In Wajir, February and March are the warmest at 36°C while the coldest are June, July, August and September (First CIDP 2013–2017, Wajir County).

4.1.2 Topography and Drainage

The terrain of the project area is predominantly flat from Wajir up to Wargadud. Thereafter, the terrain is alternating from flat, undulating to rolling.

The project area is within the northern Ewaso Ng'iro River Basin. There are no perennial rivers crossing the project road; however, there are a number of laghas.

4.1.3 Geology

The geology of the project road is as represented in Table 4-1, below.

Table 4-1: Geology

Approximate Chainage (Km)	Age in Geological Column	Geological Description
0 - 66	Recent	Reddish brown sandy soils
66 - 70	Jurassic (callovian-Bathonian series).	Grey and faun generally non-oolitic limestones, calcites, mudstones, marls
70 - 75	Jurassic (callovian-Bathonian series).	Grey and faun oolitic limestones, calcites, mudstones, marls
75 - 80	Cretaceous (Marehan series)	Claystones and indurated sandstones
80 - 83	Jurassic (callovian-Bathonian series)	Grey and faun oolitic limestones, calcites, mudstones, marls
83 - 87	Cretaceous (Marehan series).	Claystones and indurated sandstones
87 - 115	Jurassic (callovian-Bathonian series)	Grey and faun oolitic limestones, calcites, mudstones, marls
115 - 119	Recent	Reddish brown sandy soils

Source: Project Road Engineering Report, May 2010

4.1.4 Soils

Soils are sandy from Wajir to Wargadud but become rolling from Wargadud to Kutulo. In particular, the soils are sandy loam to sandy clay loam extending from 1.0m up to 15m and very small rock out crops. Based on the Transport and Road Research Laboratory (TRRL) Report 706 classification, the soil drainage characteristics of the project area are presented in Table 4-2, below.

Table 4-2: Soil Permeability Classification

Soil Class	Description
Impeded Drainage	Very low permeability Clay soils with high swelling potential Shallow soils over largely impermeable layer, very high-water table
Slightly Impeded Drainage	Low permeability Drainage slightly impeded when soil fully wetted
Well drained	Very permeable Soil with very high infiltration rates such as sands, gravels and aggregated clays.

Source: Project Road Engineering Report, May 2010

Along the project road the problem of soil erosion was observed and this could be attributed to:

- Run-off from blockage of culverts or lack of drainage facilities;
- Lack of scour checks on the side drains;
- Animal activities such as wear and tear caused by movement of livestock on tracks within road embankments.

During construction activities such as excavation and hauling of material from borrow pits and cuts for construction of embankments will also result in soil erosion to some degree (see plate 4-1).



Gulley formation adjacent to the project road

Plate 4-1: Example of soil erosion

4.1.5 Air quality and noise

Vast sections of the project road are in rural areas which are very sparsely settled and have no major anthropogenic activities that contribute to air pollution or noise levels beyond the natural background levels. The current source of air pollution is thus limited to occasional dust generated by traffic on the gravel or earth roads. Occasional whirlwinds sweeping across bare land also contribute to intermittently elevated dust levels. In the town centres the air and noise pollution are limited to local vehicular movements and winds sweeping across the bare land.

4.2 Biological Environment

4.2.1 Ecosystem / Ecoregion

The general habitat characteristic of the project area closely resembles the Somali - Masai *Acacia – Commiphora* deciduous woodland/shrubland and thickets. In the Somali - Masai *Acacia – Commiphora*, the vegetation comprises of dense shrublands with height ranging between 3 and 5m but with scattered emergent trees of over 9m (White, 1983). The vegetation in this ecoregion are influenced by semi desert climate and edaphic conditions. Most of the plant species (especially along the project road) are deciduous shading their leaves simultaneously for weeks or months. They regain their leafy vegetation during the wet season. The most common of the *Acacia* and *Commiphora* species in the project area are spinous and depending on the aridity may be separated by open spaces allowing movement of game or used as cattle tracks.

Although, evergreen species occur throughout this ecoregion they are averaged to constitute between 2.5 to 10 percent to the phytomass (White, 1983). Moreover, grass cover is widespread but contribute little to the overall phytomass and are represented by a few annual and short-lived perennial species. The bush cover is the dominant type and contribute the most to the phytomass in this ecoregion.

4.2.2 Habitats / Vegetation Communities

(a) Built Environment

Built environment presented human disturbed habitats and modified environments. The following observations were made:

- Spread of invasive alien species such as *Prosopis juliflora* and *Calatropis procera* (at Kutulo and Tarbaj) presented novel habitats that colonize native floral species.
- Houses and buildings and infrastructures (powerlines) within the trading centres provide nesting areas, perching space especially for avifauna habituated to human environments such as the sparrows (house), swifts, swallows, starlings (superb and fischer's), doves (laughing and ring-necked) and pigeons (feral).
- Garbage sites (at Kutulo) and degraded sites attract scavenging species such as marabou storks, brown-necked raven, black kites.
- Planted fence line (such as *Euphorbia turicalli*) and green space vegetation (such as *Azadirachta indica*) formed important roosting and perching spaces.

(b) Water and temporary Wetland Environments

Numerous excavated earth dams were spotted along the project road whose main purpose is to collect surface runoff after rains and provide to the nearest community settlements. Persistence of water in the dams depended on length of drought spells, amount of water collected and consumption levels. During the site visit on February 2018, the Kutulo Dam at Km118 at Kutulo Mandera had water, thus was an attraction of a range of waterbirds such as Abdim's stork (an Intra-African migrant), common greenshank, marsh sandpiper, sacred ibis, great egret, African spoonbill, grey heron, spur-winged plover and marabou stork. Abdim's stork, African spoonbill, grey heron, great stork, and sacred ibis were rarity records in the project area [Zimmerman *et al.* 2001]). See plate 4-2.



Plate 4-2: Water Birds at Kutulo Mandera (KM 118)

(c) Vegetation Associations

The vegetation associations comprise mainly of woody species that hardly have any undergrowth of herbaceous or grass cover. The ecological surveys were conducted in the dry spell thus due to heavy grazing and aridity such vegetation might have been significantly been lost overtime.

Nonetheless, examination of the road corridor on Google Earth shows that out of the 119km, 90km occur in areas with intact natural vegetation. The road chainage stretches within the intact natural vegetation are provided in Table 4-3.

Table 4-3: Chainage Stretch with Intact Vegetation

Chainage Stretch with Intact Vegetation	Area Names
Km 3 + 200 – Km 48 + 800	Wagberi / Wajir Town to Tarbaj
Km 53 + 000 – Km 59 + 900	Tarbaj to Hungai
Km 61 + 800 – Km 80 + 800	Hungai to Wargadud
Km 83 + 400 – Km 110 + 400	Wargadud to Kutulo Wajir
Km 115 + 300 – Km 117 + 000	Kutulo Wajir to Kutulo Mandera

(i) **Acacia – Acacia Associations**

These comprised on stunted bushes (with few emergents) of nearly pure stands of varying species of *Acacia*. It was the characteristic vegetation from KM 113 (Kutulo Wajir) to KM 119 (Kutulo Mandera). Most of the species were shrubs forming multi-stems immediately from the ground. The stunted bushes comprised of *A. kenyaensis*, *A. paolii*, *A. nubica*, *A. refeciens*, *A. horrida*, *A. senegal*, *A. bussei* and *A. turnbulliana*. See plate 4-3. Emergent species include *A. nilotica*. *A. xanthophloea* was sparsely distributed within the loamy soil just before entering Kutulo center.

Due to the deciduous nature of the species, most of them had shed off leaves and only a few had retained pods; thus, identification process took longer. Most species in the vegetation association have a flattened crown at low heights with overlapping canopies forming thorny impenetrable bushes.

Four (4) canopy browsers were confirmed within the vegetation associations that is impala, gerenuk, lesser kudu and reticulated giraffe. Livestock (camels, goats, sheep and donkeys) were also observed to utilize this vegetation type.

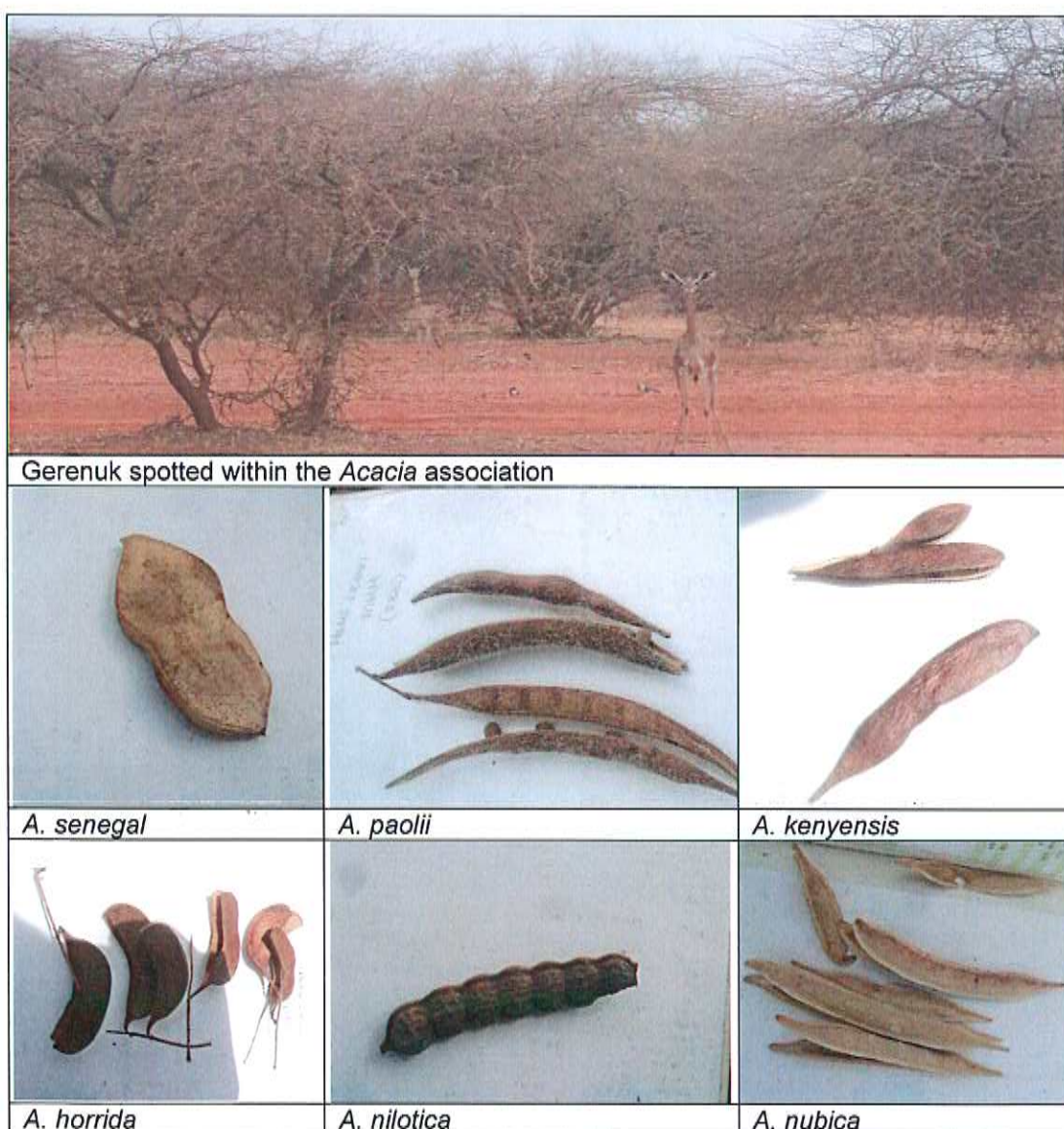


Plate 4-3: Species observed at the Acacia-Acacias Associations

(ii) **Acacia – Commiphora - Combretum Association**

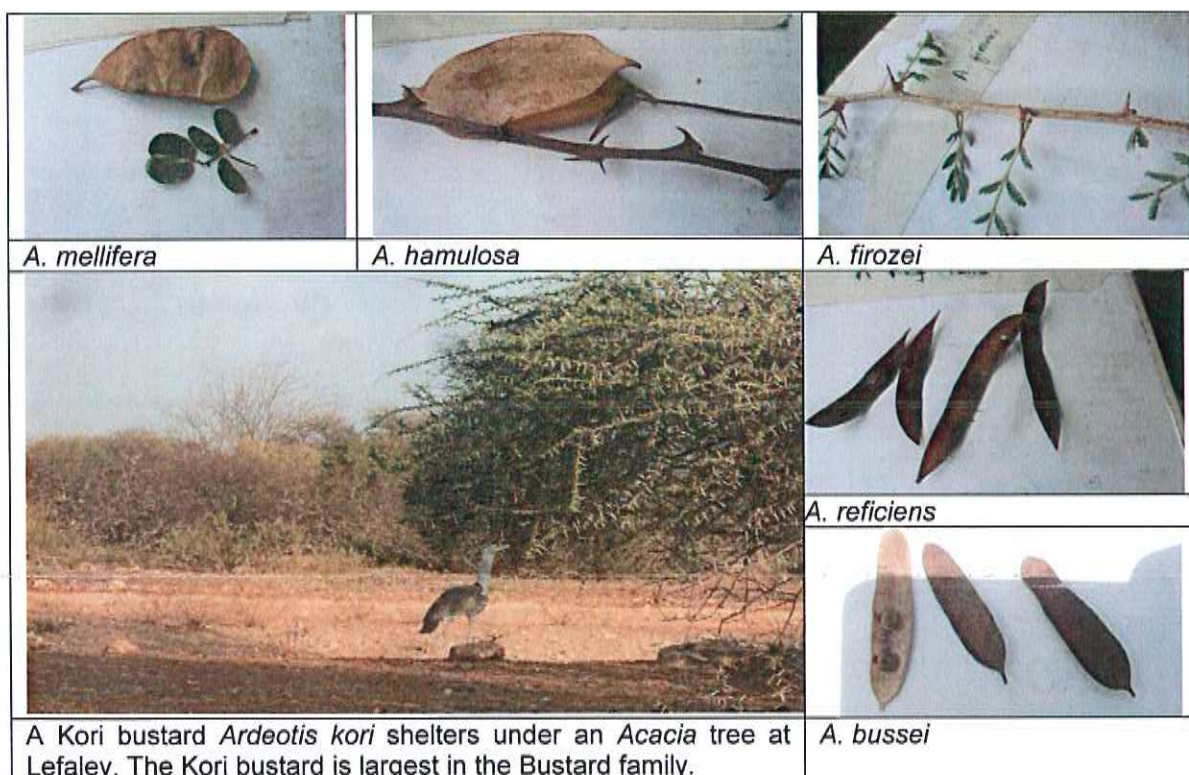
This vegetation type was observed at Lefeley, and from Wargadud (Km 84) to Kutlo Wajir (Km 111) along the project road. The soils were undulating from red cotton to red sandy soils and these may have significantly influenced the vegetation mix, among other factors.

This vegetation type comprises of species dominated by three (3) genera – *Acacia*, *Commiphora* and *Combretum*. The species have varying heights ranging between 3 – 5m with short stems having multiple branches (*A. condyoclada*) or multiple stems immediately from the ground. A few emergent species observed in the association include *Balanites*, *Grewia*, *Maerua*, *Boswellia*, *Cadaba farinosus*, *Delonix elata* which rise up to 9m.

A. condyoclada was conspicuously missing in the *Acacia*-*Acacia* associations but had a common presence in this association dotting as one of the emergent trees with single stem and flattened crowned. *A. reficiens*, *A. nilotica*, *A. nubica*, *A. hamulosa*, *A. firozei*, *A. mellifera*, *A. horrida* were the other *Acacia* species identified between Wargadud (Km 84) and Kutulo (Km 111). See Plate 4-4.

Maerua species observed along the project road include *M. crassifolia*, *M. angolensis* and *M. oblongifolia*.

Impalas, lesser kudu, dik-dik and gerenuks were confirmed to use this vegetation association. Pastoralists were also noted to utilize the area for grazing.



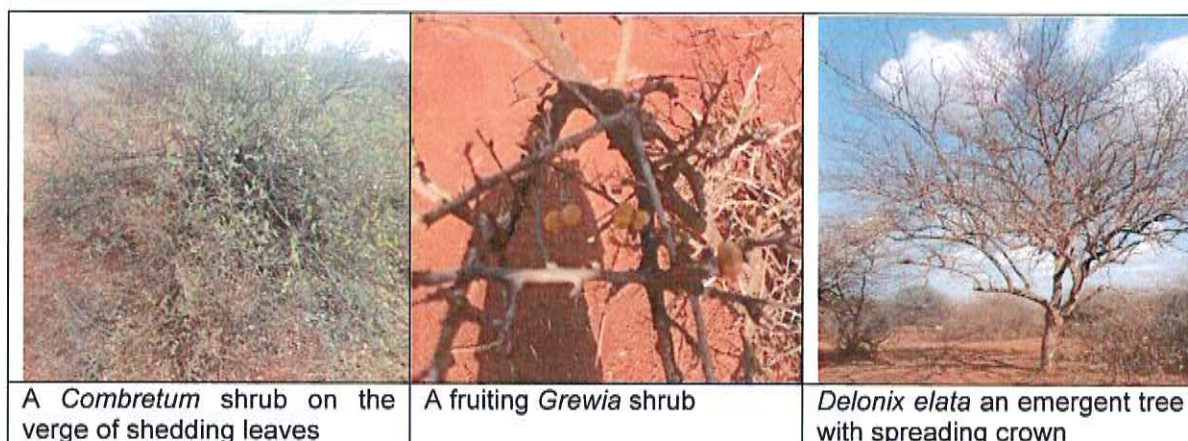


Plate 4-4: Species at the Acacias-Commiphora Associations

(iii) *Jatropha* shrubbery

The shrubbery occurred as patches along the project up to Tarbaj (km 51). The shrubs are characterised by dark reddish-purple bark, papery-peeling (to show the under bark). See Plate 4-5. The dominant species were *Jatropha pelargoniifolia* and *Jatropha dichter*. The species are easily differentiated by the presence/absence of spines. *J. pelargoniifolia* spinous spreading throughout the stem.

The local community is known to utilise stem juice from the *Jatropha* species. Stem juice from *J. dichter* is used as eyedrops; while that of *J. pelargoniifolia* is applied on wounds.

The shrubbery provided the necessary ground cover for bare sandy areas that appeared to hardly support other woody species.

During the survey period, the Somali Ostrich were spotted frequenting the shrubbery.

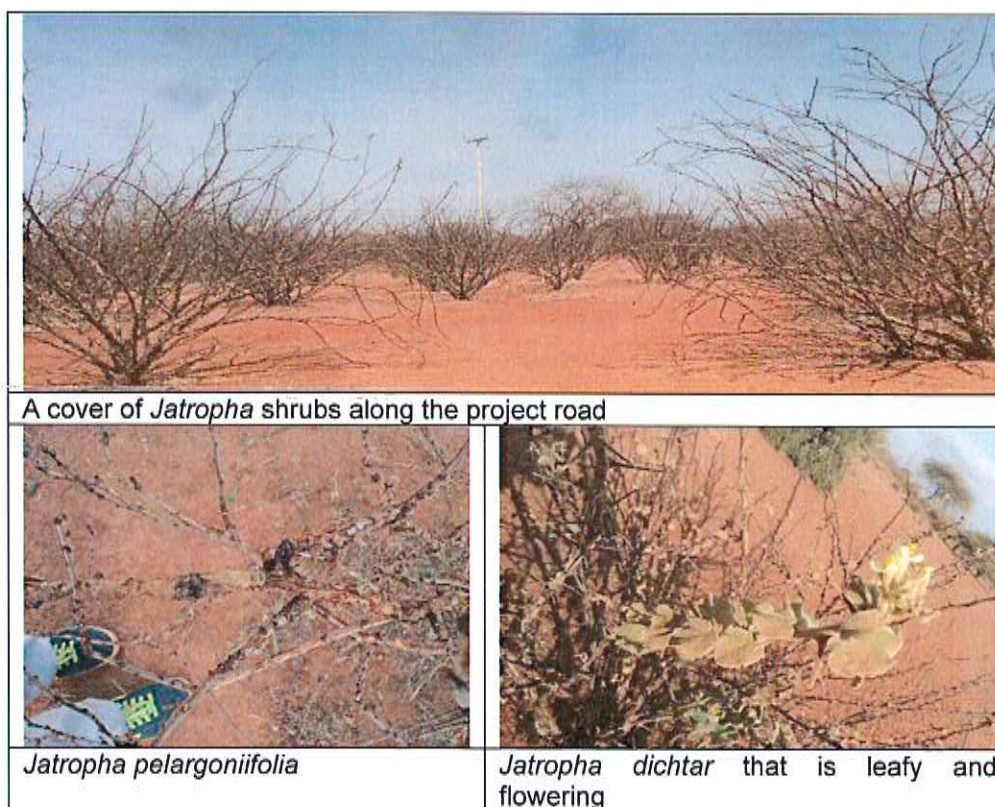



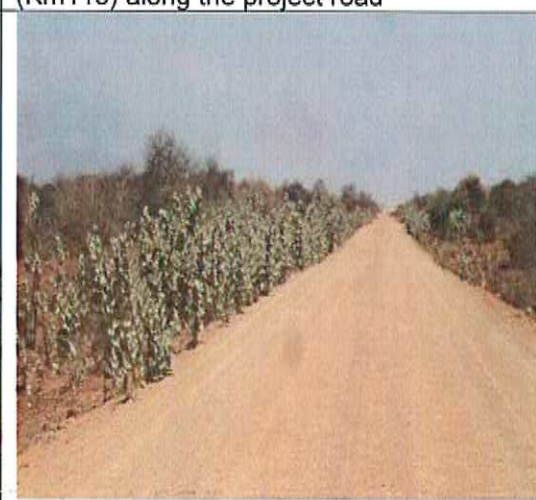


Plate 4-5: *Jatropha* Shrubbery

(iv) Novel Habitats

These vegetation habitats occurred linearly along the project road signifying secondary succession of the natural vegetation and the introduction of alien/invasive species as well as their aided dispersal due to human activities or translocation along water corridors. Invasive/alien species (mainly *Prosopis juliflora* and *Calatropis procera*) occurred in isolated patches along the project road and this could be an indicator of the intense human activities and other habitat management practices that are leading to loss of cover of native vegetation such as urbanizing (in Wajir Town Km 0+000 to Km 4+000, Kutulo, Tarbaj Centre, Hungai Centre), surrogate or alternative forage for livestock (especially during prolonged drought) leading to endozoochorous seed dispersal (Km 112+500 to Km 113+100), road maintenance using equipment contaminated with propagules etc. See plate 4-6.

	
<p>Goats spotted browsing within the <i>P. juliflora</i> bushes</p>	<p>A stretch of Invasive/alien species (<i>P. juliflora</i> and <i>C. procera</i>) at Kutulo Wajir (Km113) along the project road</p>
	
<p>Recruitment rate of <i>P. juliflora</i> is high due to its potential to produce large number of seed pods</p>	<p>One of the patches invaded by <i>C. procera</i> along the project road</p>

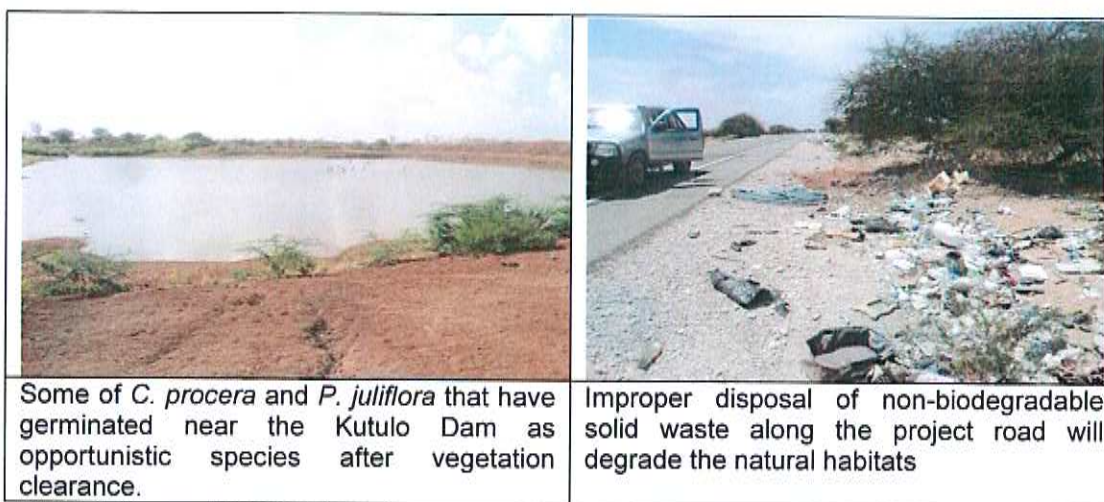
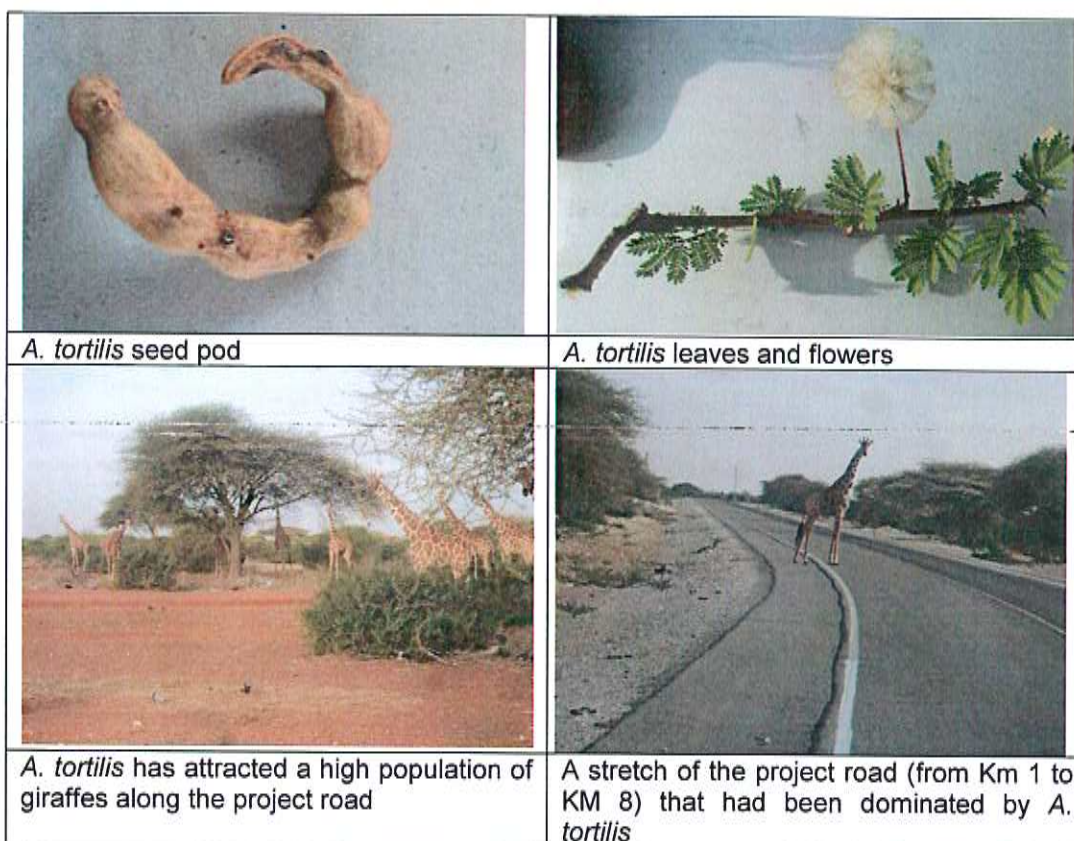


Plate 4-6: Invasive Species

(v) *Acacia tortilis* Woodlands

A. tortilis was conspicuously dominant immediately after Wajir Town up to Lefaley (Km 8). See Plate 4-7. It formed tall evergreen canopies without undergrowth. It's likely it has tolerance to heavy herbivory and human presence as opposed to other *Acacia* species. Other woody species with low cover include *Balanites*, *Acacia*, *Combretum*, *Delonix elata*, *Commiphora*, *Grewia*.

It was noted that the population of reticulated giraffes was high within habitats with tall *A. tortilis*, hence should be conserved. *Balanites* and *A. tortilis* remain evergreen during dry spell providing the much-needed browse, when other species simultaneously loose leaves.





A tawny eagle, a local raptor perched on a tall *A. tortilis* to gain vantage view for locating prey at KM 4

Plate 4-7: *Acacia tortilis*

(vi) *Commiphora* - *Boswellia* Woodlands

Commiphora – *Boswellia* woodlands had dominant cover with long stretches between Tarbaj (Km 51) and Wargadud (Km 82). See Plate 4-8. However, patches of associations of *Acacia* and *Combretum* were observed to interrupt the woodlands. Past Wargadud, patches of the woodlands were also observed up to Kutulo (Km 110).

Most of the *Commiphora* and *Boswellia* species in the project area have grown to tree heights with trunk circumference of up to 100cm. The tree trunks are short with widely spreading open crowns. *Commiphora* woodlands varied in density and pattern of trees from closed canopy to scattered individuals.

Commiphora and *Boswellia* species provide anchoring support for climbing plants such as *Adenia* spp.



Commiphora - *Boswellia* woodlands along the project road from Km 65 to Km 73

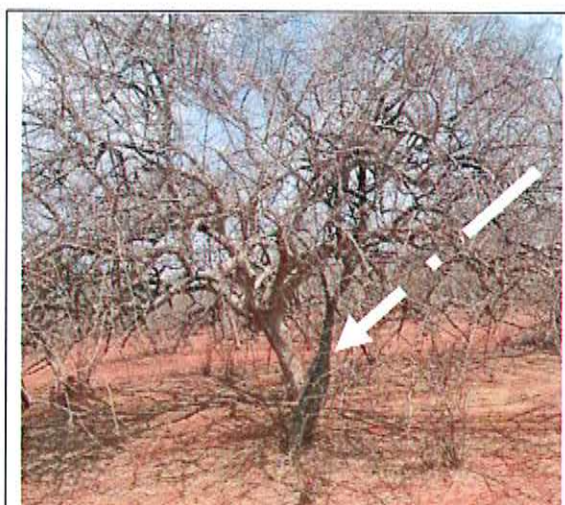
Plate 4-8 *Commiphora*-*Boswellia* woodlands

Wajir and Mandera Counties have the highest cover of *Boswellia* and *Commiphora* species. Wajir East has the highest density of *Boswellia* spp (Luvanda *et al.* 2014). *B. neglecta* and *B. microphylla* have been identified to occur in Wajir. *B. neglecta* is a widespread species in Kenya but the distribution of *B. microphylla* is only confined in Wajir and Mandera (Luvanda *et al.* 2014).

4.2.3 Flora

A total of 53 species were recorded during the surveys, most of which occur in the *Acacia* – *Commiphora* Associations. The plant species recorded during the sampling can be categorized into: (i) main canopy species; (ii) emergent species; (iii) smaller bushes and shrubs; (iv) succulents; and (v) climbers.

- (i) The Main canopy species include *Acacia tortilis*, *A. nilotica*, *A. condyloclada*, *A. senegal*, *A. xanthophloea*, *Terminalia*, *Combretum*, *Commiphora*, and *Boswellia*.
- (ii) Emergent species include *Delonix elata* and *Maerua*.
- (iii) Smaller bushes and shrubs include *Jatropha*, *A. kenyensis*, *A. elatior*, *A. hamulosa*, *A. mellifera*, *A. paolii*, *A. reficiens*, *A. firozei*, *Balanites*, *Cadaba*, *Grewia*, *Boscia*, *Cordia*, and *Prosopis juliflora*.
- (iv) Succulents include *Sansevieria*, *Calotropis*.
- (v) Climbers include *Adenia*. See Plate 4-9.



Adenia venenata, a climber

Plate 4-9: *Adenia* spp., a climber

Some of the species in the area with restricted range are presented in Table 4-4.

Table 4-4: *Acacia* Species with Restricted Range

Species	Geographical Distribution
<i>A. firozei</i>	A Kenyan endemic confined to North Eastern. There is limited information about the conservation status for <i>A. firozei</i> .
<i>A. kenyensis</i>	Endemic to Kenya and occurs in the North Eastern. There is limited information on the conservation status of the species.
<i>A. paolii</i>	This has a regional cover, found only in Kenya, Somalia, Sudan and Ethiopia. In Kenya, it has a restricted cover in North Eastern including Wajir.
<i>A. reficiens</i>	Has a regional restricted cover in Kenya, Somalia, Sudan, Ethiopia and Uganda. It is widespread in Kenya, especially in the lowland habitats.
<i>A. condyloclada</i>	Has regional restricted cover in Kenya, Somalia and Ethiopia. In Kenya has been recorded along the Wajir - Mandera Road.
<i>Boswellia microphylla</i>	Only confined in Wajir and Mandera (Luvanda <i>et al.</i> 2014).

Reference: Dharani, 2006

The local communities have some values for the vegetation. the identified local uses of the native vegetation are presented in Table 4-5.

Species Genera	Type of Use	Plant Parts used
<i>Acacia, Combretum, Cordia, Cadaba, Balanites, Delonix, Grewia</i>	Livestock fodder	Mainly leaves and pods
<i>Commiphora, Maerua, Acacia</i>	Wood Curvings, Tool handles	Wood/trunk
<i>Commiphora, Maerua</i>	Dyes/tanning	Bark
All woody species	Fuel wood	Stem and branches
<i>Boswellia, Commiphora, Acacia</i>	Construction poles	Trunk
<i>Jatropha, Acacia</i>	Fencing	Live fence / Branches (mainly for Manyattas)
<i>Commiphora, Maerua, Acacia</i>	Resin	Bark
<i>Commiphora, Maerua, Jatropha, Acacia, Azadirachta indica</i>	Ethnobotanical use	Bark, roots and leaves

Table 4-5: Local General Uses of Indigenous Woody Species

P. juliflora (locally known as Mathenge) is listed as an invasive species in the Sixth Schedule of the Wildlife Conservation and Management Act 2013.

4.2.4 Fauna

(a) Mammals

During the survey in February 2018, a total of 34 mammals were listed as known to occur along the project road. Of these, 11 species were confirmed during the field study that is the ground squirrel, gerenuk, grant gazelle, lion, impala, Kirk's dik-diks, reticulated giraffe, scrub hare, savanna baboon and lesser kudu. See Plate 4-10. The other 23 species were identified through interviews with locals on wildlife known to occur within the project area.

Among the species known to exist in the project area, the striped hyaena, leopard, lesser kudu and gerenuk are listed in the IUCN RedList database as Near Threatened. The lion, cheetah, reticulated giraffe and elephant are listed as vulnerable; while the African Wild dog is listed as endangered.

Lesser Kudu and Spotted Hyaena are listed as Vulnerable in the Sixth Schedule of the Wildlife Conservation and Management Act 2013. The Act also lists wild dog, elephants, striped hyaena and leopard as endangered.

The lesser kudu, grant gazelle, impala, Kirk's dik-diks, and gerenuk were common along the project road within the intact *Acacia* – *Commiphora* bushlands and woodlands. The gerenuk was observed browsing on low-lying evergreen vegetation (mainly *Acacia*, *Commiphora*, *Grewia* and *Balanites*). Gerenuks are known to prefer open spaces and avoid dense thickets woodlands. They are also known to be specialist browsers targeting tender leaves and branches. The lesser kudu was always behind cover of dense woodlands but near watering points (earth dams) as well as away from human settlements.

Giraffe presence was high in areas with tall *A. tortilis* trees. At their height, has few herbivores competing for browse of *A. tortilis* crowns. During project interviews, KWS indicated that there were areas of high wildlife concentrations along the road. These areas are of conservation interest. For instance, high concentrations of reticulated

giraffes occur in Wagberi, Lafaley, Tarbaj, El Noor and Four Mile. However, these areas are not designated as conservation areas.

Observations of giraffe herds along the project road were made in the morning (up to 10am) and late evening (around 4pm). During the day, they receded in the woodland interiors depicting higher nocturnal movements/browsing than diurnal. Giraffes prefer to browse at night because vegetation is covered with dew reducing its water demands.

In these dryland areas, wildlife activities decline at daytime avoiding exposure to high temperatures. For instance, a fresh donkey carcass was spotted at a morning along the project road in the woodlands of Lafaley. A close examination of the carcass revealed it was a lion kill at night.

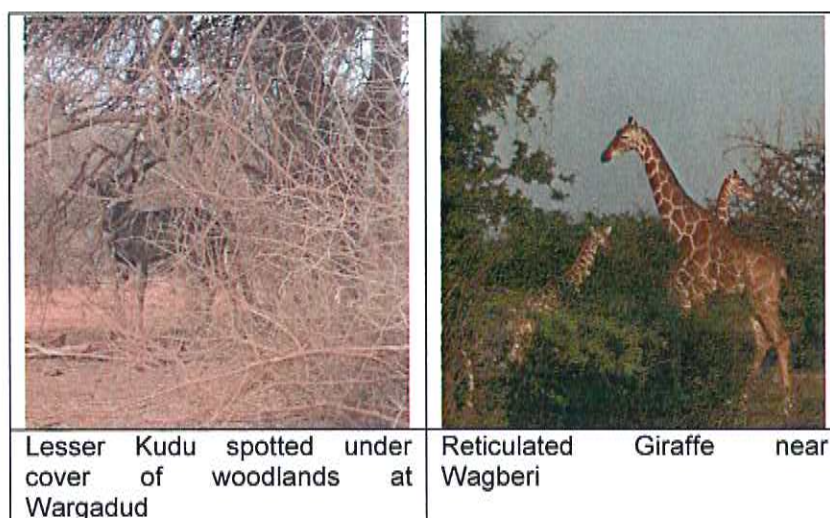


Plate 4-10: Mammal Species

(b) Herpetofauna

A total of 35 herpetofauna are known to exist along the proposed project area. Out of these, 2 species of tortoise, 12 species of lizards and geckos, chameleons (2), snakes (17), frogs (3) and one species of squeckers.

The rock python, puff adder and the flap necked chameleon are among the herpetofauna known to occur in the area. The rock python is classified as endangered while the flap-necked chameleon, savanna monitor lizard and puff adder are classified as protected reptiles by the Wildlife Conservation and Management Act 2013.

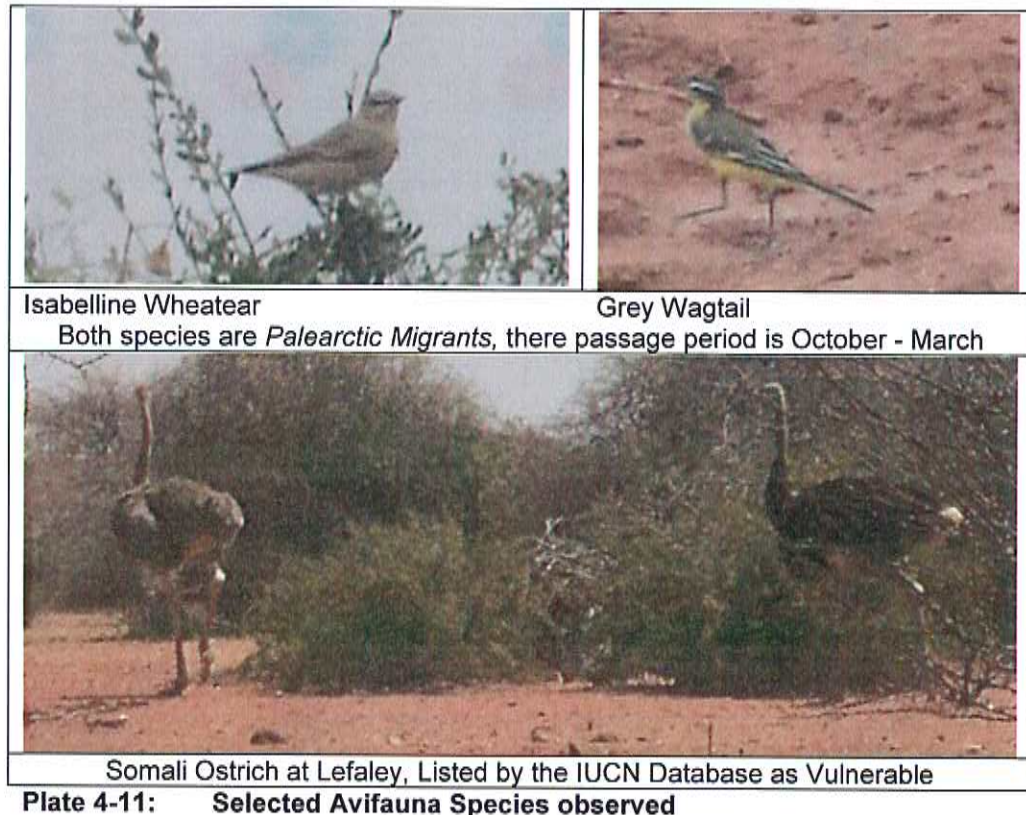
The Red Headed Rock Agama was confirmed present in the project area. Red headed rock agama is listed as an invasive species in the Sixth Schedule of the Wildlife Conservation and Management Act 2013.

