

REPUBLIC OF KENYA



ORIGINAL

MINISTRY OF TRANSPORT AND INFRASTRUCTURE



KENYA NATIONAL HIGHWAYS AUTHORITY (KeNHA)

UPDATED DRAFT ESIA REPORT

FOR THE PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD (A1), 196 KM OF MARICH PASS-LODWAR ROAD (A1), 196 KM

PROJECT ID: P148853

JANUARY 2015

To
General Manager (Special Projects)
Kenya National Highways Authority
Blue Shield Towers, Hospital Road, Upper Hill
First Floor, Procurement Office, Hospital Road
P.O. Box 49712-00100
Nairobi
Kenya

Prepared by:

Eng. Dr. Zablon Isaboke Oonge
P.O. Box 68221-00200
Nairobi.
Phone: 0733750231
E-mail: consultzam@gmail.com

EXECUTIVE SUMMARY

1. Background

One of the major transport corridors identified in the Northern Corridor Infrastructure Master Plan, the Marich Pass-Lodwar Road is also part of the A1, which originates in Isebania on the border with Tanzania in southwest Kenya. In addition to a connection with South Sudan through Uganda, the Northern Corridor road network proposes two alternative connections to Juba in South Sudan, each requiring improvement of the A1 project road: (1) upgrading and paving the Juba to Nadapal road that is located at the border terminus of an extended A1, and (2) rehabilitating the Eldoret to Lokichogio road to Nadapal.

This Environmental and Social Impact Assessment (ESIA) has been undertaken in accordance with Kenya's Environmental Legislation and follows guidelines issued by National Environment Management Authority (NEMA) regulations and World Bank Safeguards policies. Kenya's Environmental Management and Coordination Act (EMCA) demands ESIA to be conducted on major infrastructure projects to promote environmental and social sustainability of the project. The Marich Pass – Lodwar Project falls in this category.

2 The Project

The project involves upgrading of the Marich Pass – Lodwar road, totalling 197.89 Km. For the most part, the improved Marich Pass-Lodwar Road will follow the existing road alignment. However, particular sections of the current road will be realigned to improve travel speeds and road safety. The right of way (ROW) and roadway will also be widened to meet international design standards. For purposes of planning and design, the project road was divided into two sections: 1) Marich Pass to Lokichar (about 110.12 kms); 2) Lokichar to Lodwar (about 86.77 km) totalling 197.89 km.

3. Environmental and Social Baseline

3.1 Climate

The project area features harsh dry climate. The average annual temperature is 29°C (ranging from 23°C to 35°C) with the average annual rainfall is about 186 mm. The city of Lodwar is among the sunniest places on the planet, getting on average 3,600 hours of sunshine a year.

3.2 Geology and soil

The highlands south of the start of the project area in Pokot are in the Modified Tropical Zone with soils that are generally well drained and fertile. This zone has high potential for agricultural and livestock development. The lowlands in a semi-arid climatic zone further north have complex soils with various textures and drainage conditions with deep alluvial deposits on the valley floors. In Turkana, soils are highly variable and are mostly shallow and generally of light and medium texture. There are either constraints of a chemical composition, or physical limitations such as rockiness, mantle, slope, and depth. The soils are not well developed due to aridity and constant erosion by water and wind and are often capped by stone mantles.

3.3. Water Resources

Boreholes, hand-dug shallow wells, surface water, mostly from rivers, and piped water represent the principal sources of domestic and livestock water. Piped water is distributed within Lodwar municipality by Lodwar Water & Sanitation Company (LOWASCO). Lodwar's schools are provided water from INGO-dug shallow wells. Communities in other sections of the project area depend on water from the Rivers Turkwell and Moruny. Interior communities

must travel long distances to access water for themselves and their livestock, customary from dug-out sandy river beds.

3.4 Administrative Arrangements

Marich Pass, where the road project originates, is a village in Orwa sublocation, Sekerr location, in the Pokot Central portion of West Pokot County. Sekerr location has four sublocations comprising Mbara, Sostin, Chepkondou and Orwa, with the road project passing through Orwa sublocation towards Kainuk. Northwards, the project road crosses Lokichar district in Turkana County and further crosses Kainuk and Katilu divisions.

3.5 Demographic Characteristics

The project area is mainly inhabited by two ethnic groups –Pokot and Turkana. The Pokots, who are the dominant ethnic group in the southern section of the study area northward to the Kainuk forest, are Southern Nilotics who belong to the Kalenjin group. Pokot speakers in West Pokot totaled 500,000 (2009 census); the sub-chief in Orwa sublocation estimates the population of Orwa at 5,000, however. This sublocation population is divided between the Hill Pokots living in the rainy highlands and the Plains Pokots living in the dry plains.

The total Turkana population of Turkana South District is 135,913 of which 72,591 were male and 63,322 were female (2009 census). According to the district commissioner, 98 percent of the district's population is Turkana with the remainder (2 percent) of other ethnicities and/or nationalities. One prominent group in this 2 percent is Somalis who are involved in local businesses.

3.6 Settlement Patterns

The Hill Pokot live in the rainy highlands in the western and southern central parts of the Pokot area where they engage in both farming and pastoralism. Conversely, the Plains Pokot live in the dry and infertile plains where they keep cows, goats and sheep. The population in Marich Pass and Orwa Trading Centre is represented by both the Hill and Plain Pokot.

The two trading centers are developed with housing structures used mainly for commercial purposes. The most common businesses include retail shops for sale of food items such as sugar and tea leaves along with imported cereals and fruits, eating establishments and locally produced charcoal. Historically, the Turkana people are semi-nomadic pastoralists whose settlement patterns depend on availability of pasture for their animals. However, these patterns are gradually changing due to exposure to other lifestyles. The Turkana have been influenced by the pervasive benefits of urbanisation. Their settlements are concentrated around trading centers such as Kainuk, Kaakong, Kalemng'orok, Katilu and Lokichar where they can, at minimum, find work. Moreover, some centres have become densely populated because of increased government-led security.

Buildings, structures and other properties affected by the ROW in this area are found mainly in the trading centres of Marich Pass and Orwa, which are located about 2 km apart. After leaving the Moruny River, settlements are virtually non-existent until the Kainuk forest is reached. Further north there are settlements at Lokichar and Lodwar Towns.

3.7 Economic Activities

Government estimates the area's poverty level at 73 percent; however, local NGOs report that it is 94 percent. In the main, the community is semi-nomadic pastoralists, which partially accounts for high poverty rates; nevertheless, they pursue irrigated farming, particularly around

Kainuk and Katilu where food crops such as maize, sorghum, English /sweet potatoes, cow pea and green gram are raised. Horticultural crops—tomatoes, kale (sukuma wiki), spinach, pumpkins, bananas and other local vegetables—are also grown. Other income sources include charcoal trade, bars, guest houses and boda boda (for-hire motorbike) businesses.

3.8 Food Security

Along with the subsistence maize they raise, the Pokot and Turkana depend upon their cattle for their protein and dairy needs. But, like their neighbors, the Turkana, to the north, the harsh climate limits their ability to produce enough food crops even for subsistence agriculture. Consequently, there are a number of food relief efforts from the government and World Food Program (WFP), when and where necessary.

3.9 Physical Infrastructure

The Marich Pass-Lodwar Road between Marich Pass and Kainuk is in extremely deteriorated condition. Moreover, the maintenance carried out on this section quickly fails. Relatively speaking, Section 3 of the project road (Lokichar to Lodwar) is in the best condition of the three road-project sections. The only paved section of the project road is located near Lodwar.

Lodwar has an airstrip which is used by commercial airlines for daily flights between Nairobi and Lodwar. The airstrip is also used by the military and NGOs when delivering relief items for the district.

3.10 Education

The Turkana County has 175 pre-primary schools, 136 primary schools, eight secondary schools, two youth polytechnics and one medical training college. Enrolment in primary school is 122,883, with a teacher to pupil ratio of 1 to 51 while secondary school enrolment is 48,004 with a teacher to pupil ratio of 1 to 27.7. There are 2 tertiary institutions. Adult Literacy Classes have an enrolment of 562.

West Pokot on the other hand has 318 Primary schools with an enrolment of 105,452 and a Teacher to Pupil Ratio of 1:50. There are 34 Secondary schools with an enrolment of 9,897 and Teacher to Pupil Ratio of 1:36 The Adult Literacy Classes enrolment is over 1,400.

3.11 Poverty Levels

The people of Turkana fundamentally depend on the natural systems and natural resources for existence and development. However, due to the harsh environmental conditions prevalent in the area, poverty levels are high, with 71% of the Turkana population living below poverty line. Poverty hinders access to basic needs such as health care, nutrition and education and in the area, poverty often leads to over-use and destruction of the environment. In West Pokot nearly 53% of population lives in abject poverty. The rural and urban areas register counts of 53% and 65%, respectively. The highest numbers of the poor are found in the divisions of Lelan, Kongelai, Alale and Chepararia. High prevalence of poverty is mainly attributed to unreliable weather patterns, unemployment, poor infrastructure and insecurity (cattle rustling).

3.12 Health

That the area's most common diseases are malaria, cholera, typhoid and diarrhea. The health facilities are only located on both ends of the project road. In Pokot sections, the only accessible health facility in the area is RCEA Marich dispensary; however, it is experiencing consistent

shortages of medicines. The other dispensaries are located at Lodwar where there is a District Hospital.

3.13 Security

There is a level of insecurity observed along the project road. For many generations, the Pokot and Turkana have raided each other’s cattle, presumably the consequence of cattle thefts. The two groups have been through many periods of war and peace. As a result, Orwa sublocation and Marich Pass are insecure because of their proximity to Kainuk where the Turkana live at the border between the two counties. In addition to accusing each another of cattle rustling and child abduction, the Pokot and Turkana also quarrel over unresolved land and border disputes—for example, at Turkwel Gorge and Kainuk forest.

3.14 Tourism

In addition to the Marich Pass Field Studies Centre which attracts national and international tourists, Pokot Central District (West Pokot County) offers unique vegetation, diverse wildlife, dramatic landscapes, ecotourism and Kapenguria Museum, which is located in Kapenguria Town outside the project study area. There are the Nasolot Nature Reserve to the East of Kainuk and the South Turkana Nature Reserve to the East. However, both Parks are hardly visited because of their remote locations and lack of road infrastructure.

4.0 Project Alternatives

As the project activities include rehabilitation of the current road, alternative alignments were not considered with exception of “no project” alternative. The socio-economic situation prevailing in the project area features over 70% poverty rates which in turn mean that majority rely on natural resources for livelihoods, especially charcoal burning. The objective of the project to road improvement which will offer numerous alternative economic opportunities since the area will be opened up and integrated with both the Kenyan and South Sudanese economies.

5.0 Summary of Potential Environmental and Social Impacts

Environmental parameter	Potential impact	Proposed mitigation measures
Fauna	Possible poaching of wildlife by workers Possibility of poisoning animals from empty containers of bitumen and other materials especially along the section close to Turkana National Reserve	Awareness creation amongst the local people and the construction workers of laws that relate to wildlife hunting and consumption, and the importance of wildlife as a natural resource and heritage Hazardous waste that can be consumed by wildlife should be carefully managed, such as covering bitumen drums at all times. Littering of work areas should be prohibited at all times Prudent management of construction waste. Continuously consult with KWS during construction along the section close to South Turkana National Reserve to avoid possible migration season or timings across the Park to Nasolot Park to the West of the road. During operation, maintain clearance within the ROW to improve motorists sight of road corridor to avoid collisions with wildlife, erect clear signage at Kainuk all the way to Kakonga at 5 km

Environmental parameter	Potential impact	Proposed mitigation measures
		<p>intervals warning motorists of sudden wildlife crossings</p> <p>Clear warning signs for motorists to avoid unnecessary stopping across the section close to the South Turkana Reserve</p> <p>Warning signs to completely avoid littering close to the reserve.</p>
Flora	<p>Over exploitation of vegetation resources for cooking energy by the construction workers.</p> <p>The critical impact relates to the inability of the area to naturally regenerate after harvesting of the mature trees. Clearance of trees within the RoW across Kainuk forest</p> <p>The locals may see an opportunity for income generation by selling firewood and/or charcoal to workers.</p> <p>Increased invasion of <i>Prosopis juliflora</i> following soil disturbance and the road acting as water catchment that improves soil moisture at the edges of the road.</p>	<p>Use of firewood by the workers housed in camps, should be controlled. Workers should be encouraged to use alternative sources of cooking fuel.</p> <p>Extra care should be taken when construction along the Kainuk forest should avoid unnecessary cutting of trees, and should consult Kenya Forest Service prior to cutting of any trees whether within the RoW or not.</p> <p>Construction workers be allowed to use cleared vegetation materials for firewood.</p> <p>Management of <i>Prosopis juliflora</i>, an invasive weed that colonizes the road edges following soil disturbance could be managed by incorporating labour based clearance of the weed on a regular basis during O&M.</p>
Drainage and Soil erosion	<p>Erosion activities are expected during March-May. In general the first contract between Marich Pass and Kainuk is more prone to erosion due to the mountainous terrain and higher rainfall.</p> <p>Soil may erode along the road alignment, particularly during the wet season (March through May) in the initial years after decommissioning.</p>	<p>Optimize new drainage structure positions and improved capacities of the structures used in combination with specific erosion protection works</p> <p>Culvert outfall should be lined for an appropriate distance, especially between Marich Pass and Kainuk which experiences flush floods from the Pokot hills. Scour checks should be constructed alongside drains on steep slopes within this section.</p>
Construction water sources	<p>Since water is a scarce resource in this area, issues relating to access to water can lead to inter community conflicts and conflicts between communities. Other potential negative impacts include livestock-wildlife-human conflict, disease, salinity and water quality.</p>	<p>Acquire WRMA permit for water abstractions.</p> <p>Water sources are subject to separate ESIA that will be prepared independently of this report.</p> <p>To avoid potential conflicts, the project will identifying water sources (e.g. boreholes) to be handed over to the community have been presented in the main report. These are to avoid future conflicts.</p>
Noise and ground vibration	<p>This impact can be of concern only at construction sites within</p>	<p>Minimize noise, especially noise from heavy equipment when construction is ongoing through</p>

Environmental parameter	Potential impact	Proposed mitigation measures
	the larger urban environments of Kainuk and Lodwar. Where explosives will be used, especially at quarries, there will be serious noise and vibrations in the vicinity of the site.	Kainuk and Lodwar. Construction activities to be undertaken during normal working hours. Special care should be taken when construction is taking place near sensitive receptors such as schools and hospitals (Most sensitive sites – Kainuk, Lokichar and Lodwar).
Visual intrusion	On the whole, there are few scenic sites, but opened up quarries and borrow pits could be of visual intrusion	Progressively rehabilitate quarries and borrow pits as work progresses before the contracts are finalized.
Waste Management	Construction waste could be a health hazard in the area considering the poverty level which may motivate the local community to scavenge for everything especially water containers	Develop a waste management plan for use during the entire construction period, especially targeting to avoid poisoning humans and wildlife. Emptied hazardous material containers should be managed in an approved manner to avoid them being used by locals as this could be a health hazard
Urbanization	The road could trigger rapid development of Kainuk and Lokichar since these could be used as rest-stops for transit traffic	Collaborate with the county governments to prompt proactive physical planning in the area to be directed by the Pokot and Turkana County officials.
Public Health	The indirect impacts of the project on health and safety are associated primarily with human behaviour, and this includes the potential for transmission of HIV-AIDS and other STIs	Integrate HIV AIDS and STIs awareness programme amongst the workers and adjacent population. Maintain a health clinic within the camps and mobile first aid kits within working crews since health facilities are far between
Soil pollution	Soil pollution may occur in the event of accidental oil spills, and petroleum products and bitumen (amongst other liquid waste) particularly in and around machinery and plant yards, base camps and areas of concentrated activities, may infiltrate into soils and cause soil pollution.	Mitigation actions will mainly involve maintenance of machinery, bunding the garage, and directing spills to an oil sump which should be emptied into a designated final disposal site. Storage of topsoil in the borrow areas to be rehabilitated during closure of the site (before the contracts are finalized).
Air quality	The project site is dominated by a hot, dry and windy environment which exacerbates generation and blowing away of dust beyond the project site. Dust pollution could be significant within Kainuk, Lokichar and Lodwar and adjoining settlements.	Use dust suppressants as far as possible, especially within Kainuk, Lokichar and Lodwar towns. All workers should wear dust masks at all times when at the sites of high dust generation Warn the neighbourhood of the road at the three main centres of possible generation of dust beyond normal levels.
Road safety	Local people in the area have lived so long without good roads that there is a lack of awareness of the dangers of the	Install elaborate road safety signs along the entire road; mount road safety awareness campaigns amongst the locals.

Environmental parameter	Potential impact	Proposed mitigation measures
	roadways and fast moving vehicles.	Involve local leaders and institutions such as schools in road safety campaigns.
Conflicts	Potential conflicts related to water sources or job opportunities	Involve the local communities while selecting material sites and employ local workers during construction activities where possible. Establish a conflict resolution mechanism in regards to water sourcing and re-settlement and compensation issues Compensate the Project Affected Persons in full before beginning of civil works on the project (as per project RAP).

6.0 Resettlement and Compensation

An estimated total of 314 structures, buildings and/or properties will be affected by improvement of the Marich Pass-Lodwar Road; of this number, an estimated 169 buildings/structures are to be displaced in Section 2 (Lokichar to Lodwar), the highest estimated number of displacements. Section 1 (Marich Pass to Kainuk) follows Section 2 with 145 displacement. Ground-truthing and other mitigating circumstances (e.g., minor changes in the road's alignment to avoid important cultural features) may require adjustment in these numbers at construction commencement. The project has developed a Resettlement Action Plan (RAP), which is a stand-alone publicly disclosed document.

7.0 Conclusions and Recommendations

The road crosses a semi-arid environment that has low rainfall, limited economic opportunities and sparsely populated. The environment is fragile with poor ground cover for half of the road while the other half has shrubby vegetation cover. There are some important potential environmental impacts that will accompany the project, both in the short and long term. During construction potential negative impacts that are considered significantly high relate to impacts on vegetation, public health, water resources and soil degradation. One of the significant adverse impacts from the road design, construction activities and operation is disturbance of the natural habitat for wildlife at the location of South Turkana and Nasolot National reserves. Such disturbance will also have long term effects on known elephant migration corridors, increased risk of animal kills and likelihood of opening up the area for poachers of game trophies.

Other operation phase impacts include increased urbanization and immigration into the area, road safety issues and cultural conflicts. The latter two impacts could be addressed by a programmatic approach involving all the stakeholders in the road safety and social sectors. Similarly, the other negative socio-economic impacts such as increased urbanization and immigration can be effectively handled through proactive regional and urban planning.