(c) Avifauna

During surveys in February, 2018, a total of 114 species were recorded along the project road. Three species among the recorded were of conservation interest according to the IUCN Redlist Database - the African White backed Vulture is Critically Endangered, Kori Bustard is Near - Threatened, and Somali Ostrich is Vulnerable species. Vultures are mainly large scavenging birds of prey. Ostrich are the known largest ground birds. Kori bustards are also ground birds.

Among the birds recorded, Somali Ostrich, Great White Egret, Red-billed Ox-pecker are listed as protected species in the Sixth Schedule of the Wildlife Conservation and Management Act, 2013.

The checklist included 19 migrant species comprising of 17 Palearctic, one Intra-African and one Afro-Tropical migrant species. See Plate 4-11. The high number of migrant species is an indication of existence of a major flyway across the tropics, Europe and Asia. Moreover, the project area is located between three Important Bird Areas (IBAs) on the west, east and north, that is Dida Galgalo in the west (20km north of Marsabit), Malka Mari National Park (a potential IBA about 285km away in Mandera) in the east and Dawa River in Mandera. These three IBAs could have influence on the species composition along the project road.



4.2.5 Wildlife Safety and Crossings

The project road is likely to experience high traffic and increased vehicle speeds at operation phase, this will increase concerns on wildlife safety among species fond of criss-crossing the road. Wildlife safety concerns arise because:

- Some of the wildlife present in the area are gregarious (e.g. guinea fowls, hyaena and giraffe) move in numbers, which may result in mass fatalities in the event of run over by vehicles;
- In the natural habitats, some of the species have already established territorial ranges adjacent to the project and are likely to have frequent movements to the road. Dik dik, impalas and gerenuks occur in high numbers and are territorial. Presence of fresh dung piles in the proximity to the project road corridor was an indication of territorial occupation;
- Nocturnal species criss-crossing the road at night may fall victim due poor visibility of glares by vehicle headlights.

During field surveys, it was observed that wildlife movement was influenced by availability of suitable forage/prey and water as well as human avoidance. Interviews with KWS noted that access to water resources (watering points) contributed to most of the human-wildlife interactions. Areas with watering points were also considered to have high wildlife concentrations. Some of the water resources (earth dams) occur along the project road are as shown in Table 4-6. Nonetheless, areas with dominant cover of tall *Acacia tortilis* at Wajir

Town (Km3) up to Tarbaj (KM50) had a high concentration of giraffes relative to the neighbouring areas. See Plate 4-12.

Area Name	Chainage location of watering Point
Lefaley	KM 9 + 900 LHS
	KM 16 + 200 LHS
	KM 21 + 000 LHS
Tarbaj	KM 50 + 250 RHS
Hungai	KM 60 + 800 RHS
	KM 65 + 300 (water ponding at excavated site) both sides
Wargadud	KM 81 LHS
	KM 82 LHS
Kutulo Wajir	KM 110 + 500 LHS
	KM 115 + 600 LHS
Kutulo Mandera	KM 118 + 600 LHS

Table 4-6: Chainages with Watering Points



Plate 4-12: Wildlife Movement along the project road

Impacts of the project road at Construction Phase have been discussed in sub-section 6.3.2.

4.2.6 Collection of Wild Wood

The project road is to be implemented in a dryland area with fragile ecosystem (erratic rainfall patterns and susceptibility to drought). The project area is endowed with vast natural vegetation that contributes to climate change mitigation among other environmental benefits. During the field surveys, it was evident in the rural settings that there was extraction of wood products for household and commercial purpose. Over 90 percent of the rural household rely on wood fuel (Wajir CIDP 2013 - 2017), which is likely extracted locally.

Once the project road is at operation phase, the impact of extraction may be magnified due to increase in settlements and population explosion. There is need for stakeholders and line agencies (NEMA, KFS and KWS) with interest in environmental conservation to assist in averting possible imbalance between consumptive extraction of wood products (wood collection) and non-consumptive utilization (fodder and forage for livestock and wildlife). See Plate 4-13. Livestock keeping is the mainstay of the rural community and can be threatened with rapid loss of tree cover.

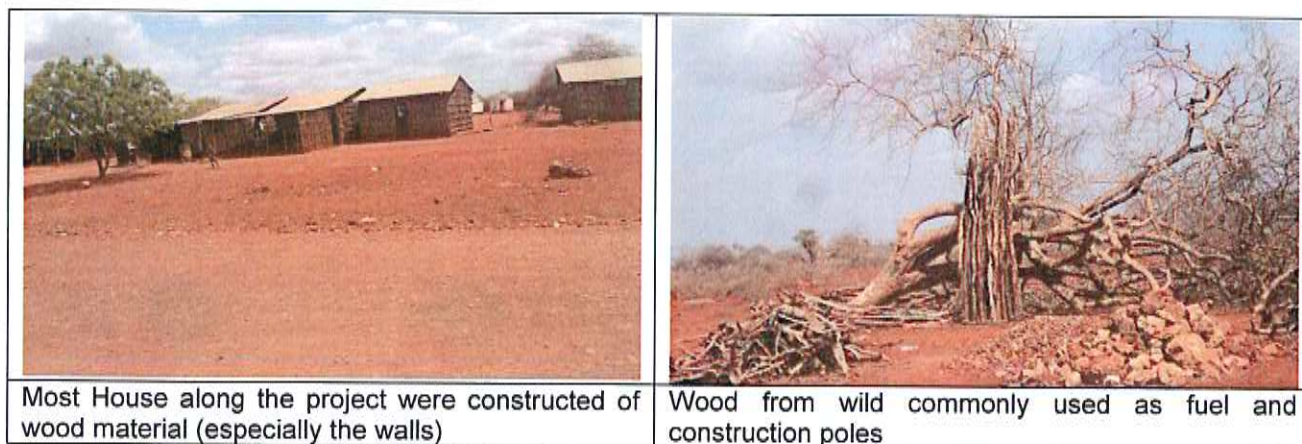


Plate 4-13: Wood Products

4.2.7 Human Wildlife Conflict

During project implementation, there will be increased human presence along the project road. About 90km of the project road is within intact natural vegetation that harbors wildlife species but are not protected areas. Due to high wildlife concentrations within Wajir County, there is increased conservation interest that involves key conservation agencies (KWS and KFS). Conservation efforts have geared towards an ecosystem approach leading to intact natural habitats and wildlife security. However, there are no established conservation areas in Wajir, therefore human-wildlife interaction as they access the common ecosystem resources (watering points and browse areas for livestock) is historical. During dry spell, wildlife are known to increase their dispersal movements into the community areas. See Plate 4-14.



Lion foot imprints near a fresh donkey carcass at Lefaley

Plate 4-14: Example of Human - Wildlife Conflict

4.3 Social Environment

4.3.1 Administration

The project road straddles both Wajir and Mandera counties and traverses through the administrative areas presented in Table 4-7.

Table 4-7: Administrative Areas

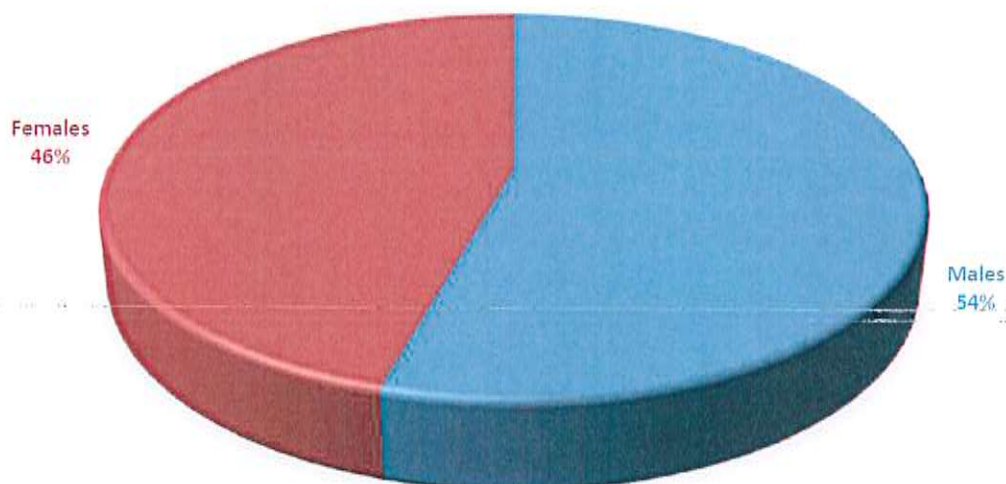
County	Sub County	Division	Locations	Sub Locations
Wajir	Wajir East	Wajir Central	Wagberi	Wagberi
		Tarbaj	Tarbaj	Tarbaj
		Kutulo (Wajir)	Kutulo	Kutulo
			Lafaley	Lafaley
			Wargadud	Wargadud
				Hungai
Mandera	Mandera Central	Kutulo (Mendera)	Kutulo	Kutulo

Source: KNBS August, 2010

4.3.2 Population

The population of Wajir county was projected to be 852,963 in 2017, comprising of 55 percent male and 45 percent females. From the sample collected during the household survey percentage of men to women matches the county wide data, as percentage of the male population was at 54% to 46% of women.

GENDER DISTRIBUTION OF HOUSEHOLD MEMBERS



The county has an inter-censal growth rate of 3.22 per cent which is higher than the national population growth rate of 3.0 per cent (First CIDP 2013–2017, Wajir County). Considering Wajir county population growth rate, the projected population for Wajir East Sub County in 2018 is 157,952 people.

According to the National Population and Housing Census (2009) the population density (in Km²) is as follows: Wajir East Sub County (17), Wajir Central Division (595), Tarbaj Division (11) and Kutulo Division (13).

From field observations and data collected by the household questionnaires, the number of members per household in Wajir is high as most of the households are polygamous. It is a cultural norm for a man to have up to four wives and as many children as possible. From the data analysed, the average household size is 6.6 with some households having up to 14 children.

The population age and gender structure for Wajir County are provided in Table 4-8, below.

Table 4-8: Population, Age and Sex Structure

Age group	2009 (Census)			2017 (Projections')		
	Male	Female	Total	Male	Female	Total
Under 5	54,066	50,579	104,645	73,668	65,173	134,843
Primary school Age (6-13)	113,909	91,224	205,133	146,781	117,549	264,330
Secondary School age (14-17)	48,037	30,745	78,782	61,899	39,617	101,517
Youth Population (15-29)	95,977	73,116	169,093	123,674	94,216	217,890
Female reproductive age (15-49)		126,064	126,064		162,443	162,443
Labour force (15-64)	167,349	136,748	304,097	215,642	176,211	391,853
Aged Population (65+)	8,619	5,927	14,546	11,106	7,637	18,744

Source: First CIDP 2013–2017, Wajir County

Figure 4-1 is a population from the sampled of households in the study area. It shows that the population of men is higher than that of women across most age groups. This is comparable to the county statistics.

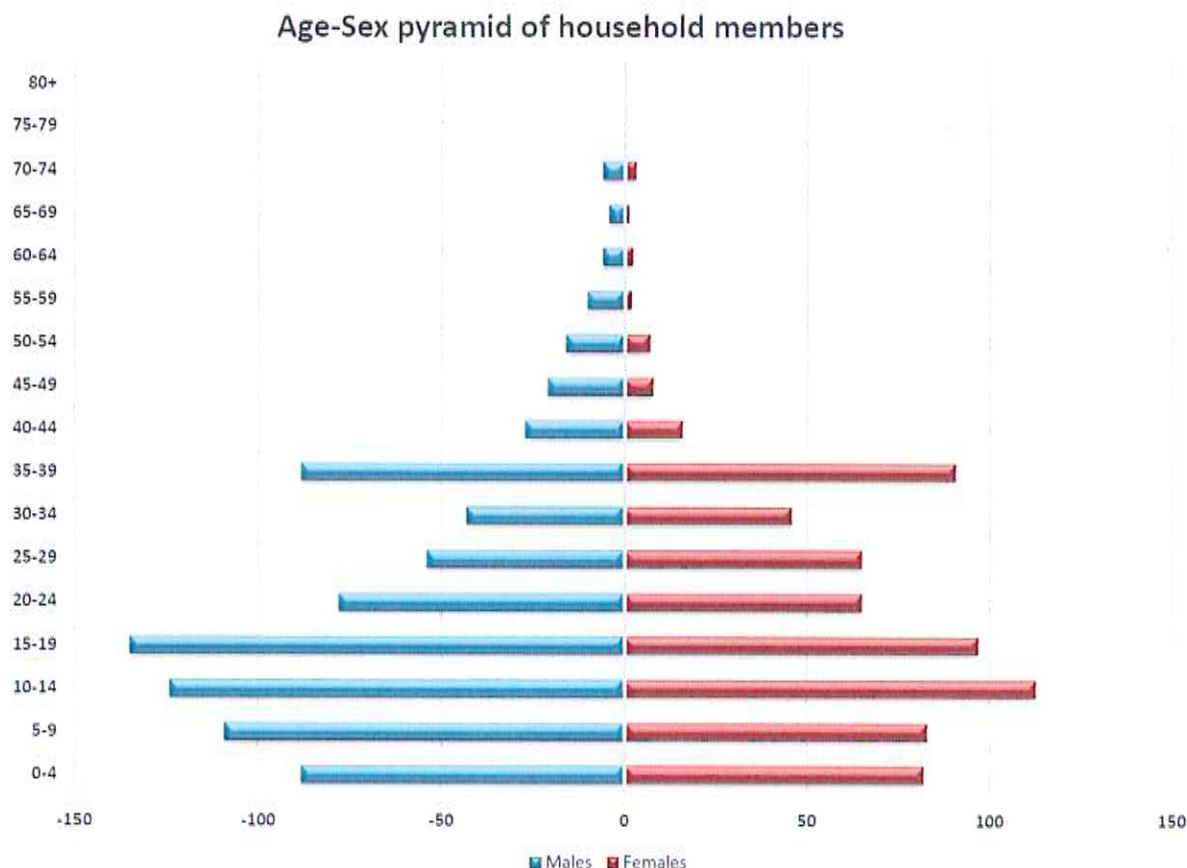


Figure 4-1: Population Pyramid

Project area population is predominantly the pastoral Somali community. Among the major Somali clans, the Degodia have settled in Wajir East and West. The other Somali clans have settled in the north (Ajuuraan) and south (Ogaden). These clans and other minor ones have all settled within Wajir Town.

According to the First CIDP - Mandera County 2013 – 2017, the population of Mandera County is projected to be 852,963 in 2017. Male comprise 54.5 percent and the rest (45.5 percent) are female. The county is projected to have a population density of 54 people per square kilometre in 2017

67 percent of the County population is mainly school going age (19 years and below). This implies the County's population has a high dependency ratio (that is 1.250) and this requires putting in place more infrastructural facilities particularly in the education and health subsectors to avoid straining the existing ones (First CIDP - Mandera County 2013-2017). The County's Human Development Index (0.417) is lower relative to the national average of 0.561. Human Development Index (HDI) is based on life expectancy at birth, mean years of schooling, expected years of schooling and gross national income per capita.

4.3.3 Religion

Islam is the dominant religion with 100 percent of the sample population professing Muslim faith as presented in Figure 4-2.

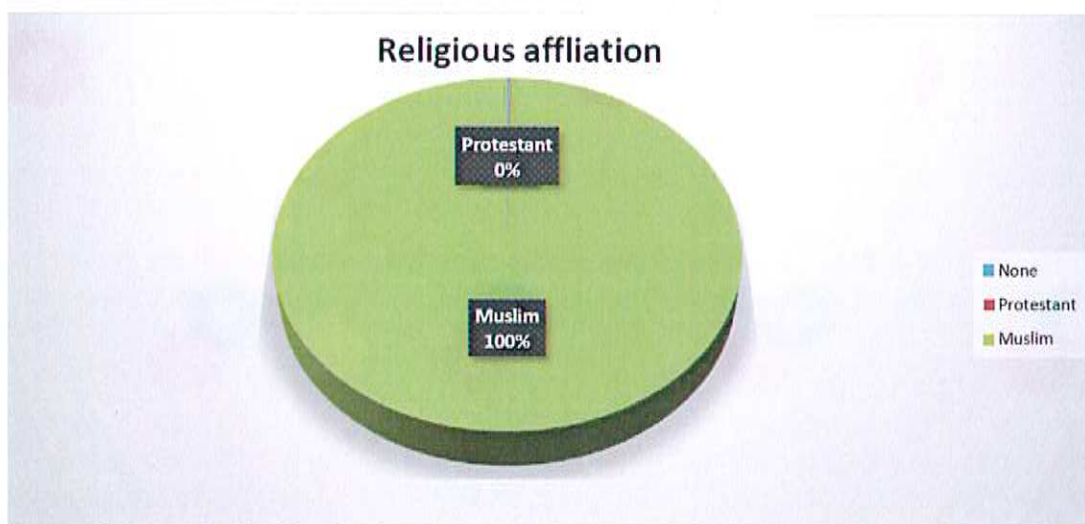


Figure 4-2: Faith Distribution Among Sampled Population

Mosques are located at the heart of every trading centre. Along the project road corridor, 9 number of mosques were observed. However, there are a few churches particularly in Wajir town. This is because although 100% of the population interviewed in the project area were Muslims, there are a few Christians in Wajir town but they were not within the project area.

4.3.4 Housing and settlements

Along the project road in both Wajir and Mandera Counties, human settlements are sparse and occur as clusters at the trading centres that interrupt long stretches of natural vegetation.



A Google Earth image showing a cluster of settlement along the road

Plate 4-15: Cluster of Settlement Along the Road

Traditional house types dominate settlements with majority of the sampled population having houses with earth flooring, stick walls and thatched roofing. The traditional house types are associated with the nomadic way of life. The houses are dome shaped and thatched with grass reinforced with wooden poles. The floor is earthen. However, stone and brick houses were also present especially in major centres such as Wagberi, Tarbaj and Kutulo.

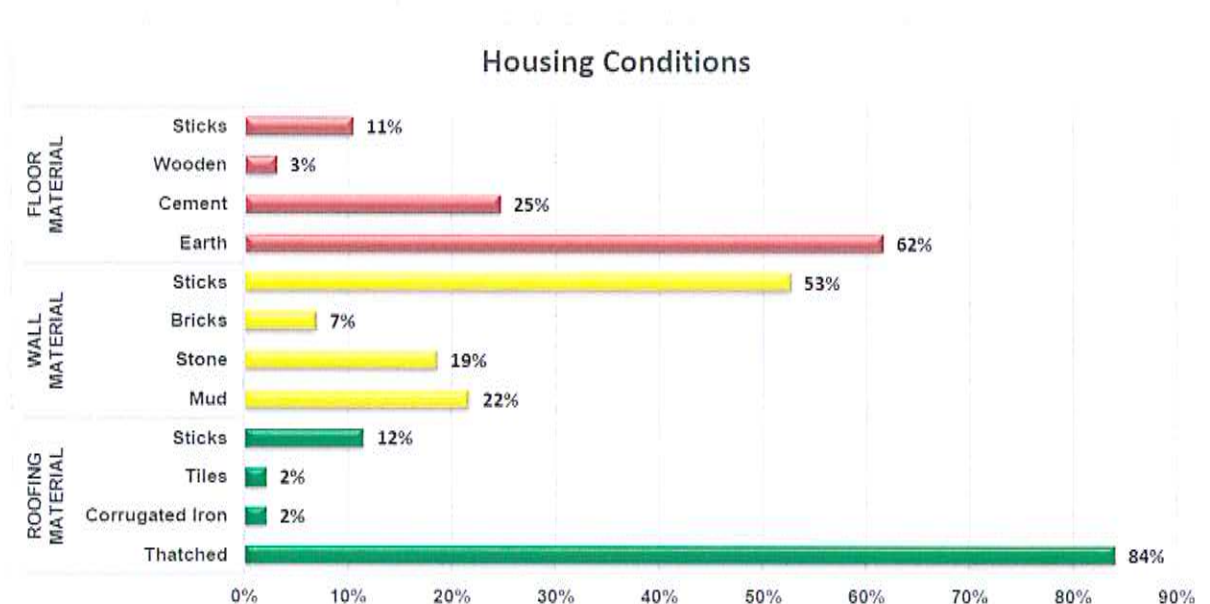


Plate 4-16: Housing materials

Below is a picture showing a typical traditional house.

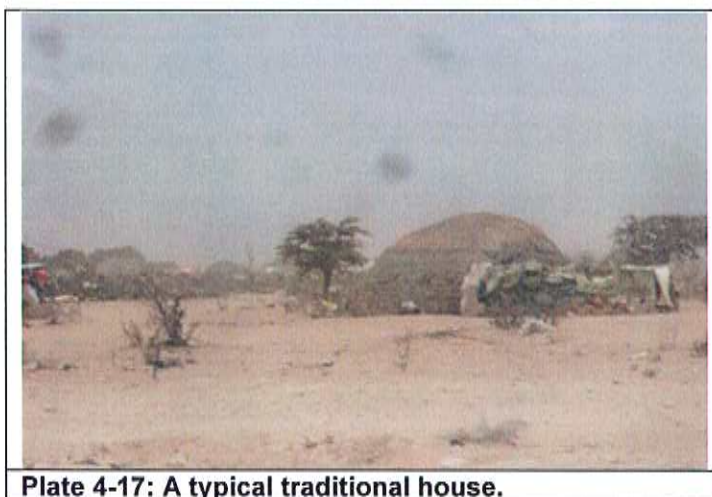


Plate 4-17: A typical traditional house.

4.3.5 Education

Literacy level in Wajir County is at 23.8 per cent. The low literacy levels are partly attributed to the nomadic lifestyle, early marriages, female genital mutilation and exploitation of women among other negative vices (First CIDP 2013-2017, Wajir County). Three-quarters of the county residents have no formal education. A fifth of the residents have attained primary school level of education only. About 4 percent of the residents have secondary level of education or above.

The sample collected during the household survey confirms that the level of illiteracy among the adults is very high. Among the sample interviewed, for adults above 18 years of age, 28.1% of the male population against 39.9% of the female population had no education at all. The highest level of education achieved for majority of the educated adults is primary school level. The level of literacy of the adults in the sample is as follows:

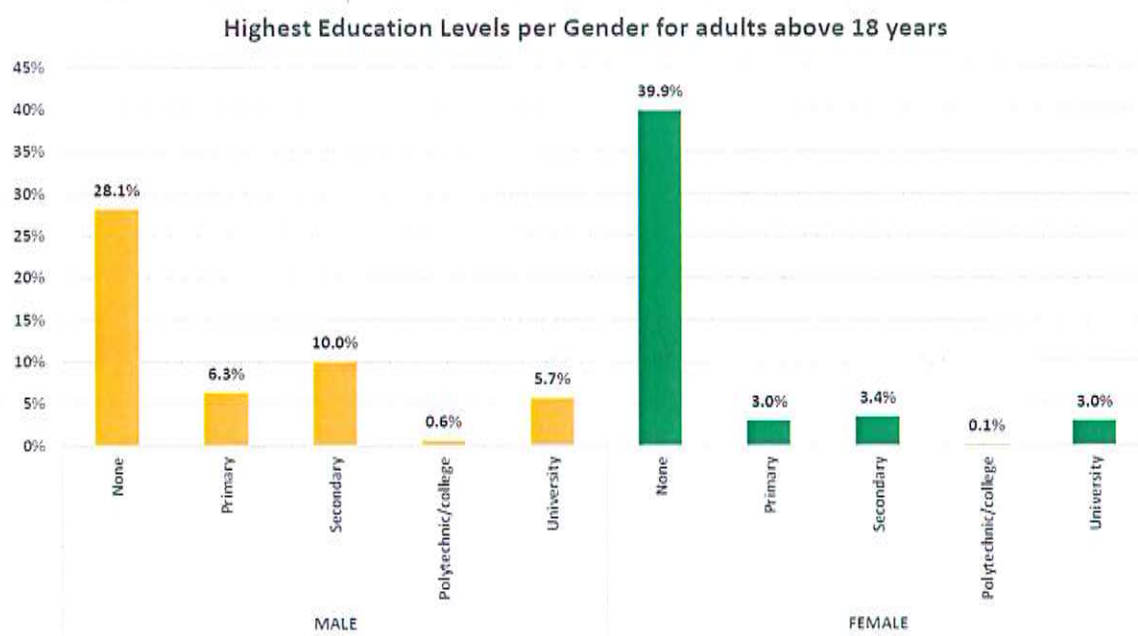


Table 4-9: Highest Education Levels Per Gender for Adults Above 18 Years

School enrolment

According to KNBS indicators in 2014 the net primary school enrolment rates was 27.2 percent. The enrolment rates were higher for the boy than the girl child. The pupil teacher ratio at primary and secondary school levels is at 45.4 and 20.2, respectively. The total number of primary and secondary schools are 231 and 45, respectively (Ministry of Education Science and Technology and UNICEF, 2014).

From our findings, the sample collected from the household survey confirms the above information about enrolment rates. Effort to take children through the formal education in the project area is made difficult by the pastoral lifestyle. As parents shift in search of water and pasture, they take their children away from schools.

Teacher student ratio recommended by the government is 1:40 respectively. From Key Informant interviews with school heads along the project area, the teacher student ratio is between 1:50 and 1:77. This is higher than the ratio recommended by the government. Insecurity in the project area that has led to high transfer turnover of teachers from non-local communities who are the majority of the teaching staff.

The table below shows the number of schools in the project area and their enrolment level according to the data collected from the Key informant.

Table 4-10: Schools in the project area (Wajir County) and their Enrolment Level

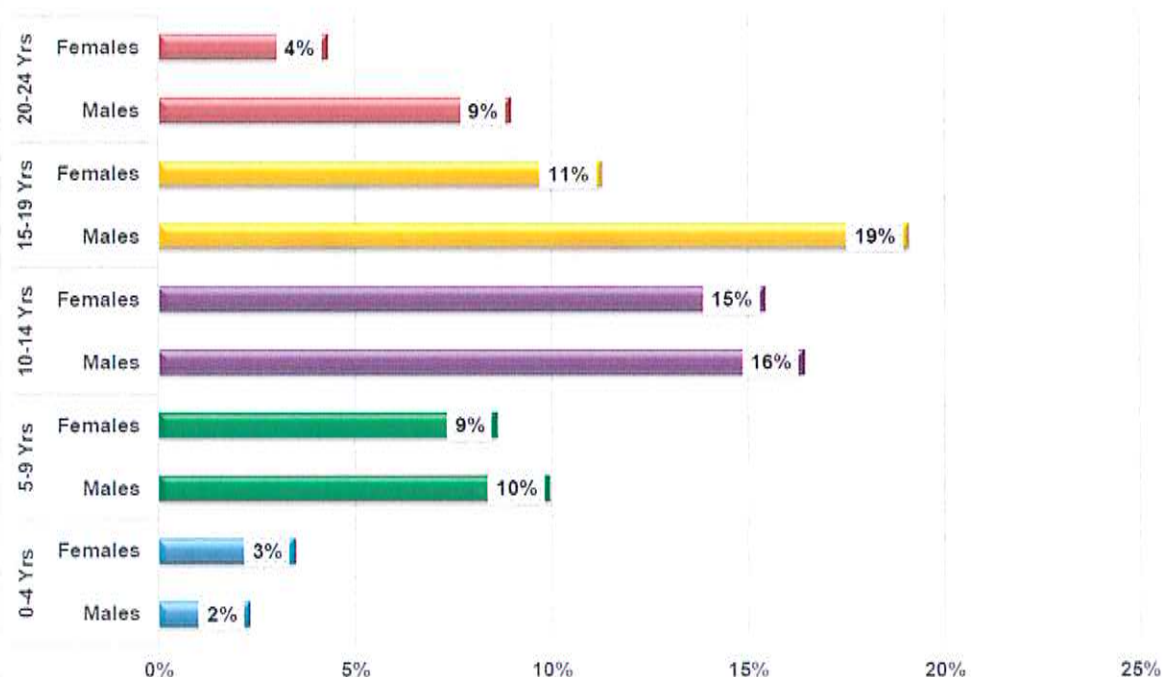
Location	School	Level	Student Population	No of Teachers
Wagberi	Wagberi	ECD& Primary	456	9
Halane	Halane	ECD &Primary	535	8
Lafaley	Lafaley	ECD &Primary	300	8
Tarbaj	Tarbaj	ECD& Primary	450	6
	Tarbaj Boys	Secondary Boarding	360	13
Hungai	Wargadud	ECD & Primary	250	5
Kutulo	Kutulo	Boys Primary	527	8
	Kutulo	Girls Primary	238	3
	Kutulo	Girls Secondary	320	14



Plate 4-18: Selected education Facilities in the project area

Since the area is occupied by muslims, they prioritize "dugsi "system of education which involves recitation and learning of the Quran thereby they join school at the age of 10 years. The sample collected during the household survey confirms that, only 10% of males and 9% of females between the ages of 5-9 are enrolled in school.

Household members currently in School



Mandera County

From the existing secondary data for Mandera County, literacy rates and schooling enrolment within the County are lower relative to the national level. A comparison is presented in Table 4-11.

Table 4-11 Education

Parameter	County level	National level
Literacy rate (2005/2006)	24.8 percent	71.4 recant
Primary school enrolment	71.5	116.9,
Secondary school enrolment	16.2	39.9
Tertiary enrolment	0.8	9.8

Source: First CIDP-Mandera County 2013-2017

4.3.6 Labour Challenges

There is deficiency of skill in the labour force. According to the First CIDP - Wajir County 2013-2017, the county has a labour force of 334,429 people. This represents 45.9 per cent of the total population. This age group is projected to increase to 370,786 and 391,853 people in 2015 and 2017 respectively.

Most of the people in Wajir County that are within the labour bracket are mainly involved in livestock keeping. Therefore, they are not available for work. This is because they are more indulged in pastoralism and with low literacy levels, they have not developed other skills in order to fit into the labour market for construction.

Mandera County

According to the Mandera CIDP 2013-2017, Mandera County's labour force (aged 15-64 years as per the 2012 projected population) is 419,601 persons of which 228,332 are males and 191,269 females. This represents 36.4 per cent of the county population.

4.3.7 Health

Prevalent diseases in the area are malaria, upper respiratory infections, intestinal worms, skin and eye infections and rheumatism.

From the data collected at household level, Malaria infection is leading at 34 % followed by common cold at 25%. Diarrhoea follows at 12 % while eye infections and URT infections are at 7% each. However, according to the data collected from hospitals, the top ten infections across all the locations are respiratory tract infections, urinary tract infections, diarrhoea, ear infections, malnutrition, injuries, eye infections, arthritis, malaria and snakebites.

Eye infections as well as Respiratory Tract Infections affect especially those who live close to the roadside. When the vehicles are moving dust is dispelled from the earth road but since the houses are made of only sticks, it easily gets into the houses where it is inhaled.

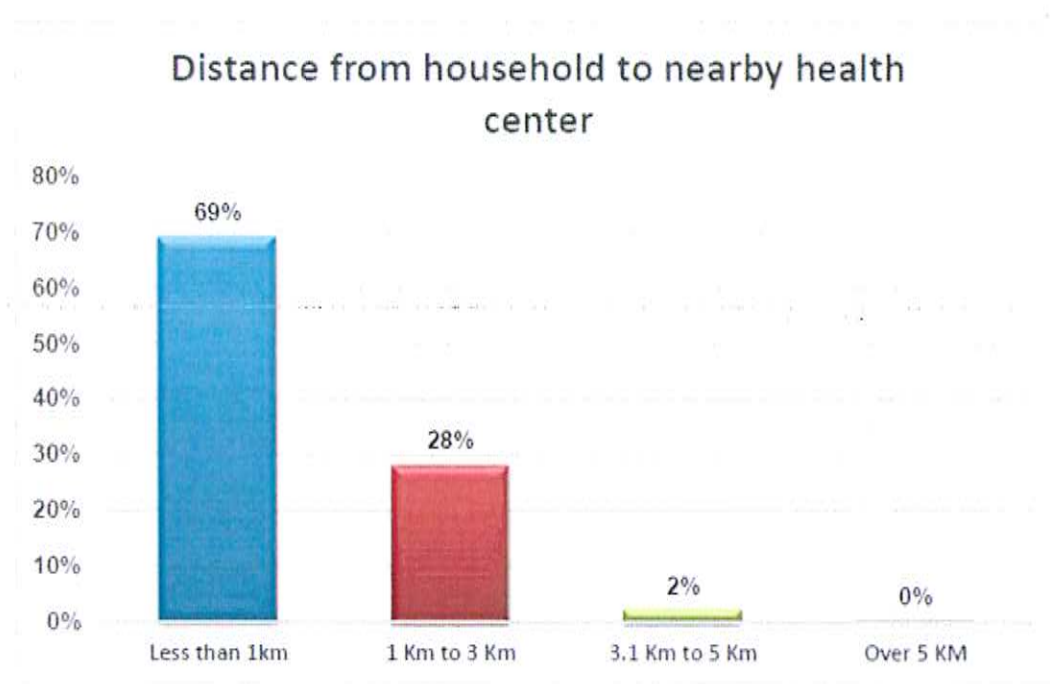
The root cause of malaria is that the landscape (low altitude and relatively flat ground that encourage water ponding) and high temperature have made mosquito breeding to thrive. During the hot seasons some of the local residents sleep outside to avoid the heat in the houses. Unless they use mosquito nets, they are exposed to mosquito attacks that spread malaria.

Diarrhoea comes about as a result of drinking contaminated water. Urinary tract Infections is one of the leading ailments as reported from the health centres.

Health Facilities

There are health facilities in each settlement. Lafaley, Hungai, Wargadud have public dispensaries that offer outpatient services, while Kutulo has a dispensary with a small section for inpatient. Tarbaj has a health centre with level IV capacity.

From data collected from the sample population, 69% of those interviewed indicated that the distance from their household to the nearest health facility is less than 1 Km. 28% of those interviewed indicated that the distance was between 1Km to 3 Km, while 2% indicated that the distance was between 3.1Km to 5 Km. The average distance to access the health facilities is therefore less than 1 Km.





Kutulo Health Centre at Kutulo Wajir (KM 113)

Plate 4-19: Example of Health facilities in the project area

4.3.8 HIV/AIDS and the current interventions

In Wajir County, the HIV adult prevalence is 0.9 percent which is lower than the national one at 6.7 percent. According to the Ministry of Health (2014), the HIV prevalence among women is higher than that of men. One of the leading cause of higher prevalence among the girl child is the Female Genital Mutilation (FGM).

County wide campaign on fight against HIV/AIDS and drugs and substance use through community forums are part of the Wajir Government Projects and Programmes as per First CIDP 2013-2017, Wajir County. This was intended to lower HIV prevalence by 50 percent.

Data collected during the Key Informant Interviews with Health Personnel at Tarbaj Health Centre confirms. That HIV/AIDS is very low in the county. This Health Centre operates as a level 4 hospital and served residents of Tarbaj, Hungai, Wargadud and Wajir Kutulo. In the last four years, only three cases have been recorded at the hospital.

4.3.9 Vulnerable and Marginalised Groups

The national government has also embarked on identifying vulnerable and marginalised groups mainly under the various instituted agencies. These include:

- The Commission on Revenue Allocation (CRA) Working Paper No. 2012/03 published survey that rated Wajir County as 5th most marginalised counties.
- Vulnerable and Marginalized Groups Framework (VMGF) prepared by the State Department for Planning. This has identified pastoralist groups in northern Kenya that are marginalized and vulnerable to include Somali occurring at the border with Somalia; the Borana, the Rendile, and the Gabra, among others.

From the FGDs and KII, the groups identified as marginalised in the project area include women, youth and disabled. For instance, primary school enrolment is in the favour of boy child at 63% against 35% for the girl child. Women have an active role in the management of homesteads. These groups however are not adequately involved in the decision-making process for community development projects (Wajir and Mandera District Development Plan, 2002 - 2008).

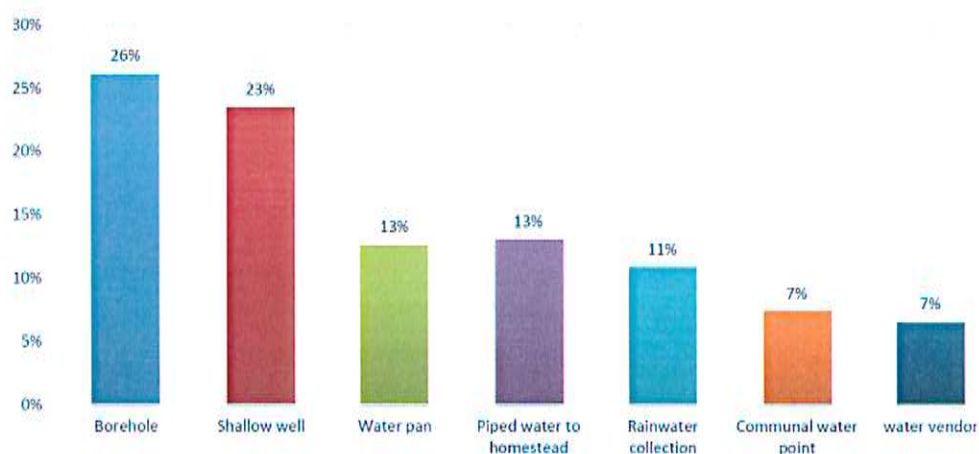
4.3.10 Water Situation

The project road is within an arid climate with limited water sources. In addition, water loss through evaporation is extremely high due to high temperatures in the area. Nevertheless, during road construction large quantities of water will be required for the following activities:

- Processing earthworks, subgrade and pavement layers;
- Curing cement treated subbase and base materials;
- Concrete works;
- Laboratory and office uses; and
- Human consumption.

From the current survey, water for domestic purposes is obtained from various sources. Boreholes account for 26% while shallow wells account for 23 %. Water pans account for 13 % while communal water points and water vendors account for 7 % each.

Sources of Drinking water



Woman fetching from the well for camels



Woman feeding her flock of sheep individually.

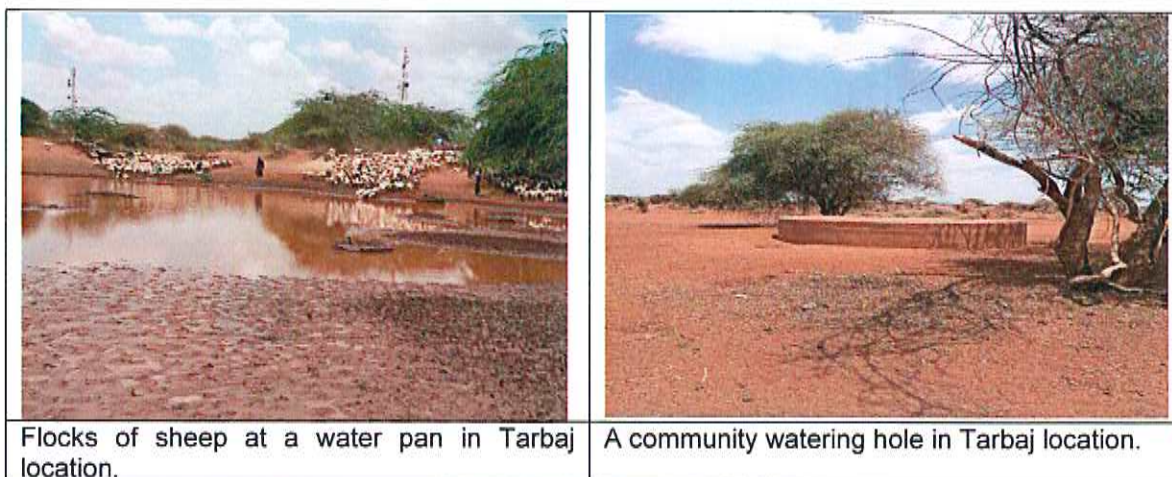


Plate 4-20: Some of the Community Water Sources in Use

Shallow Hand Dug Wells (Traditional Water Sources)

Wajir Town residents depend on shallow wells as their sources of water. Almost every household/plot in the town has a well. It is estimated that there are between 4,000 and 5,000 wells whose discharges vary and their depths are about 6m. An inventory of the wells has never been carried out.

Wajir Minor Water Supply

This well, drilled before 1940 for local community use, has an electrical submersible pump of capacity 3.5 kW and pumps of 3.6m³/hr against a head of 20m. At the time of the investigation water was rationed since it was not enough.

Army Camp Water Supply

The army camp has 4 wells and currently there is only one well operating, which has a depth of 2.1m. The well is equipped with a submersible electrical pump of capacity 1.1kW (1.5HP) Linz type centrifugal pump. The pump generates about 5.65 m³/hr, against a head of about 22m.

Arid land Resource Management Project Water Supply

Arid land Resource Management Project Water Supply has a well of depth (W.R.L.) 5.2 m and width 0.75 m. The well is equipped with a submersible electrical pump of capacity 4.5 HP.

H.Z. Dam ("Lake Yahudi")

This dam near Wajir town resulted from excavation for crusher run aggregates when Wajir Airstrip was being constructed. It probably resulted from puncturing of the shallow aquifer underlying Wajir Town. The dam withstands long periods of droughts and waters livestock from as far as Somalia. Its surface area is approximately 500 m² but its depth could not be established.

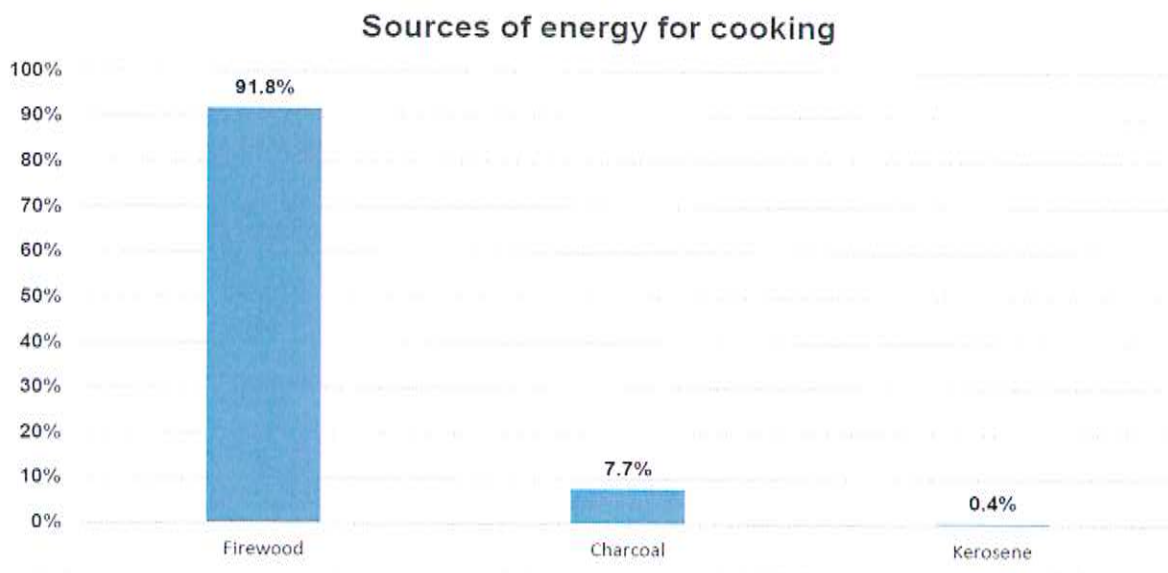
In general, "HZ dam/Lake Yahudi", the only permanent surface water resource near Wajir town, and the groundwater sources within 100 m depth were identified as able to meet the construction demand requirements for the road in this section. Additional boreholes to the existing ones can be drilled at Tarbaj (Km 51), Wargadud (Km 81) and Kotulo Mandera (Km 117). These areas had already been surveyed in 2010 and the locations are marked on the ground.

Limited data exist on water quality in the project area. According to the 2010 studies, surface water in the general area (sampled from river Daua at km 308) were found to be moderately hard and neutral that is moderately mineralized, therefore suitable for concrete works.

However, the iron level exceeded the WHO maximum guideline value of 0.3 ppm for drinking water. The chloride content of water from a UNICEF borehole was substantially higher than the maximum recommended value. It will be therefore necessary to subject water from surface and underground sources to the necessary treatment to make it suitable for human consumption.

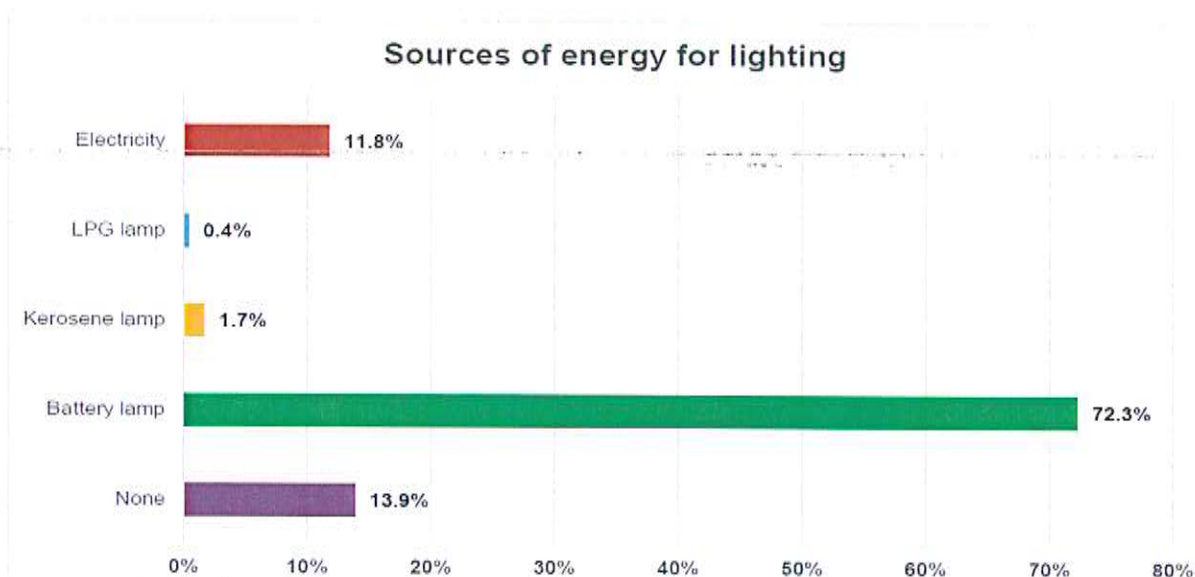
4.3.11 Energy and Fuel

Firewood is the major source of energy for cooking at 91.8% followed by charcoal which accounts for 7.75. Kerosene use is minimal at 0.4%. the firewood is fetched from the forest by young men who sell it to the households.



Sources of energy for lighting

From the data collected from the sample population, battery lamps at 72.3% are the main source of lighting used by the locals followed by 13.9% of the population who use no source of lighting. 11.8 % of the population use electricity for lighting. Electricity has been connected from Wajir town to Tarbaj. Hugai, Wargudud and Kotulo are not connected to electricity. In Wajir town, the main source of lighting is electricity. Although there are power lines all the way to Kotulo, there is no electricity connection in the town yet.



4.3.12 Security

Security remains a major concern especially with the porous borders with the neighbouring unstable Somalia. Nonetheless, there has been increased military and police deployment to boost security. There are a few manned security check points along the project road.

At the time the study was being conducted, the security alert in the area between Wargadud and Kutulo was high because of threats of attack by Alshabab militants. There were two incidences of attacks the week before the site visit and one attack in Mandera which borders with Wajir County during the time the studies were being conducted. In one of the instances the telephone booster for one of the leading network providers had been destroyed leaving that area inaccessible through telephone. Only one mobile network was available within Kutulo town. This affected our studies as we were advised to leave Kutulo town earlier than planned and were unable to go back.

Also due to the security situation at the time of the study, tension was high among the local residents in the Kutulo Mandera section and so the study team was advised by security personnel not to continue with the study past Kutulo Wajir. Other than Kutulo and Wargadud, the other locations were generally safe.

Inter clan conflicts have also manifested in Wajir in efforts to seize control or access over resources such as land, water and grazing land (First CIDP - Wajir County 2013-2017). The conflicts have been associated with reliance on livestock keeping, limited grazing areas and watering points (especially, during drought periods) as well as political influence.



A security check point at Kutulo

Plate 4-21 Security Check Point

4.3.13 Archaeological and Cultural Heritage

A cultural site along the project road was identified at Km 0+000 to Km 0+400 within the market place in Wajir Town. Within this site are the Horray wells (source of water even during dry season) and World War II bunkers. The wells and bunkers have been preserved by the National Museums of Kenya. Muslims also go to the site to conduct prayers three times a year. At Tarbaj (Km50-53) a communal grave yard which had been used up to late 2017 was identified to be partly affected by the proposed alignment. Though no longer in use, realignment is being considered to avoid the grave yard. Exhumation is unacceptable by the community.

Following the establishment of these sites, realignment has been proposed at the affected chainages.

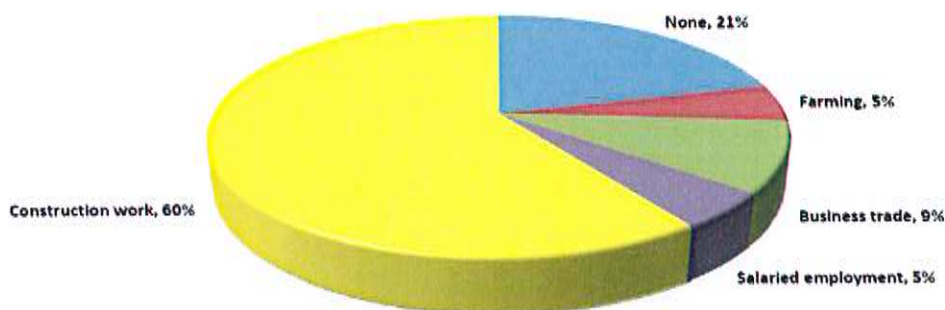
4.3.14 Economic Activities

Pastoralism is the main economic activity in the project area. According to Wajir CIDP 2013-2017, the agriculture sector engages 284,265 people which accounts for 85% of the household's income.

From the focus Group Discussions held, it was reported that the men sometimes trade in their goats and camels at the market in Wajir County. The youth on the other hand harvest gum/resin, wood from the woodlands and sisal from mandera for sale to be used to build somali houses. The wood is also used for charcoal burning.

Findings from the household survey indicate that the primary source of income for these residents is informal employment at 60%. Of the interviewed sample, 21% do not have a primary source of income. Informal employments according to the respondents include working at quarries, fetching water for people at the centres and herding animals for others.

PRIMARY INCOME SOURCES



The above outcomes from household survey do not match the general county statistics. Although the CIDP indicates that pastoralism is the main economic activity, only 5 % of the sampled population said that farming was their source of income. This can be partly because although they keep animals most people do not perceive pastoralism as a primary source of income. In addition, given that data collection was done during the dry season, it was reported to the study team that most of the nomadic pastoralists were away. There are those who keep animals only when the conditions are conducive but sell them during the drought seasons or lose them to drought and then engage in menial jobs, considered as informal sources of income above. This category is not nomadic.

The trading activities at the centres include businesses like Kiosk, food stalls, clothing store and tailoring shops. Limited irrigation watermelon farming is also ongoing in Wajir County.



Shops and trading centre along the project road at Tarbaj



Collection of firewood from wild and selling is an income generating activity among rural population

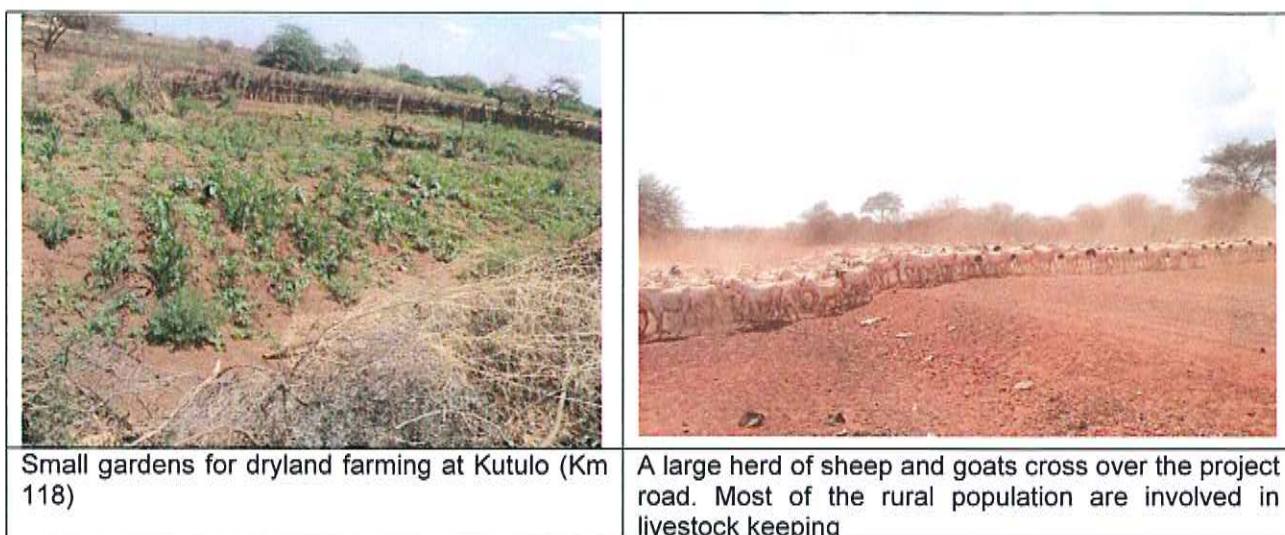


Plate 4-22: Some of the local economic activities

4.3.15 Food security

In the project area, it is not easy for households to get all three meals a day and even when they do get the food, it is usually not balanced. The staple food group is starches. The area being a food insecure area receives relief food from the ministry of devolution during drought. The program is under safety hunger network. The National Drought Management Authority is the agency responsible for catering for drought response services.

5 ALTERNATIVES TO THE PROJECT

5.1 Alternative mode of transportation

There are no alternatives to this road that fulfil the functions of providing relatively fast, cheap land transportation.

Air, rail, and water transport are unlikely to either complement or to substitute for roads or highways in this region. There is no railway transport system close to the project area connecting the two towns of Wajir and Kutulo and no water body that can be used as a mode of transportation in the project area. The only possible means is air transport but, this is a rather expensive alternative and cannot be used as an alternative to the road.

5.2 Alternative alignments

The road is part of the most important link between Nairobi and Mandera and serves the entire North Eastern Province. Alternative alignments would be considered if current baseline environmental and social conditions encountered are too sensitive to the extent that the impacts of implementing the proposed alignment would be devastating, irreversible and environmentally and economically unjustifiable. For the major section of the current alignment, no such sensitive conditions were established. However, in few instances where sections of the proposed alignment were determined to be affecting protected cultural/historical sites, dry season water source for Wajir and its surrounding and communal graves, realignment have been proposed.

The proposed project road alignment is on an existing road reserve and its upgrading will not involve any major horizontal or vertical realignment except at few locations in Wajir, Tarbaj, Hungai, Lafaley and Kutulo centres where some resettlement will be necessary due to either encroachment of the existing reserve or optimisation of the design safety.

5.3 “No action” scenario

Wajir and Kutulo towns are already connected by a continuous gravel surface road, therefore there is no standard “no action” scenario if the strategic objectives of the Government of Kenya in connecting the two areas and in fact the entire region still exist. There is no other macro-transport alternative like water, air and overland rail which can be applicable to connect these places.

This scenario will mean just maintaining the road in passable condition with intermittent repairs undertaken from time to time. This scenario is therefore to assume that similar interventions will continue in the future and that the maintenance strategy will be to ensure that the road remains passable. The maintenance strategy may involve any of the following options:

- Heavy routine maintenance. This would involve clearing blocked drains and culverts and treatment of the road surface;
- Periodic maintenance. This would spot repairs to failed sections of the road surface and measures to restore drainage to good condition; and
- Timely routine maintenance. This would involve keeping drains in good shape and cutting back vegetation and weeds.

The “No action” alternative is expensive in the long term and would involve frequent extraction of material from borrow sites. This will necessitate further development of borrow pits and continuous use gravel road resulting in the following negative environmental impacts:

- Landscape scarring creating unpleasant changes in scenery when a gaping hole is left behind due to the excavation;
- Road surfaces will remain dusty exposing large number of people, especially at the centres along the road, to constant dust pollution;
- Incidences of malaria in the vicinity of pits where drainage is not possible;
- Open un-protected seasonal water bodies which pose a potential drowning hazard, particularly for young children and livestock;
- Increased flow of surface run-off, particularly in areas where the vegetation is removed and is not re-vegetated; and
- Increased soil erosion due to lack of durable roadside drainage structures.

In addition, the status quo will mean that the area is still face problems of poor access to social services, poor economic interconnectivity and incidences of insecurity.

From the foregoing, the no action alternative is not environmentally, socially and economically the preferred option.

6 CONSULTATION AND PUBLIC PARTICIPATION

6.1 General information

The public participation program undertaken during the ESIA and RAP Studies was guided by the following considerations:

- Structured community engagement to, as far as was possible, facilitate discussions on and record consent on:
 - ✓ General project acceptance;
 - ✓ The proposed project design with practical considerations on the alignment design and related footprint of the right of way for the project;
 - ✓ In the case of persons to be relocated, options on the relocation process and acceptance of relocation in itself;
 - Participation in the identification of both positive and negative impacts of the project with focus on the bio-physical and socio-cultural environment vis a vis the project as guided by the proposed design;
 - Provision of a platform to identify the need for alternative alignments and design approach in particular areas as well and an opportunity to influence the proposed project design;
 - Provision of a platform to inform the study team of potential risks that the project may face from an environmental and social perspective;
 - Opportunities to discuss and record expected project benefits from the perspective of communities and larger stakeholder groups;
 - Discussions on possible and practical mitigation measures as informed by the experience of the community, government agency officials and civil society representatives who are based on location;
 - Discussions on aspects specific to land take and resettlement including:
 - ✓ Disclosure of information on land take for the proposed road alignment;
 - ✓ Disclosure of information related to the RAP studies;
 - ✓ Possible grievances that will arise from the land take of the proposed road alignment and practical modalities for resolution;
 - ✓ Existing and emerging issues related to land tenure, land use and land management within the project area, with focus on the proposed road alignment; and
 - ✓ Status of land adjudication and registration in the area.
-

6.2 Methodology

6.2.1 Stakeholder Identification

In general, the following steps were followed in carrying out the entire consultation process: -

- ✓ Courtesy visits at the County Government and Assistant County Commissioners offices;
- ✓ Identification of institutions and individuals interested in the process and compiling a database of the interested and affected parties;
- ✓ Setting dates for public barazas and technical meetings at various levels and with different target groups;
- ✓ Administration of questionnaires to different target groups and local community members within the proposed project site.

Meetings were also held with other government departments represented in the area and the local Civic Society Organizations (CSOs) that have a role to play in the realization of a smooth resettlement plan. These forums were held jointly with the team dealing with ESIA consultations.

The table below summarizes stakeholders identified and how they were consulted.

Table 6-1: Identified Stakeholders and Modes of Consultation Used

Stakeholder	Identified Stakeholders	Consultation Method
National Government	<ul style="list-style-type: none"> • Deputy County Commissioners • Sub County Administrator • CEC Members for Lands, Housing, Physical Planning and Urban Development • Chief Officer in charge of Land • District Administration Police Commandant • Chief Officer - Transport • Sub-county Lands Officer • Sub-county Adjudication Officer • Sub-county Surveyor • District Medical Officer for Health. Likely to be in Wajir Sub-County • Education Officer • Sub-county Social and Gender Officer • County Public Health Officers • Sub-county Livestock Development Officer • Sub-county Water Officer • KPLC • WATSAN • NEMA • Kenya Wildlife Service (KWS) • Kenya Forest Service (KFS) • National Drought Management Authority (NDMA) 	Introduction letter and Interviews
Project areas residents and PAPs	<ul style="list-style-type: none"> • Locations of public meetings (all settlements). 	Public Meetings (<i>Baraza</i>) Small Group Meetings Focus Group Discussions
Sample representatives vulnerable and marginalized groups among residents and PAPs	<ul style="list-style-type: none"> • Location of FGDs 	FGDs

6.2.2 Public Meetings

Mobilisation for Public Meetings

With the assistance of the Chiefs along the proposed road corridor and Deputy County Commissioner Wajir East, appropriate dates /days to consult with the community in their respective locations were set and publicized at local administration forums in a language understood by the community to allow them time for preparation and consensus building of their views and preferences with regards to the project.

Notices for meetings were given at least three days to one week for public meetings

In addition to this, the Chiefs deployed their assistants and village headmen to make announcements and post notices at market centres informing the public about planned meetings in their local language (Somali).



Plate 6-2: Sample Public Meetings notice

A total of six (6) community consultation meetings were held along the affected area as presented in Table 5-3 and Plate 5-2 below:

Table 6-3: Public Meetings Undertaken in the Project Area

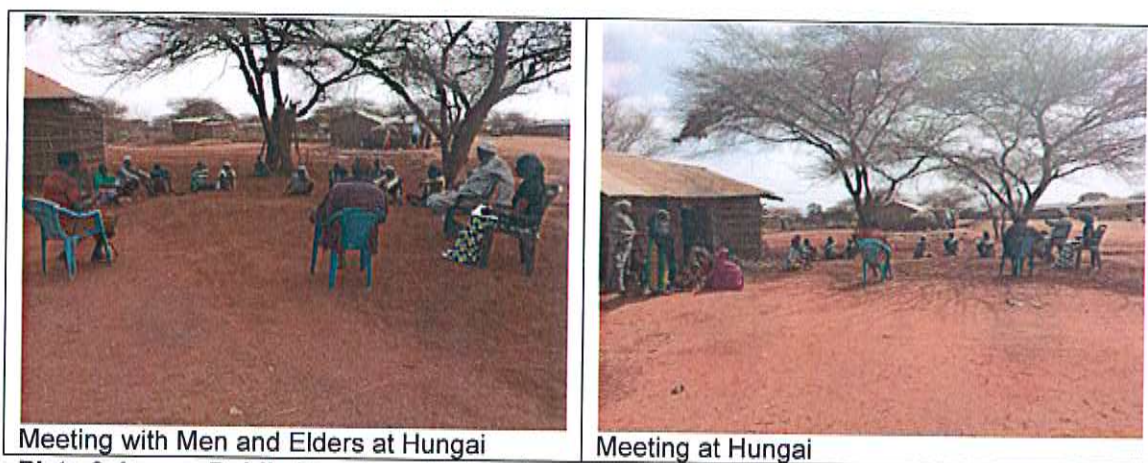
County	Sub County	Settlement	Venue	Date	No. of Attendees
Wajir	Wajir Central	Wagberi	Orhai Market	1 March 2018	60
		Lafaley	Lafaley Centre	21 Feb 2018	83
	Tarbaj	Tarbaj	Sub County Offices	24 Feb 2018	35
		Hungai	Hungai Centre	23 Feb 2018	24
		Wargadud	Wargadud Centre	26 Feb 2018	38
		Wajir-Kutulo	AP Camp	26 Feb 2018	32
Total					272



Public meeting at Lafaley



Public Meeting at Tarbaj



Meeting with Men and Elders at Hungai

Meeting at Hungai

Plate 6-4: Public Meetings Undertaken in the Project Area

The consultations were done in an open and honest manner where the study team shared both the positive and negative impacts of the project and opened a discussion with the community to articulate the issues and come up with possible mitigation measures to avoid, minimize or mitigate the negative impacts.

Minutes of Meeting and attendance sheets are presented in Appendix III of this Report.

From this exercise we obtained the following outputs:

- ✓ Feedback from PAPs on the project including perceptions on its implementation;
- ✓ Program for household surveys for the census, socio economic survey and preparation of the land and asset inventory.

6.2.3 Key Informant Meetings

Key informant meetings provided a platform for qualitative in-depth discussion with community opinion leaders whose level of education, knowledge, experience, exposure and interest on public affairs are key in the smooth implementation of the proposed road corridor.

The meetings also provided a platform to collect baseline socio-economic data on the project area. Thirdly they provided a platform to discuss challenges faced by the stakeholders and the community and related adaptation measures applied at the time.

In order to have these meetings, we made phone calls to book appointments with the key informants with whom we had established contact at the inception phase of the study. Additional informants were also contacted. Thematic survey questionnaires were used to collect information about education, schools, health facilities, employment situation, and other available amenities in the project area. The questionnaires are annexed in this report. Below is a list of all the key informants that were interviewed.

- Roads and Transport Wajir County
- County Secretary (Office of the Governor)
- County Commissioner, Wajir
- Kenya Wildlife Services (KWS)
- Kenya Forest Service (KFS)
- Kenya Power -Wajir
- Teachers Service Commission Wajir East
- Deputy County Commissioner (National Government)
- National Drought Management Authority (NDMA)
- Public Health office- Wajir
- Department of Agriculture, livestock and Fisheries Wajir

Records of these discussions are presented in Appendix II of this report.

6.2.4 Institutional Stakeholders' Meetings

Stakeholders meetings targeted grassroots institutions such as sub county offices, primary schools and health centres along the project road. During site reconnaissance, grassroots institutions were mapped along the project road. Thereafter, visits were made to hold informant discussions with the persons in-charge. The thematic areas for discussion during the meeting include:

- Population served by the facility;
- Catchment area of the facility;
- Challenges faced by communities accessing the facility; and
- Recommendations on how the road can enhance benefits to target population.

Meetings were held with the institutions presented in Table 6-5.

Table 6-5: Institutional Stakeholder's Meeting

Institutions	Name	Person in Charge (Consulted)	Dates for Meeting Held
Health Centres	Tarbaj	Head Nurse	23 February, 2018
	Hungai	Nutritionist	23 February 2018
	Kutulo	Nutritionist	22 February 2018
Primary School	Tarbaj	Head Teacher	23 February, 2018
	Wargadud	Head Teacher	24 February 2018
	Kutulo	Head Teacher	22 February 2018
Sub County office (National Government)	Tarbaj	Assistant County Commissioner (ACC)	23 February, 2018
NDMA	Tarbaj		23 February, 2018

6.2.5 Focus Group Discussions

FGDs were held with selected groups such as youth, men and women along the proposed road corridor. The members were drawn from all villages but called to a central location for the meetings as presented in Table 6-6 and Plate 6-7 below.

Table 6-6: Program and location of Focus Group Discussions

Group	Location	No of Attendees	Total
Women	Lafaley	7	35
	Wagberi	8	
	Wargadud	7	
	Kutulo	13	
PLWD	Tarbaj	6	6
Men	Tarbaj	13	27
	Lafaley	14	
Youth	Lafaley	13	31
	Wargadud	11	
	Wagberi	7	
Total			99

A checklist had been prepared earlier to facilitate the discussions and to focus on issues related to each particular group. The notes of meetings and attendance sheets have been presented in Appendix III of this Report while Plate 6-7 presents sample photos of FGDs in session.

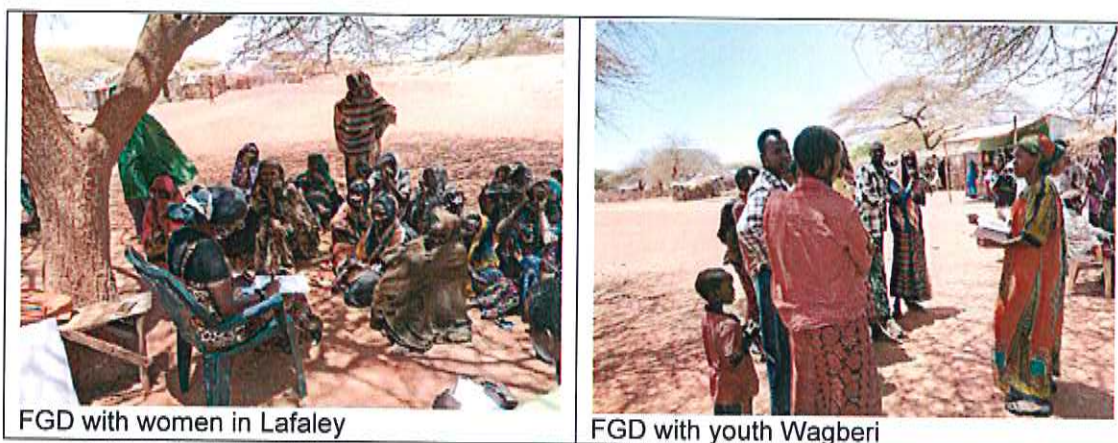


Plate 6-7: Photos of FGD Proceedings

6.3 Issues Raised from Key Informant Meetings

The summary of issues discussed during the key informant interviews are highlighted in Table 6-8 below.

It is important to note that despite not being highlighted here under, all other recommendations given by the key informants that are required by law, have been incorporated into the ESMP as well.

Table 6-8: Summary of Issues from Key Informants

Issue	Comment	Response
Risk related to water use / water use conflict	The contractor should provide his own source of water away from the community water sources to avoid artificial water shortage within the community areas.	The specifications in the bid document will be structured to accommodate this recommendation. A balance will be sought between cost effectiveness for the construction and prevention of over-drawing from aquifers by requiring the contractor provides a hydrogeological assessment report before a borehole is approved.
	Low water yield in the area contributing to scarcity of water in the area	
	Provision of signages that indicate watering points for human and livestock High water consumption leading to drying up of existing wells.	
	Measures should be put in place to avoid loss of human and animal life by drowning at the water points.	
	Depletion of water on the ground due to high consumption that will affect the grazing potential of the land	Consultations with the community on siting of boreholes and development of agreements and subsequent operating procedures for sharing of water resources.
Material conflicts	Use <ul style="list-style-type: none"> Resistance by the community in some areas due to excavation of 	Co-opting of Peace Committee, "mashalla" Committee and clan elder representatives in the grievance

Issue	Comment	Response
	materials; <ul style="list-style-type: none"> Land disputes arising between the contractor and the locals. 	management system for the project construction phase.
	Interruption of grazing areas due to excavation sites for material	<ul style="list-style-type: none"> Proper stakeholder mapping and adequately resources stakeholder engagement programs during ESIA's for material sites; All material sites must have EIA Licenses prior to issuance of approval for use by the supervising team.
Loss of access to ground water resource	<p>RoW at km0+000 to km 0+400 should be re-aligned to avoid Horay wells.</p> <p>Horay wells serves a radius of 60km and in some places 150km from the town. Road cannot pass through the wells to avoid damage or contamination.</p>	This will be done within the updated Design Report as complimented by direct PAP engagement and update of census records and valuation roll.
Livestock crossings	Structures such as overpass and underpass should be considered to facilitate easy movement of livestock especially in key livestock movement routes.	Locations of critical crossing areas were identified and mapped for consideration in the final design
Risk of population influx	There are few education facilities that can be overstretched in the event of influx	The Influx Management Strategies has considered these threats in development of recommendations for further development at the construction phase of the project.
	The project proponent can put up their education facilities which can be reverted to the community after completion as a CSR.	
	Clan and cultural conflicts due to influx of migrants from other areas seeking for employment	
	Boreholes and other water sources should be blocked to avoid creation of settlements once the contractor has left.	<ul style="list-style-type: none"> Need for water by the existing community in some areas is high.. The County Government should prepare for proper land use planning and equitable allocation of community land as demand for land is likely to increase with development and enhanced security along the project road corridor.
Sanitation	<ul style="list-style-type: none"> There is no proper functional sewerage system; The contractor should have in place a septic tank for waste collection and procure a waste handler who will liaise with the County 	The specifications in the bid document have been structured to accommodate this recommendation.

Issue	Comment	Response
	Government works for waste disposal.	
Enhancement of project benefits	<ul style="list-style-type: none"> KENHA and other stakeholders in this project should constantly liaise with the County Government as an integrated project to achieve the development goals of the area The contractor should prioritize the local supplies and services such as milk and meat. 	These aspects informed the development of the future strategy for community engagement.
Future stakeholder engagement	<ul style="list-style-type: none"> The project should do public awareness and public relations to establish any new developments that are taking place along the project road that may not have been reported but are of interest. Hold comprehensive community participation forums along the project road/corridor 	
Community health and safety	<ul style="list-style-type: none"> Fencing off excavated sites to avoid safety risks; The contractor should put in place adequate sanitary measures such as toilets and washing of hands with soap to avoid diseases such as Cholera; Water pans are a danger to children-risk of drowning. 	The specifications in the bid document will be structured to accommodate this recommendation.
	<ul style="list-style-type: none"> The proponent should seek technical advice from the public health officer on requirements on community health and safety; The proponent should initiate contact with the public health office until the end of the project. 	These aspects informed the development of the future strategy for stakeholder engagement.
	<ul style="list-style-type: none"> Procurement of a qualified food service supplier who is aware of the necessary public health requirement. 	This has been identified as a potential area for enhancement of benefits to low income households, especially women.
Impacts on education	Discourage child labor so that there is no absenteeism by children.	This aspect has been considered in the development of child protection strategies for the project.
Impacts on local culture	<ul style="list-style-type: none"> Interference with the migration and nomadic lifestyle that has been in existence; 	<ul style="list-style-type: none"> Signing of code of conduct by all staff; Sensitization of project staff on the community's way of life,

Issue	Comment	Response
	<ul style="list-style-type: none"> • Creating awareness on cultural integration; • Design integration to cater for the existing migration and nomadic routes; • Need to be sensitive on grazing areas especially the animal's pools; • Need to be sensitive to the local community's culture and lifestyle; • Being sensitive to the social, cultural, economic and religious diversity of the local communities. 	<p>areas of convergence and areas of conflict as well as culturally appropriate responses should a culture clash arise;</p> <ul style="list-style-type: none"> • Sensitisation of site and human resource managers for the project team on appropriate response measures in the event of occurrences with a risk of culture clash; • Continuous and clear communication of sanctions to be enforced on staff should they breach the code of conduct; • Evaluation of efficacy of grievance response mechanisms to promote a structured improvement of the system.
Road Safety	<ul style="list-style-type: none"> • Road accidents- Measures should be put in place by observation of the required speed limits to avoid accidents in the future; • Over speeding by vehicles which often results in loss of human lives and livestock; • Liaise with chiefs to know the hotspots for animal crossing; • Provision of furniture and structures to allow safe animal crossings. 	<p>Road design incorporates safety measures and associated furniture including signages</p> <p>Training of local community on road safety has been recommended in the ESMP</p>
Security	<ul style="list-style-type: none"> • Security challenges just past Kotulo; • Tarmac roads are safer as land mines cannot be planted here. 	<p>The costs for security personnel has been integrated as one of the required items for pricing by the Contractor.</p> <p>Close liaison between KeNHA, security agencies, the contractor and the peace committees is recommended in ESMP</p>
Decommissioning of material sites and environmental restoration	<p>Excavation sites should be rehabilitated to collect water which can benefit the adjacent communities.</p> <p>Conversion of excavated sites to water pans as a form of CSR which will benefit the community.</p> <p>Community will benefit from owning the boreholes and wells dug by the contractor after exiting the project</p>	<p>The ESMP required that proper plans for hand-over and change of use of these sites be done in consultation with the community and with the full participation of NEMA, area water user associations (WUAs) and County Government to promote sustainability of the water resources and to ensure that proper community health and safety measures and procedures are continually implemented and enforced.</p> <p>Capacity building of the County Government and existing WUAs should be done with the support of the nearest WRA office.</p>

Issue	Comment	Response
Potential CSR programs	Creation of incentives, jobs, building water pans and earth dams to benefit the community Putting up facilities for the community along the route	For consideration by the client under the support social programs for the project. Deliberate inclusion for training of students from local middle level colleges during implementation is recommend

6.4 Issues Raised at Public Meetings

The main concerns raised at all community meetings were generally connected to project impacts on their livelihoods as well as who among them would receive compensation. Relocation procedures also came up, with a proposal to the proponent to compensate those who would be affected before giving them notice to relocate.

The communities in areas such as Wagberi and Tarbaj were categorical that grave sites were to be avoided. As a result of this, the alignment and its RoW were re-aligned (twice in the case of Tarbaj) to avoid burial sites.

From the project benefit perspectives, there were also concerns about how local people would benefit in terms of employment opportunities during the construction of the proposed road.

Table 6-9 provides summary of the views raised by the PAPs, followed by responses at the meeting and a highlight of how these issues have been integrated into the RAP.

Table 6-9: Public Meeting Issue response matrix

Issue	Comments	Response
Compensation	<ul style="list-style-type: none"> Compensations should be made before road construction process begins. PAPs asked whether compensation amount will be payable to the community or to individuals 	<ul style="list-style-type: none"> The compensation will be at individual level Relevant laws and procedures will be used when valuing properties and we shall abide by the law We shall propose relevant safeguard measures to the proponent to include additional measures, on project design modification, that may be required to address adverse effects on the vulnerable Population and to provide them with culturally appropriate project benefits;
	<ul style="list-style-type: none"> Will the poor and the orphans (children) who have established settlements along the road be compensated? Poverty levels are high and the structures are not of better value. The community proposes that considerations be made during compensation so that their living standards can be uplifted. 	<ul style="list-style-type: none"> This RAP provides compensation on all affected persons to be paid out the particular owners, so long as they were present by the cut-off dates; The Census confirmed that there were no child headed households among the PAP population. From the FGDs it emerged that orphan children are usually taken in and brought up by relatives; The vulnerability analysis shows that the PAPs in Lafaley are especially marginalised (as compared to the other settlements) as they own an average of ten goats per household in an area where one household can have up to 400 goats; This RAP proposes that during construction phase of the project, that poor PAPs including the ones at Lafaley be given special attention to ensure that they get: <ul style="list-style-type: none"> Casual Labour opportunities as supplementary income sources; Equal opportunities to both men and women as the women are very interested in these jobs; That interest is shown, women who would like to provide support services to the construction workers be assisted to understand the procedures required to legalise their small businesses; That during community engagement for the construction phase discussions should be held on the cultural appropriateness of proposed programs and the required support measures be integrated into such programs.

Issue	Comments	Response
Livelihood Restoration	<ul style="list-style-type: none"> The proponent should discuss with the County Governments of Wajir so that those doing business along the road can be relocated to continue running their businesses. 	<ul style="list-style-type: none"> From consultations with the Physical Planning Office (See Appendix II for record of meeting discussions) at County Government, considering that all this land is community land, the County can at County Government level, re-allocate land to these traders. The only support they would require from the proponent is the Right of Way boundaries clearly surveyed to ensure that PAPs are not re-allocated land within the RoW; The re settlement of these traders will require participation from the County Physical Planning, Markets and Trades and ICT Department; This RAP has included the County Government as a key member of the RAP Implementation Unit (RAPIC). They should be actively involved in the monitoring and evaluation of livelihood restoration of traders who were relocated from the project RoW.
Businesses along the road	Participants wanted to know whether those doing business along the road will be compensated. Similarly, whether markets and market structures will be valued for compensation	As per World Bank O.P 4.12 all affected persons within the RoW present by the cut-off date will receive some form of compensation, in accordance with the entitlement matrix presented in this report.
Graveyards	<ul style="list-style-type: none"> Request that graveyards should not be touched by the project. If the surveyors and the valuation teams find graveyards, we request that they should change the road course. There are burial sites along the proposed road; one at Wagberi, chainage 1+200 and the other at Tarbaj 50 +300. 	<ul style="list-style-type: none"> All areas where the RoW was affected graveyards has been re-aligned to avoid the graves and structures. Boundaries of these cultural physical resources was collected to ensure that the re-alignment does not affect them.
Land Ownership	<ul style="list-style-type: none"> Conflict, lifestyle and drought pulled the community to living together so as to get resources distributed by the government. This by design has made them live along the road. Therefore, they do not have land ownership documents. What will happen to the plots they have allocated ourselves 	<ul style="list-style-type: none"> As there is adequate space just outside of the proposed new RoW and beyond, identification of land for resettlement will not be a problem in the areas outside of Wajir Town. Therefore, it is possible for them to get new space even as they cede the current space; For Wajir Town, the affected persons claim to have allotment letters, the County Government will have to verify authenticity of the plot allocation document. The County Government will again be instrumental in identifying land for resettlement around the Town; In all the above case, County Government representatives were clear that the RoW boundary is required to ensure that persons are not resettled within the Road Boundary. The role of CG in RAP implementation is therefore key for livelihood restoration through in-kind replacement of land.