The adverse environmental and social impacts are largely reversible with easily identified mitigation measures, albeit at an increased cost to the realisation of the project. The expected cost of Environmental and Social mitigation is K. Shs.538, 950,000.

After the completion of the road, the benefits that will accrue for the local people, the Kenyan economy and that of Southern Sudan will be substantial. The road rehabilitation will open up the area for international traffic to South Sudan, wider reach to the Turkana Region from other parts of the country thereby eliminating long-standing isolation and local travels for subsistence occupation. The ripple effect will be to open up the area for accelerated economic growth accruing from increased trade, access to goods and services, increased agricultural and livestock production, tourism circuits educational and health facilities. It will also facilitate exploitation and export of the recently discovered oil among other economic benefits.

TABLE OF CONTENTS

CHAPTER 1.	INTRODUCTION.....	1
1.1	INTRODUCTION	1
1.2	BACKGROUND AND RATIONALE FOR THE PROJECT	1
	1.2.1 History.....	1
	1.2.2 Current State	1
	1.2.3 Prime Objective for the Project	2
	1.2.4 Envisaged Benefits	2
1.3	JUSTIFICATION FOR THE ESIA ASSIGNMENT	3
1.4	OBJECTIVES OF THE ASSIGNMENT	3
1.5	SCOPE OF WORKS	3
1.6	BASIC APPROACH AND METHODOLOGY	4
1.7	UPDATED DRAFT ESIA REPORT LAYOUT	4
CHAPTER 2.	DESCRIPTION OF BASELINE CONDITIONS - ENVIRONMENTAL, SOCIAL AND ECONOMIC	5
2.1	PHYSICAL ENVIRONMENT	5
	2.1.1 General.....	5
	2.1.2 Topography and Relief.....	6
	2.1.3 Climate	11
	2.1.4 Geology and Soils.....	13
	2.1.5 Air quality.....	14
	2.1.6 Hydrology.....	14
2.2	BIOLOGICAL ENVIRONMENT	14
	2.2.1 Ecology.....	14
	2.2.2 General Description.....	16
	2.2.3 Fauna	19
	2.2.4 Water resources.....	21
	2.2.5 Water Supply	22
2.3	SOCIAL AND CULTURAL ENVIRONMENT	24
	2.3.1 Administrative Structure	24
	2.3.2 Population Structure and Land-use along the Target Road Corridor.....	24
	2.3.3 Historical and cultural aspects	25
	2.3.4 Settlement patterns	27
	2.3.5 Security Situation	28
	2.3.6 Land Tenure and Land Use.....	29
	2.3.7 Livelihoods	31
	2.3.8 Major Economic Activities	37
	2.3.9 Public Health.....	40
	2.3.10 Education	41
	2.3.11 Poverty Levels	41
	2.3.12 Gender	42
	2.3.13 Employment and Labour Market.....	43
	2.3.14 Cultural properties.....	43
	2.3.15 Education	43
CHAPTER 3.	DESCRIPTION OF THE PROPOSED PROJECT	44
3.1	THE GEOGRAPHICAL SETTING OF THE PROJECT AREA	44
	3.1.1 Introduction.....	44
	3.1.2 Marich Pass to Kainuk, 30 km in Pokot Central District	46

	3.1.3	<i>Kainuk – Lokichar, 82 Kms in Turkana South District</i>	47
	3.1.4	<i>Lokichar to Lodwar - 84 kms Turkana Central District</i>	47
3.2		DESIGN DATA	48
	3.2.1	<i>Road Classification</i>	48
	3.2.2	<i>Road Alignment</i>	48
	3.2.3	<i>Access Control</i>	49
	3.2.4	<i>Road Reserve Width</i>	49
	3.2.5	<i>Traffic Volume, Road Capacity and Cross-Sections</i>	49
	3.2.6	<i>Longitudinal Drainage Ditches (Side Ditches and Cut-Off Ditches)</i>	50
	3.2.7	<i>River Crossings</i>	50
	3.2.8	<i>Alignment Soils</i>	52
	3.2.9	<i>Material Sites</i>	53
	3.2.10	<i>Demand to be met</i>	53
	3.2.11	<i>Proposed Pavement Structures and Design life</i>	54
3.3		DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN	54
3.4		SELECTION, ACQUISITION AND PREPARATION OF SITES FOR ACTIVITIES	55
3.5		THE COST OF IMPLEMENTING THE PROPOSED PROJECT	55
CHAPTER 4.		POLICY, LEGISLATIVE, REGULATORY AND ADMINISTRATIVE/INSTITUTIONAL FRAMEWORK	57
4.1		LEGAL FRAMEWORK	57
	4.1.1	<i>The Environment Management and Co-ordination Act, 1999</i>	57
	4.1.2	<i>EMCA Regulations</i>	58
	4.1.3	<i>The Water Act 2002</i>	63
	4.1.4	<i>Occupational Safety and Health Act, 2007</i>	64
	4.1.5	<i>The Public Health Act (Cap. 242),</i>	66
	4.1.6	<i>Energy Act Of 2006</i>	66
	4.1.7	<i>National Land Commission Act, 2012</i>	66
	4.1.8	<i>Land Registration Act, 2012</i>	67
	4.1.9	<i>The Land Act, 2012 No.6 Of 2012</i>	67
	4.1.10	<i>The Kenya Roads Act Of 2007</i>	69
	4.1.11	<i>The Kenya Roads Board Act of 1999</i>	69
	4.1.12	<i>The Forest Act, 2005</i>	69
	4.1.13	<i>The Wildlife Act</i>	70
	4.1.14	<i>The Employment Act (No 1 of 2007)</i>	71
	4.1.15	<i>HIV/AIDS Prevention and Control Act No. 14 of 2006</i>	71
	4.1.16	<i>National Museums and Heritage Act 2006</i>	72
	4.1.17	<i>Constitution of Kenya on Culture</i>	72
4.2		POLICY PROVISIONS	72
	4.2.1	<i>The Constitution of Kenya</i>	72
	4.2.2	<i>The Kenya Vision 2030</i>	74
	4.2.3	<i>State of the Environment Report 2010 (SoE)</i>	74
	4.2.4	<i>National Policy on Water Resources Management and Development</i>	75
	4.2.5	<i>Sessional Paper No. 6 of 1999 on Environment and Sustainable Development</i>	75
	4.2.6	<i>The Land Policy</i>	75
	4.2.7	<i>Culture Heritage Policy</i>	76

	4.2.8	<i>Guidelines for Prevention and Control of Soil Erosion in Road Works</i>	76
	4.2.9	<i>Environmental Guidelines for Roads and Bridges, 2010</i>	77
4.3		NEMA COMPLIANCE	78
4.4		SECTORAL INTEGRATION	78
	4.4.1	<i>Project Institutional Management Structure</i>	78
4.5		THE WORLD BANK SAFEGUARD POLICIES	80
	4.5.1	<i>Operational Policy (OP) 4.01-Environmental Assessment</i>	80
	4.5.2	<i>OP 4.11-Physical Cultural Resources</i>	80
	4.5.3	<i>OP 4.12- Involuntary Resettlement</i>	81
	4.5.4	<i>OP 4.04 - Natural Habitats</i>	81
	4.5.5	<i>OP 4.10 - Indigenous Peoples</i>	82
	4.5.6	<i>OP 4.36 - Forests</i>	82
	4.5.7	<i>World Bank Policy on Access to Information</i>	82
	4.5.8	<i>Alignment of WB and GOK Polices relevant to this ESIA</i>	82
4.6		OTHER RELEVANT INTERNATIONAL CONVENTIONS	83
	4.6.1	<i>United Nations Framework Convention on Climate Change (UNFCCC)</i>	83
CHAPTER 5.		ANALYSIS OF ALTERNATIVES TO THE PROPOSED PROJECT	84
	5.1	ANALYSIS OF ALTERNATIVES TO THE PROJECT	84
	5.2	ANALYSIS OF PROJECT-RELATED ALTERNATIVES	84
		5.2.1 <i>Project Siting</i>	85
		5.2.2 <i>Design alternatives</i>	85
		5.2.3 <i>Construction Techniques</i>	85
		5.2.4 <i>No Construction Alternative</i>	85
CHAPTER 6.		SOCIO-ECONOMIC SURVEYS	86
	6.1	STUDY METHODOLOGY	86
	6.2	DATA COLLECTION SITES	88
CHAPTER 7.		IDENTIFICATION OF POTENTIAL POSITIVE AND NEGATIVE IMPACTS & PROJECT RISKS	88
	7.1	INTRODUCTION	88
	7.2	PROPOSED MITIGATION FOR IDENTIFIED POTENTIAL NEGATIVE IMPACTS & PROJECT RISKS	89
	7.3	POTENTIAL IMPACTS ON POPULATION CHANGE AND MIGRATION	89
		7.3.1 <i>Potential Impacts on Population Characteristics</i>	89
		7.3.2 <i>Potential Impacts on Human Settlement</i>	90
	7.4	POTENTIAL IMPACTS ON SOCIO-ECONOMIC ENVIRONMENT	90
		7.4.1 <i>Potential Impacts on Public Health</i>	90
		7.4.2 <i>Potential Impacts on forms of Social Organization and Co-Operation</i>	91
		7.4.3 <i>Potential Impacts from Improved Access</i>	91
		7.4.4 <i>Potential Impacts on Road Safety and Accident Rates</i>	91
		7.4.5 <i>Impact on Change in Occupational Patterns and in Economic Activities</i>	92
		7.4.6 <i>Impact on Economic Environment</i>	92
		7.4.7 <i>Potential Impacts on Regional and Food Security/Insecurity Situation</i>	93
	7.5	POTENTIAL IMPACTS ON PHYSICAL INFRASTRUCTURE	93
		7.5.1 <i>Potential Impacts on Waste Generation</i>	93

	7.5.2	<i>Potential Impacts on Service Interruption</i>	95
	7.5.3	<i>Potential Impacts on Mechanical Disturbance</i>	95
	7.5.4	<i>Potential Impacts on Removal of Structure Sites</i>	95
	7.5.5	<i>Potential Impacts on Regional Drainage</i>	95
7.6		POTENTIAL IMPACTS ON FLORA AND FAUNA; - BIOLOGICAL ENVIRONMENT	96
	7.6.1	<i>Potential Impacts on Biota and Biodiversity Loss</i>	96
	7.6.2	<i>Potential Impacts on Vegetation Clearance</i>	98
	7.6.3	<i>Impact on Land Use/Land Cover and Change in Designated Land-Use</i>	99
	7.6.4	<i>Impact on Sensitive Ecosystems</i>	99
	7.6.5	<i>Impact on Habitat Change and Habitat Loss</i>	99
7.7		IMPACTS ON AIR QUALITY	99
	7.7.1	<i>Impact on Air Quality due to Construction and Operation</i>	99
	7.7.2	<i>Impact on Ambient Noise Level</i>	100
	7.7.3	<i>Changes in Micro-Climate</i>	101
7.8		WATER AND AQUATIC ENVIRONMENT	101
	7.8.1	<i>Impact due to Change in Hydrological Cycle</i>	101
	7.8.2	<i>Impact on Water Quality (Surface/Ground)</i>	101
	7.8.3	<i>Impact on Ground Water Levels and Recharge Potential</i>	102
	7.8.4	<i>Impact on Drainage System and Existing Water Bodies</i>	102
	7.8.5	<i>Impact on Sensitive Ecosystems, including Downstream and Upstream</i>	102
7.9		GEOLOGICAL AND OTHER ASPECTS	103
	7.9.1	<i>Any Climate Change Factors of the Project area</i>	103
7.10		POTENTIAL IMPACTS ON VISUAL/AESTHETIC CHANGE	103
	7.10.1	<i>Visual Intrusion</i>	103
	7.10.2	<i>Landscape Change</i>	103
7.11		OCCUPATIONAL SAFETY & HEALTH IMPACTS AND CONCERNS	104
7.12		OCCUPATIONAL INJURIES AND HAZARDS IMPACTS	104
7.13		CONTRACTOR’S WORKERS’ CAMP HEALTH, SAFETY AND SECURITY	104
7.14		RISKS POSED BY THE PROPOSED PROJECT	105
	7.14.1	<i>Risks Identified on Project Route</i>	105
CHAPTER 8.		SECOND LEVEL PUBLIC PARTICIPATION AND CONSULTATIONS	107
	8.1.1	<i>General Interviews</i>	107
	8.1.2	<i>Initial Public Participation Meetings</i>	107
8.2		PROPOSED SECOND LEVEL PUBLIC PARTICIPATION	108
CHAPTER 9.		ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)	110
9.1		MITIGATION	110
	9.1.1	<i>Responsibility for ESMP Implementation</i>	111
	9.1.2	<i>The Environmental and Social Management Plan (ESMP)</i> ...	112
	9.1.3	<i>Cost of Environmental and Social Mitigation</i>	142
9.2		DEVELOPMENT OF ENVIRONMENTAL AND SOCIAL MONITORING AND EVALUATION PLAN (ESMEP)	159
	9.2.1	<i>The ESMEP</i>	160
9.3		RECOMMENDATIONS FOR CAPACITY DEVELOPMENT AND TRAINING	170
CHAPTER 10.		CONCLUSIONS AND RECOMMENDATIONS	171
10.1		FINDINGS	171

10.2 CONCLUSION 171

TABLE OF FIGURES

Figure 2-1: Main topographical features of Pokot County	7
Figure 2-2: Image of topographical features at the start of the project at Marich Pass	8
Figure 2-3: Eight major landforms in West Pokot County	9
Figure 2-4: Landforms in Turkana county	11
Figure 2-5: Mean annual rainfall distribution in Turkana County	12
Figure 2-6: Soil erosion status in Turkana County	
Figure 2-7: Soil erosion status in West Pokot County	
Figure 2-8: Ecological zones in West Pokot	16
Figure 2-9: Vegetation map of Turkana County	18
Figure 2-10: South Turkana National Reserve showing proximity to the road	20
Figure 2-11: Major rivers and their drainage	21
Figure 2-12: Sources of water for human and livestock in Pokot County	22
Figure 2-13: Areas of insecurity in southern Turkana and West Pokot border	29
Figure 2-14: Turkana livelihoods zones and categories	32
Figure 2-15: Pokot livelihood zones and categories	33
Figure 3-1: Location Map for the Marich Pass-Lodwar (A1) Project Road	45
Figure 3-2: Existing Condition of Project Road on Section near Marich Pass	46
Figure 3-3: Businesses in Kainuk Trading Centre	47
Figure 3-4: Representative business establishments in Lodwar Town	48
Figure 3-5: Condition of existing bridge at Kainuk – deflection, cracks and ingress of water underneath the slab deck	50
Figure 3-6: Condition of existing bridge at Lodwar– Not wide enough, only one lane	51
Figure 7-1: Location map showing some of the protected wildlife Habitats Traversed	96
Figure 9-1: Proposed Hierarchy of Responsibility and Reporting for ESIA monitoring	169

LIST OF TABLES

Table 2-1: Ecological zones in Turkana County	15
Table 2-2: Distance walked in search of water in Pokot	23
Table 2-3: Land use patterns as percentage of total land area	30
Table 2-4: Land use potential and agroecological zones in Turkana County	30
Table 2-5: Categories of land in Pokot County	31
Table 2-6: Livestock population by type in Turkana County	33
Table 2-7: Available livestock infrastructure for Pokot and Turkana Counties	34
Table 2-8: Livestock products revenues for Pokot County	35
Table 2-9: Cultivated area in Turkana and West Pokot	37
Table 2-10: Health statistics for Turkana	40
Table 3-1: Dimensions in meters of the type II cross-section	49
Table 3-2: Proposed Bridges	51
Table 3-3: Types of box culverts proposed	52
Table 3-4: Proposed Improved Subgrade and Pavement Structures	54
Table 3-5: Summary of Bills of Quantities for Contract 1 (Marich Pass to Lokichar)	55
Table 3-6: Summary of Bills of Quantities for Contract 2 (Lokichar to Lodwar)	56

10.2 CONCLUSION 171

TABLE OF FIGURES

Figure 2-1: Main topographical features of Pokot County	7
Figure 2-2: Image of topographical features at the start of the project at Marich Pass	8
Figure 2-3: Eight major landforms in West Pokot County	9
Figure 2-4: Landforms in Turkana county	11
Figure 2-5: Mean annual rainfall distribution in Turkana County	12
Figure 2-6: Soil erosion status in Turkana County	16
Figure 2-7: Soil erosion status in West Pokot County	Error! Bookmark not defined.
Figure 2-8: Ecological zones in West Pokot	16
Figure 2-9: Vegetation map of Turkana County	18
Figure 2-10: South Turkana National Reserve showing proximity to the road	20
Figure 2-11: Major rivers and their drainage	21
Figure 2-12: Sources of water for human and livestock in Pokot County	22
Figure 2-13: Areas of insecurity in southern Turkana and West Pokot border	29
Figure 2-14: Turkana livelihoods zones and categories	32
Figure 2-15: Pokot livelihood zones and categories	33
Figure 3-1: Location Map for the Marich Pass-Lodwar (A1) Project Road	45
Figure 3-2: Existing Condition of Project Road on Section near Marich Pass	46
Figure 3-3: Businesses in Kainuk Trading Centre	47
Figure 3-4: Representative business establishments in Lodwar Town	48
Figure 3-5: Condition of existing bridge at Kainuk – deflection, cracks and ingress of water underneath the slab deck	50
Figure 3-6: Condition of existing bridge at Lodwar– Not wide enough, only one lane	51
Figure 7-1: Location map showing some of the protected wildlife Habitats Traversed	96
Figure 9-1: Proposed Hierarchy of Responsibility and Reporting for ESIA monitoring	169

LIST OF TABLES

Table 2-1: Ecological zones in Turkana County	15
Table 2-2: Distance walked in search of water in Pokot	23
Table 2-3: Land use patterns as percentage of total land area	30
Table 2-4: Land use potential and agroecological zones in Turkana County	30
Table 2-5: Categories of land in Pokot County	31
Table 2-6: Livestock population by type in Turkana County	33
Table 2-7: Available livestock infrastructure for Pokot and Turkana Counties	34
Table 2-8: Livestock products revenues for Pokot County	35
Table 2-9: Cultivated area in Turkana and West Pokot	37
Table 2-10: Health statistics for Turkana	40
Table 3-1: Dimensions in meters of the type II cross-section	49
Table 3-2: Proposed Bridges	51
Table 3-3: Types of box culverts proposed	52
Table 3-4: Proposed Improved Subgrade and Pavement Structures	54
Table 3-5: Summary of Bills of Quantities for Contract 1 (Marich Pass to Lokichar)	55
Table 3-6: Summary of Bills of Quantities for Contract 2 (Lokichar to Lodwar)	56

CHAPTER 1. INTRODUCTION

1.1 INTRODUCTION

The Government of Kenya (hereinafter called “Borrower”) through its implementing agency the Kenya National Highways Authority (KeNHA), - the Client invited Individual Consultants (IC) with the requisite qualifications and experience in similar assignments to Express Interest to Undertake Consultancy Services For Reviewing And Updating of the Environmental Impact Assessment (EIA) for the Proposed Rehabilitation for the following assignments on 16th October 2014:

1. Lesseru - Marich Pass Road (A1) 164 km (Package 1)
2. Marich Pass - Lodwar Road (A1) 196 km (Package 2)
3. Lodwar – Lokichogio – Nakodok Road (A1) 240 km (Package 3)

1.2 BACKGROUND AND RATIONALE FOR THE PROJECT

1.2.1 History

The A1 road starts from the Northern border of Tanzania at Isebania through Mukuyu, Kisumu, Kakamega, Kitale, Lodwar, Lokichogio to Nadapal and finally Juba. On the Kenyan side section of the A1 were built to bitumen standards in various phases between 1971 and 1985.