Issue	Comments	Response
Decision making	<ul style="list-style-type: none"> • Involvement of the local leadership when coordinating issues affecting the locals is very critical. Chiefs should be involved in coordinating any involvement with the community since they are impartial. 	<p>On discussions with PAPs on grievance resolution, in addition to the Chiefs, the community asked that the "maslaha" dispute committee, the peace committee and representatives of women, men, youth and PLWD and an elder from each clan should be involved for impartiality. This is especially because natural resource conflicts are high, even before compounding these problems with project related issues.</p>
Population influx	<ul style="list-style-type: none"> • The communities acknowledged that with road construction there was bound to be population influx of people from other areas coming in search of jobs during project construction. 	<p>This system has been adopted into the project's grievance resolution mechanism as presented in both the RAP and ESIA Reports.</p> <ul style="list-style-type: none"> • Contractor shall be encouraged to local labour as feasible. An open and transparent employment policy especially for semiskilled and unskilled workers shall be required of the contractor.

7 POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This chapter highlights significant impacts which may arise due to proposed road improvement activities of the Wajir – Kutulo Road.

To this end, the focus of this Chapter will be:

- To identify and analyse the extent of the environmental and social impacts from the project;
- To assess the environmental impacts of the operation and maintenance activities,
- Propose mitigation measures; and
- To discuss the decommissioning of the project.

7.1 Construction Phase Impacts

7.1.1 Positive Impacts

(a) Employment Opportunities

Construction activities for this project road will have employment opportunities for workers at the international, national and the local community levels. The contractor will require skilled, semi-skilled and unskilled labour force to undertake various activities. Skilled labour will be required especially in the final design interpretation and supervision of construction works. Manual work may be done during enabling works (clearing the right-of-way, material loading and delivery, moulding works among others). Some of the equipment likely to be deployed on site include excavators, wheel loaders, reclaimer, graders, rollers, tippers, and water bowsers. Truck drivers, machine operators, site agent, foreman, security personnel among others form part of the skilled manpower that may be hired.

The contractor is highly encouraged to hire most staff, locally. site clearance, traffic management and diversions, earthworks, concrete works as well as road furniture installation and marking will require both skilled and semi-skilled labour. Those employed, estimated to average 150 persons, will benefit for up to 36 months of the construction period.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	+3
Spatial scope of impact	+4
Duration of impact	+4
Frequency of activity / duration of activity	+3
Frequency of impact	+4
Result	+77 Medium - High

Enhancement Measures

- Have a local employment policy as an affirmative action that ensures marginalised communities, disability groups and gender sensitive groups are not side-lined. The policy should also have security screening measures to confirm originality and conduct of potential employees during recruitment;
- Mixed communication strategies and instruments should be used to effectively relay information on employment opportunities to the community such as local public administration officers' desks, public notice boards as well as public address platforms and gatherings in churches and mosques;
- Furnish relevant authorities with details of individuals allowed to work at the camp such as time of accessing sites, number of individuals and identification, appropriate tools of work etc
- As part of induction, workers should be encouraged to adhere set EHS guideline and standards on noise, substance and waste handling as well as relations with host communities.

(b) Business Opportunities for Local Suppliers and Service Providers

The road construction activities involve a capital expenditure that requires a range of inputs comprising machinery/plant and spares for plant and machinery, tyres for plant and machinery, gabions, concrete additives, reinforcement bars posts and other consumables (wood formwork, bricks, cement, sand, aggregate, oils and lubricants) among others. The contractor will have to procure locally or regionally from credible suppliers creating business opportunities for dealers. Some transport services may also be leased from local service providers.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	+4
Spatial scope of impact	+3
Duration of impact	+4
Frequency of activity / duration of activity	+3
Frequency of impact	+3
Result	+66 Low - Medium

Enhancement Measures

- Local sources of supplies and services should be prioritized, as far as feasible, as a way of boosting local economy and building capacity of local businesses.

(c) Knowledge and skills transfer

majority of rural residents in Wajir county will be witnessing construction of bitumen road for the first time. Through staff interaction, the locals employed in the project will have an opportunity to learn from some of the specialised skilled and semi-skilled personnel that will be involved during the project construction. This may enhance their knowledge in construction of bitumen standard roads and associated facilities and their ability to access similar opportunities in future even beyond Wajir county. The works will also invoke interest in youngsters to participate in such project in future and their career goals.

Enhancement Measures

- KeNHA should make deliberate requirements on both appointed contractors and construction supervising consultants to accommodate training, especially for students in local (Wajir county-based) middle level colleges and polytechnics.

7.1.2 Negative Impacts

(a) Land take and disruption of livelihoods

The road project development is will disrupt livelihoods and cause loss of properties following displacement of people along some sections of the alignment. From the draft RAP report, there are 754 PAPs who are mainly in the urban centres traversed by the road. 529 of these are structure owners. There are 62 tenants of which 58 are business tenants while only 4 are housing tenants.

To minimize the resettlement impacts, realignments have been proposed at Tarbaj and Kutulo and therefore this number is expected to go down once the revised alignment is finalised. RAP study report has been compiled as a separate Report.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-4
Spatial scope of impact	-4
Duration of impact	-3
Frequency of activity / duration of activity	-3
Frequency of impact	-4
Result	-77 Medium - High

Mitigation Measures

- Project RAP Study Report should be implemented to guide the compensation and resettlement process;
- Compensation for all affected properties should be compensated before construction commences;
- Continuous complaints and grievance management system should be maintained throughout the project implementation phase. All pertinent stakeholders should be involved in the compensation and grievance redress mechanism during implementation of RAP.

(b) Impacts on Traffic

Much of the design road has been aligned along the existing road reserve. Accesses to facilities abutting the road will be temporarily interrupted within the settlement areas, especially in Wajir Town (KM0 to KM3) leading to traffic inconveniences and interference with normal operations. In Wajir Town (KM0) access to the market place (at Horray) and other businesses (refuelling stations, water bottling plant, livestock slaughterhouse etc) may be interrupted during construction affecting business operators and their patrons.

Impacts on traffic in areas outside the centres is however not expected to be significant. However, due to flash floods, diversions away from existing routes may still pose serious challenges during sporadic rainy seasons when such diversions are not properly done and maintained. Similarly, most of the identified martial sources are far away from the project site and impacts on haulage routes may extend well beyond the immediate project area.

Impact Analysis Matrix

Impact without Mitigation	
Severity of impact	-4
Spatial scope of impact	-4
Duration of impact	-3
Frequency of activity / duration of activity	-2
Frequency of impact	-3
Result	-55 Low - Medium

Mitigation Measures

The contractor shall be required to formulate and implement a traffic management plan incorporating:

- Provision of alternative routes in areas where accesses have been disrupted;
- Dust suppression measures to enhance visibility at construction sites for oncoming traffic and road users;
- Plans for short diversion routes which should be well maintained by regular sprinkling to reduce dust. Adhere to road reserve if possible;
- Provision and maintenance of clear traffic signages of ongoing construction works, regulate speed limits and diversion signage to notify approaching traffic;
- In urban areas, schedule delivery of materials to the sites during periods of light traffic between 9.00am - 12.00 pm and 2.00 pm - 4.00 pm during week days;
- Project vehicle should have and only use designated parking areas;
- Sensitize workers and area residents on the importance of exercising care in the project area in as far as traffic movement and other safety issues are concerned
- Obtain permission from inhabitants and Wajir county government if diversion routes go beyond the Right of Way;
- Reinstatement of diversion routes (and old tracks) to original condition;
- Institute a traffic management plan incorporating adequate temporary signages and flagmen as necessary.

(c) Disruption of Public Utilities

From Wajir to Tarbaj, approximately 50km, there is a powerline running on the road reserve. In other sections, the line is only along the road reserve in within urban centres but is aligned away from the road in the rural areas. The proposed road construction will necessitate relocation of the power line thereby affecting electricity supply along the target areas.

Impact Analysis Matrix

Impact without Mitigation	
Severity of impact	-4
Spatial scope of impact	-4
Duration of impact	-3
Frequency of activity / duration of activity	-2
Frequency of impact	-3
Result	-55 Low - Medium

Mitigation Measures

- Liaise with KPLC to identify affected sections of alignment of the power lines and provide cost to cover the relocation of the existing infrastructure;
- Relocation plans shall include adequate notification of affected KPLC customers

(d) Spread of HIV/AIDS and Other STDs

In Wajir County, the HIV adult prevalence is 0.9 percent which is significantly lower than the national one at 6.7 percent. During project road construction, it is likely that a significant increase in population along the project area as they are attracted to the project activities. The influx is likely to include people from outside the northern frontier. HIV prevalence rates have researched to increase in areas which migrant and mobile populations live, work, pass through, or originate. This group of individuals are mostly truck drivers and other employees who work for the contractor and are brought in as skilled labourers.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-4
Duration of impact	-4
Frequency of activity / duration of activity	-3
Frequency of impact	-2
Result	-55 Low - Medium

Mitigation Measures

- KeNHA/Contractor should, in liaison with approved local organisations, provide awareness training to staff and the locals and monitor the efficacy of the awareness created during the project implementation period;
- Sensitize workers on the need to refrain from risky behaviours;
- Provision of condoms both male and female in the sanitary facilities;
- The unskilled workers should, as far as feasible, be recruited from among the local residents of the project area and its immediate neighbourhood;
- All construction workers must sign a strict code of conduct that respects the local culture including that of indigenous peoples while balancing with universal human rights.

(e) Excessive Noise and Vibration

The current road use by buses, lorries and private cars is the main source of existing noise along the project road.

Construction activities generate noise from vehicles used for transportation of material and workers to site, earthworks, operation of heavy equipment and machinery for site preparation and facility erection and diesel generators used for on-site power generation. Settlements, Mosques and administrative offices along the project road are the most likely to be affected by the noise generated from the construction works.

Workers at construction site are likely to be exposed to increased noise levels as they operate the noisy equipment or work close to the noise sources. Workplace noise situation have already been envisaged and regulated as follows:

- Motor vehicles should not exceed 84 dB(A) noise levels as required in the EMC (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009.

- The Factories and Other Places of Work (Noise Prevention and Control) Rules L.N 25 Of 2005, requires:
- The continuous equivalent of 90dB(A) in 8 hours within any 24 hours duration;
 - 140dB (A) peak sound level at any given time;
 - Noise transmitted from workplace shall not exceed 55dB(A) during the day and 45dB(A) during the night;
 - Anybody working in an area involving exposure to noise, needs Audiometric examination and internal examination (pre-employment and annual) to determine deafness, cases with deterioration of hearing loss of 20dB(A) or more in two successive examinations within two weeks.

Impact Analysis Matrix

Impact without Mitigation	
Severity of impact	-2
Spatial scope of impact	-2
Duration of impact	-3
Frequency of activity / duration of activity	-3
Frequency of impact	-2
Result	-40 Low

Mitigation Measures

- Monitor environmental and occupational noise levels as per the NEMA Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 & OSHA, 2007 requirements respectively;
- The noise emission characteristics should be considered during selection and mobilization of construction equipment;
- Where feasible, fit equipment with rock mufflers, sound insulations, silencers to lower the levels of noise emission;
- Sensitize construction workers to switch off machinery and vehicles when not in use;
- Staff on active project sites with continuous exposure should be provided and encouraged to fit in their Personal Protective Equipment (PPEs);
- Locate noisy operations like batching plant away from the densely settled areas;
- Where noisy activities must be undertaken near sensitive receptors, the neighbouring occupants must be informed in advance and works limited to day time only.

(f) Contamination by liquid waste and hydrocarbon spills

Construction activities will require assembling several machinery and equipment (including excavators, graders, excavators and tippers). This will require a maintenance and repair area as well as some on site storage of fuel. Routine cleaning will generate washdown water containing sediment (soil, clay, gravel and sand), detergents and automotive fluids, all of which are pollutants. This may contaminate the receiving soils and surface water environment if not managed properly. Other sources of liquid contamination include release of untreated camps' sewer or grey water, leaks and spills from hydrocarbon containments including stored bitumen.

Impact Analysis Matrix

Impact without Mitigation	
Severity of impact	-3
Spatial scope of impact	-2
Duration of impact	-3
Frequency of activity / duration of activity	-2
Frequency of impact	-2
Result	-32 Low

Mitigation Measures

- Machinery maintenance should be done only on purpose-built garages that meet hydrocarbon containment measures and controlled drainage;
- Minor service and washing areas placed/ constructed with containment basins to ensure that the surrounding areas (including groundwater) are not polluted;
- All grey water runoff or uncontrolled discharges from the site/working areas (including wash down areas) to water courses shall be contained, treated and properly channelled;
- Flash toilets at camp sites should be connected to septic tanks or other treatment facilities approved by the county government;
- Water containing such pollutants as cements, concrete, lime, chemicals and fuels shall be discharged into a conservancy tank for removal from site.

(g) Construction Dust and air pollution

Dust problems may arise due to:

- Earthworks, grading, ground levelling and soil compaction;
- Frequent truck movements on the earth roads;
- Wind blows on uncovered or partially covered trucks delivering borrow material and ferrying out cut-to-spoil material;
- Wind blows on stockpiled mounts of soil for reuse or disposal from the site.

The construction dust may cause reduced visibility, respiratory problems to exposed workers and community members and discolouration of adjacent vegetation and buildings. In addition, construction machinery will emit exhaust fumes contributing to air pollution.

Apart from roadside vegetation, most likely receptors of dust pollution are located in the urban centres.

Impact Analysis Matrix

Impact without Mitigation	
Severity of impact	-4
Spatial scope of impact	-3
Duration of impact	-3
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-66 Low - Medium

Mitigations:

- Unnecessary vegetation clearance to be avoided through clear demarcation of construction areas;
- Where practicable, re-vegetate disturbed areas to minimize ground exposure;
- Sprinkling water (at least twice a day) on the accesses and excavated surfaces during the construction period to suppress dust generation;

- Limit the speed of construction vehicles (maximum speed limit 40 kph/25 mph) on earth road;
- Provision of appropriate protective personal equipment including respirators and dustcoats to exposed workers;
- Ensuring the location of material stockpiles are away from human settlements and business premises;
- Covering loaded trucks during the transportation of material;
- Maintenance of vehicles and machinery in accordance with the equipment specifications and manufacturer's standards;
- Sensitize workers on best practice on management of air pollution from vehicles and machinery;
- All records on dust-related complaints should be submitted to Resident Engineer for appropriate action;
- Demolition of existing structures shall be done in a manner that the dust from demolitions can be controlled;
- Undertake regular air quality (dust level) monitoring and conduct corrective adjustments where necessary.

(h) **Generation of Solid Wastes**

A range of solid waste are likely to be generated during road project implementation. Wastes emanating from construction phase will mainly come from:

- Site clearance (vegetation) and excavation works (cut-to-spoil);
- Construction support activities and machinery maintenance and repair works such as used lubricant cans, packaging wrapper, worn-out tyres, and replaced equipment parts;
- Consumables (such as wood formwork, metal cuttings);
- Material testing and trial laboratories such as lab material rejects, test specimens for disposal, excess lab sample materials and grounded equipment or spares.
- Discarded material from handling losses;
- residential camps wastes such as leftovers/food scraps, bottles, cans, clothing, food packaging, newspapers and magazines.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-4
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-60 Low - Medium

Mitigation Measures

Recommendations and mitigations on or solid wastes system

- Waste be managed as per Environmental Management and Coordination (Waste Management) Regulations 2006;
- Manage and control waste generation at the various project sites and stations through standard operating procedures (SOPs) and Solid Waste Management Plan;
- Reduce generation of solid waste at the source through proper planning and procurement of construction materials;
- Segregation of solid wastes and provision of suitable and well labelled waste receptacles within the camp and at active construction sites;
- Reuse excavated top soil for landscaping of the site as far as practical;

- Disposed solid waste at designated sites through licensed waste handlers;
- Establish a segregation and grading waste management system to manage garbage and other forms of waste generated;
- Prioritize options of waste reduction, reuse and recycling, particularly papers, polythene bags and plastic wrappers and containers and other materials that can possibly be recycled; and
- Sensitize resident workers and frequent visitors (especially those operating food catering services) at project sites on proper waste management practices especially hazardous materials and risks of contaminations.

(i) Increased soil erosion incidences

Sections such as Tarbaj, Hungai, Wargadud and Kutulo along the project road have already been affected by erosion an indication of high erosion potential of soils. Soils comprise mainly of high proportions of sandy, silty and gravel that are loosely detached and carried away during run off, especially in bare and sloppy terrains. Animal movements in large herds loosens soil particle has also increased the chances of erosion along the road.

Project implementation activities such as material borrowing and earthworks (surface scarring) will loosen soil material, which will expose to agents of soil erosion, especially in sloppy and bare areas. Active construction sites may have piled batches from borrow areas as fill material.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-2
Spatial scope of impact	-3
Duration of impact	-2
Frequency of activity / duration of activity	-3
Frequency of impact	-2
Result	-35 Low

Mitigation Measures

- Excavated material should be properly piled, sprinkled with water and covered (where possible) to prevent possible wash-out into seasonal watercourses. Stock piling areas should have levelled ground and away from sensitive areas like slopes, water courses;
- Material excavation should be minimized and restricted to designated locations;
- The contractor should ensure that construction related impacts like erosion and cut slope destabilization should be addressed through landscaping and grassing;
- Re-vegetation should be done in tandem with construction activities to avoid exposure of bare ground to agents of erosion;
- Enforce landscaping and restoration of the construction site prior to decommissioning of the construction site.

(j) Increased incidences of poaching and Human-Wildlife Conflicts

With presence of wildlife in areas along the project road, the following activities will increase human - wildlife interaction:

- Construction vehicles knocking wild animals;
- Wildlife poaching or collection of trophies by construction staff. The target prey may also retaliate injuring or killing the poacher;

- Construction staff working at night in areas with poor visibility may be accosted by nocturnal wildlife especially predators (lions, hyaenas);
- Some of the wildlife may be attracted to the contractor's camp (staff quarters) as prey and forage availability are on the decline. In the event the animal may leave behind a trail of destruction or may be hurt (entangled, electrocuted, poisoned, human persecuted, vehicle run-over) as they forage within the human environment.
- Active animal burrows and dens as well as ground nests (especially for the aardvark) occur within the project area and may be buried or collapsed during compaction along the project road corridor or vehicle off road driving through into wildlife habitats.

As documented in the baseline condition, some of the wildlife in the project area like lions, puff adder, hyaenas and ring-neck lizards are under different categories of vulnerability under both local laws and international conventions. Even though outside conservation areas, conflicts involving such species may negate existing local and international conservation efforts.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-2
Spatial scope of impact	-3
Duration of impact	-3
Frequency of activity / duration of activity	-3
Frequency of impact	-2
Result	-40 Low

Mitigation Measures

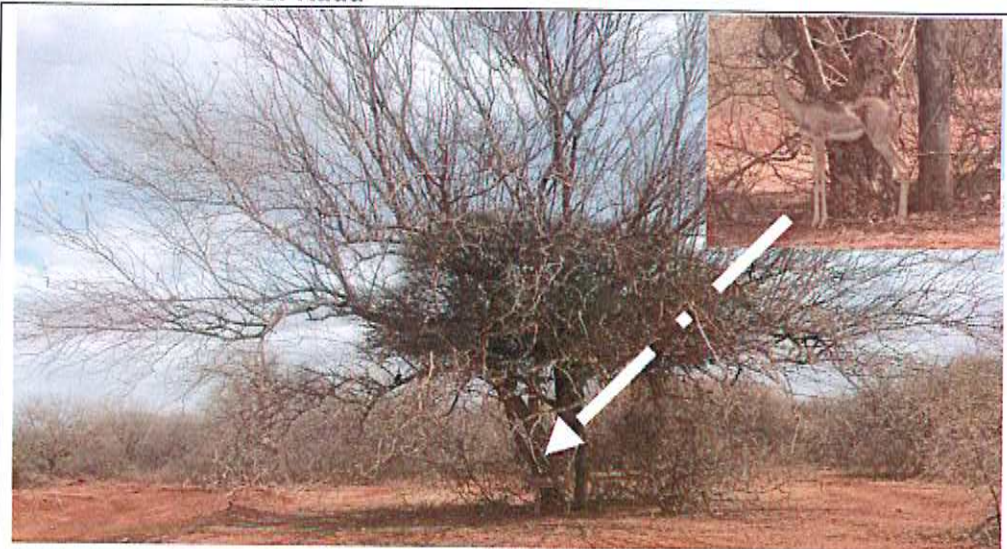
- Engage KWS to monitor wildlife distribution and movement in relation to the project during construction and subsequent stages to advise accordingly;
- Liaison with KWS on handling dangerous wildlife like snakes, wild carnivores. Contractor should liaise with KWS to capture reptiles (especially snakes) hiding under rocks and sheltered terrains and safely release them in suitable habitats;
- Sensitize staff on wildlife encounters and discourage animal persecution or provocation through pre-informed code of conduct;
- Sensitize construction staff against wildlife poaching and enforce strict code of conduct (especially prohibit wildlife poaching/unreasonable persecution). Any cases on wildlife poaching should be forwarded to KWS for further action.

(k) Vegetation Loss

The project road has been designed to highway standards, which will require expanding of the carriageway and maintaining road reserve. Such provisions in the road design will lead to clearing of natural vegetation in some sections.

Some of the floral species to be affected are endemic to Kenya (such as *A. firozei*, *A. kenyensis*), others have regional coverage in Kenya and neighbouring countries (such as *A. paolii*, *A. reficiens*, *A. condyloclada* and *Boswellia microphylla*). Moreover, the local communities have established commercial, household and ethnobotanical use for a range of species (see Table 4-5). Moreover, the vegetation form browse and habitat refugia for the resident faunal species, some of which have been listed in the IUCN RedList Database (Gerenuk, Reticulated Giraffe, Lesser kudu, Lions). See Plate 6-1.

Plate 7-1 Lesser Kudu



Gerenuk spotted (along the project road) sheltering from the mid-day sun under a *Delonix-Maerua* tree mix.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-2
Spatial scope of impact	-3
Duration of impact	-3
Frequency of activity / duration of activity	-3
Frequency of impact	-2
Result	-40 Low

Recommendations for mitigation

- Restrict vegetation clearing to project sites by clear demarcation of areas to be used;
- Thickets and bush shrubs should be preserved wherever possible through selective clearing, especially along the seasonal riverine areas;
- Siting of camp sites should be done away from densely vegetated areas

(I) Spread of Invasive and Alien Species

Small pockets of invasive and alien floral species are established along the project road and pose a threat of colonizing native species leading to vegetation succession. The spread of novel habitats along the project habitats may be as a result of ongoing road maintenance and rehabilitation, drainage flows leading to dispersal of seeds or endozoochory by livestock or wildlife.

Calotropis procera and *Prosopis juliflora* were readily identified along the project road.

Implementation of the project road may enhance the threat of invasive species:

- Use of equipment and machinery that are already contaminated with invasive propagules may lead to further spread or introduction;
- Excavation and material borrowing in already affected areas for use in the construction works;
- Improper handling or disposal of uprooted or cleared plant material that have invasive propagules leading to translocation.

Impact Analysis Matrix

Impact without Mitigation	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-4
Frequency of activity / duration of activity	-2
Frequency of impact	-3
Result	-50 Low

Mitigation Measures

- Borrow sites should be inspected for invasive species. Invaded areas avoided;
- Sensitize workers on invasive alien species, some of which they may improperly handle or transfer to other locations such as *Prosopis juliflora* and *Calotropis procera*;
- Areas along the project road invaded by *Prosopis juliflora* and *Calotropis procera* should have all cuttings or clearing burnt on site than disposed into un-invaded areas. Soil should also not be transferred from those areas into other areas of the project road or outside the region;
- Uproot any invasive/exotic plants and burn on site after construction;
- Re-vegetate bare surfaces with native species as soon as possible, in order to avoid colonization by opportunistic and invasive species. Monitor re-vegetated sites in liaison with KFS and county government to ensure survival of the seedlings.

(m) Habitat Loss and Disturbance

Construction activities such as vegetation clearing, access to material sites and excavations along the road corridor will lead to wildlife displacement and flush them from their habitat refugia. Some of the wildlife (such as impalas, gerenuks and dik-dik) with territory and home ranges will have to abandon the disturbed habitats and re-establish elsewhere leading to increased inter and intra-species competition for preferred sites. Among the herbivores, increasing or opening up spaces within habitats will increase territory range. This may be evident in dryland areas where the natural regeneration of floral cover is slow in previously closed habitats. Moreover, some of the habitat territories may shrink or overlap as the project claims parts of the areas. However, given that the project is proposed along an existing right of way, the anticipated impact is of low-medium significance.

Impact Analysis Matrix

Impact without Mitigation	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-3
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-54 Low-Medium

Mitigation Measures

- Where practical, locate project temporary features like camps and batching plants in areas already disturbed or outside of wildlife habitat. Construction activities should be confined on the demarcated corridor and discourage movement or intrusion into wildlife habitats;
- Throughout the construction cycle, project staff should be sensitized regularly on nature conservation. Local conservation agencies can occasionally be engaged to conduct the sensitization;

- The Contractor policy should discourage unauthorised intrusion or use of the wildlife habitats through signed code of conduct;
- Wasted areas under invasion of *Prosopis juliflora* or *Calotropis procera* should be prioritized for batching and other contractor's facilities over other areas with native vegetation. Cleared invasive should be burned on-site. After decommissioning contractor facilities, native vegetation should be replanted as restoration measures. Accredited sources of seedlings should be used (such as local KFS tree nurseries).
- To avoid random off-road driving that leads to trampling of vegetation in sensitive habitats, vehicles should be provided with designated routes. Existing diversions should be considered before opening up new ones during construction.

(n) Occupational Safety and Health Hazards

Construction activities will expose staff to risks of accidents and incidents while undertaking excavations and trenching, installation of contractor facilities, operating mobile machinery, electrical powered equipment and materials delivery vehicles. Occupational health and safety measures should be undertaken to avoid falling from heights, heavy lifting activities and electrical shock, exposure to excessive body vibrations and noise, fire hazards, hot bitumen, wildlife attack and snake bite etc. which can result in injuries or even fatalities.

In addition, the area's aridity will expose workers to heat stress hazards if no proper management measures are instituted.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-2
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-48 Low

Mitigation Measures

- Constructors' selection criteria should include ability to demonstrate having some defined minimum requirements for Safety and Health Management System. OSHA 2007 requirements can be used to set the requirements;
- Establish a comprehensive Health and Safety Plan and implement it throughout the construction period;
- Contractor must obtain a registration of workplace certificate from DOSHS and comply with the subsequent requirements of the Health and Safety Committee Rules (2004) under OSHA;
- Enforce use of defined standard operating procedures for handling various activities, depending on risks levels;
- Ensure adherence to Health and Safety Policy during construction activities;
- Establish an emergency response procedure and display on all work areas;
- Provision of a standard first aid kit at active construction sites at all times and a designate qualified first-aider as per the OSHA requirements. The kit must include appropriate snake anti venoms;
- Contractor (s) to maintain an accident register; carry out accident and incidents investigations and implement corrective actions;
- Undertake mandatory staff and visitor safety induction on site safety and health;
- Establish a Health and Safety Committee for the project construction team as per the Health and Safety Committee Rules (2004) under OSHA;

- Engage a qualified Health and Safety auditor to conduct routine and annual Health and Safety (H&S);
- Provide appropriate and adequate Personal Protective Equipment (PPE) to workers and enforce their usage;
- Abide by standard best practice health and safety provisions in the construction contract;
- Establish and enforce a strict code of conduct for all project drivers including outside suppliers delivering materials. The code shall focus on safety, especially speed, and loading, especially banning all carriage of staff, workers and passengers except in seats;
- Provide medical care for all staff as necessary as allowed in the Kenyan Law including securing a worker insurance cover as required under WIBA;
- Implement road safety campaigns addressing construction zone dangers and encourage motorists to exercise caution when driving through work zones.
- Conduct weekly toolbox and monthly safety meetings;
- Contractor to ensure offices are air conditioned and that workers have unlimited access to potable water to prevent dehydration incidences;
- Work program should be such that Workers are allowed rest intervals during the day from the direct atmospheric heat and sunlight;
- Undertake routine safety inspections.

(o) Security challenges

The general project area experiences security challenges with sporadic incidents of attacks by armed gunmen. Security incidences may pose challenges to contractors' workforce, discourage potential workers from working in the area and also risk of loss of construction equipment like vehicles and other valuable inputs. These may affect overall project delivery and also subject affected workers or their relative to psychological stress. Closer liaison between the implementing agency (KeNHA), the contractor and government security agencies are thus crucial to managing this risk.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-3
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-54 Low-Medium

Recommendations for security management

- KeNHA to support the contractor in liaison with government security agencies for security planning and continuous surveillance;
- Workers should be sensitised on security arrangements with regular updates as necessary;
- Travel plans to remote locations should be advised based on the current security situation;
- Emergency contact list shall be maintained on site and by various teams. This should incorporate satellite communication services between camp based and Nairobi based offices.

(p) **Impacts related to High temperature and Humidity Levels**

In Wajir, temperatures may reach extremes (34°C) and with the relative humidity of 61.8 percent may have health impacts on construction workers such as dehydration, heat stroke, mold and sticky hot weather.

Impact Analysis Matrix

Impact without Mitigation	
Severity of impact	-2
Spatial scope of impact	-2
Duration of impact	-2
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-36 Low

Recommendation / Mitigation

- Contractor must ensure Project staff have unlimited access to adequate potable water;
- Provisions should be made for adequate ventilation and air conditioning for in-house work spaces;
- Sensitize staff and project visitors on health concerns and avoiding heatstroke, dehydration and fatigue;
- Work schedules should be such that workers are allowed adequate break durations in between working sessions;
- Ensure adherence to OSHA, 2007.

(q) **Community safety and health**

During road construction, the general public may be exposed injuries from various construction activities like being struck by flying rock from quarry blasts, accidents involving construction trucks or other mobile equipment, falls or slips into unprotected trenches etc.

Accidents involving community members may strain relations between project implementers and host community members and even disrupt programs. Similarly, the contractor may be subject to litigation enjoining even the implementing agency. The contractor thus needs robust safety and health management plan that covers not only workers but the general public as well.

Impact Analysis Matrix

Impact without Mitigation	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-2
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-48 Low

Mitigation measures:

In addition to measures for workers safety, the contractor shall:

- Establish and maintain continuous liaison with the host communities including sensitisation on safety and health issues on construction sites;
- Install and maintain appropriate safety and warning signages along road sections where works are undergoing;

- Ensure that dangerous work areas have controlled access limited to authorised persons only;
- Ensure proper and adequate provision of sanitation and waste management facilities at all construction sites;
- Maintain a system of receiving and responding to any safety concerns by the communities;
- Constructor (s) should undertake general and third-party insurance liability covers as appropriate.

(r) Increased water demand

Water scarcity is a major problem in the area covered by the road given its aridity and lack of well-developed water storage infrastructure. Due to high water demand for construction works, it is difficult to meet the water demand for construction works, local community domestic uses and for livestock from the existing resources. Without participatory exploitation of alternative sources of construction water, conflicts may emerge between the contractor and the local communities.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-4
Spatial scope of impact	-3
Duration of impact	-4
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-60 Low - Medium

Mitigation

- The contractor will need to develop independent construction water sources. There is potential to abstract water from groundwater resources. With perennial water problem in the area drilling of boreholes is ideal as it will also support the locals after the road construction works are complete;
- Consider supplementing ground water supplies with harvesting seasonal surface flows through pans and small dams that may also be handed over to the local communities; and
- The Contractor must adhere to the water act, 2016 and associated rules and regulations as administered by WRA and NEMA. Relevant water abstraction permits must be obtained from these authorities.

(s) Impacts on natural resources materials sites

During the construction phase, the contractor will have to outsource construction materials from various material sources. Cases of over extracting these materials from few sites beyond their regenerative capacity may arise if not done in a sustainable manner.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-2
Spatial scope of impact	-2
Duration of impact	-3
Frequency of activity / duration of activity	-3
Frequency of impact	-2
Result	-35 Low

Mitigation measures:

- Construction materials including sand, stones and borrow materials must be sourced from duly approved sources only: For example, hardstone will be obtained from licensed quarries;
- Materials haulage routes must be pre-determined to avoid unnecessary trampling of vegetation;
- Contractor to develop a system of tracking materials received viz a vis utilization to ensure proper materials management to avoid wastage;
- Material borrow sites owned by the contractor must have approved environmental, social and safety management plans incorporating rehabilitation procedures upon decommissioning;
- For materials obtained from commercial sources, the contractor must require suppliers to demonstrate compliance with all authorisation requirements including safety and environmental protection safeguards;
- For materials obtained from commercial quarries the contractor must satisfy himself that suppliers have requisite licenses including NEMA as well as Department of Mines and Geology.

(t) Impacts on cultural resources and archaeological sites

The original project design was established to impact cultural sites at Wajir town and a section of communal grave site at Tarbaj. Realignment to avoid the affected sections have been recommended. This requires closer liaison with the local NMK offices.

While the realignment has been proposed to avoid the established cultural sites as identified by the communities. Future care demands a Chance Find Procedure development for use during the construction phase. This requires close liaison with the local National Museum of Kenya offices.

(u) Social change

During construction phase it is expected that there will be an influx of workers from varied cultures and social practices. The project area on the other hand can be categorised into rural, peri-urban and urban settlements hence resulting in a range of cultures from homogenous conservative communities to metropolitan/cosmopolitan communities in the major towns.

Interaction with the project staff can therefore lead to positive influences in the form of promotion of diversity in ways of thinking, experience of new cultures and exposure to new expectations in goals and achievements. On a higher level, these influences can result in adoption of new trends in social interaction, modes of dress, leisure time activities and spending habits.

These interactions can however lead to negative attitudes if it is perceived that the new trends have resulted in vices and deviant behaviour among community members.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-3
Frequency of activity / duration of activity	-2
Frequency of impact	-2
Result	-36 Low

Mitigation measures:

- The Contractor will establish a community liaison system to handle complaints from the community. This system will include establishment of a community liaison desk that is easily accessible by the community representatives and their leaders;
- Ensure there is adequate security and reasonable controlled access to project offices and residential quarters of immigrant staff;
- The contracts for project employees will detail codes of conduct with regard to interaction with the local community, use of public and social amenities in the locality, handling of complaints from the local community; and
- KeNHA and contractors to establish a grievance management system to handle internal and external complaints;

7.2 Operation Phase Impacts

7.2.1 Positive Impacts

(a) Spurred Economic Development

The project road will also improve connectivity between other parts of Kenya, Wajir and Mandera Counties. Improved road connectivity will spur economic development as creation of opportunities to invest and spend increase with the volume of goods and services accessible to local population and on transit. The project road development is within the national Vision 2030 and also falls within the Wajir Growth Area covered by LAPSSET Corridor project hence will be an important trade route with the neighbouring Somalia and Ethiopia as well.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	+4
Spatial scope of impact	+4
Duration of impact	+3
Frequency of activity / duration of activity	+5
Frequency of impact	+5
Result	+110 -High

(b) Reduced Travel Time and Cost

The development of the project road will reduce travel time and cost associated with the current poor road conditions. Paving the project road will improve travel experience by reducing the travel time for users. The cost of travel is deemed to decline with reduced wear and tear due to the paved conditions. This will trickle down to reduced cost of living (access to social and economic services) within the project area.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	+5
Spatial scope of impact	+4
Duration of impact	+4
Frequency of activity / duration of activity	+5
Frequency of impact	+5
Result	+140 Very High

Enhancement measures:

- Ensure routine inspection and maintenance of the project road

(c) Cultural Integration due to influx of People

The improvement of the project road will improve connectivity of Wajir and Mandera counties to the rest of the country. The number of people from other parts of the country willing to exploit opportunities due to the connectivity will increase. As people of different cultural background, lifestyles and ethnicities stream-in along the project road it will enhance the cultural integration and coexistence within the local communities. However, this may be a gradual process.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	+3
Spatial scope of impact	+3
Duration of impact	+2
Frequency of activity / duration of activity	+2
Frequency of impact	+2
Result	+32 Low

Enhancement measures:

- Awareness campaigns among the local communities to encourage cultural coexistence and appreciating diversity;
- Targeted training on local groups on how to benefit from economic opportunities created by the improved road

(d) Reduced dust Pollution

Vehicle traffic plying along the existing road cause fugitive dust because of the unpaved conditions, which may cause respiratory complications and discolouration of surrounding vegetation. In the paved state the problem of fugitive dust will be mitigated.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	+4
Spatial scope of impact	+3
Duration of impact	+4
Frequency of activity / duration of activity	+4
Frequency of impact	+5
Result	+99 Medium-High

(e) Improved Rainwater Channelling

The project design has proposed improvement of road drainage through replacing existing water channelling structures with low water bridges i.e. box culverts with no fill and all pipe culverts with 900 mm concrete culverts, in total 860 drainage structures, comprising 618 pipe culverts and 107 low water bridges and 14 box culverts will be installed. The culverts have been replicated in sizes (width x height), of 2mx1mx No, 2mx1.5mxNo, 3mx1.5mxNo and 4mx2.5mxNo. The design of the drainage structures is such that they can be precast in a yard and transported on site). These will improve overall road drainage along the corridor which has been associated with flash floods leading to loss of properties by the road users and even deaths following sporadic rainfalls.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	+5
Spatial scope of impact	+4
Duration of impact	+4
Frequency of activity / duration of activity	+5
Frequency of impact	+4
Result	+104 High

Regular maintenance of drainage infrastructure is recommended during the road operation.

(f) Reduced Habitat Disturbance

The unpaved state of the existing road has led to proliferation of unofficial road diversions as vehicles manoeuvre to avoid impassable or deteriorated road sections. The diversions traverse natural habitats causing disturbance to wildlife inhabiting wildlife. Paving the project road will negate the need to divert thus consolidate traffic and minimize habitat disturbance.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	+3
Spatial scope of impact	+3
Duration of impact	+3
Frequency of activity / duration of activity	+3
Frequency of impact	+3
Result	+54 Low-Medium

(g) Improved regional security

The current poor road conditions partly contribute to insecurity due to inhibited ground surveillance by the security agencies. This means that even during and insecurity incident or emergency situation, the response by security personnel is slowed down. With improved road conditions connecting different town centres in different counties, the surveillance and response time by security agencies will be greatly enhanced.

7.2.2 Negative Impacts

(a) Cultural Clash

With improved roads, diverse people will stream into the project area. The varying backgrounds, cultures and lifestyles of people some may be alien to the native or local community triggering clash or conflict. The local areas attached to the Islam lifestyle and have established clan identities. Actually, access and control of local resources (especially grazing grounds) in the past has triggered inter clan conflicts.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-2
Duration of impact	-3
Frequency of activity / duration of activity	-2
Frequency of impact	-3
Result	-48 Low

Mitigation measures:

- Cultural awareness campaigns involving stakeholders (public and private sectors) to enhance coexistence with changing lifestyles.

(b) Increased Vehicle Accidents

Improved road conditions will attract more traffic volume and increase incidences of vehicle over speeding considering the road has a maximum design speed of 120km/hr. Under these circumstances, a combination reckless driving and ignorance of local communities of road safety requirements and basic traffic rules may result in accidents. In Kenya, road accidents are a safety concern causing disability and death to victims. The design has incorporated the following for safety purposes:

- Traffic calming structure like bumps and zebra crossings near settlements and institutions;
- Road furniture like crash barriers in dangerous curves and elevation and signages to alert the drivers and other road users of what to expect ahead

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-4
Spatial scope of impact	-3
Duration of impact	-3
Frequency of activity / duration of activity	-5
Frequency of impact	-5
Result	-100 Medium-High

Mitigation measures:

- The local public should be sensitised on safety measures to observe while using the road;
- KeNHA to liaise with NTSA to closely monitor the road usage and impose penalties on those going against the set roads usage rules;
- KeNHA should ensure regular monitoring and maintenance of installed road furniture including safety signages along the road;
- Undertake periodic roadside bush clearance that may reduce visibility clearance or obstruct critical signages.