The first section to be built was between Lodwar and Marich Pass followed by Marich Pass to Kapenguria. The road sections between Kapenguria and Lodwar were built mainly through Force Account operations supported by financing and management assistance by the Norwegian Government (NORAD). The road was first built partly to support the fisheries development in Lake Turkana, in order to provide access to markets in the larger cities in Kenya. Later the road connection was seen as an important catalyst for integration of the Turkana district into the Kenyan economy and as an important link in the international road connection between Kenya and South Sudan.

During relief operations from the port of Mombasa to South Sudan the road carried heavy vehicle traffic. It was neither designed for nor in a condition to support this heavy traffic. The lack of regular maintenance also contributed to the accelerated deterioration of the road. Portions of the road, especially between Marich Pass and Lodwar, are presently disintegrating, posing a risk of complete failure on long sections. On the majority of stretches, all bituminous surfacing has been completely destroyed and are overlaid with gravel to improve rideability. The road is kept passable by occasional grading. The rest, partly in a state of rapid deterioration, is causing accidents and is slowing down traffic. Especially, large trucks experience extreme problems negotiating temporary detours.

1.2.2 Current State

To all intents and purposes the existing Marich Pass - Lodwar 196 km (A1) Road (Package 2) can be considered to be a gravel or earth road since in many sections there is no gravel covering either and the road is exposed to its natural sub-base.

For any given road whose pavement structure has badly deteriorated and is, hence, in poor condition, the higher order functions suffer first. In the case of the Marich Pass – Lodwar road, its international function is now severely compromised. The same is true of its national role within the Kenyan economy and transport system. What remains, and even that is severely constrained, is the project road’s local function. That is, facilitating relatively short local trips

along its length linking local communities and settlements such as Kitale to Kainuk, Kainuk to Lokichar, Sigor to Lodwar, Lokichar to Marich Pass and so on.

The Turkana region therefore remains one of the more isolated ethnic groups in Kenya, and trade is still small in scale.

1.2.3 Prime Objective for the Project

The prime objective of the project is to produce the optimum solution for a technically viable, economically feasible, environmentally sound, and socially responsive, upgraded bitumen surfaced road, which will enable passage along the road in all weathers and seasons.

Rehabilitation of this section of the road is therefore critical to:

- (i) Fully integrate the Turkana region in the Kenya economy,
- (ii) Serve in the restoration and development of the South Sudan economy,
- (iii) Promote and facilitate regional economic integration (South Sudan-Kenya),
- (iv) Provide direct road access to port of Mombasa for South Sudan's export/imports (without transiting into another country),
- (v) Facilitate relief and reconstruction efforts for all sectors in South Sudan.

1.2.4 Envisaged Benefits

This is intended to be achieved by facilitating a faster, safer, and more economic link (in terms of vehicle operating costs) between the port of Mombasa and Southern Sudan.

The road serves three functions and its rehabilitation will be a boost to these three; namely:-

- a) International function : - The project road, is a branch of the main trunk route known as the Northern Corridor linking the Kenyan port of Mombasa on the Indian Ocean to landlocked EAC countries (and large portions of D.R.Congo's hinterland that are inaccessible from the Atlantic Ocean). Specifically the project road is a link along the Mombasa - Nairobi – Nakuru – Eldoret – Lodwar – Nadapal -Juba route into South Sudan. The Kitale-Juba route for which the Marich Pass-Lodwar Section is part of has been in deteriorating condition for a number of years. Restoration of this road will revive and grow this function. When completed, the road is expected to contribute to economic growth in the region through increased trade and better access for landlocked countries to the port of Mombasa. It is envisaged that by completing this link to bitumen standard, trade between Kenya and South Sudan will increase, with benefits accruing to the people of both countries, and in particular to the people who reside along the road route corridor and the adjacent areas.
- b) National Function - The Turkana region in the northern part of Rift Valley Province was always distant from large Kenyan urban settlements and the metropolitan centre. Its population density was and still is quite low. The only major settlement is Lodwar (pop. 48,000). The A1 road to which the project road belongs runs along the Rift Valley from Tanzania Tanzania at Isebania through Mukuyu, Kisumu, Kakamega, Kitale, Lodwar, Lokichogio to Nadapal on the South Sudan Border. The A1 has a national function and links numerous districts. On a broader basis, the project objectives are mainly aimed at improving the economic status of the people of Kenya as a whole, and the people of Rift Valley Province in particular.
- c) Local / Regional Function - Although the population density in quite low and settlements few, nevertheless, the project road sections have a local function linking local communities and settlements to each other. The major settlement on the project

alignment is Lodwar in the north with smaller settlements between Marich Pass and Lodwar such as Kainuk and Lokichar, Within the road's area of influence settlements include Lotongot, Gakong, Chepterr, Anglogitat, Kaputir, Loichangamatak, Kakalet, Lolimo, Sigor, Lomut and Chesegeon. Thus the road also links local communities with short length trips that cover only portions of the road. However even the local function is severely compromised due to poor condition as well as civil conflict between the areas north and south of a notional line running through Kainuk. Landownership disputes, grazing right conflicts lead to occasional flare ups of localized conflict. Poor access to the rest of Kenya and vice versa leads to isolation, few development opportunities and shortage of employment.

1.3 JUSTIFICATION FOR THE ESIA ASSIGNMENT

In 2013 KeNHA prepared a Draft Environmental and Social Impact Assessment (ESIA) for the Marich Pass-Lodwar Road Section.

Following this report, KeNHA identified the need to verify, review and update the ESIA to ensure that the reports present an independent assessment of potential environmental and social impacts of the proposed Project, ensure that it is implemented in an environmentally and socially sustainable manner.

This assessment needed to be undertaken before the Project is implemented so as to identify Environmental and Social impacts, offer mitigation measures to the anticipated impacts and propose updates to the design to increase sustainability of the Project.

The Terms of Reference (TOR) for this assignment covers the Review and Updating of the Draft Environmental and Social Impact Assessment (ESIA), for the proposed rehabilitation of Marich Pass -Lodwar (A1) Road Component. The Revised ESIA has been carried out in a manner consistent with World Bank standards and procedures and Kenya National Highways Authority requirements.

1.4 OBJECTIVES OF THE ASSIGNMENT

The overall objective of this ESIA assignment to be to ensure that all environmental (and social) consequences of construction and operation of the road are evaluated and addressed as part of the mitigation measures incorporated into the road's final design.

The specific objectives of the assignment are:

- To Review and Update the KeNHA 2013 Draft ESIA report to conform with World Bank Operational Policies and Kenya National Highways Authority requirements;
- To identify gaps in the KeNHA 2013 Draft ESIA report and address them in the revised version;
- To conduct Second Public Consultations to continue sensitizing all the stakeholders about the Project, seek their inputs into the Project design and disclose the positive and negative impacts of the proposed Project; the meetings were held in the exact locations where the original meetings took place.

1.5 SCOPE OF WORKS

The scope of works involves the Reviewing and Updating Services of the Environmental and Social Impact Assessment (ESIA) for the Proposed Rehabilitation of Package 2 - Marich Pass - Lodwar Road (A1) 196 km carried out by KeNHA in 2013.

In reviewing the KeNHA 2013 Draft ESIA Report based on the TOR given, the following presents the details of the review and gaps of deficient information detailed in the Updated Draft ESIA Report:-

- Baseline Environment – fully described in terms of Administrative sections, flora and fauna, the culture and the people as well as settlement patterns. Minimal revision and update.
- Description of the project – The existing situation and the activities to be carried out were fully described, not so the proposed project
- Impact Prediction and Mitigation Proposed – reasonably analysed. However, there the impacts were described a new and directly linked to proposed mitigation maintaining consistency all through to the descriptions and sequence in the ESMP.
- An Environmental and Social Monitoring Programme formulated
- Cost of Environmental mitigation analysed and estimates given
- Institutional arrangements and Responsibility for implementation and monitoring of the ESMP established

1.6 BASIC APPROACH AND METHODOLOGY

This updated ESIA Report was been prepared in accordance with the TOR. The Consultant carried out a reconnaissance on the project road, assessed the existing conditions of the road within the contract and conducted the public consultations.

The Consultant also embarked on the collection and review of the data and relevant information for the assignment such as the KeNHA 2013 Draft ESIA Report, other available reports, information and literature materials.

Data and documents reviewed included among others the following:-

1. The Draft Environmental and Social Impact Assessment (ESIA) for the Marich Pass-Lodwar Road Section Prepared by KeNHA in 2013
2. Relevant Design Reports for Marich Pass-Lodwar Road Section Prepared by KeNHA e.g. Alignment Design, Pavement Design and Materials Report, Hydrology Report, Traffic Studies Report, Profile And Sections Drawings, Economic Analysis Report
3. Kenya Roads Act 2007;
4. Kenya Environmental Management and Coordination Act (1999);
5. World Bank Operational Policy 4.01 (Environmental Assessment)
6. Applicable Environmental and Social Management Framework(ESMF);
7. World Bank Environmental Assessment Policy – OP 4.01;
8. Other World Bank Funded projects ESIA and RAP reports
9. Regional Development and/or Master Plans
10. It will also aid reviewing and identifying the gaps in the KeNHA 2013 Draft ESIA and address them in order to revise and update the Report to conform to World Bank Operational Policies and Kenya National Highways Authority requirements;

1.7 UPDATED DRAFT ESIA REPORT LAYOUT

This Updated Draft ESIA Report has been organised into thirteen (13) Chapters as follows:

- Chapter 1. Introduction
 Chapter 2. Description of Baseline Conditions - Environmental, Social And Economic

Chapter 3.	Description of The Proposed Project
Chapter 4.	Policy, Legislative, Regulatory And Administrative/Institutional Framework
Chapter 5.	Analysis of Alternatives to The Proposed Project
Chapter 6.	Socio-Economic Surveys
Chapter 7.	Identification of Potential Positive and Negative Impacts & Project Risks
Chapter 8.	Occupational Safety & Health Impacts And Concerns
Chapter 9.	Proposed Mitigation Measures for Identified Adverse Impacts
Chapter 10.	Second Level Public Participation And Consultations
Chapter 11.	Environmental and Social Management Plan (ESMP)
Chapter 12.	Conclusions and Recommendations
Chapter 13.	Appendices

CHAPTER 2. DESCRIPTION OF BASELINE CONDITIONS - ENVIRONMENTAL, SOCIAL AND ECONOMIC

2.1 PHYSICAL ENVIRONMENT

2.1.1 General

Located in the northwestern part of Kenya, the proposed Marich Pass – Lodwar road traverses a small part of West Pokot County (Marich Pass to Kainuk - 30.5 km) and a larger part of Turkana County (Kainuk to Lodwar, about 167 km). The project area generally lies within the Great East African Rift valley and is bordered by chains of ranges and hills to the West. Between these hills are the plains of Turkana, on a north to south axis. Turkana County covers 77,000km² and shares international borders with Ethiopia to the North, Sudan to the Northwest and Uganda to the West and within Kenya, the county borders Marsabit to the East, Samburu to the South East, Baringo and West Pokot Counties to the South. Much of the Eastern flank of the district is on Lake Turkana, which stretches North-South for more than 200 km. On the other hand, West Pokot County covers 9,100 km², stretches 132 kilometers from north to south and borders Uganda to the west, the Trans Nzoia and Marakwet counties to the south, Turkana to the north, and Baringo to the southeast.

Turkana County is divided into six administrative districts, with the road proposed road traversing three districts of Turkana i.e. Turkana South (with Lokichar, Katilu, Kainuk and Loreng’elup divisions), Turkana Central (with Kalokol, Kerio and Central divisions) and Loima (Turkwell division). Other districts of Turkana not traversed by the road but which are linked to it are Turkana West, Turkana North and Turkana East. The county has three electoral constituencies; Turkana Central (comprising of Turkana Central and Loima districts), Turkana South (which covers Turkana East and Turkana South districts) and Turkana North (composed of Turkana North and West districts). The Lodwar Municipal Council and the County Council of Turkana are the only two Local Authorities in the county.

The West Pokot County comprises of three districts divided into ten Divisions namely; West Pokot (consisting of Kapenguria, Chepareria, sook and Kongelai Divisions), Pokot Central (With Sigor, Chesogon, Tapach and Lelan Divisions) and Pokot North (with Kasei, Kacheliba and Alale Divisions). The proposed road traverses Sigor division of Pokot Central, from Marich Pass to the border with Turkana at Kainuk, about 32 km. The county has three Local Authorities namely; Pokot County Council, Kapenguria Municipal Council and Chepareria Town Council. There are three constituencies; Kapenguria, Kacheliba and Sigor.

2.1.2 Topography and Relief

The region can be generally classified into three topographic zones, namely; highland plateau (2500m-3500m a.s.l.), the steep escarpments (1200-2000m a.s.l) and the valley floor (300-900m a.s.l.) stretching from Pokot to Lake Turkana. The major topographic features include hills, dry plains, and rugged escarpments.

In the highest altitudes crop agriculture and livestock production are the major economic activities, while areas of lower altitude (1500–2100 meters) have low rainfall and are predominantly pastoral.

The main topographic features of the proposed project region consist of dry plains, which form the floor of the Rift Valley, juxtaposed with mountain massifs. A continuous mountain range forms the western wall of the Rift Valley, and other isolated mountain ranges are scattered throughout the district. Elevations vary from approximately 350-400 meters in the plains to 3,000 meters in the high mountains.

The proposed project area has a wide variety of topographical features and contrasting environments occurring within short distances. For example, in the southeastern section of the West Pokot are the Cherangani Hills with altitude of over 3,000 metres a.s.l. while on the Northern and North Eastern, parts of Pokot are the dry plains of Turkana with altitudes of less than 900 metres above sea level. The high altitude areas constitute the larger portion of high potential areas whereas medium altitude areas between 1500 and 2100 metres receive low rainfall and are predominantly pastoral lands. All the low altitude areas are flat and stretch from Kacheliba, Kasei, and Chesegon to parts of Sigor Division. About 80 % of the Pokot County is arid or semi-Arid. The major drainage systems in the district are Turkwel and Kerio Rivers, which drain northwards into Lake Turkana. In West Pokot, mountain ranges with summits between 2000 and 2500 m, stretch from South to the North (Sekerr and Karasuk hills).

On the eastern side of the project area, the land drops steeply to a level of 750 -1000 m, forming the semi-arid plains around the Kerio, Morun and Turkwel rivers; On the side of the Ugandan border the land descends via rugged uplands towards dissected erosional plains around the Suam river, at a level of 1100 - 1400 m above sea. In all there are eighteen landform divided into eight groups.

2.1.2.1 The Pokot region

The area is divided into the following landforms:

1. High level Mountains and Uplands

The highlands at the altitude level of Kapenguria/Makutano and consist of the Cherangani Hills, Lelan in the south of Pokot, as well as the high level parts of the mountain range towards the north. These areas are suitable for forestry, dairy cattle and small scale agriculture. However, their existence and their land use have a crucial impact on the intensity of the utilization and well being of the neighbouring rangelands downslope.

2. Mountains and Hills; undifferentiated level

About one third of Pokot is occupied by mountain and hill ranges. Steep and long slopes with shallow rocky and bouldery soils prevail. There are considerable differences in climatic zones among these, according to altitude; the higher slopes are more productive and, if accessible, are more intensively used by livestock, than lower down.

3. Mid-level Uplands, dissected

Mainly to the western side of the Sekerr and Karasuk mountain range occur uplands of a rugged and irregular topography, at a level between 1200 and 1800 m height. According to climatic conditions, this area should be considered as relatively high potential rangeland. However, the predominantly shallow and rocky soils and in many places aggressively continuing erosion, combined with bush fallow agricultural activities, render the productivity of these areas lower than expected.

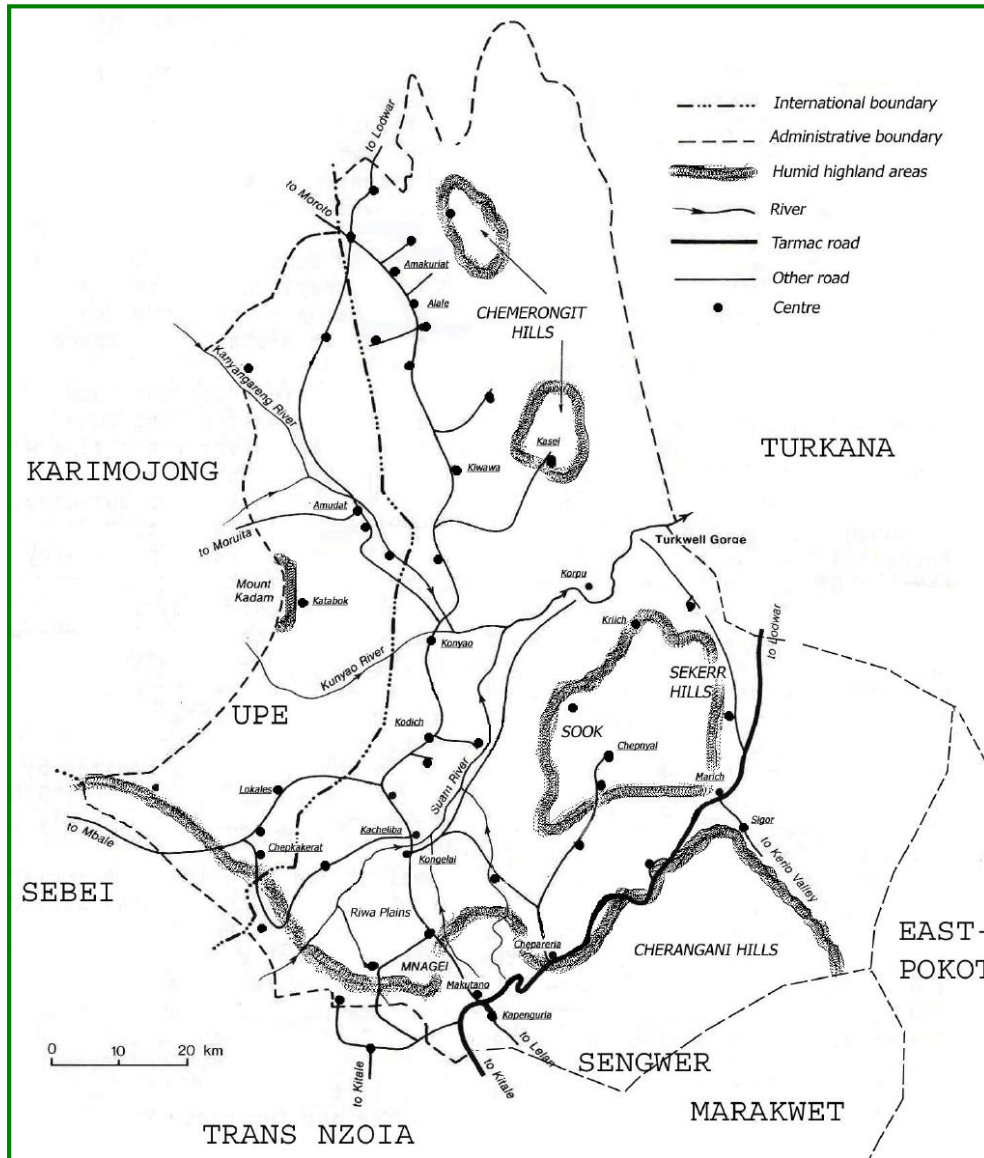


Figure 2-1: Main topographical features of Pokot County

4. Mid-level erosional plains

These are gently undulating plains, surrounding the Suam River, at a level between 1100 and 1500 m. This type of landform is normally associated with deep soils that are red clay loams or brown sandy loams, according to the composition of rock type. However, a devastating sheet and gully erosion has removed most of these soils, working its way from the sloping drainage incisions towards the almost flat divides. These vast areas are presently characterized by weathered rock, ironstone sheets, gravelly layers, or other materials that previously were subsurface horizons.

5. Dissected Footslopes/Piedmont plains

Mountains and Hills are separated from the mid-level erosional plains by long, low-angle intergrades between footslopes and piedmont plains. Mostly of high productive capacity, due to climatic zone and soil qualities, but unfortunately also under heavy attack of gully erosion and poor land development.

6. Low-level erosional plains

In the east and southeast of the county, at a level of 700 - 1000m occur extensive erosional plains. These form, together with the low level Piedmont Plains, the driest parts of West Pokot. The erosional plains are to a more or lesser degree intricately dissected, and characterized by weathered rock at or near to the surface, covered by a layer of quartz gravel. These soils are appreciated as wet season grazing and reportedly good browse area.

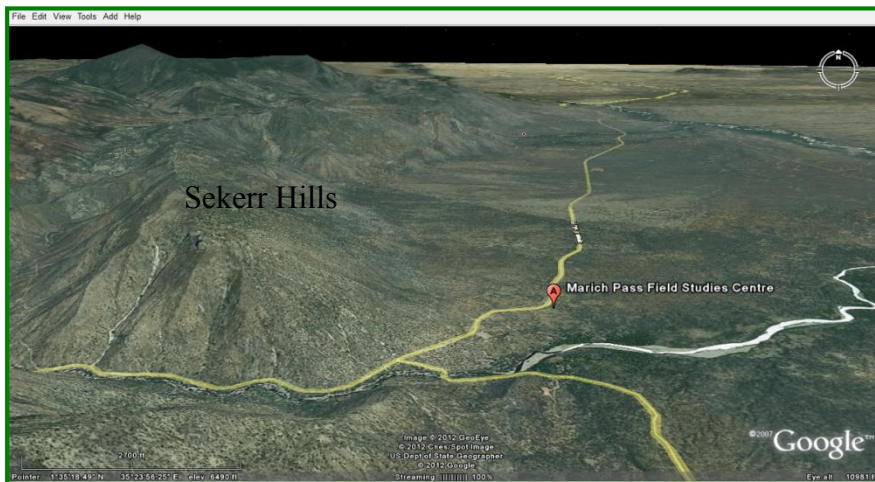


Figure 2-2: Image of topographical features at the start of the project at Marich Pass

7. Low-level Piedmont Plains

Associated with the low-level erosional plains across most parts of the project area occur sedimentary piedmont plains, mostly with dark, compact saline clay soils, covered by lighter textured surface layers. There is quite a variation in soil types and range land quality, but mostly the area is occupied by so called "Akure", an unproductive saline, sodic, calcareous soil with dusty surface layer, monotonous stands of *Acacia reficiens*, lacking a grass/herb layer.

8. River Alluvial Plains

Along the major river courses of Suam, Morun and Kerio a wider or narrower strip of alluvial deposits offers high potential range land. These river alluvial plains have potential for small scale (irrigated) agriculture. Soils are locally known as Acham (sandy deposits) and Noroyon (dark loamy, clayey soils).

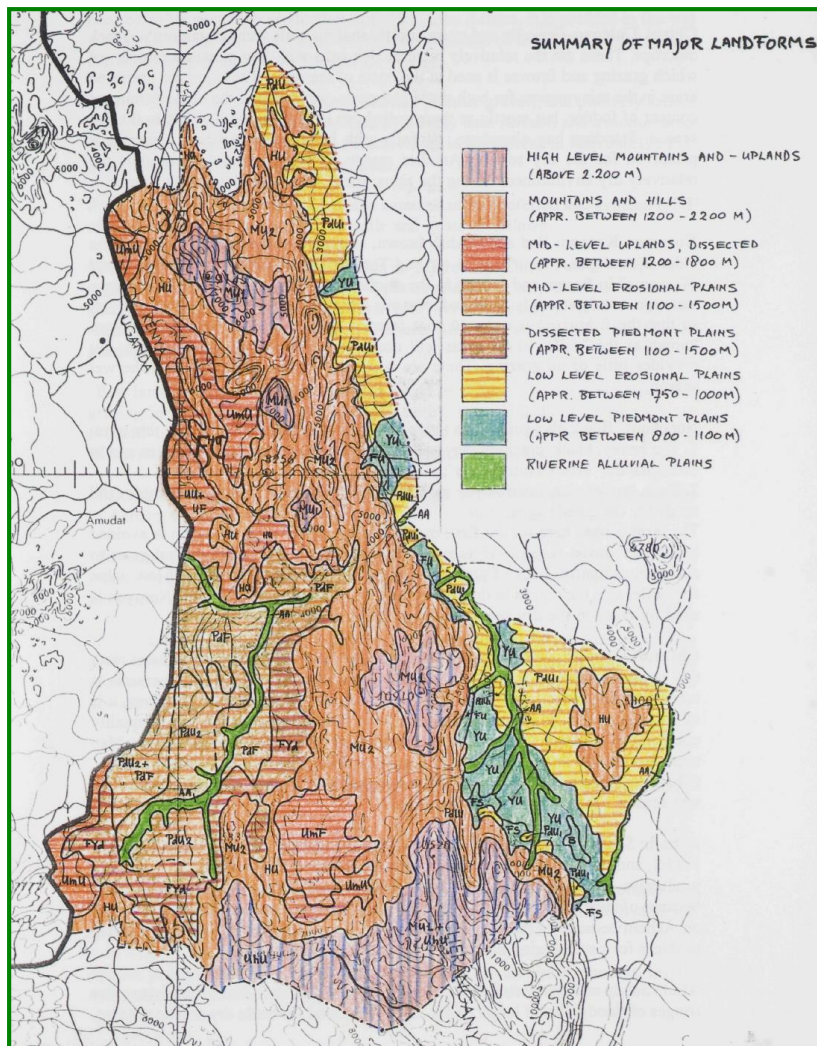


Figure 2-3: Eight major landforms in West Pokot County

2.1.2.2 The Turkana region

The main topographical features in Turkana County are low-lying open plains interspersed with isolated mountain ranges and hills, Lake Turkana and the river drainage patterns. Most of the Turkana region consists of low-lying plains. The altitude rises from about 900 m at the foot of the escarpment marking the Uganda border to the West and then falls to 369 m to the shores of Lake Turkana in the East. The isolated mountains are mainly found in the central area with plains around Lodwar and more specifically the Lotikipi plains in the north.

The open plains consist of the Central, Kalapata and Lotikipi plains. The plains form part of the more arid areas in the county, receive the lowest amount of rainfall, around 180mm per annum and are dominated by dwarf shrubs and grassland which provide forage for livestock during and shortly after the rainy season. However, this forage dries rapidly at the onset of the dry season.

In the centre of Turkana County are the plains, and around it to the south are isolated barren landscapes of extinct volcanic mountain ranges. In the north and northwestern part of the district, these ranges include: Lorengipi Range, Lokwanamoru Range, Lorioneteom Range, Pelekech Hills, Mogilla Range, Loima and Songot, Moroto, Lotikipi and Puch Prasir Plateau. In the south where the proposed project traverses, there are Kamonorok, Kailongkol, and Laiteruk mountain ranges. The altitude of the mountains ranges between 1500m and 1800m above sea level in the east reaching the peak at Loima, which forms undulating hills.

The major rivers in the county are Kerio, Turkwel, Tarach and Suguta. As these rivers get to the low-lying areas in Turkana, they disappear under the sandy conditions of the riverbeds. Most of these rivers are seasonal, except Turkwel and Kerio rivers. Volcanic rocks cover about one third of the county and outcrops from the basement rocks occur in several hills and mountains scattered in the area. The plains which form the main topography of the Turkana are below 600 metres, making the area the lowest anywhere in the East African hinterland.



Plate 1: Turkana plains



Plate 2: Pokot hills



Plate 3: Pokot side of Cherangani Hills viewed from Sigor

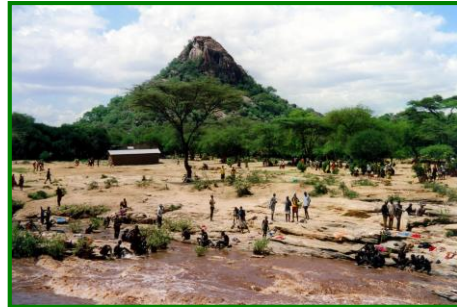


Plate 4: Kacheliba and Suam River

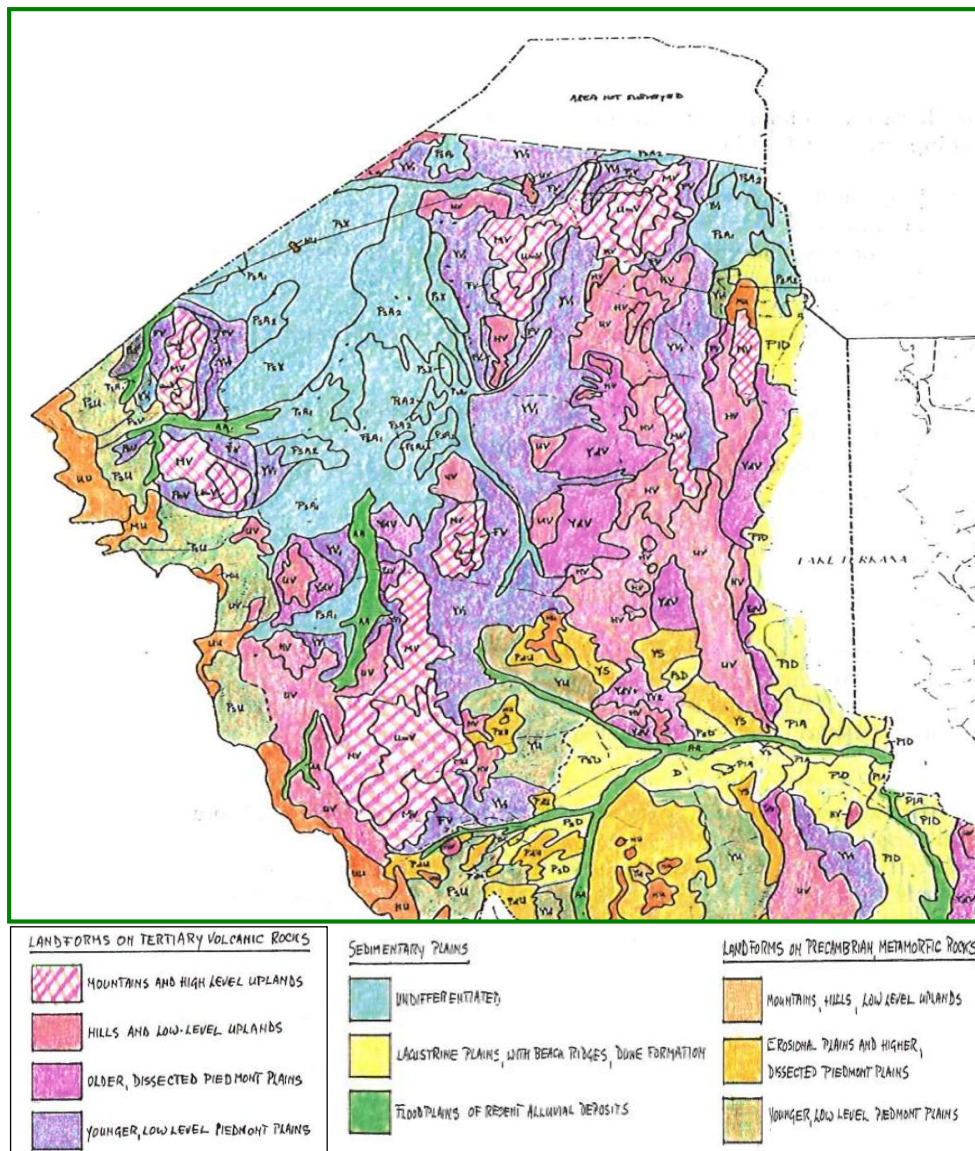


Figure 2-4: Landforms in Turkana county

2.1.3 Climate

The proposed project road traverses a largely dryland area. For example, about 80% of West Pokot is semi-arid and experiences erratic climatic conditions. Pokot’s climate varies from humid in the highlands in the south to sub-humid in the escarpment zone and semi-arid in the central lowlands. On the other hand, Turkana is classified as an Arid and Semi-Arid Lands (ASAL) area where the climatic conditions are characterized as warm to hot, with erratic rainfall that is unpredictable both in timing and distribution.

From December to March, the northeast monsoon originates over Arabia and passes over Somalia before reaching the area (Herlocker, 1979) bringing a flow of hot, dry air masses into the area resulting in reduced rain. Rainfall mainly occurs under the influence of the southeast monsoon, which originates over the Indian Ocean and is relatively cool and moist. However, distribution of rains is controlled by the land masses. For example, In Turkana, the western parts along the Uganda border have more rain than any other part, due partly to orographic lifting of air masses loaded with moisture from Lake Turkana while in Pokot, the southern parts have more rainfall due to the high altitude influence of Cherangani hills. Irregularity of rainfall is a characteristic feature from year to year and within individual years (Soper, 1985). The

predominant low mean annual rainfall, coupled with extremely high variability, indicates drought-stressed ecosystems. Seasonal dry periods vary between six and nine months. Long-term data series suggests one drought every six to seven years

2.1.3.1 Rainfall

Turkana is a low rainfall area. Rainfall is expected during March-May in the East and northern parts of the county and during March - June in the western parts and in the proposed project area south. When it falls, rainfall increases with rising altitude with areas of mountain ranges on the western border with Uganda and Sudan receiving more than 500 mm per year. The highlands in the north-eastern parts bordering Ethiopia and the hills in the south and southwest bordering Pokot also register higher rainfall. The lowest rainfall occurs along the shore of Lake Turkana and in the central plains around Lodwar with an annual average 150 mm per year). Rainfall variability is extreme both in space and time, with rainfall patterns highly skewed in distribution. January, February and September tend to be the driest periods.

In West Pokot, rainfall is bimodal with the long rains falling between March and June and the short rains occurring between September and November. Annual rainfall varies from less than 400 mm in the lower altitude areas (1150-2000 m altitude) to the north, to slightly over 1500 mm in the high altitude areas (2439-3370 m altitude) to the south. Like Turkana, unreliability and variability are more considerable in the lower altitude drier areas. Deviation from the yearly and monthly means can be considerable.

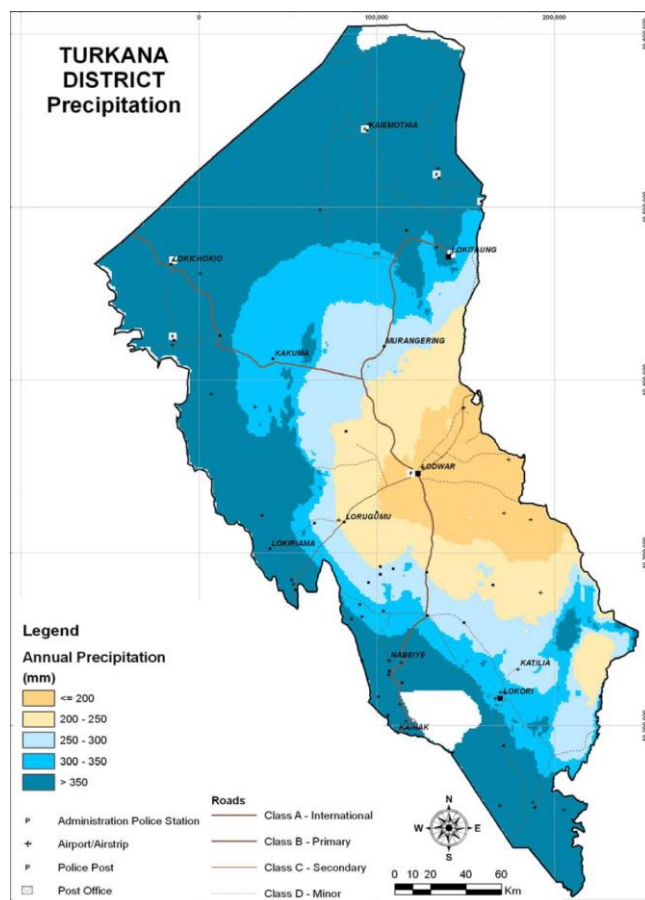


Figure 2-5: Mean annual rainfall distribution in Turkana County

2.1.3.2 Temperature

Turkana County is hot and dry with high but fairly uniform temperatures throughout the year. Temperatures range from a low of 24°C to a high of 38°C with a mean of 30°C. The low-lying

plains in Turkana are hot and dry, and temperatures are high and are seldom lower even at night. During the day, the extremely high temperatures are accompanied by strong easterly winds sweeping across the largely barren countryside, carrying large quantities of sand. In Pokot, temperatures in the lowlands range from 15 to 30°C but the highlands may experience temperatures as low as 9°C.