(c) Inhibited Wildlife and Livestock Movements

Over 90 percent of the project road traverse areas of natural vegetation that are important foraging ground for local livestock and wildlife. Some of the wildlife inhabiting the project area are of conservation interest and feature in the IUCN Red List Database and the Sixth Schedule of the Wildlife Conservation and Management Act 2013. Livestock keeping (herding) is the mainstay of the rural communities within the project area.

Due to high concentration of livestock and wildlife in the project area, it is necessary to enhance safety through provision of appropriate signages and crossing structures, as necessary. Watering points and search for pasture were the main factors that increase movement across the project road. See 4-12.

Mitigations to consider for wildlife structures include:

- Install and maintain signages to warn motorists while approaching wildlife and livestock crossing hotspots;
- Wildlife crossings are considered to provide safe and convenient road crossing locations and this should be achieved in the type and design of the structure. The Crossing structure should factor:
 - ✓ a diversity of species than targeting a few. The designs should consider animals with the most stringent demands for crossing.
 - ✓ The structures should be shorter in length and wider width.
 - ✓ Design of structures should provide natural lighting as possible and minimize noise and vibration;
 - ✓ Fences are important to guide animals to the structures as well as for problem animal control;
 - ✓ Recreation of habitats and continuity of ecosystem processes near and within the structure is encouraged to increase animal appeal.

The giraffe was found to have the stringiest demands for wildlife crossings along the project road.

(d) Increased Deadwood Collection and charcoal

Increase in road connectivity will lead to more access to areas previously considered remote along the project road that have intact and close stands of tall naturally occurring trees (such as *Acacia*, *Balanites*, *Commiphora*, *Maerua*, *Grewia*, *Combretum*, *Delonix* and *Boswellia*). these may be a target for charcoal burners and timber dealers causing accelerated loss of vegetation cover critical for wildlife browsing and livestock herding. Being an arid area, the recruitment rate for plants is slow thus some wildlife may disappear due to exposed cover or loss of certain preferred tree species. For instance, gerenuks are strict browsers with high preference for new leaves, buds, flowers and twig tips particularly *Acacia*. Giraffes and savannah baboons are highly reliant on the tall *Acacia* and *Delonix* trees to provide browse forage at convenient heights. Moreover, most of the resident wildlife are independent of drinking water and rely on forage for provision.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-1
Duration of impact	-5
Frequency of activity / duration of activity	-2
Frequency of impact	-3
Result	-55 Low -Medium

Mitigation Measures

- KWS and KFS should conduct routine habitat surveillance and patrols as well as thorough inspection of vehicles by security personnel at manned roadblocks (at the exit points) to rid off illegal loggers and timber dealers;
- Multi government agencies should institute campaigns on sustainable charcoal production, incorporating revegetation of affected areas with native species;
- The locals should be sensitized on the importance of conserving woody vegetation.

(e) Human encroachment along the project roads

After construction of the project road is complete and operational, there is the possibility of encroachment of various informal business along the project roads due to the increase in traffic and improved business opportunities. The encroachment increases the possibility of road side accidents and makes road maintenance difficult and an expensive activity due to the compensation demands from destruction of properties and disruption of livelihoods for the encroachers.

Mitigation measures:

- KeNHA in consultation with the county governments should enforce development control by not allowing for any development approvals on the road reserve to ward off potential encroachers and to allow for easy implementation of future road maintenance or expansion plans;
- Install and maintain road reserve boundary posts at appropriate intervals;
- Conduct awareness talks and presentations about the road reserve.

(f) Road maintenance impacts

During road maintenance, solid waste generation may include road resurfacing waste (removal of the old road surface material), road litter, illegally dumped waste, or general solid waste from rest areas, vegetation waste from right-of-way maintenance; and sediment and sludge from storm water drainage system maintenance. Paint waste may also be generated from road and bridge maintenance (due to removal of old paint from road stripping and bridges prior to re-painting).

Mitigation measures:

- Incorporate recycling of road resurfacing waste where possible;
- Composting of vegetation waste from roadside clearance for reuse as a landscaping fertilizer;
- Manage sediment and sludge removed from storm water;
- All removed paint materials suspected or confirmed as containing lead should be treated as a hazardous waste.

7.3 Potential Impacts during Decommissioning

While the project road is not anticipated to be decommissioned in the near future but periodically maintained for extended service, temporary contractor's facilities will be decommissioned by the end of road construction works' defects liability period.

The contractor is expected to prepare a detailed decommissioning plan for all his temporary facilities including camps, borrow sites and quarries. The plans detailing environmental restoration measures and associated safety and health protection should be submitted to NEMA for approval at least three months before the actual decommission works begin. The following presents anticipated decommission impacts of the contractor's facilities.

7.3.1 Positive Impacts

(a) Reuse of contractor's facilities

Some of the contractor's camps and other facilities erected during project construction can be handed over to the local government for convenient utilisation as local administration offices or social halls instead of demolition.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	+3
Spatial scope of impact	+2
Duration of impact	+3
Frequency of activity / duration of activity	+2
Frequency of impact	+3
Result	+40 Low

Enhancement measures

- KeNHA to liaise with the local county administration to facilitate official handover of reusable facilities;
- Contractor shall complete a decommissioning plan incorporating appropriate disposal of non-recyclable materials and rehabilitation of the biophysical environment at the temporary camp sites prior to handover

7.3.2 Negative Impacts

(a) Community safety

Abandoned and improperly rehabilitated material borrow sites and quarries can present a great safety and health hazard to adjoining communities due to water ponding, deep cliffs and being inhabited by or providing hideout for problem wildlife.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-4
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-60 Low -Medium

Mitigation Measures

- Contractor must prepare detailed decommission plan for approval by local government, NEMA and department of mines as applicable;
- KeNHA should consider Satisfactory rehabilitation of decommissioned sites as part of contractual requirement with enforceable penalties including financial disincentives.

(b) Loss of Income

Staff working at the contractor's camp will lose income sources as their services will be terminated. Without prior awareness of contract conditions, abrupt loss of income source may psychologically impact the affected workers and even their families.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-2
Duration of impact	-3
Frequency of activity / duration of activity	-2
Frequency of impact	-2
Result	-32 Low

Mitigation Measures

- Notify the employees in advance on the project closure date and adequately compensate them;
- Dismissal procedures to be compliant with Employment Act, 2007;
- Provide counselling & alternative skills for alternative activities;
- Employer should possibly identify alternative means of livelihood for the staff who were employed at the construction camp.

(c) Noise pollution

Decommissioning of construction structures involve noisy activities originating from movement of heavy ground vehicles, disassembling all the prefabricated structures, disconnection of services, breaking down concrete foundations and handling of debris from sites. Though short lived, the generated noise will affect exposed workers and, in some cases, the nearby communities.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-3
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-54 Low -Medium

Mitigation Measures

- Prepare a decommissioning plan to guide activities;
- Monitor noise levels as per the NEMA Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 & OSHA, 2007;
- The noise emission characteristics should be considered during selection and mobilization of decommissioning equipment; and
- Sensitize staff to switch off machinery and vehicles when not in use.

(d) Dust and Fumes

Decommissioning activities likely to cause dust and fumes include:

- Excavation and loading of spoil debris for disposal;
- Decommissioning of septic facilities; and
- Removal of fuel holding tanks and dispensers.

These will be a nuisance mainly to demolition workers but may also affect nearby communities.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-4
Frequency of activity / duration of activity	-2
Frequency of impact	-3
Result	-50 Low

Mitigation Measures

- Prepare a decommissioning plan to guide staff on proper handling of sensitive facilities;
- Enforce stand operating procedures while undertaking demolition works;
- Provide and enforce the appropriate use of PPE against dust; and
- Employ dust suppression measures such as sprinkling water on loose soil surfaces and providing cover for spoil batches.

(e) Waste Accumulation

Decommissioning of construction camps will generate waste some of which may not be reused or recycled. Spillages during handling substances may also occur contaminating surfaces. Removal and reinstatement of sites may accumulate debris that require proper handling and disposal.

Impact Analysis Matrix

<i>Impact without Mitigation</i>	
Severity of impact	-3
Spatial scope of impact	-3
Duration of impact	-4
Frequency of activity / duration of activity	-3
Frequency of impact	-3
Result	-60 Low -Medium

Mitigation Measures

- Decommissioning plan should cover waste management;
- Waste be managed as per Environmental Management and Coordination (Waste Management) Regulations 2006;
- Establish a segregation and grading waste management system to manage garbage and other forms of waste generated;
- Prioritize options of waste reduction, reuse and recycling, particularly papers, polythene bags and plastic wrappers and containers and other materials that can possibly be recycled; and
- Disposed waste at designated sites through licensed waste handlers.

8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANS (ESMP)

8.1 Environmental Management Plan

The Environmental Management Plan (ESMP) is developed to demonstrate how site-specific concerns and mitigation measures are addressed during construction and operation of the proposed project development activities. The ESMP has been developed with project knowledge and information available to date. The impacts originating from the project road development (construction and operation phases) have been identified. To ensure that the negative environmental impacts can be controlled and mitigated effectively, a thorough scientific management and monitoring plan has been prepared. This will ensure that all the targets are achieved and that the environmental responsibilities and obligations of EIA are met during project implementation. As a progressive approach, components of the ESMP may require updating throughout the initiation and scheduling of plans for the project. Thus, this is a working document subject to amendments whenever new information is received or project road conditions change.

8.2 Purpose and Objectives of ESMP

The ESMP describes the range of environmental and social issues associated with the project and outlines corresponding management strategies that will be employed to mitigate potential adverse environmental impacts. The ESMP conveys the Project's environmental and social constraints. The project will comply with all local laws and regulations, which seek to ensure that the road construction and operation does not adversely affect the environment and social community resources.

The project supervision may periodically revise the ESMP in consultation with the Contractor, and subject to the approval from National Environment Management Authority (NEMA). The revisions may be made to accommodate changes in work, weather, and road conditions. The ESMP should be made available to all the project staffs.

The objectives of the ESMP are:

- To serve as a commitment and reference for the project planners and implementers including conditions of approval from NEMA;
- To serve as a guiding document for the environmental and social monitoring activities for future studies, on requisite progress reports;
- To provide detailed specifications for the management and mitigation of activities that have the potential to impact negatively on the environment;
- To provide instructions to relevant project personnel regarding procedures for protecting the environment and minimizing environmental effects, thereby supporting the project goal of minimal or zero incidents;
- To document environmental concerns and appropriate protection measures; while ensuring that corrective actions are completed in a timely manner;
- To address capacity building requirements within the proponent team, if necessary.

8.3 Auditing of the ESMP

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

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

8.4 Responsibilities of the ESMMP

In order to ensure the sound development and effective implementation of the ESMP, it will be necessary to identify and define the responsibilities and authority of the various persons and organisations that will be involved in the project. The following entities will be involved in the implementation of the ESMMP:

- Kenya National Highways Authority (KeNHA);
- Ministry of Transport, Infrastructure, Housing and Urban Development;
- National Environment Management Authority;
- Supervising Consultant;
- Construction Contractor;
- Wajir County Government.

8.4.1 Kenya National Highways Authority (KeNHA)

KeNHA is the project proponent and has environment and social staff capable of overseeing ESM implementation. KeNHA will be responsible for:

- overseeing or appointing qualified and competent team to oversee environmental, health and safety (EHS) during the Project cycle;
- Implementation of the ESMP and;
- Ensuring that during construction and operations, the NEMA license conditions are adhered to since it's the principle holder of NEMA license.

8.4.2 Ministry of Transport, Infrastructure, Housing and Urban Development

This ministry is formulated to facilitate development and sustenance of transport infrastructure, maritime economy, public works and housing for sustainable socio-economic development. The Ministry has five state departments. The State Department for Infrastructure is one of the Departments whose functions include policy management for road development. KeNHA falls under the State Department for Infrastructure.

8.4.3 National Environment Management Authority

The responsibility of the National Environment Management Authority (NEMA) is to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government in the implementation of all policies relating to the environment and to ensure that all mitigation measures proposed are actually implemented.

8.4.4 Supervising Consultant

The Supervising Consultant will be required to oversee the construction programme and construction activities performed by the Contractor, in compliance with the present ESMMP. The Consultant will have Environmental and Social Specialists in its team to co-ordinate all aspects of the environment during project implementation. This will include following the construction to monitor, review and verify the implementation of the project's ESMP. Moreover, keep track of project compliance regarding permits and approvals necessary from the relevant authorities.

8.4.5 Construction Contractor

The Contractor will be required to comply with the requirements of the EIA/ ESMMP and the Standard Specifications for road works in Kenya, which include specifications for environmental protection and waste disposal, borrow pit and quarry acquisition and exploitation, landscaping and grassing among others.

Contractor shall be required to have both social and environmental safeguard specialists to:

- Customize the construction ESMP developed with the final contractor's construction methods;
- Advise the contractor on daily basis on the implementation of ESMP;
- Conduct continuous community liaison and grievance management system implementation in liaison with the proponent;
- Maintain monitoring records on ESMP implementation.

8.4.6 County Governments

The relevant departmental officers in the County Government of Wajir and Mandera should be called upon where necessary during project implementation to provide the necessary permits and advisory services to the project implementers.

8.5 Environmental and Social Management Plan (ESMP) during Construction and Operation Phases

Table 8-1 ESMP during camp construction phase

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Timeframe	Cost (KSHS)
Disruption of Traffic, Public Utilities and Accesses	<ul style="list-style-type: none"> Liaise with service providers (such as KPLC) to identify affected alignment of the service lines (e.g. powerlines or water supply connections). Provide alongside a provisional cost to cover the realignment or damages to the existing infrastructure; Active construction sites should have alternative routes provided in areas where accesses have been disrupted; Dust suppression measures should be applied to visibility at construction sites for oncoming traffic and road users; Make shorter diversions to reduce inconveniences; Provide visible signages of ongoing construction works, regulate speed limits and diversion signage to notify oncoming affected traffic users; Schedule delivery of materials to the site during periods of light traffic between 9.00am - 12.00pm and 2.00pm - 4.00pm during week days; Project vehicle should have designated parking areas; Sensitize workers and area residents on the importance of exercising care in the project area in as far as traffic movement and other safety issues are concerned. 	Mitigate disruption of services due to construction	KeNHA / KPLC / Project Affected Water Supply Owners	Pre-construction and Construction	Separate studies to be undertaken
Disruption of Livelihood due to land take	<ul style="list-style-type: none"> Project RAP Study Report should be applied to guide the compensation and resettlement process; All grievances on land should be settled, especially compensation of land owners before construction commences; The proper land acquisition mechanism should be followed adhering to land laws of Kenya to minimize grievances; All pertinent stakeholders should be involved in the compensation and grievance redress mechanism during implementation of RAP. 	Redress mechanism for land take grievances	KeNHA	Pre-construction	Cost as per RAP Study Report

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Timeframe	Cost (KSHS)
Spread of HIV/AIDS and Other Sexually Transmitted Diseases (STDs)	<ul style="list-style-type: none"> Sensitize workers on the need to refrain from risky behaviours; KeNHA/Contractor should provide awareness training to staff and the locals; Provision of condoms both male and female in the sanitary facilities; The unskilled workers to be recruited should be residents of the project area and its immediate neighbourhood; Skilled workers should be dropped and picked to and from the site (i.e. Avoid putting up workers camps) where possible; The contractor should liaise with organizations addressing HIV/AIDS issues at the project area to provide protective measures and awareness programmes to workers. All construction workers must sign a strict code of conduct that respects the local culture including that of indigenous peoples while balancing with universal human rights. 	Prevent spread of sexually transmitted diseases	Contractor / KeNHA	Construction	No additional cost to the BoQ
Excessive Noise and Vibration	<ul style="list-style-type: none"> Monitor noise levels as per the NEMA Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 & OSHA, 2007; The noise emission characteristics should be considered during selection and mobilization of construction equipment; Where feasible, fit equipment with rock mufflers, sound insulations, silencers to lower the levels of noise emission; Sensitize construction workers to switch off machinery and vehicles when not in use; Staff on active project sites should be provided and encouraged to fit in their Personal Protective Equipments (PPEs). Locate noisy machines like batching plant away from the main work areas. 	Mitigate noise and vibration pollution	Contractor	Construction	KSHS 3,000,000 for PPEs
Contamination by Liquid Waste and Spills	<ul style="list-style-type: none"> Minor service and washing areas placed/ constructed with containment basins to ensure that the surrounding areas (including groundwater) are not polluted; All grey water runoff or uncontrolled discharges from the site/working areas (including wash down areas) to water courses 	Manage waste water	Contractor	Construction	1,000,000 KSh.

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Timeframe	Cost (KSHS)
	<ul style="list-style-type: none"> shall be contained, treated and properly channelled; and Water containing such pollutants as cements, concrete, lime, chemicals and fuels shall be discharged into a conservancy tank for removal from site. 				
Accumulation of Solid Waste	<p>Recommendations and mitigations on or solid wastes system</p> <ul style="list-style-type: none"> Waste be managed as per Environmental Management and Coordination (Waste Management) Regulations 2006; Manage and control waste generation at the various project sites and stations through standard operating procedures (SOPs) and Solid Waste Management Plan; Reduce generation of solid waste at the source through proper planning and procurement of construction materials; Segregation of solid wastes and provision of suitable and well labelled waste receptacles within the camp and at active construction sites; Reuse excavated top soil for landscaping of the site as far as practical; Disposed solid waste at designated sites through licensed waste handlers; Establish a segregation and grading waste management system to manage garbage and other forms of waste generated; Prioritize options of waste reduction, reuse and recycling, particularly papers, polythene bags and plastic wrappers and containers and other materials that can possibly be recycled; and Sensitize resident workers and frequent visitors (especially those operating food catering services) at project sites on proper waste management practices especially hazardous materials and risks of contaminations. 	Proper management and disposal of solid waste	Contractor	Construction	KShs. 2,500,000 annually for waste management
Construction Dust	<ul style="list-style-type: none"> Where practicable, re-vegetate disturbed areas to minimize ground exposure; Sprinkling water (at least twice a day) on the accesses and excavated surfaces during the construction period to suppress 	Mitigate construction dust	Contractor	Construction	KShs. 250,000 monthly for water supply

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Timeframe	Cost (KSHS)
	<ul style="list-style-type: none"> dust generation; Limit the speed of vehicles (maximum speed limit 40 kph/25 mph) on dust surfaces; Provision of appropriate protective personal equipment including respirators and dustcoats to exposed workers. 				for sprinkling
Increased Soil Erosion	<ul style="list-style-type: none"> Excavated material should be properly piled, sprinkled with water and covered (where possible) to prevent possible wash-out into watercourses. Piling areas should have levelled ground and away from sensitive areas like slopes, water courses; Material excavation should be minimized and restricted to designated locations; The contractor should ensure that construction related impacts like erosion and cut slope destabilization should be addressed through landscaping and grassing; Re-vegetation should be done in tandem with construction activities to avoid exposure of bare ground to agents of erosion; The already degraded areas should be identified in liaison with KFS for enrichment planting program with indigenous species; Enforce landscaping and restoration of the construction site prior to decommissioning of the construction site. 	Mitigate soil erosion	Contractor	Construction	KShs. 1,000,000 for enrichment planting program
Increased Human-Wildlife Conflicts	<ul style="list-style-type: none"> KWS should monitor wildlife distribution and movement in relation to the project during construction and subsequent stages to advise accordingly; Liaison with KWS on handling dangerous wildlife like snakes, wild carnivores. Contractor should liaise with KWS to capture reptiles (especially snakes) hiding under rocks and sheltered terrains and safely release them in suitable habitats; Sensitize staff on wildlife encounters and discourage animal persecution or provocation; Sensitize construction staff against wildlife poaching and enforce strict code of conduct (especially prohibit wildlife poaching/unreasonable persecution). Any cases on wildlife poaching should be forwarded to KWS for further action. 	Mitigate incidences of Human-Wildlife conflict	Contractor / KWS	Construction	KShs. 500,000 Annually for KWS emergency response

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Timeframe	Cost (KSHS)
Vegetation Loss	<p>The vegetation occurring within the design road chainage will be lost during construction including the Kenyan endemics (<i>Acacia firozei</i> and <i>A. kenyensis</i>) at Wargadud and Kutulo. In these areas, the design road should be realigned with the existing road as a strategy to conserve the natural occurrence of the <i>Acacia</i> species.</p> <p>Thickets and bush shrubs should be preserved wherever possible through selective clearing, especially along the riverine.</p>	Conserve sensitive flora	Contractor Resident Engineer (RE)	Construction	No additional cost to the BoQ
Spread of Invasive and Alien Species	<ul style="list-style-type: none"> Ensure that all equipment required for project operations and maintenance is clean and completely free of plant parts (especially invasive propagules) and mud, before storage or use in new sites; Borrow sites should be inspected for invasive species. Invaded areas avoided; Sensitize farmers on invasive alien species, some of which they may improperly handle such as <i>Prosopis juliflora</i> and <i>Calotropis procera</i>; Vegetation disturbance should be restricted and selective, only where necessary; Restrict vegetation clearing to project sites by clear demarcation of areas to be used; Areas along the project road invaded by <i>Prosopis juliflora</i> and <i>Calotropis procera</i> should have all cuttings or clearing burnt on site than disposed into un-invaded areas. Soil should also not be transferred from those areas into other areas of the project road. Uproot any invasive/exotic plants and burn on site after construction; Re-vegetate bare surfaces with native species as soon as possible, in order to avoid colonization by opportunistic and invasive species. Monitor in liaison with KFS re-vegetated sites to ensure survival of the seedlings. 	Prevent the spread of invasive and alien species	Contractor / KFS	Construction	KShs. 3,000,000 Revegetation and monitoring by KFS
Habitat Loss and Disturbance	<ul style="list-style-type: none"> Where practical, locate project features in areas already disturbed or outside of wildlife habitat. Construction activities should be confined on the beaconed corridor and discourage movement or 	Conserve wildlife habitat through conservation	Contractor / KFS	Construction	

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Timeframe	Cost (KSHS)
	<ul style="list-style-type: none"> intrusion into wildlife habitats. Throughout the construction cycle, project staff should be sensitized regularly on nature conservation; The Contractor policy should discourage unauthorised intrusion or use of the wildlife habitats; Wasted areas under invasion of <i>Prosopis juliflora</i> or <i>Calotropis procera</i> should be prioritized for batching and other contractor's facilities over other areas with native vegetation. Cleared invasives should be burned on-site. After decommissioning contractor facilities, native vegetation should be replanted as restoration measures. Accredited sources of seedlings should be used (such as local KFS tree nurseries). To avoid random off-road driving that leads to trampling of vegetation in sensitive habitats, vehicles should be provided with designated routes. Existing diversions and by-passes should be considered before opening up new ones during construction. 				
Occupational Safety and Health Hazards	<ul style="list-style-type: none"> Obtain a registration of workplace certificate from DOSHS and comply with the subsequent requirements of the Health and Safety Committee Rules 2004 of the OSHA Act; Ensure installations for handling energy (petrol station) have been licensed by ERC, accordingly; Ensure adherence to Health and Safety Policy during construction activities; Establish an emergency response procedure and display on all work areas; Provision of a standard first aid kit at active construction sites at all times and a designate qualified first-aiders as per the OSHA requirements; Maintain an accident register; carry out accident and incidents investigations and implement corrective actions; Undertake staff and visitor safety induction; Establish a comprehensive Health and Safety Program and implement it throughout the construction period; Establish a Health and Safety Committee for the project team as 	Enhance workplace and worker safety through OS&H measures	Contractor	Construction	No additional cost to the BoQ

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Timeframe	Cost (KSHS)
	<ul style="list-style-type: none"> per the Health and Safety Committee Rules 2004 of the OSHA Act Engage a qualified Health and Safety auditor to conduct routine and annual Health and Safety (H&S); Provide appropriate and adequate Personal Protective Equipment (PPE) to workers; Abide by standard best practice health and safety provisions in the construction contract; Establish and enforce a strict code of conduct for all project drivers including outside suppliers delivering materials. The code shall focus on safety, especially speed, and loading, especially banning all carriage of staff, workers and passengers except in seats; Provide medical care for all staff as necessary as allowed in the Kenyan Law including securing a worker insurance cover as required under WIBA; Implement road safety campaigns addressing construction zone dangers and encourage motorists to exercise caution when driving through work zones. Conduct toolbox and monthly safety meetings; Undertake routine safety inspections. <p><i>Recommendations for security management</i></p> <ul style="list-style-type: none"> Travel plans to remote locations should be advised based on the current security situation; Emergency contact list shall be maintained on site; Work in collaboration with government agencies in insecure areas and beefing up security in prone areas. 				
Impacts related to High temperature and Humidity Levels	<ul style="list-style-type: none"> Project staff shall have adequate access to clean water (at least 2 litres a day); Air conditioning for in-house spaces; Adequate ventilation, especially in-house spaces; Sensitize staff on health concerns and avoiding heatstroke, dehydration and fatigue. 	Adapt to high temperature and humidity	Contractor	Construction	KShs 50,000 per month

Table 8-2: ESMP during Operation Phase

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Time frame	Cost (KSHS)
Cultural Clash	Cultural awareness campaigns involving stakeholders (public and private sectors) to enhance coexistence with changing lifestyles.	Cultural coexistence	NCIC / County Government	Operation	No additional cost to the BoQ
Over-speeding and Increased Vehicle Accidents	<ul style="list-style-type: none"> Create bumps near settlements and institutions to reduce drivers speeds to 50 Km/hr that has a lower fatality rate; Put road signs to alert the driver of what to expect ahead; Sensitize the locals on road safety; Mark zebra crossings at points with high human and animal traffic; Put bends in areas where settlements are close to the roads. 	Road use safety	KeNHA	Operation	No additional cost to the BoQ
Inhibited Wildlife and Livestock Movements	<p>Mitigations to consider for wildlife structures include:</p> <ul style="list-style-type: none"> Wildlife crossings are considered to provide safe and convenient road crossing locations and this should be achieved in the type and design of the structure. The Crossing structure should factor a diversity of species than targeting a few. The designs should consider animals with the most stringent demands for crossing. When deciding on the structure, there is need for understanding of the distribution, abundance, and ecological and behavioral demands for present wildlife. In locating the structures, place near known wildlife corridors but far from human disturbance / presence. The structures should be shorter in length and wider width. Provide natural lighting as possible and mitigate noise and vibration from being transmitted. Fences are important to guide animals to the structures as well as for problem animal control. Recreation of habitats and continuity of ecosystem processes near and within the structure is encouraged to increase animal appeal. 	Livestock and wildlife safety	KeNHA	Operation	No additional cost to the BoQ

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Time frame	Cost (KSHS)
Increased Deadwood Collection and Tree Felling	<ul style="list-style-type: none"> KWS and KFS should conduct routine habitat surveillance and patrols as well as thorough inspection of vehicles by security personnel at manned roadblocks (at the exit points) to rid off illegal loggers and timber dealers; The locals should be sensitized on the importance of conserving woody vegetation. 	Conserving natural vegetation cover	KWS / KFS	Operation	No additional cost to the BoQ

Table 8-3: ESMP during Decommissioning Phase

Environmental / Social impact	Recommendation, mitigation, monitoring and/or Management Measures	Goals	Responsibility for Implementation	Time frame	Cost (KSHS)
Loss of Income	<ul style="list-style-type: none"> Notify the employees in advance on the project closure date and adequately compensate them; Dismissal procedures to be compliant with Employment Act, 2007; Provide counselling & alternative skills for alternative activities; Employer should possibly identify alternative means of livelihood for the staff who were employed at the construction camp. 	Livelihood sustainability	Contractor	Decommissioning	No additional cost to the BoQ
Noise	<ul style="list-style-type: none"> Prepare a decommissioning plan to guide activities; Monitor noise levels as per the NEMA Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 & OSHA, 2007; The noise emission characteristics should be considered during selection and mobilization of decommissioning equipment; and Sensitize staff to switch off machinery and vehicles when not in use. 	Mitigate noise	Contractor	Decommissioning	No additional cost to the BoQ
Dust and Fumes	<ul style="list-style-type: none"> Prepare a decommissioning plan to guide staff on proper handling of sensitive facilities; Provide and enforce the appropriate use of PPE against dust; and Employ dust suppression measures such as sprinkling water on loose soil surfaces and providing cover for spoil batches. 	Mitigate air quality problems	Contractor	Decommissioning	No additional cost to the BoQ
Waste Accumulation	<ul style="list-style-type: none"> Decommissioning plan should cover waste management; Waste be managed as per Environmental Management and Coordination (Waste Management) Regulations 2006; Establish a segregation and grading waste management system to manage garbage and other forms of waste generated; Prioritize options of waste reduction, reuse and recycling, particularly papers, polythene bags and plastic wrappers and containers and other materials that can possibly be recycled; and Disposed waste at designated sites through licensed waste handlers. 	Proper management of waste	Contractor	Decommissioning	No additional cost to the BoQ

9 ENVIRONMENTAL AND SOCIAL MONITORING PLAN

9.1 Environmental and Social Monitoring

The overall objective of environmental and social monitoring is to ensure that mitigation measures are implemented and that they are effective. Environmental and social monitoring will also enable response to new and developing issues of concern. The activities and indicators that have been recommended for monitoring are presented in the ESMMoP.

Environmental monitoring is also carried out to ensure that all construction activities comply and adhere to environmental provisions and standard specifications, so that all mitigation measures are implemented. The environmental monitoring program will operate during road construction and operation phases. It will consist of a number of activities, each with a specific purpose with key indicators and criteria for significance assessment.

Monitoring includes:

- Visual observations;
- Selection of environmental parameters;
- Sampling and regular testing of these parameters.
- Periodic on-going monitoring will be required during the life of the Project and the level can be determined once the Project is operational.

Monitoring will be done in three fronts:

- Physical monitoring
- Biological monitoring and
- Social monitoring

9.1.1 Internal Monitoring

It is the responsibility of the KeNHA to conduct regular internal monitoring of the project to verify the results of the Contractor and to audit direct implementation of environmental mitigation measures contained in the ESMMoP and construction contract clauses for the Project.

KeNHA also have the direct responsibility to implement and monitor land acquisition and compensation issues arising from project land-take. The monitoring should be a systematic evaluation of the activities of the operation in relation to the specified criteria of the condition of approval.

The objective of internal monitoring and audit will be:

- To find out any significant environmental hazards and their existing control systems in place.
- Meeting the legal requirements as stipulated in the Environmental Management & Coordination (Amendment) Act, 2015 and the parent EMCA No 8 of 1999.

9.1.2 External Monitoring and Evaluation

NEMA has the overall responsibility for issuing approval for the Project and ensuring that their environmental guidelines are followed during Project implementation. Its role therefore is to review environmental monitoring and environmental compliance documentation submitted by the implementing authorities and they would not normally be directly involved in monitoring the Project unless some specific major environmental issue arose.

Through the Resident Engineer, the Client representative shall ensure that the environmental management and monitoring will at minimum include:

- Current environmental and social issues and parameters to be mitigated;
- Mitigation measures;
- Counter measures;
- Line of responsibilities;
- Cost of undertaking the environmental and social mitigation measures; and
- The time frame within which these mitigation measures will be handled.

The parameters to be monitored are as shown in Table 9-1.

Table 9-1: ESMoP during Construction and Operation phase

Monitoring Scope	Parameter	Indicators	Location	Frequency	Responsibility
Disruption of Traffic, Public Utilities and Accesses	Utility relocation plans Traffic management plan	Number of grievances registered; Communications and agreements with utility companies;	Right of way	Quarterly	Contractor
Disruption of Livelihood due to land take	PAPs	Notices to the affected public RAP implementation progress	Right of way	Quarterly	Contractor
Spread of HIV/AIDS and Other Sexually Transmitted Diseases (STDs)	Sensitization campaigns	Sensitization and monitoring records; Campaign materials	Entire site	Quarterly	Contractor
Excessive Noise and Vibration	dB and m/s, respectively	Signed code of conduct Noise levels, complaints log	Active areas	Daily	Contractor
Contamination by Liquid Waste and Spills	Contaminated surfaces	Records on water quality;	Entire Site	Daily	Contractor
Accumulation of Solid Waste	Domestic refuse, metallic scraps, sludge	Bunded hydrocarbon storage areas Waste management plan	Entire Site	Monthly	Contractor
Construction Dust	Dust particulate	Waste collection and disposal records Records on issuance and use of PPEs Daily water uses for dust sprinkling Safety induction records	Active areas	Daily	Contractor
Increased Soil Erosion	Eroded surfaces	Complaints from community Gully formation; sedimentation	Entire Site	Quarterly	Contractor
Increased Human-Wildlife Conflicts	Wildlife encounter incidences	Records of encounter incidences Sensitization records	Entire Site	Monthly	Contractor
Vegetation Loss	% cover	No. of Trees felled and	Entire Site	Weekly	Contractor

Monitoring Scope	Parameter	Indicators	Location	Frequency	Responsibility
Spread of Invasive and Alien Species Habitat Loss and Disturbance	% cover	Areas of land cleared			
	Vegetation cover and wildlife habitat	Identified invasive species Number of seedlings replanted;	Entire Site	Quarterly Weekly	Contractor Contractor
Occupational Safety and Health Hazards Community safety and health	Visual inspection; Accident and Incident records	Percent of ground vegetation cover Accident and Incident Register.	Entire site	Daily	Contractor
	Safety and Health Management Plan with relevant procedures incorporating:	Relevant Records;	Entire site	Weekly	Contractor
	<ul style="list-style-type: none"> Occupational safety and health advisor engaged; Safety training for workers, Emergency response plan 	Controlled access to hazard areas Accident reports, Community sensitization and feedback on safety and health			
	Temperature & humidity	Human health change	Entire site	Daily	Contractor

BOD = Biochemical oxygen demand, CO = Carbon monoxide, COD = chemical oxygen demand, dB = decibel, DO= Dissolved oxygen, pH measure of acidity/alkalinity, SO₂ = Sulfur

10 CONCLUSION

The prioritization for development in the north eastern parts of Kenya under NETIP through road and connectivity development justifies the need for the design review for the upgrading Wajir - Kutulo road. Poor road connectivity has contributed to regional imbalance due to remoteness and poor access to services. Under NETIP, the development of the project road will contribute to economic growth of the local community. Nonetheless, this updated ESIA has put in place mitigation measures against the identified adverse social and bio-physical impacts arising from road development. Alongside this ESIA update, a RAP Study Report has been prepared to address land take within the settlement areas along the project road.

The Project should comply with all local laws and regulations, which seek to ensure that the construction work does not adversely affect the environment and social community resources. Any adverse impacts that arise will be mitigated on an on-going basis through the ESMP proposed in this report. At the operation phase, the monitoring plan shall ensure the project complies with the best environmental practices.

In conclusion, therefore, provided the recommended mitigation and environmental management measures are effectively implemented during the construction and operation phases of the project road development, the anticipated environmental and social negative impacts will, for the most part, have low significance.

11 REFERENCES

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APPENDICES

Appendix I: Biodiversity Checklists

Appendix II: Records of Key Informant Interviews

Appendix III: Records of Public Meetings

Appendix IV: Records of Preliminary Meetings on Site

Appendix V: Records of FGDs

Appendix I: Biodiversity Checklists

FLORA LIST

No.	Name	Conservation status	Wajir Town	Wagberi	Lafeley	Tarbaj	Hungai	Wargadud	Kutulo Wajir	Kutulo Mandera
1	<i>Acacia bussei</i>							1	1	1
2	<i>Acacia condyloclada</i>									
3	<i>Acacia firozei</i>				1	1	1	1		
4	<i>Acacia hamulosa</i>						1	1	1	
5	<i>Acacia horrida</i>						1	1	1	1
6	<i>Acacia kenyanensis</i>									1
7	<i>Acacia mellifera</i>						1	1	1	1
8	<i>Acacia nilotica</i>					1	1	1	1	1
9	<i>Acacia nubica</i>								1	1
10	<i>Acacia paolii</i>								1	1
11	<i>Acacia reficiens</i>								1	1
12	<i>Acacia senegal</i>								1	1
13	<i>Acacia tortilis</i>		1	1	1	1		1	1	1
14	<i>Acacia turbulliana</i>								1	1
15	<i>Acacia xanthophloea</i>						1		1	1
16	<i>Adenia venenata</i>					1	1	1		
17	<i>Azadirachta indica</i> (within settlements)		1	1	1					
18	<i>Balanites aegyptica</i>				1	1	1	1		
19	<i>Balanites</i> spp. (probably <i>pedicellaris</i>)				1			1		
20	<i>Balanites</i> spp. (probably <i>rotundifolia</i>)					1		1		
21	<i>Boscia coriacea</i>				1		1			
22	<i>Boscia</i> spp. (probably <i>minimifolia</i>)					1		1	1	
23	<i>Boswellia microphylla</i>				1			1		
24	<i>Boswellia neglecta</i>					1		1		
25	<i>Cadaba farinosa</i>				1		1	1		
26	<i>Calotropis procera</i>									
27	<i>Commiphora africana</i>			1	1	1	1		1	
28	<i>Commiphora</i> spp. (probably <i>campestris</i>)				1			1		
29	<i>Combretum</i> spp. (probably <i>hereroense</i>)			1	1		1			
30	<i>Commiphora holtziana</i>			1		1	1	1		
31	<i>Commiphora myrrha</i>				1					
32	<i>Commiphora</i> spp. (probably <i>rostrata</i>)				1		1	1	1	
33	<i>Commiphora</i> spp. (probably <i>senii</i>)			1						
34	<i>Cordia monoica</i>				1					
35	<i>Cordia sinensis</i>						1	1	1	
36	<i>Delonix elata</i>									
37	<i>Euphorbia turicali</i>				1	1	1	1	1	
38	<i>Grewia tembensis</i>				1			1	1	

HERPTILE LIST

No.	Common Name	Scientific Name	Local Name (Somali)	**Conservation Status
1	Testudines			
2	Bell's Hinged Tortoise	<i>Kinixys belliana</i>		
3	Leopard Tortoise	<i>Geochelone pardalis</i>		
4	Lizards & Geckos			
5	Speke's Sand Lizard	<i>Heliobolus spekii</i>		
6	Somali-Masai Clawed Gecko	<i>Holodactylus africanus</i>		
7	Tropical House Gecko	<i>Hemidactylus mabouia</i>		protected
8	Prince Ruspoli's Gecko	<i>Hemidactylus ruspolii</i>		
9	Kenya Dwarf Gecko	<i>Lygodactylus keniensis</i>		
10	Nyika Gecko	<i>Hemidactylus squamulatus</i>		
11	Short-necked Skink	<i>Mabuya brevicollis</i>		
12	Tree Skink	<i>Mabuya planifrons</i>		
13	Peter's Writhing Skink	<i>Lygosoma afrun</i>		protected
14	Long-tailed Skink	<i>Mabuya megalura</i>		
15	Chameleons			
16	Slender Chameleon	<i>Chamaeleo gracilis</i>		
17	Flap-necked Chameleon	<i>Chamaeleo dilepis</i>		
18	Snakes			
19	Kenya Sand Boa	<i>Eryx colubrinus</i>		protected
20	Speckled Green Snake	<i>Philothamnus punctatus</i>		
21	Speckled Sand Snake	<i>Psammophis punctulatus</i>		
22	Link-marked Sand Snake	<i>Psammophis biseriatus</i>		
23	Red-spitting Cobra	<i>Naja pallida</i>		
24	Puff adder	<i>Bitis arietans</i>		protected
25	Yellow-striped Blind Snake	<i>Rhinotyphlops unitaeniatus</i>		
26	Cape File Snake	<i>Mehelya capensis</i>		
27	Mole Snake	<i>Pseudaspis cana</i>		
28	Smith's Racer	<i>Platycephalus brevis smithii</i>		
29	East African Shovel-Snout	<i>Prosymna stuhlmanni</i>		
30	Boomslang	<i>Dispholidus typus</i>		
31	Common Egg-eater	<i>Dasypeltis scabra</i>		
32	Kenya Horned Viper	<i>Bitis worthingtoni</i>		
33	Brown House Snake	<i>Lamprophis fuliginosus</i>		
34	Agamas			
35	Red-headed Rock Agama	<i>Agama agama</i>		
36	Monitor Lizard			
37	White-throated Savanna Monitor	<i>Varanus albigularis</i>		
38	Frogs			
39		<i>Hyperolius glandicolor pitmont</i>		
40	Mascarene Rocket Frog	<i>Ptychadena mascareniensis</i>		
41	Desert Toad	<i>Bufo xeros</i>		
42	Squeakers			
43	Common Squeaker	<i>Arthroleptis stenodactylus</i>		

**national conservation status

AVIFAUNA LIST

No.	Common Name and Family	Scientific name	Migrant Status	Conservation Status	Feeding guild	Forest Dependency	Wajir Town	Wagberi	Lafeley	Tarba	Hungai	Wargadud	Kutulo Wajir	Kutulo Mandera
Struthionidae: Ostriches														
1	Somali Ostrich	<i>Struthio molybdophanes</i>		Vulnerable			1	1	1	1				
Ardeidae: Herons, Egrets & Bitterns														
2	Grey Heron	<i>Ardea cinerea</i>	Atro-tropical migrant /	Least Concern	insectivore									
3	Cattle egret	<i>Bubulcus ibis</i>	Intra-African Migrant	Least Concern	insectivore		1	1	1					1
4	Great White Egret	<i>Ardea alba</i>	Atrotropical	Least Concern	insectivore						1		1	
Ciconiidae: Storks														
5	Marabou Stork	<i>Leptoptilos crumenifer</i>		Least Concern	raptor	non-f	1	1	1				1	1
Bucerotidae: Spoonbills														
6	Eastern-yellow-billed Hornbill	<i>Tockus flavirostris</i>		Least Concern			1							
Ciconiidae: Storks														
7	Red-billed Hornbill			Least Concern					1	1	1	1		
8	African Grey Hornbill	<i>Lophoceros nasutus</i>		Least Concern	omnivorous		1	1	1	1	1	1	1	1
Ciconiidae: Storks														
9	Abdim's Stork	<i>Ciconia abdimii</i>		Least Concern										1
Threskiornithidae: Ibises & Spoonbills														
10	Sacred Ibis	<i>Threskiornis aethiopicus</i>		Least Concern			1	1				1	1	1
11	African Spoonbill	<i>Platalea alba</i>		Least Concern		non-f								1
Scolopacidae:														
Sandpipers etc														
12	Common Greenshank	<i>Tringa nebularia</i>	palearctic migrant	Least Concern										1
13	Marsh Sandpiper	<i>Tringa stagnallus</i>	palearctic migrant	Least Concern										1
Charadriidae: Lapwing														
14	Crowned Lapwing	<i>Vanellus coronatus</i>		Least Concern	insectivore		1	1	1					1
15	Spur-winged Lapwing	<i>Vanellus spinosus</i>	palearctic migrant	Least Concern										1
Burhinidae: Thick-Knees														
16	Spotted Thick-knee	<i>Burhinus capensis</i>		Least Concern										
Accipitridae: Vultures, Eagles, Hawks, Buzzards & Kites														
17	Augur Buzzard	<i>Buteo augur</i>		Least Concern	raptor	non-F			1					
18	African Harrier Hawk	<i>Polyboroides typus</i>		Least Concern					1			1		1
19	Eastern Chantrelle	<i>Melierax poliopterus</i>		Least Concern										
Goshawk														
20	Black Kite	<i>Milvus migrans</i>		Least Concern					1					
21	Black Shouldered Kite	<i>Elanus axillaris</i>		Least Concern	raptor				1					
22	African White Backed Vulture	<i>Gyps africanus</i>		Critically Endangered	raptor									
23	Tawny Eagle	<i>Aquila rapax</i>		Least Concern			1				1			
Phasianidae: Quails & Francolin														
24	Yellow-necked Francolin	<i>Pternistis leucoscepus</i>		Least Concern						1				1
25	Crested Francolin	<i>Dendroperdix sephaena</i>		Least Concern					1					
Numididae: Guineafowls														
26	Helmeted Guineafowl	<i>Numida meleagris</i>		Least Concern										
27	Vulturine Guineafowl	<i>Acryllium vulturinum</i>		Least Concern				1	1	1	1	1	1	
Otididae: Bustards														
28	Black-bellied Bustard	<i>Lissotis melanogaster</i>		Least Concern				1		1				1
29	Buff-crested Bustard	<i>Lophotis gindiana</i>		Least Concern				1						
30	Kori Bustard	<i>Ardeotis kori</i>		Near Threatened					1	1			1	
Pteroclididae: Sandgrouse														
31	Black-faced Sandgrouse	<i>Pterocles decoratus</i>		Least Concern			1							
32	Chestnut-bellied Sandgrouse	<i>Pterocles exustus</i>		Least Concern						1				1

[illegible]

[illegible]

MAMMAL LIST

No.	Common Name	Scientific Name	Local Name (Somali)	*Conservation status	**Conservation Status
1	Stripped Hyena	<i>Hyaena hyeana</i>		Near threatened	Near Threatened
2	Spotted Hyena	<i>Crocuta crocuta</i>		Least concern	Least concern
3	Guenther's Dik-dik	<i>Madoqua guentheri</i>		Least concern	Least concern
4	Kirk's Dik-dik	<i>Madoqua kirki</i>		Least concern	Least concern
5	Lion	<i>Panthera leo</i>		Vulnerable	Vulnerable
6	Cheetah	<i>Acinonyx jubatus</i>		Vulnerable	Vulnerable
7	Leopard	<i>Panthera pardus</i>		Vulnerable	Near Threatened
8	Wild Dog	<i>Lycaon pictus</i>		Endangered	Endangered
9	Lesser Kudu	<i>Tragelaphus imberbis</i>		Near threatened	Near Threatened
10	Gerenuk	<i>Litocranius walleri</i>		Near threatened	Near Threatened
11	Reticulated Giraffe	<i>Giraffa camelopardalis reticulata</i>		Vulnerable	Vulnerable
12	Grant Gazelle	<i>Nanger granti</i>		Least concern	Least concern
13	Common Warthog	<i>Phacochoerus africanus</i>		Least concern	Least concern
14	Impala	<i>Aepyceros melampus</i>		Least concern	Least concern
15	Bat-eared Fox	<i>Otocyon megalotis</i>		Least concern	Least concern
16	Black-backed Jackal	<i>Canis mesomelas</i>		Least concern	Least concern
17	Striped Polecat (Zorilla)	<i>Ictonyx striatus</i>		Least concern	Least concern
18	Honey Badger	<i>Mellivora capensis</i>		Least concern	Least concern
19	Aardvark	<i>Orycteropus afer</i>		Least concern	Least concern
20	White-bellied Hedgehog	<i>Atelerix albiventris</i>		Least concern	Least concern
21	Unstriped Ground Squirrel	<i>Xerus rutilus</i>		Least concern	Least concern
22	Scrub Hare	<i>Lepus saxatilis</i>		Least concern	Least concern
23	Elephant	<i>Loxodonta africana</i>		Vulnerable	Vulnerable
24	African Buffalo	<i>Syncerus caffer</i>		Least concern	Least concern
25	Common Zebra	<i>Equus quagga</i>		Near threatened	Least concern
26	Gemsbok	<i>Oryx gazella</i>		Least concern	Least concern
27	Senegal Galago	<i>Galago senegalensis</i>		Least concern	Least concern
28	Genet	<i>Genetta tigrina</i>		Vulnerable	Least concern
29	Dwarf Mongoose	<i>Helogale parvula</i>		Least concern	Least concern
30	Savannah Baboon	<i>Papio cynocephalus</i>		Least concern	Least concern

31	Aardwolf	<i>Proteles cristatus</i>			Least concern	Least Concern
32	African Wild Cat	<i>Felis silvestris</i>			Least concern	Least Concern
33	Serval	<i>Leptailurus serval</i>			Least concern	Least concern
34	Banded Mongoose	<i>Mungos mungo</i>			Least concern	Least concern

* international conservation status

**national conservation status

AVIFAUNA LIST

[illegible]

Appendix II: Records of Key Informant Interviews

Stakeholder Consultation
For Environmental and Social Safeguards Studies (ESIA and RAP)
For Design Review of Wajir – Kutulo Road

Interview Guide

Stakeholder / Institution Name:

Introduction

The Government of Kenya (GoK) has applied for a credit from the International Development Association (IDA) towards the cost of the North Eastern Transport Improvement Project (NETIP). Part of the proceeds are to be used for feasibility studies, preparation of social and environmental safeguard instruments, engineering design review, updating of detailed designs and preparation of revised and repackaged bids documents. In that respect, GoK through its Kenya National Highways Authority (KeNHA) have commissioned GIBB Africa Ltd to undertake design review for two road sections – Wajir-Kutulo road section of Isiolo – Mandera road- Contract No. KeNHA/RD/CS/SP/2268/2017, respectively.

The Consultant is required to conduct environmental and social safeguards studies – ESIA and RAP studies for each of the two road sections. The activities for the studies entail review of economic and social activities; collecting social, environmental and physical data as well as assessing the project's environmental and social impacts.

Other than the Right of Way (RoW), construction facilities related with the proposed development include borrow pits, crusher plant operations, water harvesting basins, contractor's campsite and batching plant/site.

We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. What is your opinion on the proposed development?

it's good for the development of infrastructure in the country and more so in this region because it's still boost the general security.

2. Which are the nearest protected areas (PAs) / Natural Reserves (NR) / Forest Reserve allowing wildlife to disperse from and to onto the proposed RoW?

Meru & Marsabit N. Parks.

3. Which species of conservation concern are found in the dispersal areas, particularly along the proposed RoW?

Giraffes, lesser kudus, lions, cheetahs and elephants.

4. Which are the commonest wildlife along the corridor / dispersal area?

Giraffes and Grevy's.

5. Which time of the year is the dispersal corridor busy?

March - April and October - November

6. What conservation measures have been put in place to ensure wildlife (including flora) remain under protection, particularly in the vicinity of the proposed development area?

Establishment of conservancies and wildlife sanctuary.

7. Generally, what have been the key challenges (or clash of interest) to conservation in relation to the proposed development

a. Wildlife

Road Kills

b. Vegetation

clearing of endemic species

c. Natural landscape

Pollution

8. Human-wildlife Conflict related to the proposed road development

a. Are there existing human-wildlife conflicts?

Displacement of species from their habitats forcing them to migrate to human habited areas. Also competition for scarce resources (water).

b. Which wildlife are commonly involved in the conflict?

Hyenas, cheetah and snakes

c. Which corrective measure should be taken at

i. Construction stage?

Roads flanks, signage on animal crossings and filling of quarry sites. Reduction of dust pollution by pouring water regularly.

ii. Operation stage?

Road signage, Rubble and filling
of the quarry sites.

9. Wildlife related traffic accident along the proposed development area?

a. Which wildlife fall victim of accidents?

Gerenuk, Kudus, Rabbits and
small nocturnal mammals.

b. Which corrective measure should be taken at

i. Construction stage?

Observation of speed limit
and Minomom filling of trees.

ii. Operation stage?

Road signages indicating animal
crossings.

10. Are there perceived challenges to habitat rehabilitation / restoration after project development?

i. Right Of Way (RoW)

Yes. Water provision

ii. Borrow Pit and Water Harvesting Basins

Star powered water

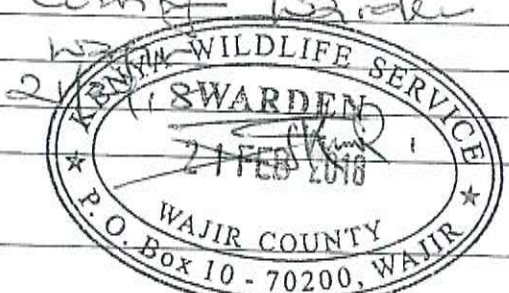
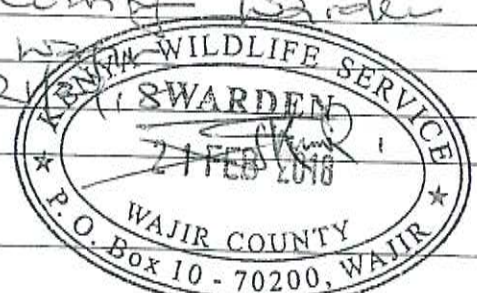
iii. Contractor's Campsite

Community / Institutional Support

11. What other do you suggest towards the improvement of the EIA or development of the project?

Filling of quarry sites, water provision for wildlife & community. Construction of road bridge/signages on wildlife crossing areas and children near schools.

Stakeholder Contacts

Name:	Joel Brudo		
Contacts:	Tel:	Mobile:	E-mail:
		0713559640	Wajir@kws.go.ke
Organization Represented:	KWS		
Designation:	County Warden		
Locality:	Wajir Wildlife Service		
Date:	21 FEB 2018		
Signature:			
Official Stamp: (if available)			

Stakeholder Consultation
For Environmental and Social Safeguards Studies (ESIA and RAP)
For Design Review of Wajir – Kutulo Road

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Other than the Right of Way (RoW), construction facilities related with the proposed development include borrow pits, crusher plant operations, water harvesting basins, contractor's campsite and batching plant/site.

We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. In your opinion, what is the community perception of the development of project road?

Positive because it will propel development through transport and movement of goods and people. It will also encourage investment. The upgrading of the road will create jobs and property has appreciated in the recently tarmacked road in Wajir town. Improve connectivity for teachers to rural and remote schools

2. Are you aware of any site of historical / Archeological importance in the project area?

History wells is a history ground

3. Are you aware of any sensitive sites or areas of especial interest to the community or county along the project road?

Nakuru

Maracle area are to be grazing lands just past
tomb up to Kulu

4. What are the settlement and migration patterns among the communities along the project road? Explain

Most people have settled along the road for accessibility
of road and communication network.
Along people have be attracted along the road
because schools, health services and government
Administration and security

5. How has land ownership, access and utilization of resources evolved along the project road? Have there been challenges or conflicts in the recent past?

Land is owned communally but held in trust by
government. In the past some communities have
demanded fee for excavation of building material.
The project should create incentives to community as
as a benefit or ransom for their resource

6. Do you foresee any positive impacts from the development of the project road? Explain

i. Construction stage?

(i) Employment

(ii) as a CR excavated sites could be converted to
water pans their benefit the local communities

(iii) Community benefit by ^{2 of 4} owning wells and boreholes
dig by the contractor as they exit the project

ii. Operation stage?

See No. 1

7. Do you foresee any ^{negative} positive impacts from the development of the project road? Explain

i. Construction stage?

- (i) Community resistance in some areas due to excavation of material
- (ii) Security challenges just passed Kutulo

ii. Operation stage?

- (i) Defacing of excavation sites
- (ii) Interference with grazing areas due to ^{abandoned} excavation sites ^{for} material
- (iii)

8. If your answer No. 7 is Yes, please suggest how the anticipated negative impacts can be mitigated.

i. Construction stage?

- (i) The project should create incentives, jobs, building water pans, earth dams to benefit community
- (ii) Putting up facilities for communities along the road.


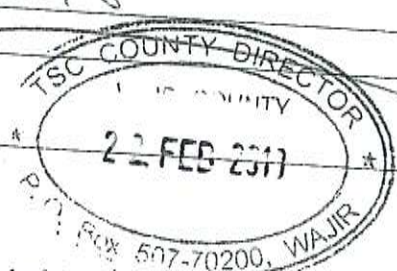
ii. Operation stage?

- (i) Converting excavated sites to ^{for collection of} ~~rehabilitating~~ hold water
- (ii) Fencing of excavated sites to ~~have~~ avoid safety risks
- (iii) Moulding ~~wanton~~ clearance of vegetation

9. What other do you suggest towards the improvement of the EIA or development of the project?

The project should be fast tracked as community have been waiting for

Stakeholder Contacts

Name:	A.M. ROBLE		
Contacts:	Tel:	Mobile:	E-mail:
		0723269635	adam.robble60@gmail.com
Organization Represented:	Teachers Service Commission		
Designation:	Deputy County Director		
Locality:	Wajir		
Date:	23/02/2018		
Signature:			
Official Stamp: (if available)			

Stakeholder Consultation
For Environmental and Social Safeguards Studies (ESIA and RAP)
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Other than the Right of Way (RoW), construction facilities related with the proposed development include borrow pits, crusher plant operations, water harvesting basins, contractor's campsite and batching plant/site.

We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

Questions/Statements

1. What is your opinion on the proposed road development?

This is a noble project and a lifeline and it will connect key economic lifelines

2. Which specific environmental/water resources are found along the project road that need or are under conservation management?

Water resources ~~from~~ are obtained from Kijir Town to serve the outskirts along the road (at Horsey wells). So the road cannot pass through the wells to avoid damage or contamination. Horsey wells serves a radius of 60 km and in some places 150 km from town.

3. How have the local community been involved/initiatives in sustainable use and conservation of the environmental/nature resources?

Wells are privately owned and maintained by local. They have been in existence since 1940's. So the Water Resource Dept is involved in Water Quality Control.

4. What initiatives have been undertaken to address any environmental/water resource challenges to achieve conservation along the project road?

Policies and Regulatory measures such as Horsey wells are conserved and no construction is allowed. Using existing Policies and regulations to safeguard other existing sources. Horsey wells can take close to 50 water bowsers a day.

Public Health Sector and NGOs (Save the Children) have partnered with Dept of water to test water quality esp during the rains - water is saline and mostly does not meet the ^{2 of 4} KES standards. Federal Policopony, TSB are usually high thru out. At household level people have wells. But Horsey wells has the highest

5. What is the performance of environment resources along the project road in the recent past?

Sec No. 4

6. How is the delivery of ecosystem services for communities along the project road in the recent past?

When there is extended drought ppl experience water problems affecting livelihood and the drought cycle is erratic

7. Any particular concerns on the ecosystem services that need to be addressed by the project development?

The Contractor should develop their own new waterpoints for the construction works. The promising areas along the Road are Klagadud and Kuto and the Contractor is advised to work with the Klati Users Association in the development and ensure they permit for necessary feed

8. Which corrective measure should be taken at

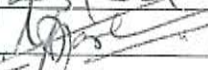

i. Construction stage?

Displacement of Communities; clearance of vegetation
⇒ Project should compensate affected families
⇒ Conservation of wildlife

ii. Operation stage?

→ Overtaking increasing chances accidents
→ Contamination of water points
x Provide road furniture, waste management

Stakeholder Contacts

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Official Stamp: (if available)			



Stakeholder Consultation
For Environmental and Social Safeguards Studies (ESIA and RAP)
For Design Review of Wajir – Kutulo Road

Interview Guide

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Introduction

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Other than the Right of Way (RoW), construction facilities related with the proposed development include borrow pits, crusher plant operations, water harvesting basins, contractor's campsite and batching plant/site.

We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. What is your opinion on the road project?

I believe this will significantly improve the living standards of the people through faster movement of goods and people. It is timely

2. What issues or concerns do you have on the project road development on the following:

(a) Land and Land Use

— Most of the land in areas where the road pass will pass through is (communal), hence the need to involve the local communities in planning and project implementation so that there are no issues that will arise.

(b) Water and Water Resources

— Considering the availability of water in a given area, the contractors can have multiple options when they need water so that they don't compete with investors & the locals in consumption of water.

(c) Area Agriculture, Livestock and Related Activities

— There is need to be sensitive on grazing land, especially where animals pass through when moving in search of water and pasture.

(d) Community Culture and Lifestyle

— There is need to be sensitive to the local community's culture and lifestyle, let the contractors have gate keepers in each centre through the chiefs and community elders.

(e) Gender Participation and Minority Groups

— Opportunity should be given to marginalized and minority communities, especially on employment. In these areas, society do

Women participate in decision making, hence the need to involve them. There is also the need to be conscious of ethnic diversity in each centre.

(f) Education

→ The Contractor can through Corporate Social Responsibility, be involved in the construction or repair of classrooms so that the local community can fully support the road project. They should also discourage child labour so that there is no school absenteeism.

(g) Infrastructure Development (Roads, energy etc)

With improved roads there would also be improvement in other infrastructure development. Good roads mean good schools, hospitals and recreational facilities.

3. What management measures have been put in place locally for

(a) Solid Waste

→ provision of solid waste bins

(b) Waste water and septic

— Drainage system in the CBD

4. How have your activities interacted with the project road?

5. What suggestions do you have towards mitigating any issues arising from the project road?

- Involving the local community
- Employment of the locals on casual works
- Stakeholders meeting and awareness
- Being sensitive to the social, cultural, economic & religious diversity of the local communities.

6. What other do you suggest towards the improvement of the EIA or development of the project?

- Consultation of the local community
- Local ownership of the road project
- Frection of pumps on the road in every Centre
- Making the road friendly and respectful of the people's economic way of life



Stakeholder Contacts

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Signature: [Signature]
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Other than the Right of Way (RoW), construction facilities related with the proposed development include borrow pits, crusher plant operations, water harvesting basins, contractor's campsite and batching plant/site.

We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. What is your opinion on the road project?

It will improve the accessibility of the mobile clinic of which it will provide health care services to the nomadic people

2) (b) This can lead to communicable diseases such as Typhoid

Recommendation

- The contractor and project proponent should consider developing their own sources of water such as drilling boreholes and wells in the vicinity of the community areas for their own use during construction and thereafter handing over to the community as a CSR (Community Social Responsibility).
- The contractor to be mobilized for the road development should install in place adequate sanitary measures such as toilets and hand washing facilities with soap to avoid disease such as cholera and food borne disease.
- They should procure a qualified food services supplier ~~that~~ who is aware the necessary public health requirements.
- The construction works requires a huge workforce. Therefore the contractor is required to install mobile clinic to provide general health care services like first aid and general treatment considering that construction works is being done in remote area with access challenges. Serious cases be referred to the referral hospital for emergency response.

ii) Health and Safety

- (i) The contractor should ~~ensure~~ provide the necessary PPEs to the staffs and ensure they are put into their respective use.
- (ii) During constructions the proponent should ensure a HIV/AIDS awareness and prevention campaign installed in the project.
- (iii) Noise and dust mitigation measures should be installed such as sprinkling of water on the dusty roads and also maintenance of ~~the~~ vehicles.

(ii) qualified disabled and impaired persons should be given first priority during recruitment of staff.

(f) Education

The area has few learning institutions which will be overstretched if the contractor staffs intend to use the schools for their children so the proponent should consider building schools along the project road during construction which will also serve as CSR.

(g) Infrastructure Development (Roads, energy etc)

The road construction should also put in place proper drains to avoid creation of pools after rains.

3. What management measures have been put in place locally for

(a) Solid Waste

The Locally there is a waste site there is no more and restricted for use therefore the contractor should consider waste segregation, reduction and re-use. and ~~that~~ The contractor should hire a licensed waste handler to manage disposal.

3 (h) (ii) The water table within the project area is high therefore the construction of septic tanks is required to avoid contamination through seepage into the ground water reserves. The Contractor should seek technical advice from the public health office on the requirements on community health and safety.

(b) Waste water and septic

No water waste system/ storage
but small individual septic tanks.
very shallow due to low water
table.

4. How have your activities interacted with the project road?

positively, no major disputes so far
but only small administrative issues.

5. What suggestions do you have towards mitigating any issues arising from the project road?

community resolutions through local leaders,
elders and clan leaders (Ugusi)

6. What other do you suggest towards the improvement of the EIA or development of the project?

• Hold comprehensive community participation
forums along the road path/corridor.



Stakeholder Contacts

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We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. In your opinion, what is the community perception of the development of project road?

It is a matter of fact since the project will
improve accessibility to major towns in the
area

2. Are you aware of any site of historical / Archeological importance in the project area?

Yes, at Wajir town there exist archaic wells which is under national museums of Kenya. They were previously used as a watering point for pastoral livestock by the community.

3. Are you aware of any sensitive sites or areas of especial interest to the community or county along the project road?

Am not aware.

4. What are the settlement and migration patterns among the communities along the project road? Explain

Initially there was attendance of a mobile lifestyle but now the trend is changing towards a residential lifestyle. Within Wajir town the settlements distribution is high but as you tend to move away, the centres are sparsely located from each other.

5. How has land ownership, access and utilization of resources evolved along the project road? Have there been challenges or conflicts in the recent past?

Land within Wajir town is under private hands who have allotment letters but as you move away, land becomes communal.

In the past there have been clan conflicts over resources but of late the situation has greatly improved.

6. Do you foresee any ^{negative} positive impacts from the development of the project road? Explain

i. Construction stage?

There is negative environmental impact resulting from clearance of vegetation along the project road. Increase of water demand due to project uptake/abstraction during

Construction:

clan and cultural conflict due to influx of migrants from other places as they seek for employment opportunities

ii. Operation stage?

Interference with the migration and nomadic lifestyle that has been in existence.

- Accidents may increase due to vehicle overspeeding on the tarmac roads.

7. Do you foresee any positive impacts from the development of the project road? Explain

i. Construction stage?

- During construction stage the locals will get employment
- The economy of the locals will improve due to supply of construction materials.
- Transfer of technical skills brought by skilled technicals.
- Though case the locals will benefit from such projects like building of classrooms or facilities.

ii. Operation stage?

- There is improved accessibility to towns within the area.
- Gradual reduction of traffic along the tarmac and avoid off-road driving.
- Reduced interference in cultural and social integration.
- Improved roads leading to reduced vehicle maintenance and lower cost of transport.

8. If your answer No. 7 is Yes, please suggest how the anticipated negative impacts can be mitigated.

i. Construction stage?

- Adopting environmental mitigation measures e.g. minimizing loss of vegetation, rehabilitation of disturbed areas.
- Employing GIVING Preference to the locals when hiring construction staff.
- Creating awareness on cultural integration.

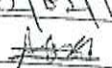
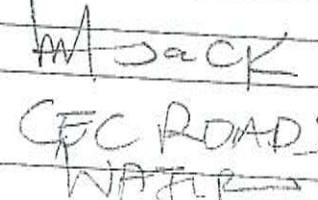
ii. Operation stage?

→ Design integration to cater for the existing migration and nomadic routes.
→ Provision of good road conditions during design and road furnitures.

9. What other do you suggest towards the improvement of the EIA or development of the project?

- Engagement of stakeholders eg KWDA who are designing and implementing bypasses within higher town. This should be integrated in the design for this project to avoid design mismatch

Stakeholder Contacts

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Locality:	WAKIL		
Date:	22/02/18		
Signature:			
Official Stamp: (if available)			



Stakeholder Consultation
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For Design Review of Wajir – Kutulo Road

Interview Guide

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Other than the Right of Way (RoW), construction facilities related with the proposed development include borrow pits, crusher plant operations, water harvesting basins, contractor's campsite and batching plant/site.

We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. What is your opinion on the road project?

This is a timely intervention from the Government of Kenya in ensuring our roads are motorable. This will open up this region for future business (both regional and cross border trade).

2. What issues or concerns do you have on the project road development on the following:

(a) Land and Land Use

In my opinion, the road alignment should be resigned at Kiboko Road to Mbitika Road since it is passing through Olakey wells. Olakey wells is a gazetted heritage centre and a very important source of water for replenishing the surrounding wells.

(b) Water and Water Resources

Considering the water deficit in the project area, it is recommended during construction the contractor provides his own source of water outside the community sources of water to avoid artificial shortage of water within the community areas -

(c) Area Agriculture, Livestock and Related Activities

The project area is known to be used by livestock pastoralist with frequent movement across the road. So suitable structures such as underpass or overpass should be provided to allow safe movement of livestock, especially in key livestock movement routes.

(d) Community Culture and Lifestyle

Due to the pastoral lifestyle of the community, most of the people might lack academic qualification but have the relevant skills required for the implementation of the road construction. So the contractor should have an affirmative action that favors the local community be employed if they possess the skills.

(e) Gender Participation and Minority Groups

Women within the project area, in most scenarios, they don't involve themselves in hard labour jobs, however there are other opportunities which they can fit in. This

includes catering services, supervision, quantity works and secretarial jobs. We would recommend them to be given first priority in those opportunities.

(f) Education

The project area has few education facilities which can be overstrained in the event of influx of construction staff when during implementation of the project. We, therefore, recommend the project to put up their own education facilities, which can be reverted to the community after completion as a CSR.

(g) Infrastructure Development (Roads, energy etc)

In the implementation of this project, powerlines ~~across~~ along the project road will be affected. The necessary stakeholders like Kenya Power, Rural Electrification Authority should be consulted before any realignment is done.

3. What management measures have been put in place locally for

(a) Solid Waste

The County Government has not factored this project into their Waste Management Plan, therefore, we would recommend the contractor to procure a NEMA accredited waste handler to manage waste generated from the construction activities during implementation of this project.

(b) Waste water and septic

Wajir County has no proper functional sewerage system, therefore the contractor should provide a septic tank for waste collection and procure a waste handler who will liaise with the County Waste treatment works for waste disposal.

4. How have your activities interacted with the project road?

The County Government has already constructed a bitumen standard road upto the town outskirts along the project road. It is recommended for the completion of the tarmac upto the end of the road so as to reap the full benefits.

5. What suggestions do you have towards mitigating any issues arising from the project road?


~~Kenya~~ ^{Kenya + Africa} and other stakeholders in this project, should constantly liaise with the County Government as an integrated project, to achieve the development goals of the area.

6. What other do you suggest towards the improvement of the EIA or development of the project?

Adhering to both NEMA and International Environment and social standards.



Stakeholder Contacts

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Date:	22/02/2018		
Signature:			
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We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. What is your opinion on the road project?

It's a well thought project and it will uplift
the economic activities as it factors design
in the northern frontier districts of Wajir
Mandera & Garissa

2. What issues or concerns do you have on the project road development on the following:

(a) Land and Land Use

NO issue as most of the land is already
cultivated

(b) Water and Water Resources

Digging of water pans and drilling of bore
holes will help. The road has passed through
important water wells here to be redesigned
because water wells are at different places
eg Khory ground.

(c) Area Agriculture, Livestock and Related Activities

No much effects because adjustments
can be done.

(d) Community Culture and Lifestyle

Very receptive no major hindrances

(e) Gender Participation and Minority Groups

May be poor due to the local culture
of our people coupled with religious
beliefs as a hindrance.

It will have positive impact.

It will ~~be~~ ~~strong~~ and where its
affectual adjustment has to be done

We have a camp site at Kan from which
can reach the town.

(b) Waste water and septic

there is no formal waste water management system but there are excavators delivering to the treatment works therefore its recommended a licensed waste handler be hired to manage waste water

4. How have your activities interacted with the project road?

- Delivering of health care services especially community strategy i.e the community dialogue days and community action days
- During health campaigns such as polio and measles campaign.

5. What suggestions do you have towards mitigating any issues arising from the project road?

The project should adhere to the health and safety measure under the public health act CAP 242 and food, drugs and chemical substance act CAP 254 Laws of Kenya.

6. What other do you suggest towards the improvement of the EIA or development of the project?

The contractor should initiate contact with the public health office and to maintain it up to the end of the project

Stakeholder Contacts

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Date:	20/2/2018		
Signature:			
Official Stamp: (if available)			

PUBLIC HEALTH
WAJIR SUB-COUNTY
BOX 2 - 70200
Wajir 20/02/2018

- Wajir Referral Hospital
- Alimaw H/Centre
- TB - manyatta (sub-district) County Hosp.
- Halane dispensary
- Ufalei "
- Tarba Sub - County Hosp.
- Hungai Dispensary
- Wargadud "
- Kotulo H/Centre



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We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. What is your opinion on the road project?

Road project will improve the livelihood of the people of this County.

2. What issues or concerns do you have on the project road development on the following:

(a) Land and Land Use

Wayleave matters to be handled together with other stakeholders.

(b) Water and Water Resources

N/A

(c) Area Agriculture, Livestock and Related Activities

N/A

(d) Community Culture and Lifestyle

There will be positive and negative cultural influences into the society. Some might be beneficial and others might not be useful.

(e) Gender Participation and Minority Groups

Marginalised societies in this part of the country to be incorporated in these projects so as to create ownership.

(f) Education

Language barriers will be a factor to be considered in these regions and therefore need to employ translators as many of the people are not educated. Local translators preferred.

(g) Infrastructure Development (Roads, energy etc)

This part of the country will be very welcoming if the infrastructure especially roads are improved and able to connect with other parts of the country.

3. What management measures have been put in place locally for

(a) Solid Waste

Need to improve on Sanitation and Solid waste management. This has not been done and need to be integrated into the project. This area is environmentally fragile area.

(b) Waste water and septic

Waste management to be integrated to the project. The County has a serious shortfall of water demand.

4. How have your activities interacted with the project road?

The powerlines are constructed along the road reserves.

5. What suggestions do you have towards mitigating any issues arising from the project road?

Need to be incorporated as a stakeholder. More communication on the project. Awareness of the project and interaction. The BO should factor in the cost of any re-alignment of powerlines if need be.

6. What other do you suggest towards the improvement of the EIA or development of the project?

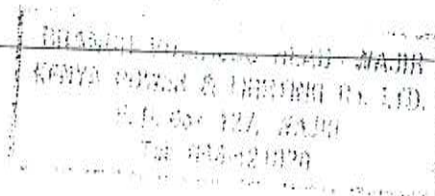
Proper road deviations to allow pedestrians and other road users.



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Stakeholder Contacts

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Stakeholder / Institution Name:

Introduction

The Government of Kenya (GoK) has applied for a credit from the International Development Association (IDA) towards the cost of the North Eastern Transport Improvement Project (NETIP). Part of the proceeds are to be used for feasibility studies, preparation of social and environmental safeguard instruments, engineering design review, updating of detailed designs and preparation of revised and repackaged bids documents. In that respect, GoK through its Kenya National Highways Authority (KeNHA) have commissioned GIBB Africa Ltd to undertake design review for two road sections – Wajir-Kutulo road section of Isiolo – Mandera road- Contract No. KeNHA/RD/CS/SP/2268/2017, respectively.

The Consultant is required to conduct environmental and social safeguards studies – ESIA and RAP studies for each of the two road sections. The activities for the studies entail review of economic and social activities; collecting social, environmental and physical data as well as assessing the project's environmental and social impacts.

Other than the Right of Way (RoW), construction facilities related with the proposed development include borrow pits, crusher plant operations, water harvesting basins, contractor's campsite and batching plant/site.

We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. What is your opinion on the road project?

The road project would be highly appreciated as it will spur development and economic growth in the Northern frontier counties of Wajir, Garissa, Isiolo & Mandera as well as the rest of Kenya.

2. Which are the nearest protected areas (PAs) / Natural Reserves (NR) / Forest Reserve allowing wildlife to disperse across the project road?

The Ewaso ngiro river (Lorian Swamp) and Lagas (river beds) along the road project from Isio to Mandera.

3. Which species of conservation concern are found along project road?

All species along the road project are of conservation concerns because of the fragile Ecosystem; if all removed it will expose the area to all vagaries of weather.

4. What are the main ecosystem uses for the natural vegetation along project road?

- Forage / browse for livestock + wildlife
- Source of fuelwood, Habitat for wildlife
- Provides building + construction materials especially the Somali Herio (local houses).
- Protection of soil, wind + water erosion
- Biodiversity conservation; source of livelihood - Gums/resin

5. Which initiatives has your Institution put in place to allow for sustainable use and conservation of the natural vegetation along the project road?

- Capacity building + awareness creation on the importance of natural vegetation / resources
- Rehabilitation of degraded lands
- Development of management plans - we are finalizing one plan for Tarkay - Wargadud area for sustainable conservation by the woodland.

6. How is the local community participating in the initiatives, considering demand of wood resources as well as vegetation degradation?

The local communities are the main stakeholders in Environmental Conservation - They participate by reporting cases of tree destruction / fires so that appropriate action is taken by our offices & the County Govt. - It's also the source of employment for the local communities as they are paid some stipend for watering trees planted as well as fencing them off from browsing by livestock.

7. What integrated measures should be put in place by the proposed project to ensure vegetation cover conserved?

- Cutting of trees should be very minimal especially large / big trees - They can be pruned or pollarded / trimmed unless they are interfering with the road design.
- Planting of trees along the road after completion of the road project.

8. Which vegetation patches within the project area should be conserved in-situ?

All vegetation along the Lorean Swamp and Lagos (river bed)

9. Which corrective measure should be taken to conserve vegetation during the proposed project's
i. Construction stage?

Do not cut large / big trees species unless absolutely necessary

- ii. Operation stage?

Avoid mass deforestation - You can do selective cutting only those that interfere with project design

10. Are there any perceived challenges to habitat management rehabilitation / restoration after the Construction the of:

- i. The Project Road

-- water availability -- is the biggest problem as trees planted may not survive.

- Maintenance of Trees planted and protection
- Vastness of the area

ii. Contractor's Camp

- Water is a big problem
- Maintenance of trees planted & protection

iii. Material Sites

- bank material debris if not disposed off well or properly, there is a lot of risks associated with it - where material is removed becomes flooded during rainy season & breeding ground for mosquitoes, also children play in that stagnant water, a health risk

11. What other do you suggest towards the improvement of the EIA or development of the project?

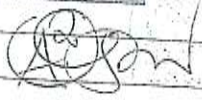
Quarries sites be backfilled so that it does not have stagnant water
* Stagnant water is breeding ground for Mosquitoes + other waterborne diseases
→ more stakeholder consultation + public participation

Stakeholder Contacts

Name:	Ambia Abdi Osman		
Contacts:	Tel: 0720 969074	Mobile: 0720 969074	E-mail: ambiaosman@yahoo.com
Organization Represented:	Kenya Forest Service		
Designation:	Ecosystem Conservator		
Locality:	Wajir County		
Date:	22/02/2018		



GIBB International
CONSULTING • DESIGN • MANAGEMENT

Signature:	
Official Stamp: (if available)	



Stakeholder Consultation
For Environmental and Social Safeguards Studies (ESIA and RAP)
For Design Review of Wajir – Kutulo Road

Interview Guide

Stakeholder / Institution Name:

Introduction

The Government of Kenya (GoK) has applied for a credit from the International Development Association (IDA) towards the cost of the North Eastern Transport Improvement Project (NETIP). Part of the proceeds are to be used for feasibility studies, preparation of social and environmental safeguard instruments, engineering design review, updating of detailed designs and preparation of revised and repackaged bids documents. In that respect, GoK through its Kenya National Highways Authority (KeNHA) have commissioned GIBB Africa Ltd to undertake design review for two road sections – Wajir-Kutulo road section of Isiolo – Mandera road- Contract No. KeNHA/RD/CS/SP/2268/2017, respectively.

The Consultant is required to conduct environmental and social safeguards studies – ESIA and RAP studies for each of the two road sections. The activities for the studies entail review of economic and social activities; collecting social, environmental and physical data as well as assessing the project's environmental and social impacts.

Other than the Right of Way (RoW), construction facilities related with the proposed development include borrow pits, crusher plant operations, water harvesting basins, contractor's campsite and batching plant/site.

We kindly request for your opinion in line with the issues noted below to facilitate the development of the ESIA Report.

1. In your opinion, what is the community perception of the development of project road?

The community appreciate the development of the project road and it will benefit them the livestock owners.

2. Are you aware of any site of historical / Archeological importance in the project area?

The Horray Kells should ~~also~~ be preserved because (1) Historic
cultural feature which are preserved since pre colonial - 2nd Kells
(2) people do prayers (go to meet) (3) Kells because
water has continued acquire - Kells from Tarbag (48 km)
to the Kells town acquire

3. Are you aware of any sensitive sites or areas of especial interest to the community or county along the project road?

Along the road trees vegetation should not be cleared
artificially. Not move them 100m from the road.
There is lot of watering points and there are signs
should be provided to show the water source
for human and livestock. Signs and precautionary

4. What are the settlement and migration patterns among the communities along the project road? Explain

* Kells Town, Katsale, Tarbag, Hungai, Kalgadad & Katsale Kibula
Animal mainly pass across heading to watering
point

5. How has land ownership, access and utilization of resources evolved along the project road? Have there been challenges or conflicts in the recent past?

From under perspective land is communal but in settled
areas land has adjudicated for even other uses.
Kibula, Katsale and Kibula members have experienced
recent conflicts on pasture but were fuelled by
politics based on tribe - Kibula and Kalgadad

6. Do you foresee any positive impacts from the development of the project road? Explain

i. Construction stage?

(i) The contractor should prioritise local suppliers and
services from community such as milk and meat
(ii) Excavation sites to be rehabilitated to collect water
which can benefit adjacent communities

(iv) ~~Construction should have~~

ii. Operation stage?