2.1.4 Geology and Soils

2.1.4.1 Geology

From approximately 79+000 to 124+000 the project area passes through some red brown silty Sand soils. These are mainly residual soils which are underlain by the basement system rocks from which they are derived. The rocks comprise of plagioclase amphibolites and granitoid gneisses which has been extracted from the geological map of the Loperot Area. Typically the rocks of the main amphibolitic group are red-weathering black or greenish black, finely banded, fine-grained plagioclase amphibolites. On the other hand, the granitoid gneisses are homogeneous buff-colored and lack foliation but do retain a faint gneissic orientation of the constituent minerals. Quartz or quartzo-felspathic lenticles are fairly common and are often stained a pinkish color by iron oxide.

The project road from approximately 124+000 to 182+000 lies on the geological map of South Lodwar. It can be inferred that the road is bounded to the east by the numerous hills composed of Basement System Rocks and to the east by the alluvial plains.

In the western part of the area the plains flanking the Lochereesokan, Emuruanuk and Loichangamatak hills are covered with blocky waste derived from the underlying Basement System rocks. These gravelly deposits are composed of angular fragments of quartz, felspar and less commonly gneiss. The fragments are usually well sorted, varying in size from grits only slightly coarser than sand to blocks up to 60mm in diameter. On the other hand, the plains in the central part of the area, separated from the western region by the north-south aligned erosional terrace, are covered with fine-textured powdery grey to buff silty Sand soils. Rocks of the Basement System are sparsely exposed in the area. In the western sector they form a series of hills projecting through the superficial deposits, such as Lochereesokon, Kumaburi, Emuruanuk and Loichangamatak.

The last section of the project road from 182+000 to 197+450 is comprised in the geological map of the Northern Turkana Area. Recent superficial deposits include wide extents of sandy soils, red over Basement System rocks and generally grey, buff or white elsewhere. The solid geology around Lodwar consists of phonolitic lavas of the Muruangapoi Hills which are seen to rest directly on Turkana Grits, and at the northern end of the hills overlie the lower basalt series. North of this range, plugs of microfoyaite invade the lower basalts, and locally small flows rest on the basalts.

2.1.4.2 Soils

The highlands south of the start of the project area in Pokot are in the Modified Tropical Zone with soils that are generally well drained and fertile. This zone has high potential for agricultural and livestock development. The lowlands in a semi-arid climatic zone further north have complex soils with various textures and drainage conditions with deep alluvial deposits on the valley floors. Most of the soils in this zone are Saline, Sodic or Calcareous in nature. Crop production in these areas is possible through irrigation, though salinity would exclude certain soil pockets. The zone is essentially range land, though there is a huge potential for large scale irrigation development. Soils in the region can be broadly classified into:- (a) Lava boulders and shallow stony soils, (b) Clay soils, (c) Loam soils and (d) Alluvial soils.

In Turkana, soils are highly variable and are mostly shallow and generally of light and medium texture. There are either constraints of a chemical composition, or physical limitations such as rockiness, mantle, slope, and depth. The soils are not well developed due to aridity and constant erosion by water and wind and are often capped by stone mantles.

Most of Turkana is covered by lava flows, which generally occur in a north-south direction and, because of their altitude, form the major central hills. The landscape is generally called uplands and peneplains. These features are covered with shallow, poor soil with no organic matter. Directly below the top soil is unconsolidated weathering rock. This means that middle soil between the top soil and the rock is lacking.

Due to the predominantly arid climate, there is relatively little vegetative cover to stabilize the soils and as a result, they are easily eroded. Wind erosion and deposition is an important feature in the county and areas of strong sheet erosion occur on all steep slopes where vegetation is removed by the grazing animals. There are local occurrences of highly saline soils and of soils with low mineral contents. Only a small part of the county's soils have potential for irrigated agriculture. Most of the cultivation is carried out communally.

The two major rivers, Turkwel and Kerio, have essentially alluvial soils in which silty sand overlays coarse sand. At the Kerio delta and the lake shores, the soils are more saline than elsewhere and are frequently overlaid by windblown sand (Gwynne, 1977).

2.1.5 Air quality

The project area is dominated by a hot, dry and windy environment which exacerbates generation and blowing away of dust. With the existing road which is currently gravel surfaced, and the passing of vehicles, coupled with strong winds often generates high levels of dust along the proposed road.

2.1.6 Hydrology

The project road passes between the mountainous areas of the upper West Pokot area in the west and the low plains of the Moruny River to the east. It then passes through Kainuk and continues north. The Moruny River catchment measures about 2700 km². According to the local water authorities, no data is measured at the Moruny River at Kainuk or elsewhere. An observed measuring device was probably an out-dated installation from one of the abolished irrigation schemes in the area.

The main flow direction is from west to east. Catchment areas vary in size up to 50 km². The majority of catchments are under 20 km² and slopes are relatively steep. The drainage direction is very distinctive. Swampy areas are confined to a single section near km 14+000. After Kainuk the drainage direction changes from East to West.

2.2 BIOLOGICAL ENVIRONMENT

2.2.1 Ecology

Most of the proposed road passes through an area that has, like the rest of Turkana County very low ecological potential. Though the county occupies 12% of Kenya's total area, it represents only 0.6% of the country's ecological potential (TDDP, 1980) (Table 4). According to the ecological classification adopted by the survey of Kenya (Republic of Kenya 1992), land in the Turkana covers five agro-climatic zones (zones III-VII) of which 'arid' and 'very arid' zones VI and VII respectively, cover about 90% of the county. These agro-climatic zones have been

classified according to annual rainfall and evaporation patterns. Moisture indices are calculated not only from rainfall and evaporation, but also include measures of radiation, temperature, saturation deficit, and wind speed. According to this classification, an index of -60 is the minimum possible and is equivalent to no rainfall, or ‘true desert’.

The arid zone V (moisture index of -42 to -51) is characterized by wooded and thorn-bushed grassland; the very Arid Zone VI (moisture index of -51 to -57) is dwarf shrub grassland with acacia trees mostly confined to water courses and depressions. Lava outcrops and gravel flats are common in many parts of Turkana. The east central region is nearly a desert; even the shoreline of Lake Turkana has little vegetation.

Table 2-1: Ecological zones in Turkana County

Ecological Zone (use)	% of County area
Zone III (agriculture, forestry, intensive grazing)	2
Zone IV (high-potential grazing)	8
Zone V (medium-potential grazing)	49
Zone VI (low-potential grazing)	41
Total	100

In West Pokot six of the seven agro-climatic zones, recognized in Kenya occur: zones I to VI (humid to arid).

- Zone I (humid) occurs in an area which is mainly forested is protected against any form of cultivation or grazing because of its vital importance as a water catchment area for a much larger region, including Turkana land;
- Zones II (sub-humid) and III (semi-humid) have good to moderately good climatic conditions for agricultural production;
- Zone IV (semi-humid to semi-arid) is more marginal.
- Zone VI (arid) and large parts of zone V (semi-arid) are too dry for rainfed arable farming and the livestock carrying capacity is very low; the areas can only supply food for a very small number of people.

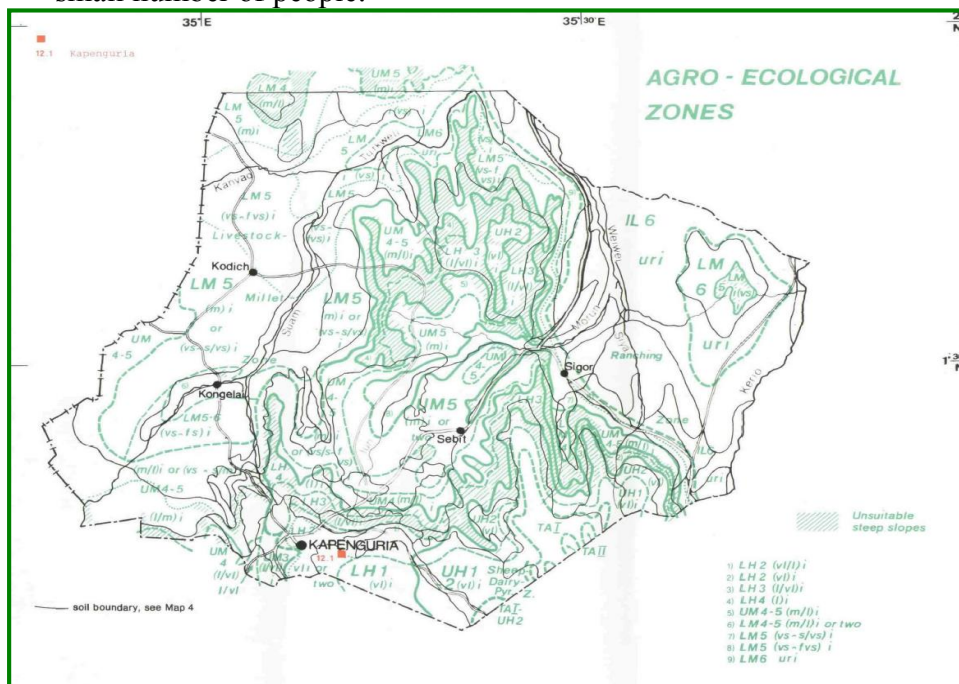


Figure 2-6: Ecological zones in West Pokot

2.2.2 General Description

The distribution and status of vegetation in Turkana is determined mainly by water availability, but also by temperature and evaporation, topography, soils, and historical influences. A quarter of the county is devoid of trees and two thirds support only scattered trees (Norconsult, 1990) while reliable sources of grass with high productivity are small and widely scattered. The presence of plant biomass is related to altitude except for riverine areas (Plate 6). The two main types of woody vegetation found in Turkana are riparian and non-riparian.

The vegetation of the area is characterized by annual grasses and shrubs in the plains, and perennial grasses and large trees on the higher grounds. The lowlands are crosscut with many temporary stream and river courses. The larger of the river courses, the Kerio and the Turkwel, support dense gallery forests, and *Acacia* trees grow along the banks of many smaller stream and river beds.

Tree vegetation mostly appears as riverine vegetation and although the numbers of tree species are fewer than in humid environments, they are well known and important to the Turkana people (Morgan 1971), with *Acacia tortilis* (umbrella thorn, ‘Turkana ‘ewoi,’ or ‘etir’ when young) as the most valuable tree species. Both the Turkwel and the Kerio rivers have thick belts of riparian vegetation on either side, with deep-rooted *Acacia tortilis* forming a canopy forest with little understorey. The seed pods (“ngitit”) are a prized feed for goats and the crushed seeds are also used as food for humans.



Plate 5: *Acacia tortilis* riverine forest on Turkwel River near Lodwar (a) aerial (b) ground

Further from the main rivers, there is a sequence of thickets of *Cordia sinensis* (‘edome’), *Salvadora persica* (‘asekon’ or ‘toothbrush tree’), *Balanites spp* (‘ebei’, ‘elemach’), *Acacia seyal*, and *Dichrostachys cinerea*. In areas distant from the water courses, the species vary, but include *Acacia nubica* (‘epetet’), *Acacia mellifera*, *Acacia reficiens* (‘eregae’), *Dobera glabra* (‘edapal’), *Boscia coriacea* (‘erdung’), *Commiphora africana* (‘ekadel’), and *Euphorbia cuneata*. Near the lake and lower stretches of the rivers, *Hyphaena coriacea* (‘eengol’ or ‘doum palm’) is dominant.

2.2.2.1 Vegetation Classification

Vegetation in Turkana is classified as follows

(a) *Dwarf shrubland (DS)*: In this class, most woody plants are hardly more than two metres in height except in depressional areas where soil is deeper. Woody. The area is dominated by *Acacia reficiens*, *A. horrida*, *Indigofera spinosa* and *Cadaba farinosa*. These woody plants are a major source of fodder as they are heavily browsed;

(b) *Shrublands (S)*: These extend more to the south and north. Common species in the north include *Acacia reficiens* and *Cordia sinensis*, while the southern areas are dominated by *Acacia reficiens* and *A. senegal*. The grass species found in the north are more palatable than those found in the south. Those in the north include *Chloris virgata*, *Eriochloa fatmensis*, *Eragrostis ciliaris* and *E. racemosa*, while in the south *Enneapogon cenchroides* is dominant.

(c) *Shrub-grassland (SG)*: This is an ecotype between grassland and bush, and is found in many areas of Turkana. Common grasses/herb species are *Eragrostis cilianensis*, *E. racemosa* and *Chloris virgata* while woody species are dominated by *Acacia reficiens*, *A. mellifera* and *Grewia tenax*.

(d) *Grassland (G)*: The areas in the Lotikipi Plain and kalapata plains, and around Eliye Springs are extensively covered by grassland. Herbaceous cover is dominated by *Setaria sphacelata*, *Eragrostis racemosa*, *Becium obovatum* and *Barleria acanthoides*.

(e) *Riverine (R)*: Along the Turkwel, Kerio Rivers, the vegetation type is riverine. Its width depends on the landscape of the area through which the rivers pass. In a flat plain it is extensive and *Maerua crassifolia*, which is an evergreen shrub, marks the extent of the floods. *Acacia tortilis* dominates the vegetation and the third major species is *Ziziphus mucronata*. In some areas for example along the Tarach and Turkwel Rivers, there are heavy infestations with *Prosopis* spp. which seems to quickly colonize disturbed sites and replacing the indigenous species.

(f) *Bushland (B)*: Bushland type vegetation is found in the south of the county and along the border with Uganda and in an area north of Lokori in southern Turkana. Although *Acacia reficiens* is still the dominant, there are three other abundant species. Grasses are dominated by perennial species e.g. *Digitaria milanjanus*, *Panicum maximum*, *Sporobolus conjinis* and *Echinochloa haploclada*.

(g) *Forestry Resources*: Forests with a canopy cover about 2% and are limited to the mountain ranges, especially the Loima Hills, which are relatively humid, and also along the main rivers (Turkwel and Kerio), which have significant areas of riverine forest. The shores of Lake Turkana are dominated by *Acacia spp* and Doum palm (*Hyphene compressa*) and more recently invaded by *Prosopis* spp on some sites along the rivers, especially the Kalokol to Turkwel stretch.

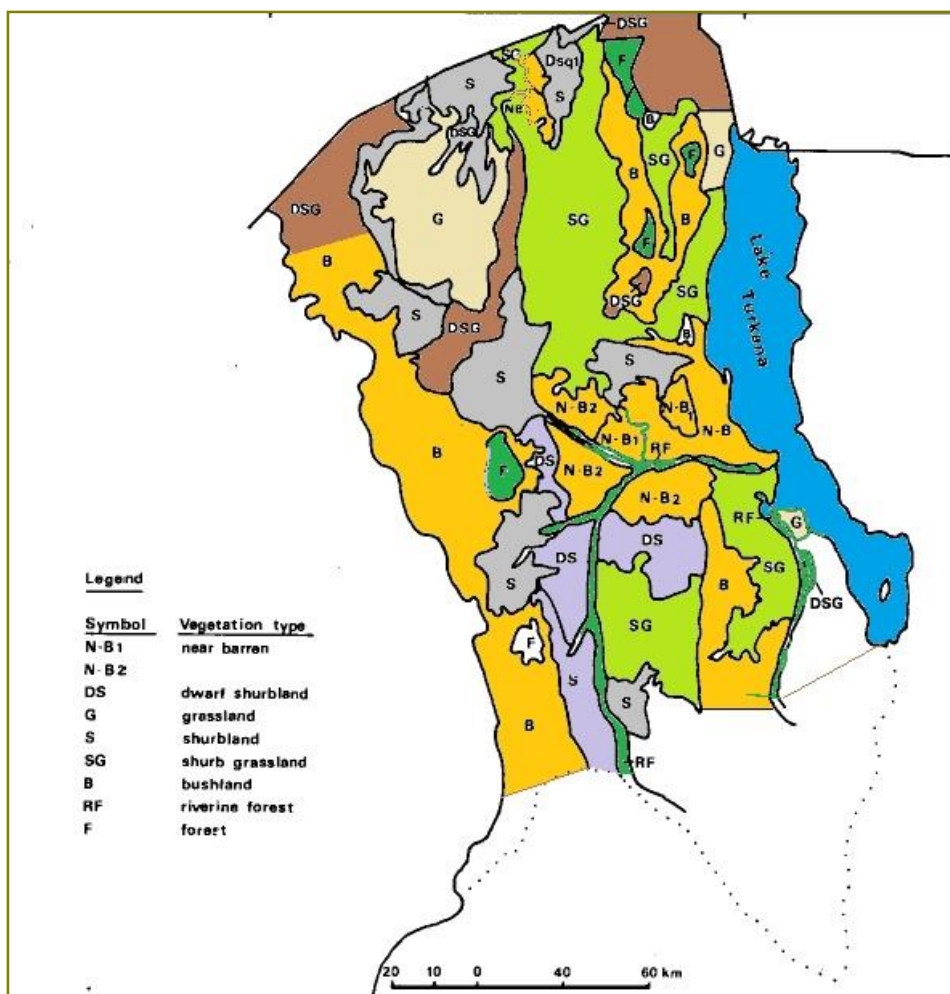


Figure 2-7: Vegetation map of Turkana County

Key:

Symbol	Woody cover %	Herb cover %	Standing crop kg/ha	Vegetation type	Major species
N-B 1	1	1	160	Near barren	Acacia reficiens, A. condyoclada and Asistida mutabilis.
N-B 2	2	5	260	Near-barren	Condition due to over-grazing and is dominated by Acacia reficiens, Duosperma eremophilum and Jatropha villosa.
DS	5	7	340	Dwarf shrubland	Acacia condyoclada Balanites orbicularis, Aristida mutabilis and Tragus berteronianus
G	--	12	580	Grassland	Tribulus terrestris, Mollugo cerviana, Tetrapogon cenchriformis, Seteria sphacelata and Becium obovatum
S	18	16	680	Shrubland	Enneapogon cenchroides, Chloris virgata, Aristida mutabilis, Acacia reficiens and Cordia sinensis
SG	6	25	1600	Shrub-grassland	Acacia reficiens, A. mellifera, Grewia tenax and Cadaba farinosa
B	40	42	2040	Bushland.	Acacia reficiens, A. mellifera, Boscia coriacea, Dactyloctenium aegyptium and Digitaria milanjana

RF	44	45	5400	Riverine forest	Acacia tortilis, Maerua crassifolia, Indigofera spinosa and Jatropha villosa
F				Forest	

In Turkana, *Prosopis* species has spread to the fringes of Lake Turkana, along some parts of the main rivers such as Turkwel, Tarach and Kerio. Despite this, there are programmes and interventions that are ongoing in the invaded areas that mainly involve thinning, singling and utilization. Poles, posts, charcoal and pods are some of the *Prosopis* products utilized locally.

Forestry resources support a wide range of household activities – livestock production, honey, traditional medicines, shelter, charcoal production and foods. In some areas where infrastructure is better developed, forestry resources are becoming an important source of household income particularly through the sale of charcoal, gums and resins. Over 103 plant species in Turkana County are used as fruits, vegetables, food, and medicine processing. *Hyphaena compressa* (*Doum palm*) for example produces edible fruits, is used for local brew production and blood preservation.

In Pokot, the vegetation ranges from grassland to the north to forest in the south and on hills, depending on the soil and water conditions. The middle and northern area consist of grasslands are characterized by sparse and stunted vegetation consisting *Acacia reficiens*, *Commiphora* spp and *Sansvieria spp* with floodplains consists of many species including *Salvadora persica*. In the middle areas, the vegetation is mainly acacia thickets and scrub bush with a poor ground cover except for the period after the rains when annuals appear. The bush is interspersed with taller woody species such as *Acacia tortilis*; *Balanites aegyptica* and *Terminalia spp*. Perennial grasses such as *Centrus ciliaris* and *Chloris roxburghiana* are dominant but disapeat after rains dur to overgrazing and harsh conditions. Along the rivers, *Ficus sycomorous* and *Tamarindus indica* grow.

Other species that occur in Pokot and highly valued for different uses include *Acacia mellifera*, *Balanites pedicellaris*, *Boschia coriacea* and *Diospyros scabra*, *Dodonaea viscosa*, *Euclea divinorum*, *Grewia bicolour*, *Olea africana* and *Zanthoxylum chalybeum*. *Cordia sinensis* is used for fruits, fodder (leaves), construction; *Maytenus heterophylla* is useful for fencing; *Tamarindus indica* and *Salvadora persica* as fruits, medicine for cold (fruits, roots), ash is used to protect wounds (on goats) from being affected by insects, toothbrush making, fodder (leaves), shade; *Acacia eliator* for tea (bark), fodder (fruits), firewood, construction; *Acacia nilotica* for fodder, fencing, construction.

2.2.3 Fauna

Free ranging wildlife is not very common in West Pokot and Turkana. Although most species of wildlife occurring in the various ecological zones of Kenya have been spotted in the region, they occur in low numbers in the area. Being arid and semi arid environment, the areas of Pokot and Turkana in general have relatively few fauna outside the existing protected areas.

2.2.3.1 Nasolot National Reserve

Located in West Pokot, Nasolot is a small (92 km²) reserve located in the hills to the south of the Lower Turkwel Dam. The Sarmach Gate to the reserve lies on the Turkwel road just 7km from the junction (with the A1 project road). Besides being a reserve for wildlife, it borders on part of the Turkwel lakeside helping to protect the slopes from human encroachment and erosion. It offers good views of the Gorge and its lakes and the prominent, rocky Nasolot Hill.

Significant species to be found here include: buffalo, bushbuck, lion, leopard, hyena, baboon and the Lesser Kudu and Fringe-eared Oryx. There are more than 150 species of birdlife.

2.2.3.2 South Turkana National Reserve (STNR)

South Turkana national reserve covers 1,091sq kilometers in the foot hills of mount Nasolot near Lake Turkana and is much larger than Nasolot, its close neighbour to the west; but, in fact the two are really one eco-system divided by the project road (Kapenguria-Lodwar A1). The Reserve includes the Masol Hills, Laiteruk and Kailongoi, and some interesting landforms between and around them.

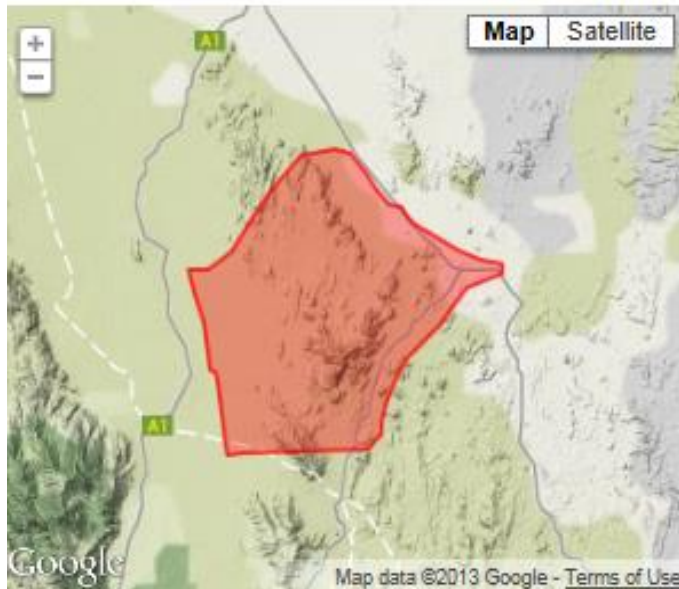


Figure 2-8: South Turkana National Reserve showing proximity to the road

Much of the STNR is dense thornbush which is a refuge for birds and animals, but there is some riverine forest (along banks of Kerio River), some salt springs and views of the Hills. There is abundant bird life. The reserve hosts several species of wild game such as elephants, buffalo, oryx, bushbuck, greater kudu, grant gazelle, leopard, cheetah, jackal, lion, giraffe, spotted hyena, jackal and birds as well. The river bed on Kerio river are often sighted with crocodiles.

Endangered Species

There are fewer wildlife in the project area compared to similar environments across Kenya. This is partly because over the years, wildlife has been killed for a variety of reasons including bush meat. A case to note is the South Turkana National Reserve where there has always been a herd of elephants which are threatened by ever increasing number of people migrating and poachers. More so, there are local Wei Wei Poachers who kill wild animals in this region thereby endangering the wildlife species. It is believed that the local Turkana population hunting wildlife for food, and there is little evidence of substantial game left in the reserve.

Among the endangered species are the antelopes, gazelles, elephants among others. In addition, wildlife habitats have been degraded through high demand for charcoal and firewood especially

to supply the refugee camps. However, there is still wildlife that disperse across the project area, some from as far as South Turkana Nature Reserve.

2.2.4 Water resources

Surface water sources are very limited in the area. The major drainage systems in the southern areas of the proposed road project in Pokot and Turkana are Turkwel, Kerio. Both the Turkwel and Kerio Rivers drain northwards into Lake Turkana. The perennial tributaries of the Kerio River are Lomut, Suam, Weiwei, Muruny, Sigha, Kale and Suam. As these rivers get to the low-lying areas in Turkana, they disappear under the sandy conditions of the riverbeds.

There is fair potential of both surface and ground water resources in Pokot. Groundwater potential is estimated at about 4 million cubic metres per year and opportunities for exploitation exist in the eastern divisions of Kacheliba and Alale. The area also has a number of springs and many are already protected. Boreholes are concentrated in drier north-western regions. Hydroelectric power is being generated at Turkwel power station, situated at the boundary with Turkana. The reservoir has good potential for irrigation and fishing but is not fully utilized. Irrigation is carried out mainly along River Weiwei which has a water flow of about 12,000 litres per second.

Water is crucial to sustaining the Turkana and Pokot pastoral livelihoods; for use by their herds and for domestic purposes. The two main rivers (Turkwel, Kerio) flow more or less continuously from April to September. These rivers receive the bulk of their water from the Kenya highlands (Mt Elgon), far south in Trans Nzoia. Other rivers in Turkana include the Kawalathe (Near Lodwar), Kosipir, and Suguta. These rivers have water from three to ten months of the year.



Figure 2-9: Major rivers and their drainage

The Kerio River Basin in Kenya covers a total of 17,800 km² extending over a 350 km distance, with an average basin width of only 50 km (Sogreah, 1982). The upper basin is located in the humid areas as Cherangani, while the lower basin is in semi-arid Turkana and Pokot. Flows have been measured at Gauging Station 2C8 at Lokori in Turkana, where the mean inter-annual flow was estimated to be 10.5 m³/s, with the mean Kerio River contribution to the water

balance of L. Turkana being less than 5 m³/s per annum. The Kerio River enters Lake Turkana south of the Turkwel river delta, in the south-west of the lake. The Lake covers an area of 7,560 km².

The Turkwel River Basin covers an area 23,900 km² with its source at an altitude 4,320 m on Mount Elgon, on the Kenya Uganda border to the west. The Turkwel River runs a course of length 340 km, and there are three distinct catchment zones, as follows:

- The Suam River, catchment area 5,900 km², which drains from the Uganda border in the west, to Turkwel Gorge where the river is dammed, joining the Turkwel.
- The Wei Wei and Morun rivers in Pokot, which drain the Cherangani Hills, with a combined catchment area of about 1,500 km² at Marich Pass, prior to joining the Turkwel River at Kaputir.
- The semi-arid plain of the Turkwel River forms the third part of the basin extending from Kaputir to Lake Turkana. The only flow is in the form of localized flash floods arising from storms. The major part of any water reaching Lodwar infiltrates or evaporates before the lake is reached.

2.2.5 Water Supply

2.2.5.1 West Pokot

West Pokot is a semi-arid area with low and sparsely distributed rainfall. Therefore, water is scarce throughout, especially in the lowlands, where most of the population is nomadic pastoralists. Only a very small proportion (6 per cent) of the population has access to safe sources of water, one of the lowest values in Kenya. The main sources of water are: Rivers (25); dry river wells (35%), pans and dams (7%), Ponds and shallow wells (5% each) and boreholes (23%) (Figure 14). Water harvesting and storage are also common especially in the south part of the county, due to the hilly terrain. Throughout the area, the local populations also use water pans and earth dams to collect and store rain water during the rainy season. However, due to high temperatures, the evaporation rate is high. Furthermore, silt carried downstream causes dam siltation.

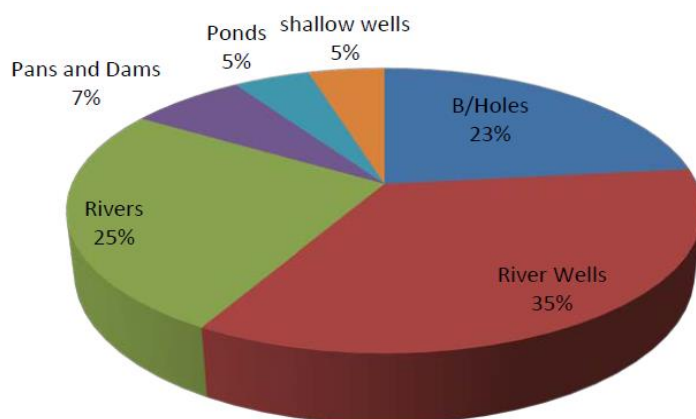


Figure 2-10: Sources of water for human and livestock in Pokot County

The volume of groundwater available for development on a sustainable basis in Pokot is estimated at 4 million cubic meters per year. Boreholes are mainly concentrated in the north western parts. However, a considerable proportion of the boreholes have been underutilized due to high cost of maintenance and operation.

The uneven geographic distribution of water resources in the Pokot is compounded by the fact that the river water flow is sometimes diverted for irrigation and farming along river banks. This leads to destruction of water catchment areas in the pastoralist zones located downstream, with a great impact on the water availability problem. The general shortage of water in the area and the poor distribution of water sources are reflected on the average amount of time required for the households to collect water for their daily needs (Table 5). Even in the rainy season, only a very minimal proportion of the households have immediate access to water (nearest water point located less than 5 minutes distance from the household). Furthermore, more than 10 per cent of the households require more than one hour daily to access the nearest water point, a percentage which increases to more than 15 per cent in the dry season.

Table 2-2: Distance walked in search of water in Pokot

	<5mins	6-30mins	31-60mins	61-120mins	>120mins
Dry season	3.3	60.4	20.6	10.4	4.8
Wet season	6.6	64.5	18	7.8	3

During the drought, the distance covered by the households in search for water for domestic use and to water livestock tends to increase. The average return distance from households to the water sources for households is about 3.3 km.

2.2.5.2 Turkana

In Turkana, only about 15 per cent of people have adequate access to water, compared to the national average of 57 per cent. The Turkana people source their water from rivers, springs, rock pools, and waterholes which they dig in dry river beds. During extreme dry seasons, the waterholes (akar) may be dug up to 25m below the ground, from which water is passed up in containers by human chains of sometimes up to 10 people. Water fetching for domestic use in Turkana has traditionally been the female’s responsibilities (Plate 7) while sometimes the males fetch water only for their animals when away of grazing missions.



Plate 6: Watering camels in Turkana and goats in Pokot

Most of the population relies on river and shallow water wells for water, especially the shallow groundwater aquifer associated with dry riverbeds. However, main factor which diminishes its potential is poor water quality, rather than total absence (UNICEF, 2006). Ephemeral rivers also provide significant water sources mainly via shallow wells, being seasonal rivers the most abundant source of water in the district. People often travel more than 10 km in search of water for domestic use and for livestock. Thus, conflict over water sources and pasture between the Turkana and their neighbours is common.

The groundwater is generally good from having been filtered through sandy aquifers, but it sometimes becomes contaminated with animal dung around waterholes. In some places, groundwater is salty and brackish. People are often required to drink brown coloured water with high silt content.

2.3 SOCIAL AND CULTURAL ENVIRONMENT

2.3.1 Administrative Structure

Marich Pass, the beginning of the Project road, is located in Sigor division, Sekerr location, the latter subdivided into four sub locations-Chepkondou, Mbara, Orwa and Sostin. Along this section, the road project is located entirely in Orwa sub location in Pokot Central Sub County.

The rest of the section of Kainuk is 85 kms in length located in Turkana South Sub County. Near Kainuk, the Project road moves into the Turkana South District that is composed of four divisions, namely Kainuk, Katilu, Lokichar and Loreng'elup. The project road passes through all except Loreng'elup division. Lokichar serves as the current district's headquarters as well as the location of numerous district offices for central government ministries and agencies. The project road ends at Lodwar, the capital and the largest settlement of Turkana County.

2.3.2 Population Structure and Land-use along the Target Road Corridor

Population density and distribution in both Turkana and West Pokot partially reflects the prevailing ecological conditions, due to dependency on natural resources. The areas with little or no population are in southern, southwestern and northwestern sections bordering West Pokot County. About 40% of the population is found in and around settlements and irrigation schemes.

The Pokots are the dominant ethnic group in the southern section of the study area northward to the Kainuk forest. They are Southern Nilotics of the Kalenjin group. The population in West Pokot County was almost 512,690 during the 2009 census with male 254,827 (49.7%) and female 257,863 (50.3%).

The sedentary, agricultural Pokot occupy the Sekerr hills, along with the Cherangani hills, where they customarily raise rainfed and irrigated sorghum and finger millet. The crops have now been expanded to include maize, beans and cassava. In addition to cultivating, these Pokot kept small herds of livestock. This Pokot group is known as pipöpagh (people of the grains) or Hill Pokot.

The semi-nomadic, pastoral Pokot live in the western and eastern plains, the eastern plains part of the project-study area. These Pokots herd cattle, sheep, goats, and, in smaller numbers, donkeys and camels. Persistent movement in search of pasture, water and saltlicks characterizes their lives.

The herders travel long distances with their livestock, moving between dry and wet season grazing areas. This Pokot group is known as the pipötich (people of the cattle) or Plains Pokot.

The total 2009 population of Turkana South County was 135,913 - 72,591 males (53.4%) and 63,322 females (46.6%) (2009 census). Of that population total, the overwhelming majority is Turkana (98 percent) while the remainder (2 percent) is made up of other ethnicities and/or

nationalities. One prominent group in this 2 percent is Kenyan Somalis who operate local businesses.

The Turkana are the third largest Nilotic ethnic group in Kenya. They are the principal tribe in the study area. They, like the Pokot to the south, are divided into two discrete groups: the forest people (nimonia) and the people of the plains (nocuro). These two groups are subdivided into about twenty clans with each clan linked to a unique livestock brand, facilitating the recognition of clan relationships. Each clan also occupies a defined territory. Although individual rights to forage do not exist, the clan elders must give permission to move into another's grazing territory. Each clan defends its territory, and during periods of stress such as drought, the elders may deny non-clan access to the grazing area or impose a toll in livestock.

The Turkana have a livestock raiding culture. Historically and currently, raiding with the subsequent counter raids of traditional enemies provided the Turkana with:

- Expanding grazing lands;
- Gaining access to new water sources;
- Restocking herds;
- Improving social status by acquiring livestock from defeated enemies;
- Acquiring bride price; and
- Reducing hunger and poverty.

2.3.3 Historical and cultural aspects

Turkana Community

According to oral traditions the 'original' Turkana was the eastern vanguard of the 'Ateker,' groups of the eastern Nilotic linguistic family known as the central para-nilotes, which replaces the incorrect and misleading term 'Nilo-hamitic'. Traditionally, these tribal groups which share close linguistic ties with the Turkana are the Karamojong, Jie, Dodoth, Iteso, Ngangatom, and Toposa (Lamphear 1992). These tribal groups were Turkana neighbours and inhabited the Korten-Magos hills in the present day Karamoja district of Uganda at the beginning of the 18th century.

The Turkana, like their neighbours, have a livestock raiding culture. Raiding of traditional enemies was previously a means of expanding grazing lands, gaining access to new water sources and most importantly, an economic stratagem of self-restocking and improving social status by acquiring livestock from defeated enemies (Oba, 1992). This means that each raid is spontaneously followed by counter raids. Other motivation for raids in pastoral communities is the desire to reduce poverty and hunger, and acquire bride wealth.

Four territorial Turkana groups, inhabiting different ecosystems, are compared; the Ngisonyoka (south Turkana) the Ngiyepakumo and the Ngilukamong (Tarach group), the Ngikamatak (central Turkana) and the Ngibocheros (the lake zone group).