- (i) Improvement of transport and movement of animals especially delivery of farm produce
- (ii) Allow timely delivery and supplies of goods

7. Do you foresee any positive impacts from the development of the project road? Explain

i. Construction stage?

- (i) Depletion of water on the ground due to high consumption that will affect the growing potential of land
- (ii) Vegetation clearance especially beyond the road reserve. The area suffers from climate change
- (iii) HZ claim & damage to children

ii. Operation stage?

- (i) Vehicle speeding causing livestock and human accidents
- (ii)

8. If your answer No. 7 is Yes, please suggest how the anticipated negative impacts can be mitigated.

i. Construction stage?

- (i) Barbed wire and other water sources developed during construction should be blocked to avoid creation of new settlements. Once the contractor has left, high water consumption is leading to drying of existing wells.

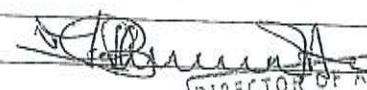
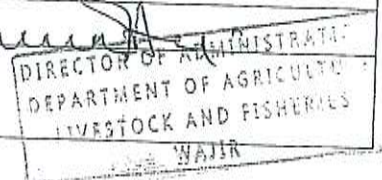
ii. Operation stage?

- (i) Liaise with chiefs to know hotspots for animal crossing

9. What other do you suggest towards the improvement of the EIA or development of the project?

The project should do public awareness and public relations to establish any new developments that are taking along the project road that may not have been reported but may be of interest.

Stakeholder Contacts

Name:	Hassan Gureh Omar		
Contacts:	Tel: 0723981096	Mobile:	0723981096 E-mail: hassangure1@yahoo.com
Organization Represented:	Dep of Agri, Livestock & Fisheries		
Designation:	County Director of Fisheries		
Locality:	County head office		
Date:	23/2/2018		
Signature:			
Official Stamp: (if available)			

Date 19/02/2018

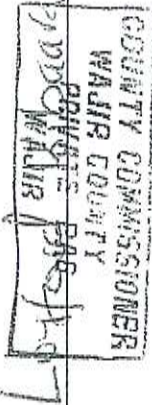



GOVERNMENT OF KENYA



KENYAN NATIONAL
HIGHWAYS AUTHORITY

GIBB Africa

CONSULTING • DESIGN • MANAGEMENT

No	Name	Area Name / Organization	Title / Designation	ID Number	Telephone / Mobile No.	Email Address	Signature
1	 COUNTY COMMISSIONER WAJIR COUNTY	COOP	County Commissioner	921451	0727251	cc@wajir.go.ke	 COUNTY COMMISSIONER WAJIR COUNTY Wajir
2	Amorah Abdul Osman	KCB	Ecosystem Conservation	0038274	0720151074	am@wajir.go.ke	
3	Joel S. Kando	KWAT	Warden Wajir County	9259317	0713559640	registrar@wajir.go.ke	

Appendix III: Records of Public Meetings

- a. Meeting at Wagberi Location**
- b. Meeting at Tarbaj Location**
- c. Meeting at Hungai Location**
- d. Meeting at Wargadud Location**
- e. Meeting at Kutulo-Wajir Location**
- f. Meeting at Lafaley Location**

Appendix III (a) Minutes of public meeting at Wagberi location

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting ESIA

Location: Wagberi	Minute Rapporteur:
Date: 01/03/2018	Time: Start: 9:00am hrs Finish: 10:00am hrs
Purpose: Consultation and Sensitisation meeting on the Design Review of Kutulo-Elwak Road Project	
Attendees: As Attached	
Item No.1: Project Description	
<p>The consultation and sensitization team gave the project description and further outlined the activities currently being undertaken on the proposed Wajir-Kutulo Road. These activities are;</p> <ol style="list-style-type: none"> Sensitization on the activities and community mobilization; Environmental and Social Impact Assessment; Survey works and placing of beckons at 60 Meters wide; Registration of all Project Affected Persons (PAPs); and Valuation of affected immovable structures and properties <p>The team emphasized on the need for the community to work together with these five teams undertaking these activities for effective delivery. The team also asked the members present to share their views concerning the proposed project so as to be considered during the project cycle.</p> <p>The community then presented their views as follows</p>	
Issues Raised	
What will happen to the traders in Olrahi Market as the County Government of Wajir had come and relocated them to pave way for the road reserve and now the new road was going to affect them and their business	Response The Consultant will consult the County Government of Wajir on the issue concerning the market
There is a graveyard along the road at chainage 800 meters, what will happen to the grave	The design engineer will try to avoid the graveyard as much as possible
Is it possible for the road reserve to reduce, the meters along the town and expand it in areas where there are no human activities?	Along the major centres the road has a width of 40 metres and bypasses have been proposed to avoid the centres
Having no other business to discuss the meeting ended at hrs.	

Signed as true record of the meeting

Chief:

MUSSEIN A. ABALLU

Location:

WAGBERI

Sign

[Signature]

Stamp

6/3/2018

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting RAP

Location: Wagberi	Minute Rapporteur:
Date: 01/03/2018	Time: Time: Start: 9:00am hrs Finish: 10:00am hrs
Purpose: Consultation and Sensitisation meeting with PAPS for RAP on the Design Review of Wajir-Kotulo Road Project	
Attendees: As Attached	
Item No.1: Project Description	
<p>The consultation and sensitization team further outlined to the PAPs the activities currently being undertaken on the proposed Kutulo-Elwak Road. These activities are;</p> <ol style="list-style-type: none"> i. Project Purpose; ii. Cut-off date explanation of what it is; iii. Actual Dates of cut off set and agreed; iv. Program on their level of participation <ul style="list-style-type: none"> • Preparation of land and asset inventory • Census • Baseline Socio Economic /HH Survey, K.I.I and FGD (their full participation during FGD) • Valuation-participation in inventory -Confirm the assets are correct as they will sign the inventory form • Disclosure of the project will be given to them by KeNHA • Representatives approved by the community for the absentee PAPs v. Grievance Mechanism <ul style="list-style-type: none"> • Type of grievances to be expected • Existing Grievance Mechanisms • Recommendation of Grievance Mechanism for RAP • Expected Challenges 	
Project Purpose	
<p>The study team explained to the Project Affected Persons (PAPs) that they were Consultants from GIBB Africa, contracted by the Kenya National Highways Authority (KeNHA) the implementing agency, to undertake preparation of road designs for the Wajir-Kutulo road. As part of this important program, the Resettlement Action Plan (RAP) as guided by the World Bank Operational Policy OP 4.12 and GOK guidelines needs to be prepared to meet the Government requirements and the Bank's social safeguards conditions for project approval. In an effort to ensure that the proposed project is implemented in an environmentally and socially sustainable manner.</p> <p>The Consultant explained that Wajir-Kotulo road was part of the Isiolo-Mandera road and construction of the road will be of importance to the area as it is expected to bring changes such as:</p> <ul style="list-style-type: none"> • Opening up the Counties of Wajir and Mandera which will lead to economic growth, employment generation and eventually poverty reduction. • Reduce production costs, particularly in the livestock sectors, through faster delivery of livestock produce to the markets. • Reliability and accessibility of extension services will be increased and available at low costs which have been hampered by poor road condition due to fast and efficient transportation of goods and services to in and out of the project area; and • Security in the area is expected to be improved as the villages will be easily accessible during response to security distress. There have been several incidences of terrorist's attacks in the area but due to bad roads, most often than not, the security arrives very late to offer any assistance. <p>The study team further outlined to the PAPs, the activities that were currently being undertaken on the proposed Wajir-Kutulo road as:</p>	

- Sensitization on the activities and community mobilization;
- Environmental and Social Impact Assessments;
- Survey Works and Placing of beckons at 60 Meters width of the road;
- Baseline Socio Economic/HH survey, KII and FGD;
- Registration of all PAPs/RAP Census; and
- Valuation of affected immovable structures and properties.

Cut-off date explanation of what it is

The study team explained to the PAPs that a cutoff date was a date set as the last possible date for registration of project affected persons and asset inventory. What this means is that any person who moved into the area designated for the project and put up a structure after this date has been set, was not going to be eligible for compensation. The team explained that it was important for the project to set a cutoff date to avoid influx of people settling in into the project Right of Way.

Actual Dates of cut off set and agreed;

The cutoff date for Wagberi Location was publicly agreed during the meeting to be 04 March 2018

Program on their level of participation

The study team emphasized to the PAPs on the need for the community to work together with the above six teams undertaking these activities for effective delivery. The team explained that during the Census and asset inventory, they would be required to produce their national identification cards that will be used to identify and register them as the true owners of the affected properties and assets. A further explanation was given on valuation method that would be done at full replacement cost based on current market value of the affected asset. The RAP Expert informed the community that a photo would then be taken of the asset owner standing in front of the affected asset, after which a project Identification number would be given to the PAP with their exact chainage along the road either on the left or right side, and it would also indicate the village. The study team explained that they would submit a copy to the client to be used for verification purposes during the RAP disclosure by the Client (KenHA). The study team explained that during the baseline socio economic survey and Census, trained enumerators from the area will be walking door to door interviewing the head of the household and that it was important for all households to be represented. The meeting agreed that all households would have an adult member who would respond to the questionnaire, for absentee PAPs the village elder walking with the census team would assist in identifying the owners.

Grievance Mechanism

The chief and assistant chief together with the elders handle most of the disputes within the community. During compensation, the disputes to be anticipated will revolve around land ownership and documentations as well as two people who share a property may not agree on who to be paid for compensation therefore the community suggests that an all-inclusive committee to be formed to solve any future arising disputes. For cases where there is no resolution the courts will decide what to be done

Signed as true record of the meeting

Chief:

Hussein - A - Abdullahi

Location:

Wagberi

Sign

Stamp

6/3/018

WAGBERI LOCATION

PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue: Orhai Marut Hgylben.

DATE: 01/03/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	KHADJIA SHIMOT GARAD		0723103793		
2	QALI UGAS HUSSEIN		0722908372		
3	EDEY ADDW ABUKAR		0727206113		
4	HAMDI MALIM BISHAR		0722557852		
5	ADOW ATTUWED IBRAHIM		0715762090		
6	ABDI HANLEY MUUSA		0712242551		
7	HTINDIA JELE IBRAHIM		0710410811		
8	DARTIRA MOTTAMED MALIM		0716085150		
9	OMAR MOTTAMED ABDI		0720027677		
10	ZEINAB IBRAHIM OMAR		0720754767		
11	KHADJIA IMAN NOOR		0728542844		
12	KHADJIA BILAL MOTTAMED		0717166490		

PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue:

DATE:

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	ALI ABDI MAALIM		0724414041		
2	NASIRIHA AHMED		0723331486		
3	FARTUN KHEIR		0720033816		
4	HABIBA YAROW NOER		0718800022		
5	HAMARA HUSSEIN MUHAMMAD		0726701583		
6	MARYAM KHEIR ABDIKARIM				
7	SEINAB HASSAN AHMED		0701352800		
8	ABDIA HASSAN		0710751262		
9	HABIBA MUHAMMAD NOOR		0723966914		
10	HAREIHA SHEIKH		0726505572		
11	SALAH BILAL MUHAMMAD		0705796214		
12	ZEINAB DUA ALI		0704654848		

**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

JOB NO.001903

Venue:

DATE:

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	AMINA MUSTAFA HUSSIN		07102273960		
2	RUKIA ABDULLATHI		0712242800		
3	RAKHD ABDI ALI		0724877129		
4	HANBIA MOHAMMAD OMAR		0722557852		
5	FATUMA DAYOW ALI		0727592573		
6	MOHAMMED HUSSIN		0720335040		
7	SHANQARA BARI		0723602598		
8	IBRAHIM MOHAMMED		0724286946		
9	BISHAR KHALIF		0712196570		
10	IBRAHIM YUSUF MUMIN		0729235596		
11	ADANA MOHAMMED BILAL		0701142941		
12	SHUKRI HASSAN		0723977113		

PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue:

DATE:

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	HAZIMA HUSSEN		0724629361		GHMOL
2	KALJUMA YUSUF		0716727181		
3	DEPA MAOW		0722833852		
4	LATIHAN ISOCK		0712999736		
5	ALASEY MOHAMMED		0719891978		
6	ABDULLAH JIMAKE		0725284736		
7	JOSEPH KARIAMA		0722421853		
8	MOHAMMED ILON IBRAHIM		0723749451 0710677488		
9	HAZIMA KHALIF		0726647966		
10	MOHAMMED ABDULLAH		0725928476		
11	SUNDA JELE		0720684346		
12	MOHAMMAD ALI HAJJI		0720975137		

**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

JOB NO.001903

Venue: Orhai Marut Maybeni

DATE: 01/03/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	ADAN ALI ABDI		0726120056		
2	ABD AMBIA KHALIF HUSSEIN		0714248868		
3	MUHAMMAD MADNOUR		0724599545		
4	MUSLIMA MUHAMMAD QASIM		072345288		
5	FATUMA YUSUF MUHAMMAD		0729773370		
6	JUDITH BATHAMBO		0708323389		
7	RICHARD KOBIA		0705447909		July
8	ABDIA ISMAIL				des
9	FATUMA SAMOW				
10	MUHAMMAD KHALIF		0715393959		
11	ABDIA ADAN		071627926		
12	ISMAIL HUSSEIN		0726201990		
			0716189808		

Appendix III (b) Minutes of public meeting at Tarbaj location

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting ESIA

Location: <u>Tarbaaj</u>	Minute Rapporteur: <u>Ujaya A. Ojino</u>
Date: <u>22/02/2018</u>	Time: Start: <u>11:00</u> hrs Finish:hrs
Purpose: Consultation and Sensitisation meeting on the Design Review of Wajir-Kutulo Road Project	
Attendees: As Attached	

Item No.1: Project Description

The consultation and sensitization team gave the project description and further outlined the activities currently being undertaken on the proposed Wajir-Kutulo Road. These activities are;

- Sensitization on the activities and community mobilization;
- Environmental and Social Impact Assessment;
- Survey works and placing of beckons at 60 Meters wide;
- Registration of all Project Affected Persons (PAPs); and
- Valuation of affected immovable structures and properties

The team emphasized on the need for the community to work together with these five teams undertaking these activities for effective delivery. The team also asked the members present to share their views concerning the proposed project so as to be considered during the project cycle.

The community then presented their views as follows

Issues Raised	Response
<p>Name: <u>Religion</u></p> <p>Issue: <u>According to their religion inter marriage should only happen between Muslims</u></p>	<p>People from outside should be educated to respect their religion.</p>
<p>Name: <u>Village Elders</u></p> <p>Issue: <u>Population influx, different cultures and inter-relations.</u> <u>- They will not be happy when these people come to corrupt their women because they are not muslims. If they are muslims they will be fine.</u></p>	<p>Capacity building of immigrants on the host culture and way of life</p>
<p>Name: <u>Health Centre</u></p> <p>Issue: <u>Health Centre - when they are sick they go to the local health centre but it has no capacity to admit they go to Wajir Level 5 for referral and require efficient transport services.</u></p>	<p>The road is expected to improve transportation and emergency response in the area.</p>

Issues Raised	Response
<ul style="list-style-type: none"> The community has some very poor households that would benefit from the social amenities that the project is preparing. Payment should be given to the vulnerable household. 	<p>The consultant will recommend to the client to give poor households priority to enable them enjoy the benefits of project.</p>
<ul style="list-style-type: none"> What will happen to the people who are to be relocated by the project? They have no other land. 	<p>Any affected person will be adequately compensated based on the valuation of asset.</p>
<ul style="list-style-type: none"> When the contractors come and do excavations they leave the sites in poor conditions and it becomes a health hazard, since they don't back fill. 	<p>Recommend in the ESMP for the contractor to backfill all the materials site.</p>
Having no other business to discuss the meeting ended at 1.5.00 hrs.	

Signed as true record of the meeting

Chief: **MOHAMED AHMED OLOW**

Location: **TARBAG**

Sign: 

Stamp



CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Minutes of the Public Meeting Held with Project Affected Persons

Location:	Tarbaj	Minute Rapporteur:	Joyce Owino
Date:	23/02/2018	Time Start:	2:00pm Finish 3:30pm
Purpose:	Consultation and Sensitization Meeting on RAP Studies		
Attendees:	As Attached		

**Due to the challenge of language barrier, a member from the community was appointed to translate in Somali for the people to understand and comprehend the information given*

Item No 1: Project Purpose

The study team explained to the Project Affected Persons (PAPs) that they were Consultants from GIBB Africa, contracted by the Kenya National Highways Authority (KeNHA) the implementing agency, to undertake preparation of road designs for the Wajir-Kutulo road. As part of this important program, the Resettlement Action Plan (RAP) as guided by the World Bank Operational Policy OP 4.12 and GOK guidelines needs to be prepared to meet the Government requirements and the Bank's social safeguards conditions for project approval. In an effort to ensure that the proposed project is implemented in an environmentally and socially sustainable manner,

The Consultant explained that Wajir-Kotulo road was part of the Isiolo-Mandera road and construction of the road will be of importance to the area as it is expected to bring changes such as:

- Opening up the Counties of Wajir and Mandera which will lead to economic growth, employment generation and eventually poverty reduction.
- Reduce production costs, particularly in the livestock sectors, through faster delivery of livestock produce to the markets.
- Reliability and accessibility of extension services will be increased and available at low costs which have been hampered by poor road condition due to fast and efficient transportation of goods and services to in and out of the project area; and
- Security in the area is expected to be improved as the villages will be easily accessible during response to security distress. There have been several incidences of terrorist's attacks in the area but due to bad roads, most often than not, the security arrives very late to offer any assistance.

The study team further outlined to the PAPs, the activities that were currently being undertaken on the proposed Wajir-Kutulo road as:

- Sensitization on the activities and community mobilization;
- Environmental and Social Impact Assessments;
- Survey Works and Placing of beckons at 60 Meters width of the road;
- Baseline Socio Economic/HH survey, KII and FGD;
- Registration of all PAPs/RAP Census; and
- Valuation of affected immovable structures and properties.

Item 2: Program on their level of participation

The study team emphasized to the PAPs on the need for the community to work together with the above six teams undertaking these activities for effective delivery. The team explained that during the Census and asset inventory, they would be required to produce their national identification cards that will be used to identify and register them as the true owners of the affected properties and assets. A further explanation was given on valuation method that would be done at full replacement cost based on current market value of the affected asset. The RAP Expert informed the community that a photo would then be taken of the asset owner standing in front of the affected asset, after which a project Identification number would be given to the PAP with their exact chainage along the road either on the left or right side, and it would also indicate the village. The study team explained that they would submit a copy to the client to be used for verification purposes during the RAP disclosure by the Client (KeNHA).

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

The study team explained that during the baseline socio economic survey and Census, trained enumerators from the area will be walking door to door interviewing the head of the household and that it was important for all households to be represented. The meeting agreed that all households would have an adult member who would respond to the questionnaire, for absentee PAPs the village elder walking with the census team would assist in identifying the owners.

Item 3: Cutoff date:

The study team explained to the PAPs that a cutoff date was a date set as the last possible date for registration of project affected persons and asset inventory. What this means is that any person who moved into the area designated for the project and put up a structure after this date has been set, was not going to be eligible for compensation. The team explained that it was important for the project to set a cutoff date to avoid influx of people settling in into the project Right of Way.

Item 4: Cutoff date Tarbaj Location

The cutoff date for Tarbaj Location was publicly agreed during the meeting to be 25 February 2018

Item 5: Grievance Mechanism

The community has council of elders who help in resolving community conflicts such as disputes between a husband and wife, land disputes and other domestic conflicts. They also have a peace building committee.

When elders are not able to solve conflicts, the matter is taken to the chief and assistant chief, if no resolution is found it will go to the area MCA, then the MP and finally to the Governor.

For cases such as rape and murder, the matter is reported to the police and then taken to Court. Some land issues end up at the land arbitration office and if no resolve is found the matter goes to court.

The community also has Maslaha courts which consists of prohibiting or permitting something on the basis of whether or not it serves the public's benefit or welfare in cases not regulated by the Quran

Recommendation on Grievance Mechanism for RAP

During RAP implementation the community suggested strengthening of the current existing mechanisms to be all inclusive in order to address any challenges that may arise at the time

Item 6: Q and A

The study team asked the community members present to share their views concerning the proposed project so as to be considered during the project cycle.

The community then presented their views as follow:

Issue	Comment	Response
Compensation	Will the project compensate them for their assets lost?	All affected assets that are immovable within the 60 meter corridor along the loop and 40 meter corridor along the road passing through the centre will be valued for compensation
Notice to vacate	When would they be required to move is it before they are compensated or after they have received compensation	We will propose that the proponent gives all the PAPs adequate notice of at least 3 months
Construction Commencement	When is the Project likely to start	The project is expected to begin in the near future
Loss of business	What will happen to their businesses as they have no other source of income	We will propose to the client to discuss with the County Governments of Wajir on how

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Issue	Comment	Response
		those doing business along the road can be relocated to continue running their businesses within the same area where they have established their customer base
Employment opportunities	Will the women also be considered for employment?	When the Project comes, it will have employment opportunities for menial jobs and service provision related to road construction, we will propose that locals along the road to be given priority
Graveyard	There is a graveyard along the road,	Adequate consultations with the community will be done before final decision is made on the burial sites
Having no other business to discuss the meeting ended at 3:30pm		

Signed as true records of the meeting

Chief - MOHAMED AH OLOW

Location TARBAJ

Signature: 

Stamp:



PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

Turbo

ATTENDANCE LIST

JOB NO.001903

Venue: D.C.C. Office Turbo

DATE: 22/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Mohamed Ali Adan		0703536610		MC
2	Mohamed Adan Amin		0727926289		
3	Ahmed Rame Ibrahim	Secfro-Tse Turbo	0720541563	Yone766@gmail.com	Yone766@gmail.com
4	Hussein Bare Adan		0700908957		MC
5	Mohamed Ibrahim Hira		0700916324		MC
6	Yussuf Ahmed Sheikh		0743490050		Yussuf
7	Adan Hiraas Noor		0724761683		Mohamed
8	Osman dayals Mohamed		0725921050		MC
9	Muhtar Ali da'biye		0715126525		MC
10	Gedi Muhtar Noor		0713811355		MC
11	Abdi Gedi Alasew		0725010585		MC
12	Yussuf Khalid Hussein		0701230790		Yussuf

**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**










Tarbagaj

ATTENDANCE LIST

JOB NO.001903

Venue: P.O.O. Office Tarbagaj

DATE: 22/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Issack Adam Hussein		0704853556		
2	Jwale Asdi diisow		N/A		
3	Ahmed A. Abdille		0712602077		
4	Mohamed Adan Afi		0714980495		
5	Mohamed siyut		0720442560		
6	Abdiwahab Ahmed		0721492703		
7	Hassan Shuich		0719232706		
8	Mohamed Bui		0790800482		
9	Issa Hayale		0721550647		
10	Mohamed Abdullaw		0721921426		
11	Ahmed Aftin		0721629997		
12					

ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP)
UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

KII CONSULTATION LOG

JOB NO.001903

Venue: Wajir

DATE: 22/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	YUNIS YUSSUF GEDI	ASMP PO OFFICER WAJIR EAST HARBOR	0722401085	Kiranjayy@yahoo.com	
2	Ahmed M. Mohamed	TOWN ADMINISTRATION THREKAT	0725866943	amamusa:am@gmail.com	
3	JACOB MUTHITO	NURSING OFFICER	076382382	jacobmuthito@gmail.com	
4	HASSAN M. GATLOW	HEAD TEACHER - TARBAT PI	0725292843	hmgatlow@gmail.com	
5	MUHAMMAD ABU OMAR	HEAD TEACHER - TARBAT PI	0726043046	Wingard@Gmail	
6		Wajir Town			
7	ATTACHED SAKAR	County Secretary	0726141422	ahmedsakalor@gmail.com	
8	NAEMA SOMOW	CEC, LANDS	0725109677	naema.somow@gmail.com	
9	Abdi I. Abdi	Dur. Land	0721250190	abdiib@yahoo.com	
10					
11					
12					

PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

Tarbaji

ATTENDANCE LIST

JOB NO.001903

Venue: S.C.C. Opas Tarbaji.

DATE: 22/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Mohamed Noor Juma	Tarbaji Village Number	0729283831	M/A	
2	Mumin Abdi Hassan	"	0723028393	M/A	
3	Hussein Abdi Birik	"	0729276662	M/A	
4	Elmas Mohamed Issack	"	0725178256	M/A	
5	Mohamed Noor Saman	"	0700908892	M/A	
6	Abdirahman Saman	"	0725718615	M/A	
7	Muhammed Yusuf	"	0728629908	M/A	
8	Mohamed Mohamed M.	"	0707071823	M/A	
9	Mohamed Hussein Hassan	"	0798890836	M/A	
10	Abdi Isak Isak	"	0702379137	M/A	
11	Muhammad Bishar Hussein	"	0725334184	M/A	
12	Bishar Sheikh Abdi	"	0721560203	M/A	

Appendix III (c) Minutes of public meeting at Hungai location

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting ESIA

Location: <u>Hyungai</u>	Minute Rapporteur: <u>Doyce A. Othman</u>
Date: <u>23/02/2018</u>	Time: Start: <u>10:00am</u> hrs Finish:hrs
Purpose: Consultation and Sensitisation meeting on the Design Review of Wajir-Kutulo Road Project	
Attendees: As Attached	
Item No.1: Project Description <p>The consultation and sensitization team gave the project description and further outlined the activities currently being undertaken on the proposed Wajir-Kutulo Road. These activities are;</p> <ol style="list-style-type: none"> i. Sensitization on the activities and community mobilization; ii. Environmental and Social Impact Assessment; iii. Survey works and placing of beckons at 60 Meters wide; iv. Registration of all Project Affected Persons (PAPs) ; and v. Valuation of affected immovable structures and properties <p>The team emphasized on the need for the community to work together with these five teams undertaking these activities for effective delivery. The team also asked the members present to share their views concerning the proposed project so as to be considered during the project cycle.</p> <p>The community then presented their views as follows</p>	
Issues Raised	Response
Name: Issue: Will this project be actualized? They have been waiting for roads for the last 50 years.	The Project construction Phase is expected to start in two-three years.
Name: Issue: Dust and Noise. The road is rough and dusty which makes it very hard for people to sleep. They are forced to close shop when cars overspeed to avoid the impacts of dust.	During construction measures would be put in place to minimize dust emission. The road proposed will be tarmacked and this will reduce the dust nuisance.
Name: Issue: During rain the road is too muddy and not accessible and when the tarmac comes they expect a lot of improvement and social change due to influx of people from other areas.	They welcome people from other areas but they would like for other people to respect their culture.

Issues Raised	Response
• There are alot of accidents along the road especially between cars and livestock, along the centres and where children are crossing the road	The design team will be informed to put measures in place along the road centres to reduce accidents
• They want job opportunities during construction.	The Project will provide job opportunities for casual and other staff the community should be
• What will happen to the people who will be affected by the road project	Prostited - They will be adequately compensated and given notice to move
• What is the expected Right of way.	The expected Right is 60M.
Having no other business to discuss the meeting ended at hrs.	

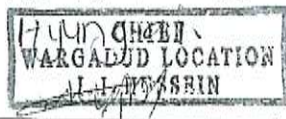
Signed as true record of the meeting

Chief:

Location:

Sign

Stamp



CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting RAP

Location: <u>Hungai</u>	Minute Rapporteur:
Date: <u>23/02/2018</u>	Time: Start: <u>11:00am</u> hrs Finish: <u>12:40pm</u> hrs
Purpose: Consultation and Sensitisation meeting with PAPS for RAP on the Design Review of Wajir-Kutulo Road Project	
Attendees: As Attached	
Item No.1: Project Description The consultation and sensitization team further outlined to the PAPS the activities currently being undertaken on the proposed Wajir-Kutulo Road. These activities are; <ol style="list-style-type: none"> Project Purpose; Cut-off date explanation of what it is; Actual Dates of cut off set and agreed; Program on their level of participation <ul style="list-style-type: none"> Preparation of land and asset inventory Census Baseline Socio Economic /HH Survey, K.I.I and FGD (their full participation during FGD) Valuation-participation in inventory -Confirm the assets are correct as they will sign the inventory form Disclosure of the project will be given to them by KeNHA Representatives approved by the community for the absentee PAPS Grievance Mechanism <ul style="list-style-type: none"> Type of grievances to be expected Existing Grievance Mechanisms Recommendation of Grievance Mechanism for RAP Expected Challenges 	
Project Purpose The study team explained that they were consultants from GIBB Africa Ltd, contracted by KeNHA to prepare road design for Wajir-Kutulo road which is part of Isiolo - Marsabit road. The road was important and by in opening up the area and improving security to enable the settlements along the road to be easily accessible during security response. The road would improve transport services to be more efficient economically for livestock owners and traders.	
Cut-off date explanation of what it is The study team explained that it was important for the meeting to publicly agree on a cut-off date, which is a date set as the last day of census and asset inventory, to avoid later influx of people settling into the area designated for the project.	

Actual Dates of cut off set and agreed;

The cut-off date for Hyungai location was set for the (26/02/2018) 26 February 2018 and publicly agreed during the meeting.

Program on their level of participation

The Study team explained that the census and asset inventory exercise would require them to participate. The community's project affected persons were required to have their national identity cards which would be used to identify their names officially as the registered valuer would be recording the affected assets, the household head or the appointed representative was required to be present to confirm that all the affected asset was recorded and sign the asset inventory form and a photo taken of the PAP in front of the affected asset.

The Study team explained that Kenya National Highway Authority would be responsible in disseminating the RAP report to each household during the RAP implementation process.

During the meeting it was collectively agreed that all the affected households would either have the owner or an appointed representative who would provide the household information to the census team consisting of a trained enumerator from the community, valuer and the sociologist who would provide PAP identification for each household based on the location and affected chainage and side of the road.

The Study team also emphasized on the importance of each person participating fully during the FGD meetings that were going to be held separately for the;

- Women;
- Youth;
- PLWID; and
- Elders and Opinion Leaders.

Grievance Mechanism

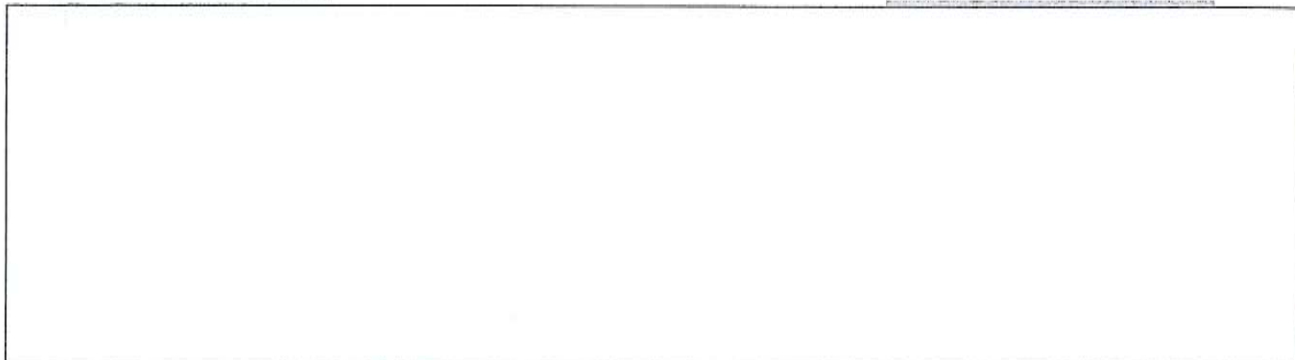
- During grievances the elders, the chief and a community grievance committee usually solve community issues such:

- Husband and wife conflict
- Conflict due to land
- Conflict due to livestock

In the event that a conflict cannot be solved at the community level it is taken to the Khasbi Courts or government courts.

During RAP they propose for the grievance committee to have the following people:

- The chief and assistant chief
- The elders who will be there at the time since this is a Pastoral nomadic committee and the men are always moving in search of water for their livestock.
- The committee will also include a Woman
- A representative of People living with disability and the youth



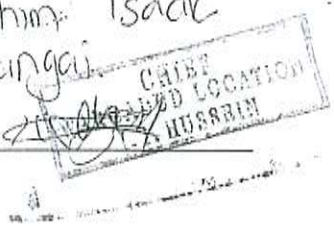
Signed as true record of the meeting

Chief: Ibrahim Isaac

Location: Hyungai

Sign _____

Stamp











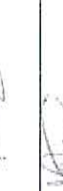


**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

JOB NO.001903

Venue: Hyungai Sub Location

DATE: 23/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Ahmed Dove		0719875652		
2	Hassan Hassan		0701516702		
3	M. Abdullahi Ali		0725274967		
4	M. Hussein Ibrahim		0720094401		
5	Adan Sukenen		0716777993		
6	Hassan Abdi		0726854288		
7	Ibrahim Sijet		0710370052		
8	Muhammed Noor		0729985868		
9	Wahidige Omar		0713747435		
10	Issack Ali				
11	Muhammed Abdi		0726043086		
12	Ibrahim Mado				






**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

JOB NO.001903

Venue: Hingirai Sub location

DATE: 23/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Omari Godi		0790800629		
2	Abdullahi Ali		0743 750542		HA
3	Abdulla M. M. M.		0700672036		
4	Ambia Sheikh				
5	Saretha Ishyale		072743355		
6	Dagan Barow				
7	Saleem Adhi				
8	Halima Alif				HA
9	Haretha Abdille Elmi				HA
10	Fatuma Dinye Issack		0746944312		
11	Chief IBRAHIM ISSACK	CHIEF	07771304940		
12	A/c MUSSA GESSI ABILLI	A/CHIEF	0727452384		

Appendix III (d) Minutes of public meeting at Wargadud location

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting ESIA

Location: Wargadud	Minute Rapporteur: Joyce Owino
Date: 24/02/2018	Time: Start: 1:30pm hrs Finish: 2:30pmhrs
Purpose: ESIA Consultation and Sensitisation meeting on the Design Review of Wajir-Kutulo Road Project	
Attendees: As Attached	
Item No.1: Project Description	
<p>The consultation and sensitization team gave the project description and further outlined the activities currently being undertaken on the proposed Kutulo-Elwak Road. These activities are;</p> <ol style="list-style-type: none"> Sensitization on the activities and community mobilization; Environmental and Social Impact Assessment; Survey works and placing of beckons at 60 Meters wide; Registration of all Project Affected Persons (PAPs) ; and Valuation of affected immovable structures and properties <p>The team emphasized on the need for the community to work together with these five teams undertaking these activities for effective delivery. The team also asked the members present to share their views concerning the proposed project so as to be considered during the project cycle.</p> <p>The community then presented their views as follows</p>	
Issues Raised	Response
Dust pollution Dust is a nuisance since the settlements are along the road	During construction a dust minimization plan will be proposed in the ESMP to lower the potential of dust emission from site activities. Likewise, appropriate measures will be taken to ensure that the site and the surroundings are maintained to a high standard of cleanliness.
Accidents Accident occurrences of both humans and livestock in the area is low but it is expected to rise when the road has been constructed appropriate measures need to be put in place to prevent accidents from occurring	Driving practices that reduce both the risk of accidents and measured acceleration and driving within safe speed limits will be recommended on the ESMP. Speed bumps along the town centres will also be proposed as well as road safety measures that will prevent accidents
Influx of people People from other areas will be coming in to work during construction and this will corrode their culture, also HIV/AIDs prevalence is very low in the area and measures need to be put in place to ensure that spread of STDs does not become	This particular impact of road construction can only be mitigated through education of both the migrant and local populations. HIV/AIDs awareness campaigns and education will be proposed to the

Quality Highways Better Connections		CONSULTING & DESIGN	
Issues Raised		Response	
rampant		Contractor during construction phase.	
Vehicles wear and tear very fast due to the current road condition The current road condition is costing the motorist in terms of servicing and maintaining their vehicles due to wear and tear		With the upgrade of the road to bitumen standards this problem is expected to be minimized.	
Increase in business The project will improve businesses in the area since now more people will travel to the area and the community will also be able to access the markets for their livestock easily		These are benefit that are expected in the area to achieve livelihood improvement and poverty reduction as well as efficient mode of transport for faster delivery of goods and services as well as extension services and emergency response y the Government and NGOs.	
Efficient transport services Cost of transport will reduce because the modes of transport used will now be improved and efficient			
Having no other business to discuss the meeting ended at 2:30pm hrs.			

Signed as true record of the meeting

Chief: Ibrahim Isack

Location: Hargadud

Sign: 

Stamp

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Minutes of the Public Meeting Held with Project Affected Persons

Location:	Wargadud	Minute Rapporteur:	Joyce Owino
Date:	24/02/2018	Time Start:	1:30pm Finish 2:30pm
Purpose:	Consultation and Sensitization Meeting on RAP Studies		
Attendees:	As Attached		

**Due to the challenge of language barrier, a member from the community was appointed to translate in Somali for the people to understand and comprehend the information given*

Item No 1: Project Purpose

The study team explained to the Project Affected Persons (PAPs) that they were Consultants from GIBB Africa, contracted by the Kenya National Highways Authority (KeNHA) the implementing agency, to undertake preparation of road designs for the Wajir-Kutulo road. As part of this important program, the Resettlement Action Plan (RAP) as guided by the World Bank Operational Policy OP 4.12 and GOK guidelines needs to be prepared to meet the Government requirements and the Bank's social safeguards conditions for project approval. In an effort to ensure that the proposed project is implemented in an environmentally and socially sustainable manner.

The Consultant explained that Wajir-Kotulo road was part of the Isiolo-Mandera road and construction of the road will be of importance to the area as it is expected to bring changes such as:

- Opening up the Counties of Wajir and Mandera which will lead to economic growth, employment generation and eventually poverty reduction.
- Reduce production costs, particularly in the livestock sectors, through faster delivery of livestock produce to the markets.
- Reliability and accessibility of extension services will be increased and available at low costs which have been hampered by poor road condition due to fast and efficient transportation of goods and services to in and out of the project area; and
- Security in the area is expected to be improved as the villages will be easily accessible during response to security distress. There have been several incidences of terrorist's attacks in the area but due to bad roads, most often than not, the security arrives very late to offer any assistance.

The study team further outlined to the PAPs, the activities that were currently being undertaken on the proposed Wajir-Kutulo road as:

- Sensitization on the activities and community mobilization;
- Environmental and Social Impact Assessments;
- Survey Works and Placing of beckons at 60 Meters width of the road;
- Baseline Socio Economic/HH survey, KII and FGD;
- Registration of all PAPs/RAP Census; and
- Valuation of affected immovable structures and properties.

Item 2: Program on their level of participation

The study team emphasized to the PAPs on the need for the community to work together with the above six teams undertaking these activities for effective delivery. The team explained that during the Census and asset inventory, they would be required to produce their national identification cards that will be used to identify and register them as the true owners of the affected properties and assets. A further explanation was given on valuation method that would be done at full replacement cost based on current market value of the affected asset. The RAP Expert informed the community that a photo would then be taken of the asset owner standing in front of the affected asset, after which a project Identification number would be given to the PAP with their exact chainage along the road either on the left or right side, and it would also indicate the village. The study team explained that they would submit a copy to the client to be used for verification purposes during the RAP disclosure by the Client (KeNHA).

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

The study team explained that during the baseline socio economic survey and Census, trained enumerators from the area will be walking door to door interviewing the head of the household and that it was important for all households to be represented. The meeting agreed that all households would have an adult member who would respond to the questionnaire, for absentee PAPs the village elder walking with the census team would assist in identifying the owners.

Item 3: Cutoff date:

The study team explained to the PAPs that a cutoff date was a date set as the last possible date for registration of project affected persons and asset inventory. What this means is that any person who moved into the area designated for the project and put up a structure after this date has been set, was not going to be eligible for compensation. The team explained that it was important for the project to set a cutoff date to avoid influx of people settling in into the project Right of Way.

Item 4: Cutoff date Wargadud Location

The cutoff date for Wargadud Location was publicly agreed during the meeting to be 27 February 2018

Item 5: Grievance Mechanism

The following committees exist within the community and they resolve grievances that arise for their specific issues within their docket;

- Maslaha dispute resolution;
- The Elders, Chief and Assistant Chief; and
- Committee for school, hospital, borehole, mosque, youth, persons living with disability- these committees are mostly involved in fund raising and welfare of the community

Recommendation on Grievance Mechanism for RAP

During RAP implementation the community will form an appropriate committee to deal with issues that will arise at the time.