The Ngisonyoka of south Turkana are presented as a non-equilibrium but stable production system (Ellis and Swift 1988), whose territory includes both mountains and plains and consequently, diverse vegetation patches. They move about 10-15 times per year between these heterogeneous areas, but avoid the highlands bordering Pokot because of insecurity. On the whole, the heterogeneity of their territory has allowed them to survive severe droughts without depending on food aid (McCabe and Ellis 1987).

The Ngikamatak of central Turkana, on the other hand, established symbiotic relationships with the Karimojong, which allowed access to the dry season grazing across the border, within Uganda. In contrast to these two groups, the Tarach groups of northwest Turkana have wet season pastures in a drought-prone zone, while their traditional dry season grazing lands are along the border with Uganda, which is insecure due to raids by the Dodos. Their option is to exercise force to get access to the dry season rangelands.

The Ngibocheros, who inhabit a barren territory along the shores of Lake Turkana, and are quite prone to recurrent droughts and food insecurity. To cope with this stress, they employ diverse survival strategies, including gathering of wild fruits, fishing, managing small stock and reliance on famine relief.

The main tribe in the study area is the Turkana. They are divided into two broad groups; the forest people (Nimonia) and the people of the plains (Nocuro) which are divided into roughly twenty clans (ategerin). These are: Ngibelai, Ngibotok, Ngibocheros, Ngichoro, Ngigamatak, Ngijie, Ngikajik, Ngikuniye, Ngikwatela, Ngilukumong, Ngimamong, Ngimazuk, Ngimonia, Ngiseto, Ngisiger, Ngisonyoka, Ngissir, Ngiturkan, Ngiwoyakwara and Ngiyapakuno. Each one of the clans is associated with a particular brand for its livestock, so that any Turkana can identify a relative in this way. Each clan also occupies a defined territory. No individual rights to forage exist and crossing to other territories requires permission from the elders and the “emuron” or seer of that territory. Each clan defends its territory and during periods of stress the elders may deny outsiders the access to the grazing area or impose a toll in livestock.

The Turkana generally live in extended family households (awi), and the family awi often involves two enclosures. An “awi” consists of 9-15 people. The individual awi would congregate together into several units called adakar (ngadakar in plural). Movement and management decisions are made at the awi and adakar levels. During dry periods the ngadakar, household members and the animals are dispersed in different orbits to spread risk and capture existing opportunities. Among the different Turkana traditional institutions, the Adakar (grazing social unit) is the most important. The Adakar structures are based on security i.e. protection from organized raids, natural resources management and social-cultural links. It is headed by an elder’s council, which has representation of all the herdsmen. All Turkana speak one language and follow one basic set of customary laws, but they do not recognize one global traditional governance or leadership. Consequently, the Adakar units are quite independent and autonomous.

The majority of the Turkana still follow their traditional religion: they believe in a God called Kuj or Akuj, associated with the sky and creator of all things. He is thought to be omnipotent but rarely intervenes in the lives of people. Contact between God and the people is made through a diviner (emuron). Diviners have the power to interpret dreams, foresee the future, heal, and make rain. Estimates are that about 15% of the Turkana are Christian.

Pokot Community

The traditional administrative unit of the Pokot is the kokwo (the 'tree of men'), which is the central decision-making council. Women may be allowed to attend, but they sit separately from the men and whereas men address the kokwo while standing and holding the symbolic stick, women can only speak while seated. The Pokot are divided into two groups.

The more sedentary and primarily agricultural Pokot have traditionally inhabited the ethnic core area comprising of the Cherangani and Sekerr hills. These people are known as pipöpagh (people of the grains), or Hill Pokot, and traditionally practice rain-fed and irrigated agriculture. In the past, they primarily produced millet (or sorghum) and eleusine (or finger millet), whereas nowadays cultivation has been extended, mostly by growing maize, but also to other crops such as beans and cassava. Besides cultivating, the pipöpagh traditionally possessed small numbers of livestock.

Besides the land of the ethnic core area, agricultural Pokot are also found in the Mnagei, Lelan, and Chemerongit highlands. Furthermore, agriculture has become of increasing importance for people of the lowlands over the years, and many people cultivate nowadays, especially along River Suam. Here, land is owned not by clans, but by individual families. The Chemerongit hills are cultivated by people with an agro-pastoral livelihood, while the Mnagei and Lelan sections of the Pokot.

The semi-nomadic and primarily pastoral Pokot inhabit the western and eastern plains. The lowlands in the research area are comprised of the western plains: lower Sook, the northern part of Kipkomo, the north-eastern parts of Riwa, and the area west of the Suam River. The life of these semi-pastoral people centres on herding of cattle, sheep, goats, and in smaller numbers donkeys and camels. They are therefore named pipötich ('people of the cattle'). Life is mainly characterized by high mobility as movement in search of pasture, water, and saltlick, is persistent. The herders travel long distances with their livestock, moving between dry and wet season grazing areas.

2.3.4 Settlement patterns

The Pokot population in Orwa sub location, where Marich Pass and Orwa Trading Centre are located, is divided between the Hill Pokots living in the rainy highlands and the Plains Pokots living in the dry plains.

The two groups normally intermingle because trading is concentrated in Marich Pass and Orwa Trading Centre. Marich Pass and Orwa Trading Centre are developed with residential structures used primarily for commercial purposes.

The most common businesses include retail shops for sale of food items such as sugar and tea along with imported cereals and fruits; eating establishments; and, locally produced charcoal. Buildings, structures and other properties located within the ROW for the project road are found, for the most part, in these two trading centres, which are situated about 2 km apart. After leaving the Moruny River near both centres, settlements are virtually non-existent until the Kainuk forest is reached.

By tradition, the Turkana people are semi-nomadic pastoralists whose settlement patterns depend on availability of pasture for their animals and their land requirements are extensive. However, these patterns are gradually changing due to their exposure to other lifestyles. The Turkana have been influenced by the inescapable benefits of urbanisation. Their settlements are concentrated around trading centers such as Kainuk, Kaakong, Kalemng'orok, Katilu and Lokichar where they can, at minimum, find work. Moreover, some of these centres have become densely populated because of increased government led security.

According to government estimates, the area's poverty level stands at 73 percent, but local informants-primarily local NGOs-estimate the rate at 94 percent. Because the Turkana

pastoralist community is semi nomadic, they are not stationary, which partially accounts for high poverty rates.

The major settlements on the project alignment is Lodwar in the north with smaller settlements between Marich Pass and Lodwar such as Kainuk and Lokichar, Within the road's area of influence settlements include Lotongot, Gakong, Chepterr, Anglogitat, Kaputir, Loichangamatak, Kakalet, Lolimo, Sigor, Lomut and Chesegeon. Thus the road also links local communities with short length trips that cover only portions of the road.

2.3.5 Security Situation

Limited grazing and watering resources trigger cattle raids. Many of these constitute the reasons for conflict among the Pokot Like their neighbors to the north, the Turkana, they pursue cattle raids of bordering tribes for various reasons. The net result is that this region of Kenya is deemed a high insecurity area.

The local function of the project road is severely compromised due to poor condition as well as civil conflict between the areas north and south of a notional line running through Kainuk. Land ownership disputes, grazing right conflicts lead to mistrust and occasional flare ups of localized conflict.

Cattle raids and resource-based conflicts are the main types and manifestations of conflicts in the region. The region's proximity to Ethiopia, Sudan, Uganda and hostile neighbouring districts in Kenya makes it one of the most affected areas by insecurity incidences.

The main causes of conflicts are competition over the control and use of scarce natural resources (pasture, grazing land and water) between different communities and their neighbouring communities is the main cause of conflicts. Other causes include traditional

culture of cattle rustling, ethnocentrism, poverty, marginalization and proliferation of illicit arms.

The leading aggressors (communities) include Toposa from Sudan and Pokot from Kenya and Uganda. Other includes Dodoth, Tapeth and Matheniko from Uganda, Didinga from Sudan, Merille from Ethiopia, Dongiro from Ethiopia and to a lesser extent the Samburu from Kenya.

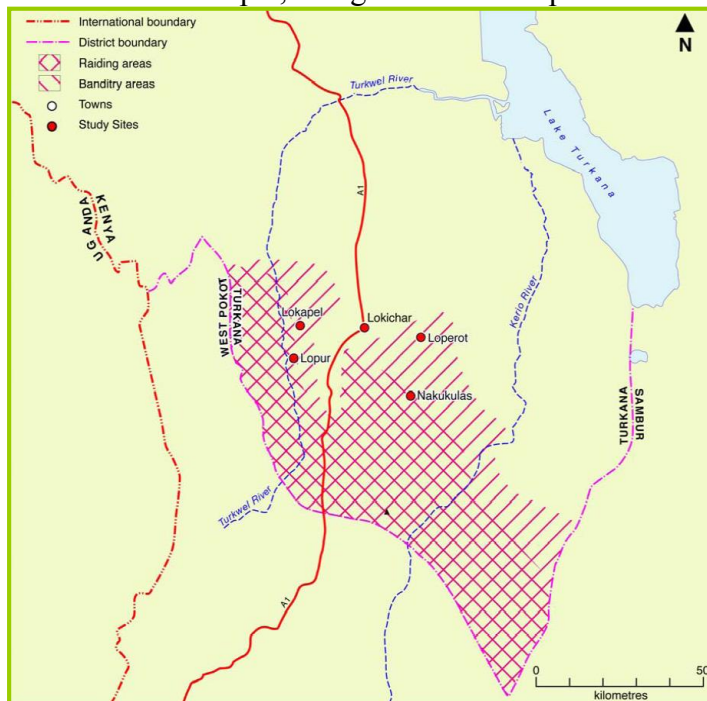


Figure 2-11: Areas of insecurity in southern Turkana and West Pokot border

2.3.6 Land Tenure and Land Use

Land tenure

All land in Turkana County is administered as Trust Land all under the Trust land Act. The existing land tenure in the trust lands can be described as a quasi-customary/communal in that land rights are held in trust by the county councils. Because there have been no formal surveys or land adjudication in the whole of the county, land is still held communally by various communities under customary tenure, and is managed by the Local Authorities (Turkana County Council and Lodwar Municipal Council) on behalf of the communities. Under the new Constitution, 2010, the land is now considered as community land with all rights vested in them.

Land tenure in Pokot is a mixture of trust land, mainly in the pastoralist areas in the north while land has been adjudicated in the highland farming areas to the south and central Pokot.

Land use

Nomadic pastoralism is the dominant land use in Turkana County. Other land use activities include small scale agriculture along river banks and flood plains, scattered settlements, urban centres etc. Table 7 shows the proportions of various land uses in Turkana and Pokot Counties.

Table 2-3: Land use patterns as percentage of total land area

Land Use	W/Pokot	Turkana
Pasture/pastoralism	50	70
Arable land	40	20
Wildlife	6	0.9
Forestry	0.9	-
Water masses	-	0.1
Other uses	3.1	9

The Turkana County, although largely marginal, contains pockets of high potential rangelands, which are crucial to land use patterns. The mountains, hills, plains, streams, rivers and valleys create a highly heterogeneous ecosystem, but the marginal nature of the environment creates survival risks, which the pastoralists must cope with by multi-resource exploitation.

Mobility is the principal mode of resource use, in response to the patchy rainfall distribution and concomitant patchy vegetation productivity. To take the best advantage of the diverse land resources and environmental variability, the Turkana manage multiple species of livestock, comprised of camels, goats, sheep, cattle and donkeys. Since each species has distinct dietary needs, the Turkana are able to exploit different expanses of the range during any period of the year. Cattle are confined to mountain areas and river courses during the dry season, and moved to the plains during the wet season, while the plains are endowed with sufficient browse for sheep and goats and camels during the wet and the dry season as well (Little, 1985). Table 8 shows details of the current and potential land use in the divisions of Turkana County.

Table 2-4: Land use potential and agroecological zones in Turkana County

Division	Area (Km ²)	AEZs	Current use	Potential land use
Lokochigio	9126	Lower midlands (LM5) Inner lowlands 6 (IL6)	Livestock keeping	Livestock keeping, water harvesting for farming
Kaaleng	10830	Inner lowlands 6 (IL6) Inner lowlands 7 (IL7)	Livestock keeping	Livestock keeping
Lapur	4652	Inner lowlands 7 (IL7)	Livestock keeping	Livestock keeping
Lokitaung	5208	Inner lowlands 7 (IL7)	Livestock keeping	Livestock keeping
Kibish	5127	Unsurveyed area	Livestock keeping	Livestock keeping, farming
Lokichar	2913	Inner lowlands 5, 6 & 7 (IL5, 6 & 7)	Livestock keeping	Livestock keeping
Oropoi	5348	Lower midland 5(IL5) Inner lowlands 6 (IL6)	- Livestock keeping - Sorghum growing	Livestock keeping, farming
Lokori	5008	Inner lowlands 4, 5, 6 & 7 (IL 4, 5, 6 & 7)	-Irrigation sorghum and maize growing; Livestock	Livestock keeping, farming, irrigation
Lomelo	5962	Lower midlands 5 (LM5) Inner lowlands 5, 6 & 7 (IL5, 6, 7)	Livestock keeping	Livestock keeping

Katilu	1187	Inner lowlands 5 & 6 (IL5 & 6) Lower midlands 5 (LM5)	- Irrigation scheme - Sorghum and maize growing, livestock	Livestock keeping, farming, irrigation
Kainuk	2504	Inner lowlands 4 & 5 (IL5 & 6) Lower midlands 5 (LM5)	- Irrigation scheme; Sorghum and maize growing; Mangoes and paw paws; Livestock keeping	Livestock keeping, water harvesting for farming, irrigation
Central	2099	Inner lowlands 7 (IL7)	Livestock keeping, very little agriculture	Livestock keeping, water harvesting for farming, irrigation
Kerio	2703	Inner lowlands 7 (IL7)	Livestock keeping, very little agriculture	Livestock keeping, water harvesting for farming, irrigation
Kalokol	3470	Inner lowlands 7 (IL7)	Livestock keeping, very minimal agriculture	Livestock keeping, water harvesting for farming
Turkwel	3093	Inner lowlands 5, 6 & 7 (IL5, 6 & 7)	Irrigation scheme and livestock keeping	Livestock keeping, water harvesting for farming, irrigation
Loima	2174	Inner lowlands 5 & 6 (IL5 & 6)	Livestock keeping	Livestock keeping
Kakuma	5596	Inner lowlands 6 & 7 (IL6 & 7)	Livestock keeping, little farming	Livestock keeping, water harvesting for farming
TOTAL	77,000			

As in Turkana, cattle are the most valued possessions of the Pokot, although sheep and goats are also highly prized. Approximately 50% of the Pokot are almost fully dependent on livestock for their survival. They sell livestock to meet cash needs for such as food items, clothing, transport and veterinary care. In the less harsh areas, the Pokot grow millet, sorghum and maize. Many of them still migrate with their animals during the dry season in search of water and pastures.

Table 2-5: Categories of land in Pokot County

Category of land	% of total
Rangeland	44
Marginal land	28
Medium potential	6
High Potential	3
Unsuitable	19

2.3.7 Livelihoods

The Turkana County is subdivided into four main livelihood zones based on their sources of income – pastoralism (64%), agro-pastoralism (16%), fishing based (12%), and peri-urban and urban (8%).

- *Pastoral*: covers most parts of northern and central divisions and supports 60% of total population. Main livestock kept are cattle, goats, sheep and camels.
- *Agro-pastoral*: located along the riverine areas of Turkwel and Kerio and supports 20% of the total population. The agro-pastoralists keep livestock and also practice small-scale farming. There are two rivers that support agricultural activities, Rivers Kerio and Turkwel
- *Formal and informal employment, trade*: mainly in urban and peri-urban centres support 8% of total population.
- *Fishing*: supports 12% of total population mainly practiced along the western shores of Lake Turkana

Pastoralism is the main subsistence and economic activity in the county. It is estimated that about 60% of the population derive their livelihood from livestock-based activities. Fishing is an important activity along the lakeshore. Over the years, fish yields from the lake have been declining due to the drying of the Ferguson gulf and the state of insecurity in Todonyang (the mouth of river Omo). One section of the Turkana, the Ngibocheros, live along the shore of Lake Turkana and depend on fishing and aquatic hunting, as well as herding for subsistence

The Turkana who live along the major water courses engage in small-scale agriculture. Crop production is practiced by agro-pastoralists mainly on pockets of arable land within flood plains and along riverine areas. The harvest is dependent largely on the amount of rain realized in a year, and the volume of water flowing in the two major seasonal rivers; the Turkwel and Kerio.

Indigenous fruits/foods are important sources of food particularly during dry spells. Of the wild fruits, Doum palm is the most widely used. It is used for basket and mat making. Acacia tortilis is utilized for livestock feed, firewood and charcoal production. Other livelihood activities include fisheries, trade in charcoal and firewood, mining, and employment.