Item 6: Q and A

The study team asked the community members present to share their views concerning the proposed project so as to be considered during the project cycle.

The community then presented their views as follow:

Issue	Comment	Response
Project implementation	The Community has witnessed road surveys being done for over ten years, and at one point the right of way for the road had been cleared and those who were resided along the road had relocated. However since the project was never implemented people moved back along the road and even some have built permanent structures. The community is skeptical about the road project finally commencing	The project is expected to begin in the near future
Compensation	Will the community be compensated? The community has no issue	All affected assets that are immovable within the 60 meter corridor will be valued for

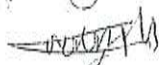
CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Issue	Comment	Response
	as long as the Government commits to pay them their due compensation before being told to move.	compensation as long as they have been found on site at the time of the census and asset inventory. However, any structure that comes up after the cutoff date will not be compensated.
Land ownership	Within the community, there are people who have been allocated land, but they do not have documents. However, the elders can be witnesses to confirm ownership of such land. For those who do not have structures on the said land, will they be compensated for the land if they loose access as a result of the project?	
Employment opportunities	The community would like to be considered for employment opportunities when the project construction phase begins	When the Project comes, it will have employment opportunities for menial jobs and service provision related to road construction, we will propose that locals along the road to be given priority
Having no other business to discuss the meeting ended at 3:30pm		

Signed as true records of the meeting

Chief Ibrahim Isaac

Location Hargadud

Signature: 

Stamp:

**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

DATE:

Venue: *Wajir*

JOB NO.001903

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Rashid Mude		0725265238		<i>[Signature]</i>
2	Hussen Dirige		0722343240		<i>[Signature]</i>
3	Amina Mubow		0797384216		<i>[Signature]</i>
4	Kadban Jette		0795116499		<i>[Signature]</i>
5	Asha Saadi		0707906251		<i>[Signature]</i>
6	Zenab Paroo		0724777739		<i>[Signature]</i>
7	Raga Gedi		0711795559		<i>[Signature]</i>
8	Abdiga Seidaro		0714814249		<i>[Signature]</i>
9	Nadhiya Adan		0707898501		<i>[Signature]</i>
10	Abdiga Hussen		0700406757		<i>[Signature]</i>
11	Machina Hussen		0702083705		<i>[Signature]</i>
12	Ksaba Paroo		0727170123		<i>[Signature]</i>

**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

JOB NO.001903 Venue: *Margachud* DATE:

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Hassan Abdi		0717492230		<i>[Signature]</i>
2	Muawid Musa		0724110374		<i>[Signature]</i>
3	Hassan Mohamed		0700110704		<i>[Signature]</i>
4	Kule Mohamed		070580003 070580003		<i>[Signature]</i>
5	Bishar Muktar		0714902324		<i>[Signature]</i>
6	Ahmed Ibrahim		0713776751		<i>[Signature]</i>
7	Dennis Dakel		0706706121		<i>[Signature]</i>
8	Abdi Saleh		0706703782		<i>[Signature]</i>
9	Nubeno Kerley		07		<i>[Signature]</i>
10	Ahmed Wahlgge		0729706361		<i>[Signature]</i>
11	IBrahim Dake		0725126949		<i>[Signature]</i>
12	Mawo firah		070989964		<i>[Signature]</i>

**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

DATE:

Venue: *Margaret*

JOB NO.001903

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	<i>Rokica Mohamed</i>		<i>0727-810798</i>		<i>[Signature]</i>
2	<i>Moshima Abdi</i>		<i>0713906034</i>		<i>[Signature]</i>
3					
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**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

JOB NO.001903

Venue: Mangochi

DATE: 24/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Dargare Mohammed		0730891164		
2	Mole Zedon		0740176400		
3	Jelle Naop		0715443979		
4	ARFAH Ali		07998721067		
5	Issack Muse		0701318983		
6	Mohamed Billos		0727130296		
7	Baghim Abdi		0718341550		
8	Hussien Saleh		0725464244		
9	Abdi Ngea		0714821323		
10	Aliin Abdullahi		0727130495		
11	Hassan Abdullahi		0705034801		
12	Mohab Abdi		0704668853		

Appendix III (e) Minutes of public meeting at Kotulo-Wajir location

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting ESIA

Location:	Kutulo	Minute Rapporteur:	Joyce Owino
Date:	24/02/2018	Time:	Start: 10:30am hrs Finish: 12:30pm hrs
Purpose: Consultation and Sensitisation meeting with PAPS for RAP on the Design Review of Wajir-Kutulo Road Project			
Attendees: As Attached			
Item No.1: Project Description			
<p>Item No.1: Project Description</p> <p>The consultation and sensitization team gave the project description and further outlined the activities currently being undertaken on the proposed Kutulo-Elwak Road. These activities are;</p> <ul style="list-style-type: none"> vi. Sensitization on the activities and community mobilization; vii. Environmental and Social Impact Assessment; viii. Survey works and placing of beckons at 60 Meters wide; ix. Registration of all Project Affected Persons (PAPs) ; and x. Valuation of affected immovable structures and properties <p>The team emphasized on the need for the community to work together with these five teams undertaking these activities for effective delivery. The team also asked the members present to share their views concerning the proposed project so as to be considered during the project cycle.</p> <p>The community then presented their views as follows</p>			

Issues Raised	Response
<p>Influx of people</p> <p>The community is aware that with such road projects people from outside will be coming to their area to settle and integrate with them. They are okay with people inter marrying with them as long as they belong to the Muslim religion or the party that is not Muslim should be willing to convert to their religion. In the event that the person does not convert, it will lead to the elders and religious leaders ostracizing their own from the community With development comes corrosion of culture and it is important for everyone to agree to prevent calamities that will cause the project which much needed from stalling</p>	<p>Awareness campaigns and education should be proposed to the immigrants on the community way of life</p>
<p>Water Supply</p> <p>The area does not have adequate water and the community is concerned on what will happen when construction activities rings in more people to compete on their already scarce resource. Is it possible for the project to build boreholes to increase water in the area? The water can also be used to do irrigation farming as the area has good soil suitable for farming.</p>	<p>The proposal will be communicated to the proponent for consideration</p>

Issues Raised	Response
Health facility The area has one dispensary that will require an upgrade in order to improve services offered both to the locals and the construction population that is expected to settle in the area.	The proposal will be recommended to the client for consideration

Having no other business to discuss the meeting ended at 12:30pm hrs.

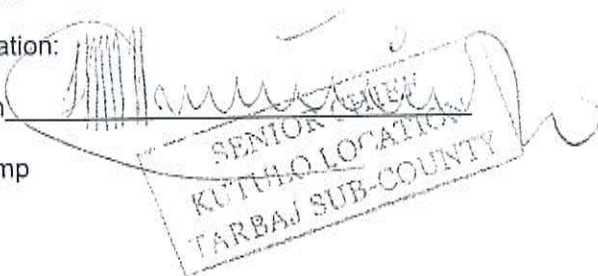
Signed as true record of the meeting

Chief:

Location:

Sign

Stamp



CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Minutes of the Public Meeting Held with Project Affected Persons

Location:	Kotulo	Minute Rapporteur:	Joyce Owino
Date:	24/02/2018	Time Start:	10:30am Finish 12:30pm
Purpose:	Consultation and Sensitization Meeting on RAP Studies		
Attendees:	As Attached		

**Due to the challenge of language barrier, a member from the community was appointed to translate in Somali for the people to understand and comprehend the information given*

Item No 1: Project Purpose

The study team explained to the Project Affected Persons (PAPs) that they were Consultants from GIBB Africa, contracted by the Kenya National Highways Authority (KeNHA) the implementing agency, to undertake preparation of road designs for the Wajir-Kutulo road. As part of this important program, the Resettlement Action Plan (RAP) as guided by the World Bank Operational Policy OP 4.12 and GOK guidelines needs to be prepared to meet the Government requirements and the Bank's social safeguards conditions for project approval. In an effort to ensure that the proposed project is implemented in an environmentally and socially sustainable manner.

The Consultant explained that Wajir-Kotulo road was part of the Isiolo-Mandera road and construction of the road will be of importance to the area as it is expected to bring changes such as:

- Opening up the Counties of Wajir and Mandera which will lead to economic growth, employment generation and eventually poverty reduction.
- Reduce production costs, particularly in the livestock sectors, through faster delivery of livestock produce to the markets.
- Reliability and accessibility of extension services will be increased and available at low costs which have been hampered by poor road condition due to fast and efficient transportation of goods and services to in and out of the project area; and
- Security in the area is expected to be improved as the villages will be easily accessible during response to security distress. There have been several incidences of terrorist's attacks in the area but due to bad roads, most often than not, the security arrives very late to offer any assistance.

The study team further outlined to the PAPs, the activities that were currently being undertaken on the proposed Wajir-Kutulo road as:

- Sensitization on the activities and community mobilization;
- Environmental and Social Impact Assessments;
- Survey Works and Placing of beacons at 60 Meters width of the road;
- Baseline Socio Economic/HH survey, KII and FGD;
- Registration of all PAPs/RAP Census; and
- Valuation of affected immovable structures and properties.

Item 2: Program on their level of participation

The study team emphasized to the PAPs on the need for the community to work together with the above six teams undertaking these activities for effective delivery. The team explained that during the Census and asset inventory, they would be required to produce their national identification cards that will be used to identify and register them as the true owners of the affected properties and assets. A further explanation was given on valuation method that would be done at full replacement cost based on current market value of the affected asset. The RAP Expert informed the community that a photo would then be taken of the asset owner standing in front of the affected asset, after which a project Identification number would be given to the PAP with their exact chainage along the road either on the left or right side, and it would also indicate the village. The study team explained that they would submit a copy to the client to be used for verification purposes during the RAP disclosure by the Client (KeNHA).

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

The study team explained that during the baseline socio economic survey and Census, trained enumerators from the area will be walking door to door interviewing the head of the household and that it was important for all households to be represented. The meeting agreed that all households would have an adult member who would respond to the questionnaire, for absentee PAPs the village elder walking with the census team would assist in identifying the owners.

Item 3: Cutoff date:

The study team explained to the PAPs that a cutoff date was a date set as the last possible date for registration of project affected persons and asset inventory. What this means is that any person who moved into the area designated for the project and put up a structure after this date has been set, was not going to be eligible for compensation. The team explained that it was important for the project to set a cutoff date to avoid influx of people settling in into the project Right of Way.

Item 4: Cutoff date Kutulo Location

The cutoff date for Kutulo Location was publicly agreed during the meeting to be 28 February 2018

Item 5: Grievance Mechanism

Existing GRM

They have several committees headed y the chief and assistant chiefs such as committee for water, education, health, and farming.

Peace elders /Maslaha dispute resolution committee, help to solve problems within the community, if people are not satisfied they go to the chief, police then the normal courts

Cases such as defilement, rape and murder are reported to the police and go to the normal courts.

Type of grievance expected

Domestic conflicts;

Livestock conflicts; and

Land disputes.

Recommendation on Grievance Mechanism for RAP

During RAP implementation the community will form an appropriate committee to deal with issues that will arise at the time.

Item 6: Q and A

The study team asked the community members present to share their views concerning the proposed project so as to be considered during the project cycle.

The community then presented their views as follow:

Issue	Comment	Response
Employment	The community requested that when the contractor is mobilized to come on site, he should give priority to service providers for transport and labour for any skill that can be found locally to the locals before sourcing for outsiders as this will reduce the number of outsiders coming to settle in their area for job opportunities	The study team clarified that usually projects have technical teams such as the supervising engineers, surveyors, contractors who are sourced during the tendering stage of the project. The non-technical staff and menial jobs available and other related services to be provided will have opportunities for the community to get employment.

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Issue	Comment	Response
Compensation	Will the community be compensated? The community has no issue as long as the Government commits to pay them their due compensation before being told to move.	All affected assets that are immovable within the 60 meter corridor will be valued for compensation as long as they have been found on site at the time of the census and asset inventory. However, any structure that comes up after the cutoff date will not be compensated.
Road design	A community member inquired if it was possible to reduce the width of the road along the town centre	The study team explained that the proposal would be discussed with the design engineers to find out if it was feasible.

Having no other business to discuss the meeting ended at 3:30pm

Signed as true records of the meeting

Chief

Location

Signature:

Stamp:



CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting ESIA

Location: Kutulo	Minute Rapporteur: Joyce Owino
Date: 24/02/2018	Time: Start: 10:30am hrs Finish: 12:30pm hrs
Purpose: Consultation and Sensitisation meeting with PAPS for RAP on the Design Review of Wajir-Kutulo Road Project	
Attendees: As Attached	
Item No.1: Project Description	
<p>Item No.1: Project Description</p> <p>The consultation and sensitization team gave the project description and further outlined the activities currently being undertaken on the proposed Kutulo-Elwak Road. These activities are;</p> <ul style="list-style-type: none"> vi. Sensitization on the activities and community mobilization; vii. Environmental and Social Impact Assessment; viii. Survey works and placing of beckons at 60 Meters wide; ix. Registration of all Project Affected Persons (PAPs) ; and x. Valuation of affected immovable structures and properties <p>The team emphasized on the need for the community to work together with these five teams undertaking these activities for effective delivery. The team also asked the members present to share their views concerning the proposed project so as to be considered during the project cycle.</p> <p>The community then presented their views as follows</p>	

Issues Raised	Response
<p>Influx of people</p> <p>The community is aware that with such road projects people from outside will be coming to their area to settle and integrate with them. They are okay with people inter marrying with them as long as they belong to the Muslim religion or the party that is not Muslim should be willing to convert to their religion. In the event that the person does not convert, it will lead to the elders and religious leaders ostracizing their own from the community. With development comes corrosion of culture and it is important for everyone to agree to prevent calamities that will cause the project which much needed from stalling</p>	<p>Awareness campaigns and education should be proposed to the immigrants on the community way of life</p>
<p>Water Supply</p> <p>The area does not have adequate water and the community is concerned on what will happen when construction activities rings in more people to compete on their already scarce resource. Is it possible for the project to build boreholes to increase water in the area? The water can also be used to do irrigation farming as the area has good soil suitable for farming.</p>	<p>The proposal will be communicated to the proponent for consideration</p>

Issues Raised	Response
<p>Health facility</p> <p>The area has one dispensary that will require an upgrade in order to improve services offered both to the locals and the construction population that is expected to settle in the area.</p>	<p>The proposal will be recommended to the client for consideration</p>
Having no other business to discuss the meeting ended at 12:30pm hrs.	

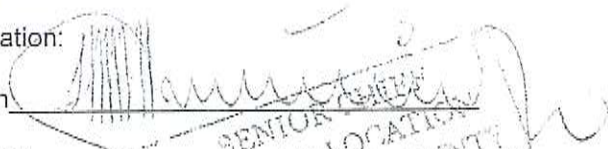
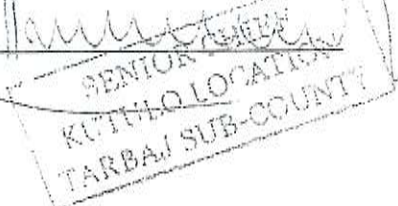
Signed as true record of the meeting

Chief:

Location:

Sign

Stamp

**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

JOB NO.001903

Venue: Kohlo Location

DATE: 29/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Rukia ABDI		0725844142		
2	Mogale JELLE		0728895538		
3	ALATIEF MADAT		07		
4	Helima Hussein				
5	DAKAN MANKA				
6	HABIBA ABDI		0789025033		
7	MARHAN SHAIK		07		
8	GURAY ABDI		0736938255		
9	Jamila Di-bil		0787007783		
10	MARHAN KAROW		0725519966		
11	ATUMA BAKAY		0720162309		
12	Mumina Ahmed		0718463709		

**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

JOB NO.001903

Venue: Kopulo location

DATE: 24/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	SHUKRIYA MUTHUMED		0739809131		
2	ABDUL MUTHUMED		0731175058		
3	FATUMA ALI		0726225566		
4	ABDULHA MUTHUMED		0735625264		
5	ABDULHA SHUKRI		0731042114		
6	MUSLIMA MUTHUMED		0786704106		
7	GABRIEL JELLE		0704508142		
8	SHUKRIYA MUTHUMED		0736148896		
9	FATUMA ABU		0735291492		
10	AMINA ABDI		0787056093		
11	MULUN HASSAN		0735035604		
12	NABO GED		0753481258		

**PUBLIC CONSULTATION MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND
RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD**

ATTENDANCE LIST

JOB NO.001903

Venue: Kofu Location

DATE: 24/02/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	SARUA AHMED	Ko-	075229337		
2	HABBA MUTHUMED		0780750719		
3	ISSAK S. OSMAN	Chief	0738692509		
4	MOHAMMED RUBAN	Businessman	0733273914		
5	HASSAN ERLIK		0734525568		
6	OSMAN ABIKAR		0787978945		
7	HASSAN SARUAB				
8	ISSACK ABUSMAN ISMAIL	Chief	0736146205	0723409280	
9					
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Appendix III (f) Minutes of public meeting at Lafaley location

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting ESIA

Location: <u>Litalele</u>	Minute Rapporteur: <u>Joyce A. Ombiro</u>
Date: <u>21-02-2018</u>	Time: Start: <u>11:00am</u> hrs Finish: <u>12:00pm</u> hrs
Purpose: Consultation and Sensitisation meeting on the Design Review of Wajir-Kutulo Road Project	
Attendees: As Attached	
Item No.1: Project Description	
<p>The consultation and sensitization team gave the project description and further outlined the activities currently being undertaken on the proposed Wajir-Kutulo Road. These activities are;</p> <ul style="list-style-type: none"> i. Sensitization on the activities and community mobilization; ii. Environmental and Social Impact Assessment; iii. Survey works and placing of beacons at 60 Meters wide; iv. Registration of all Project Affected Persons (PAPs); and v. Valuation of affected immovable structures and properties <p>The team emphasized on the need for the community to work together with these five teams undertaking these activities for effective delivery. The team also asked the members present to share their views concerning the proposed project so as to be considered during the project cycle.</p> <p>The community then presented their views as follows</p>	

Issues Raised	Response
<p><u>Dust Pollution</u></p> <p>Name:</p> <p>Issue: Currently the vehicles passing along the road are Derspeeding and the dust levels are high, children have flu constantly</p>	<p>The consultant noted the issue and their proposal for bumps along the country would be recommended in the report.</p>
<p>Name: Mr. Mustafa</p> <p>Issue: Women loose their pregnancy before term due to the poor road condition and vehicles have to speed to avoid being targets of attacks along the road - Miscarriages</p>	<p>The study team acknowledged their concern and assured the community that gender needs of women children (boys & girls) would be considered in the design.</p>
<p>Name:</p> <p>Issue: There are alot of accidents along the road especially children get hit as they cross due to vehiclw speeding - Accident, estimate 5 accidents an month resulting to loss of lives and livestock</p>	<p>The study team recorded this with the aim to advice the design team to put plans of minimizing accidents in the final design</p>

Highlight of challenges with current roads.

- Dust
- Noise
- Diseases / Health issues as a result of dust.
- Accidents / Loss of livestock / lives especially children due to vehicles overspeeding
- Miscamages due to the rough roads.
- There is a diversion that cuts through the village

Highlight of what they would like to have when the new roads come:

- They would like the Government to put bumps along their route to reduce vehicles from overspeeding
- The chief would like to get an office to enable him deliver services to the people
- They would like for the project to build a barchou for them. The current barchou is 1km away from the village and it is used for both livestock and human consumption

Project Support

The community whole heartedly support and welcome the project. This was done by a show of hands and photos taken to record their broad support.

Issues Raised	Response
<ul style="list-style-type: none"> Dust pollution Air pollution during the transportation of animal killed 	<ul style="list-style-type: none"> Appropriate mitigation measures would be proposed
<ul style="list-style-type: none"> They require signage to show children crossing 	This would be recommended in the ESMP for new roads
<ul style="list-style-type: none"> Women would also like to be considered for job opportunities during construction 	Recommendation for gender inclusiveness during job allocations
<ul style="list-style-type: none"> Upgrade 	
Having no other business to discuss the meeting ended at ...12:00 PM... hrs.	

Signed as true record of the meeting

Chief: Lafatey Idle Ahmed Aballi

Location: Lafatey

Sign: [Signature]

Stamp

CONSULTANCY SERVICES FOR THE DESIGN REVIEW OF WAJIR-KUTULO ROAD

Notes for the Meeting RAP

Location: <u>Leifaley</u>	Minute Rapporteur: <u>Djaya A. Obino</u>
Date: <u>21-02-2018</u>	Time: Start: <u>12:00pm</u> hrs Finish:hrs
Purpose: Consultation and Sensitisation meeting with PAPS for RAP on the Design Review of Wajir-Kutulo Road Project	
Attendees: As Attached	
Item No.1: Project Description The consultation and sensitization team further outlined to the PAPs the activities currently being undertaken on the proposed Wajir-Kutulo Road. These activities are; <ol style="list-style-type: none"> Project Purpose; Cut-off date explanation of what it is; Actual Dates of cut off set and agreed; Program on their level of participation <ul style="list-style-type: none"> Preparation of land and asset inventory Census Baseline Socio Economic /HH Survey, K.I.I and FGD (their full participation during FGD) Valuation-participation in inventory -Confirm the assets are correct as they will sign the inventory form Disclosure of the project will be given to them by KenHA Representatives approved by the community for the absentee PAPs Grievance Mechanism <ul style="list-style-type: none"> Type of grievances to be expected Existing Grievance Mechanisms Recommendation of Grievance Mechanism for RAP Expected Challenges 	
Project Purpose * The consultant (GIBB Africa Ltd) explained to the community that Kenha intends to construct the Wajir-Mandera Road. Due to language barrier, a translator was appointed to explain to the community in their language (Somali). The consultant further mentioned that the RAP is guided by World Bank Policy op 4.12 to ensure the project is implemented in a Social Sustainable manner. GIBB mentioned that the road will meet international standards and it was an important aspect in Improving Security in the area.	
Cut-off date explanation of what it is The consultant explained the meaning of cut off date, to be the last possible date when project affected persons (PAPs) and their assets will be recorded. The study team explained that, having this date set and publicly agreed was to avoid later influx of people coming in to settle in the area designated for the project.	

Actual Dates of cut off set and agreed;

The cut off date for Lataley Location was set for 22 February 2018. As agreed by the People collectively during the Public Meeting to minimize later inflow.

Program on their level of participation

The Study team explained that during the census, the PAPs or their representatives were required to be present with their national identity cards. The team explained that the national identity cards would be used to identify them as per their official names and recorded in both the census questionnaire and the asset inventory form.

The study team would then give them project specific codes in their order of location on the particular chainage. After this, a trained enumerator from their community would assist them in filling the questionnaire for each affected household. The census team will then take photos of the PAPs standing in front of their affected assets.

The study team also emphasized the importance of the PAPs presence as the registered land valuer was recording the affected assets on the inventory form, as the PAPs would be required to sign the asset inventory collecting form to show confirmation that it was the true copy of all the asset information collected.

The community agreed collectively that they would all be present during census, and for those who will be absent they agreed to leave behind representatives who would provide their information. It was also agreed during the meeting that the chiefs and elders would talk with the census team and assist in providing information for those PAPs who will be absent with no representatives. The community also broadly accepted the project by a show of hands and photos taken to record this.

Grievance Mechanism

In the community they have elders. When a person greives another. They usually have a process of "Suben" which is an apology and a way of accepting and opening door for conflict resolution.

- Then the two parties sit down and the one who has committed an offence or grievance agrees to pay the other person. Usually the two parties end up resolving the conflict.

Expected grievances:

- In their community they have alot of respect for one another and they do not anticipate any major grievances.

Recommendation

- | | |
|--------------------------|-------------------|
| - 5 village elders / Men | - 1 Sheikh / Imam |
| - 3 Women | - Chief |
| - 3 Youth Representative | - Assistant. |
| - 1 disabled (PLHIV) | |

- The above recommended grievance

Signed as true record of the meeting

Chief: Idle Ahmed Abailile

Location: Kafale

Sign: 

Stamp



ROAD MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue: *Lajalen location.*

DATE: *21/01/2018*

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	<i>Shahary Osman Kili</i>				
2	<i>Wahab Yariye Tawit</i>				
3	<i>Sharifa Jumeire</i>				
4	<i>Adou Hussein Mohamed</i>				
5	<i>Hadiya Haidoud Hassan</i>				
6	<i>Asua Ogul Saliat</i>				
7	<i>Habiba Mohamed Haidoud</i>				
8	<i>Mariamuna Nasr Gouline</i>				
9	<i>Leather bishay moham</i>				
10	<i>fatuma ngalo kamani</i>				
11	<i>Susay Hassan</i>				
12	<i>fatuma shadow</i>				

MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue: *Lafaley location*

DATE: *21/12/2018*

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	<i>ARZA Ali Hassan</i>	<i>resident</i>	<i>0728664414</i>		<i>ARZA</i>
2	<i>Lathan binson munder</i>	<i>resident</i>	<i>0710626314</i>		<i>Lathan</i>
3	<i>Satuma ngas murese</i>	<i>resident</i>	<i>0724653460</i>		<i>SATUMA</i>
4	<i>Munyungu wu bulyungu</i>	<i>Community</i>	<i>0706060196</i>		<i>MAKUMUNU</i>
5	<i>Shenxara elis wad</i>	<i>Village elder</i>	<i>0726467391</i>		<i>Shenxara</i>
6	<i>Shurifa Jumaide murese</i>	<i>maternity cleaner</i>	<i>0704068871</i>		<i>Shurifa</i>
7	<i>Balalaba bawde Yusuf</i>	<i>community health committee</i>	<i>0728633542</i>		<i>BALALABA</i>
8	<i>Nepia Hassan Osman</i>	<i>resident</i>	<i>0728680012</i>		<i>Nepia</i>
9	<i>Ebla adam musa</i>	<i>Village elder</i>	<i>0729062616</i>		<i>Ebla</i>
10	<i>Asha ogle sarat</i>	<i>Village elder</i>	<i>0704604356</i>		<i>ASHA</i>
11	<i>Kamal Ali binow sarat</i>	<i>resident</i>	<i>0713709571</i>		<i>KAMALI</i>
12	<i>Aden samow Ali</i>	<i>resident</i>	<i>0705072007</i>		<i>ADEN</i>

MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT
ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue: LAFALE-1

DATE: 21-02-018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	SINAD MOHAMMED HUSSAN	VILLAGE	0715600311		SINAD
2	JIMALE KUNOW MOHAMMED	VILLAGE	0726077481		JIMALE
3	MOHAMMED AMAR ABDI	VILLAGE	0725876609		MOHAMMED
4	ISLE HASSAN GHAK	VILLAGE	0795628786		ISLE
5	AMMED MUHAMMED KALIMU	VILLAGE	0717199040		AMMED
6	AMINA ADAN AHMED	VILLAGE	-		AMINA
7	HALIMA HASSAN ALI	VILLAGE	0700781263		HALIMA
8	HABIBA ABDI WEHLIXE	VILLAGE	-		HABIBA
9	BAREY MOHAMMED YUSUF	VILLAGE	0707023391		BAREY
10	ABDIA HARET ADAN	VILLAGE	0716645986		ABDIA
11	ABDIA GADAFAY WARDER ERLA AHMED	VILLAGE	-		ABDIA
12	ZEINAB HASSAN ABDI	VILLAGE	0720277126		ZEINAB

MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT
ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue: LAFALE

DATE: 21-02-2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	ABDI MIKAIL JIMALE	Village	0729468455		Abdi
2	ABDIRIZAK MUHAMMED ABU	Village	0729002459		Abdirizak
3	ISMAIL DUIS ABDI	Village	0707342723		Ismail
4	ABDUL MIKAIL JIMALE	Village	0706905404		Abdul
5	ABDULHAKIM MUHAMMED ABU	Village	0727887043		Abdulhakim
6	ABDULLAH ABUKAR HASSAN	Village	0724137892		Abdullah
7	OMAR ISSACK HASSAN	Village	0700185552		Omar
8	MOBLE BASHEER MUHAMMED	Village	0724588920		Moble
9	OSMAN ADAN ADOW	Village	0728313029		Osman
10	NOOR MUHAMMED BISHAR	Village	0728026000		Noor
11	SADAM HAILE ISSACK	Village	0729006266		Sadam
12	HARIRA DAHIT BASHIR	Village	071118487		Harira




MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT
ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue: LAFALE-1

DATE: 21-02-2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	OMAR MOHAMMED HUSSEIN	Village	0721426542		
2	ABDI IBRAHIM HUSSEIN	Village	0718465360		
3	AMBIA ANTAH OSMAN	Village	0725904716		
4	BINTA ADAN YUSUF	Village	—		BINTA
5	HINDIA SHEIKH MOHAMMED	Village	0716512373		HINDIA
6	NOR BARE AHMED	Village	0721350198		NOR
7	FATIMA MIKAIL TIMALE	Village	0716442507		FATIMA
8	RUKIA MIKAIL TIMALE	Village	0798765013		RUKIA
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MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT
ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue: LAFALEI

DATE: 21-02-2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Aden HUSSEIN MUHAMMAD	SCHOOL CHAIR LADY	0723357828		Aden
2	MUHAMMAD UGASS KANYARE	C.H.V	0725087853		MUHAMMAD
3	MUSA FARAH HADLOW	Village	0720461485		MUSA
4	JELE HASSAN YUSSUF ABDELHAK	Village	0725055119		—
5	IBRAHIM HARET ADAN	Village	0729783340		—
6	ISSACK KULLOW MUHAMMAD	Village	0707904710		Issack
7	MUHAMMAD HUSSEIN AZI	Village	0724485436		Azi
8	AMINA ARROUS SHEIKH	Village	0720303162		Amina
9	ABUKAR HASSAN DEBOW	C.H.V	0720349775		ABUKAR
10	AFTIN KASSIM YUNUS	Village	0729584086		Aftin
11	INPARSANE ADAN ADOW	Village	0720602759		Inpar
12	YASIN HUSSEIN ALI	Village	0729062720		Yasin

MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue: Lupaey location

DATE: 21/2/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	Aben Abdh Hassan	youthe resident	0729824183		ADAN
2	Abass Harib Issack	youthe resident	0728383330		Abass
3	Omar nurroo dakin	Village elder	0710372557		OMAR
4	Sugul elahin Mohamed	Village elder	0710372557		JSW
5	Mohamed Ibrahim Abdille	Village elder	0704602782		MOH
6	Dirie hass Hassan	Village elder	0724626045		Dirie
7	Sabdon Ibrahim Hassan	Village elder	0720767552		Sabdon
8	Sabat Ali dere	elderly community	0726437417		Ali
9	Benow Abdullahi Ibrahim	elderly community	0708163008		Benow
10	Abdighafman Yusuf Ali	youthe	0715073447		Yusuf
11	Sabat Abdille Omar	youthe resident	0720326405		Sabat
12	Hassan Mohamed Ibrahim	Village			Hassan

MEETING FOR ENVIRONMENTAL IMPACT ASSESSMENT (ESIA) AND RESETTLEMENT
ACTION PLAN (RAP) UNDER DESIGN REVIEW OF WAJIR-KUTULO ROAD

ATTENDANCE LIST

JOB NO.001903

Venue: Layaleh location

DATE: 21/12/2018

No.	NAME	DESIGNATION	TELEPHONE NO	Email Address	SIGNATURE
1	BILAL BIKIL MAMUD	Village	0724834921		Bu Jm
2	Mohamed Sugul elam	hospital chairman	0725298606		20220
3	Moadley Kalmoi nini	resident	0710958702		gibo
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Appendix V: Records of FGDs

CONSULTANCY SERVICES FOR DESIGN REVIEW OF WAJIR-KUTULO ROAD
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN STUDIES
FOCUS GROUP DISCUSSIONS ATTENDANCE SHEET

JOB NO:001903

GROUP:

Murteidus (Torbay)

DATE:

23/02/2018

NO	NAME	TELEPHONE	SIGNATURE
1.	ABDI NIKAIL JIMALE	N/A	
2.	KINAIL DING ARNI	N/A	
3.	JIOALE KUNOKI MOHAMUD	N/A	
4.	YUSSUF GIRELE HAGAN	N/A	
5.	IGGAL KILLOKI MOHAMUD	N/A	
6.	ROBLE BARTER MOHAMUD	N/A	
7.	SIYAS MOHAMUD HUSSEIN	N/A	
8.	IBRAHIM HARRET ADAM	N/A	
9.	ADAM ABY HAGAN	N/A	
10.	ABDI IBRAHIM HUSSEIN	N/A	
11.	YASIN HUSSEIN ALI	N/A	
12.	AFTIN KASIM YUNUS	N/A	
13.	ABUKAR HAGAN DUBOW	N/A	

CONSULTANCY SERVICES FOR DESIGN REVIEW OF WAJIR-KUTULO ROAD
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN STUDIES
FOCUS GROUP DISCUSSIONS ATTENDANCE SHEET

JOB NO:001903

GROUP: *Women (10 people)*

DATE: *21/02/2018*

NO	NAME	TELEPHONE	SIGNATURE
1.	HINDIA CHEIKH MOHAMMED	N/A	
2.	HABIBA ABDI	N/A	
3.	FATUMA ABDULLA	N/A	
4.	HAKUNA SALAT GAZAT	N/A	
5.	FATUMA KASSIM NUNUN	N/A	
6.	HAKUNA SALAT	N/A	
7.	HAKUNA GABARAY	N/A	
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CONSULTANCY SERVICES FOR DESIGN REVIEW OF WAJIR-KUTULO ROAD
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN STUDIES
FOCUS GROUP DISCUSSIONS ATTENDANCE SHEET

JOB NO:001903

GROUP: *Women (KODJO)*

DATE: *27/02/2018*

NO	NAME	TELEPHONE	SIGNATURE
1.	<i>RUKIA ABDI</i>	<i>0725844142</i>	
2.	<i>NIGGARE JELIE</i>	<i>0738205383</i>	
3.	<i>ALAYET NADAY</i>	<i>N/A</i>	
4.	<i>HALIMA HUSSEIN</i>	<i>N/A</i>	
5.	<i>SAKAN NANIKA</i>	<i>N/A</i>	
6.	<i>HABIBA ABDI</i>	<i>0789025053</i>	
7.	<i>NARAYAN CHEK</i>	<i>N/A</i>	
8.	<i>GURAY ABDI</i>	<i>0736938255</i>	
9.	<i>SANIKA SUBIL</i>	<i>0787007783</i>	
10.	<i>NARAYAN BARDH</i>	<i>0725519966</i>	
11.	<i>FATUMA BAKAY</i>	<i>0720163509</i>	
12.	<i>MUMINA AHMED</i>	<i>0718498709</i>	
13			

CONSULTANCY SERVICES FOR DESIGN REVIEW OF WAJIR-KUTULO ROAD
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN STUDIES
FOCUS GROUP DISCUSSIONS ATTENDANCE SHEET

JOB NO:001903

GROUP: Youth (Margadud)

DATE: 27/01/2018

NO	NAME	TELEPHONE	SIGNATURE
1.	AMNES NAAHAT ALI	0727632290	
2.	AMNES BIGHAR	0700919924	
3.	MUSUF IBRAHIM	0710909952	
4.	ABAN BUKEL	0727135498	
5.	HAGAN ABASI	0720689169	
6.	YUSUF BIGHAR	0727120535	
7.	ADOKI NICHANNEB	0720868762	
8.	IBRAHIM HAGAN	0725464869	
9.	ABASI HAGAN	0727120549	
10.	HABIBA YUSUF	0713739544	
11.	AMNES SUBUKI	0707467000	
12.			
13.			

CONSULTANCY SERVICES FOR DESIGN REVIEW OF WAJIR-KUTULO ROAD
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN STUDIES
FOCUS GROUP DISCUSSIONS ATTENDANCE SHEET

JOB NO:001903

GROUP: Youth (Mogobeni)

DATE: 01/03/2018

NO	NAME	TELEPHONE	SIGNATURE
1.	AHMED ABDELLATHI	07222749645	
2.	IMRAN ABDI	07226903587	
3.	ABDI KILICKI	07223820587	
4.	ABDIRAHMAN BILAL	0725064243	
5.	AREFA NOOR	0722838034	
6.	HASINA HUSSEIN	0726399273	
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CONSULTANCY SERVICES FOR DESIGN REVIEW OF WAJIR-KUTULO ROAD
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN STUDIES
FOCUS GROUP DISCUSSIONS ATTENDANCE SHEET

JOB NO:001903

GROUP:

DATE:

NO	NAME	TELEPHONE	SIGNATURE
1.	SHUKRIYA NICHUMES	0739809131 0711770996	
2.	ADAY NICHUMES	0731175258	
3.	FADUNA AJI	0726221566	
4.	ABDIYA NICHUMES	0735625264	
5.	ABDIYA SHUK	0731042114	
6.	NICHUMES NICHUMES	0786704106	
7.	CHADY JALE	0704508142	
8.	SHONY NICHUMES	0730148886	
9.	FADUNA ANTRA	0736291492	
10.	ADUNA ABNI	0787056095	
11.	NICHUMES HADUN	0735635604	
12.	NESOD GEDI	0733481268	
13.			

CONSULTANCY SERVICES FOR DESIGN REVIEW OF WAJIR-KUTULO ROAD
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN STUDIES
FOCUS GROUP DISCUSSIONS ATTENDANCE SHEET

JOB NO:001903		GROUP: Gidarsi Nun (Gafuug)	DATE: 21/02/2018
NO	NAME	TELEPHONE	SIGNATURE
1.	DEKEM ABDULJAHIR IBRAHIM	N/A	
2.	GABDUL JINAH KANYARE	N/A	
3.	ARITA ALI HAKCAN	N/A	
4.	HAKCAN NICHANONES IBRAHIM	N/A	
5.	ADAF (GABDUL ALI)	N/A	
6.	NICHANONES HUNGEM ABDULKE	N/A	
7.	BULAL BIRIK ABDI	N/A	
8.	IMAR ABISI HAKCAN	N/A	
9.	HILUKI ABDULKE HAKCAN	N/A	
10.	HARIST ABDI FARAH	N/A	
11.	SHUKU HAT KAKO	N/A	
12.	ABDUL GAKAT ABDULKE	N/A	
13.	NICHANONES HUNGEM ALI	N/A	

W. KADAY KAWOY NEEK

CONSULTANCY SERVICES FOR DESIGN REVIEW OF WAJIR-KUTULO ROAD
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND RESETTLEMENT ACTION PLAN STUDIES
FOCUS GROUP DISCUSSIONS ATTENDANCE SHEET

JOB NO:001903

GROUP: PLUMB Torbay


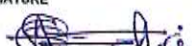

DATE: 23/02/2018




NO	NAME	TELEPHONE	SIGNATURE
1.	NOTHOMES ENAR ABDI	N/A	
2.	ABDULLAH ABIKAR HASSAN	N/A	
3.	MUSA FRAH HAWO	N/A	
4.	MARGANE ADAY ADOK	N/A	
5.	IDRIS SHEIKH NOTHOMES	N/A	
6.	AMNES NOTHOMES NOOR	N/A	
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DOCUMENT CONTROL SHEET

FORM MP180 / B

Project Name and Number	Project Name: Design Review of Wajir-Kutulo (A13) Road Project Number: 1903
Title of Report	Draft ESIA Study Report
Client	Kenya National Highways Authority (KeNHA)
Project Coordinator	Winfred Gichuru
Project Reviewer	Aggrey Kwadha
Quality Manager	Mercy Rose Karen
Task Leader	Moses Mulwa
Team Members	Tom Omenda, George Wandera, Fredrick Maseno, Anastasia Ngatti Catherine Juma, Joyce Akinyi and Allan Ochieng
Sub Consultants	

Prepared by		Reviewed by		Approved by	
ORIGINAL	NAME Moses Mulwa	NAME Aggrey Kwadha	NAME Sam Mambo		
DATE 09/03/2018	SIGNATURE 	SIGNATURE 	SIGNATURE 		

REVISION	NAME MOSES MULWA	NAME AGGREY KWADHA	NAME SAM MAMBO		
DATE 20/04/2018	SIGNATURE 	SIGNATURE 	SIGNATURE 		

REVISION	NAME	NAME	NAME
DATE	SIGNATURE	SIGNATURE	SIGNATURE

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