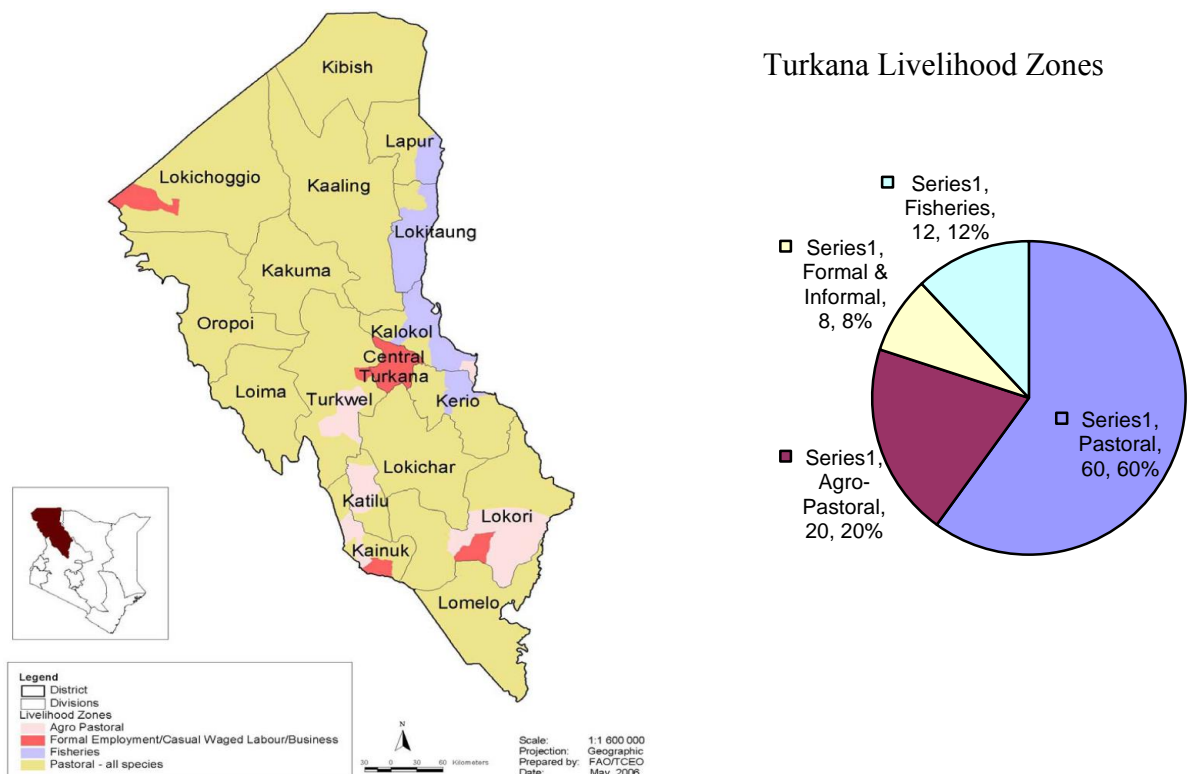


Figure 2-12: Turkana livelihoods zones and categories

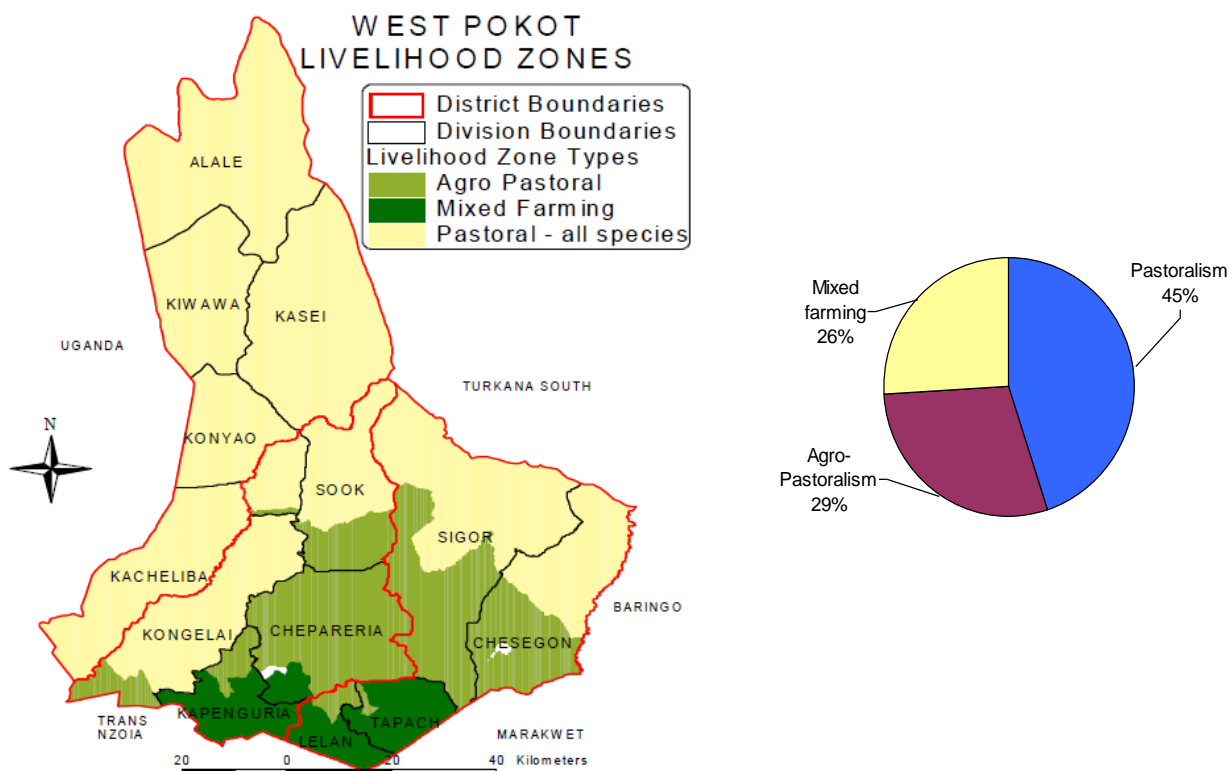


Figure 2-13: Pokot livelihood zones and categories

The livelihoods in West Pokot takes three forms namely; pastoral, agro-pastoral and mixed farming. Mixed farming is largely practiced in West Pokot whereas Pokot Central and Pokot North practice agro-pastoralism and pastoral respectively. The number of various livestock types in Turkana is shown in Table 10. The following are the key livelihood activities in both Turkana and Pokot.

Livestock production – Pastoralism

Livestock sub sector contributes significantly to the economy of Turkana County’s economy. The value of livestock resources in the county is estimated to be 5.9 billion annually. In the county, growth of the economy is correlated to growth and development in livestock.

About 60% of the population in Turkana depends on five species of livestock for their subsistence: Camels, cattle (Zebu), sheep, and goats provide most of their subsistence needs while donkeys are used to transport household goods during migrations. The livestock provide such products as milk, meat, hides, skins and ghee. The rest of the population depends on agro-Pastoralism, fishing and casual or formal labour in the urban areas. The number of different livestock types in Turkana is shown in Table 10. The highest numbers of livestock in Turkana are found in Lokitaung and Lokori divisions with the heaviest average concentrations being evident around the catchment areas of Kakuma, Kalokol, Lokori and Lorugum, but low around Lodwar and Katilu.

Table 2-6: Livestock population by type in Turkana County

Livestock type	Turkana	West Pokot
Zebu Cattle	1,534,612	341,000
Dairy Cattle	-	58,000

Hair Sheep	3,517,151	360,000
Wool Sheep	-	91,000
Goats	5,994,861	444,600
Camels	461,462	5,250
Donkeys	558,187	9,000
Pigs	570	93
Indigenous Chickens	165,349	401,000
Chicken Commercial	15,444	1,500
Bee Hives	32,581	21,000

Source: KNBS, 2009

Livestock plays also play an important economic and socio-cultural role among the Pokot community. The livestock sub-sector contributes to the food and cash needs of the pastoralists and provide employment to 90% of the population of 512,690 (KNBS, 2009). The estimated annual income from livestock in the county is Kshs 1.82 billion. It is also used as a medium for social exchange in the payments of bride price, fines, and gifts. The livestock sub sector makes significant contribution to West Pokot County's economy. The estimated annual income from livestock in the county is about kshs 1,113,571,000.

Pokot is predominantly a pastoralist area. The livestock reared consists of cattle (zebu), camels, donkeys, sheep and goats. The main pastoralist divisions are Alale, Kacheliba, Sigor and parts of Chepareria. Dairy cattle are reared in Lelan, the upper part of Chepareria and in Kapenguria. Thus, livestock keeping accounts for a significant percentage of household incomes.

Livestock infrastructure

There are several existing livestock facilities in Turkana and Pokot counties that support marketing and production. However, these not adequate to sustain the livestock population in the counties. The available ones are shown in Table 7.

Table 2-7: Available livestock infrastructure for Pokot and Turkana Counties

Infrastructure	West Pokot	Turkana
Livestock Improvement centers	1	5
Sale yards	15	26
Abattoirs	1	1
Vaccination and animal handling crushes	180	-
Holding grounds	6	2
Dips	76	-
Milk cooling plants	2	-
Honey refineries	2	-
Tannery	1	-

Table 2-8: Livestock products revenues for Pokot County

No	Product	Revenue
1.	Milk	1,792,164,600
2.	Cattle	460,383,600
3.	Goats	2,697,696,450
4.	Sheep	703,829,600
5.	Honey	7,693,200
6.	Camels	166,492,400
7.	Poultry	3,615,940
8.	Eggs	62,573,040
9.	Hides and skins	6,279,004
	TOTAL	5,900,727,834

Source MOLD, 2011

The Turkana pastoral system makes optimal use of the vegetation in time and space through this transhumant system of wet- and dry-season grazing combined with the setting aside of specific dry-season grazing reserves (epaka or amaire). Such a system of resource management is made more complex by a variety of social controls concerned with sharing, flexibility and mobility (Barrow 1986; Norconsult 1990). However, general patterns do exist based on the environment. The pastoralists and their livestock come together during the wet season in their 'ere', the area where sorghum may be planted and a stand of trees, or ekwar, may be owned. As conditions become drier, herd-owners begin to separate their herds by species and production characteristics.

The semi-nomadic and primarily pastoral Pokot inhabit the western and eastern plains. The lowlands are comprised of the western plains: lower Sook, the northern part of Kipkomo, the north-eastern parts of Riwa, and the area west of the Suam River. The life of these semi-pastoral people centres on herding of cattle, sheep, goats, and in smaller numbers donkeys and camels. They are therefore named *pipötich* ('people of the cattle'). Life is mainly characterized by high mobility as movement in search of pasture, water, and saltlick, is persistent. The herders travel long distances with their livestock, moving between dry and wet season grazing areas.

Irrigation Projects

In order to promote food security in the region, a number of irrigation projects have been initiated and implemented in the region. These include:

Wei Wei Integrated Irrigation Project

This irrigation project is found in West Pokot district. Before its inception the project area was prone to serious food deficits necessitating constant dependence on food relief supplies from both the government and the private sector. In 1986, KVDA in collaboration with the Italian co-operation started implementation of Wei Wei integrated irrigation project. 275 ha. have been developed and put under crop production utilizing the waters from the Wei Wei integrated irrigation project. 225ha. of this project have been subdivided and allocated for the local community which, through the Wei Wei Farmers Association, have taken over the management of phases I and 2 of the project while KVDA provides extension services to farmers as well as doing demonstration trials in 50ha. of the land.

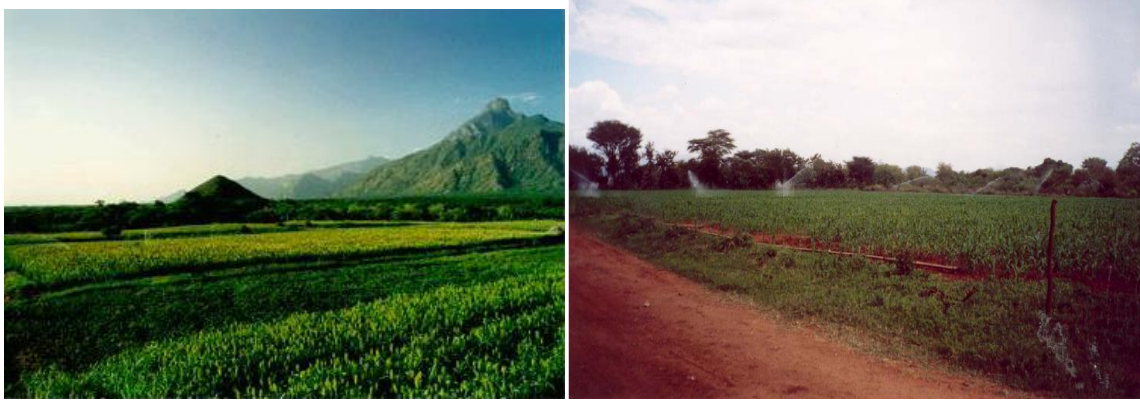


Plate 7: Intensive crop cultivation along Wei Wei River

Elelea and Turkwel Downstream Irrigation Projects

Elelea is a community based project assisted by KVDA providing material and technical back-up. It is located at Lokori within Kerio River basin. KVDA completed the construction of the Elelea water intake in 2004 and the water canal excavated and completed in 2005. The scheme irrigates 1200 acres pilot scheme supporting 1200 households.

Turkwel Downstream irrigation activities take place in Nakwomoru, Lopus, Kapelibok Juluk, kalokol and Katilu in Turkana. Katilu scheme project largely failed although being revived on small scale. Farmers also carry out irrigation on small scale along the Turkwel.

Crop Production

Crops in Turkana

Over recent years, the pastoralist communities have had to use other supportive activities to supplement pastoralism, which has proven to be ineffective in meeting all their economic and social needs. Key areas of activity include sedentary agriculture, particularly along the Turkwel River, where settled farmers and agro-pastoralists grow maize, sorghum, sukuma, oranges, mangoes, bananas and vegetables (UNDP, 2006). Crop production is practiced by agro-pastoralists mainly in pockets of arable land within flood plains and along riverine areas. The harvest is dependent largely on the amount of rain realized in a good year, and the volume of water flowing in the two major seasonal rivers of Turkwel and Kerio.

It is estimated that 20% of the soils in Turkana County can support limited agricultural production, but this is limited by the low and variable rainfall (250-500 mm per annum). The principal centres of irrigated agriculture include areas such as Katilu (irrigation scheme), Lokori, Turkwel (irrigation scheme), Kalemunyang, Nakwamoru, Kaptir, Juluk, and Lokui along the Turkwel River and Lotubai and Morulem irrigation schemes along the Kerio River, the Lotikipi plains, upper parts of the Loima Hills, Nakaton and Kawalathe drainage, lower parts of Kalokol and the Kerio Valley. In addition, irrigated agriculture has also been practiced along major seasonal rivers such as the Tarach River.

Most cultivation is based on low-input sorghum farming (where the Turkana have some of the fastest maturing, though low yielding varieties of sorghum in Kenya), maize, green grams, cowpeas, bananas, mangoes, oranges and guavas, with maize and sorghum comprising 80% of irrigated crops in the county.

Although irrigation has been tried for many years in Kalokol and other areas along the Turkwel River with huge financial inputs from both the Government and donors, success has been

limited mainly due to management and administrative problems. It may however still be possible to improve existing schemes to the estimated 10,000 hectares, up from the present 1,187 ha by increasing the acreage of staple food crops (e.g. sorghum, maize and pulses), improving the local capacity for management, and providing farmers with germplasm, bulking, dressing, storage of drought adapted seed varieties and marketing.

Crops in Pokot

Only 3% of the land in the Pokot has been identified to have high potential for agricultural production, 6% has medium production potential, 28% is marginal land and 44% is considered as rangeland. The remaining 19% of the land is covered by forests or unsuitable for agricultural use (Makokha *et al.* 1999). However, about 60% of the area's residents derive their livelihood from agriculture. Although livestock rearing is the major economic activity but cattle rustling; frequent disease outbreaks, inadequate marketing and lack of adequate water and pastures are the major constraints facing the sub-sector.

Table 2-9: Cultivated area in Turkana and West Pokot

	W/Pokot	Turkana
Area under food crops (ha)	11,939	27,520
Area under cash crops (ha)	-	637
Average farm size (acres)	0.5	4.2

Source: District Development Plan 2004-2008

The more sedentary and primarily agricultural Pokot have traditionally inhabited the ethnic core area comprising of the Cherangani and Sekerr hills. These people are known as *pipöpagh* (people of the grains), or Hill Pokot, and traditionally practice rain-fed and irrigated agriculture. In the past, they primarily produced millet (or sorghum) and eleusine (or finger millet), whereas nowadays cultivation has been extended, mostly by growing maize, but also to other crops such as beans and cassava. Besides cultivating, the *pipöpagh* traditionally possessed small numbers of livestock

Agricultural Pokots are also found in the Mnagei, Lelan, and Chemerongit highlands. Furthermore, agriculture has become of increasing importance for people of the lowlands over the years, and many people cultivate nowadays, especially along River Suam. Here, land is owned not by clans, but by individual families.

The Chemerongit hills are cultivated by people with an agro-pastoral livelihood, while the Mnagei and Lelan sections of the Pokot are characterized by a mixed economy, whereby main crops such as maize and beans are grown, and dairy animals are kept. Land in Mnagei and Lelan, as well as around Chepareria has been privatized to a great extent. The Chemerongit hills are still officially recognized as communal land

2.3.8 Major Economic Activities

a) Animal husbandry

Cattle, goats, sheep and camels are the main source of livelihood for the Pokots and Turkanas who derive 90% of their livelihood from sale of the livestock and products such as milk, hides and skins. Livestock is the economic base of Turkana region. The region is served by North-West livestock marketing routes. Most of the marketed livestock are consumed locally in the county. The main market outside the greater Turkana is Nairobi for goats and Western Kenya region for cattle. The most marketed livestock are goats accounting for 80% of total revenue from sales of livestock whereas cattle account for 14%, sheep and camel account for 2% each.

Livestock production in Turkana County supports nearly the entire population directly (as livestock keepers) and indirectly (trading in livestock and inputs). It is a source of income, indicator of social status, source of food and means of establishing social ties. Livestock inputs have improved over the years. Livestock sales occur all year round.

b) Agro-pastoralism

Pokots engage in crop and fruit production and marketing besides livestock keeping. The Turkanas are pastoralists but those living along the valley practise agro-pastoralism. Although there has been improved livestock health in the region, this has not been in tandem with development of livestock marketing and alternative non-livestock investment in arid and semi-arid areas.

c) Mining

A large portion of North Western Kenya has considerable mineral potential. Due to difficulties in accessing many parts of the region, comprehensive mineral exploration has not been undertaken. The following are the minerals found in the region:

- (i) Limestone: Located in Ortum – Sebit area of West Pokot district with estimated reserves of over 30 million tonnes. Other deposits are found in Turkana
- (ii) Talc: Located in Soka and Samor in West Pokot district with estimated reserves of 1 million tonnes.
- (iii) Gypsum: Located at Loperot and Napeded in Turkana with estimated reserves of 0.6 million tonnes.
- (iv) Chromite: Located in Telot-Sekerr area, West Pokot district with estimated reserves of 50,000 tonnes.

West Pokot, especially, is rich in mineral deposits including alluvial gold and silver on Masun and Turkwel rivers. Gold is panned by the local people. The concentration is not high enough to start large scale gold mining projects. Other minerals found in the district are copper, cobalt, chromite, nickel, kyanite, asbestos, and mica.

Gold mining has also been prevalent in Turkana for many years. Whilst most gold mining operations in the contemporary period are labour intensive one man operations, gold mining in the recent past has been the domain of large businesses backed by significant political support. Currently, gold mining occurs primarily in Nakoriyek (on the road to Kanakurdio), Kimagur (on the main road before Lokichar), Lokiriama, Namorupus and Nadunga (west of Nakoriyek). Small-scale gold mining is also found in the southern part of the district at Nakwamoru and central parts at Makutano (*'Gold'*) between Kakuma and Lodwar, where mining is not of a large-scale commercial nature, though an alluvial type of it is being exploited Turkana has abundant building sand and quarry materials.

d) Honey, basketry and medicinal herbs

Beekeeping is the other major income generating activity and earns the households an estimated Kshs 3 million annually. Women weave baskets, work leather, and make milk gourds and unglazed pots for cooking and water storage. Men specialize in woodworking, making beehives, headrests, and the handles for spears, knives, and hoes.

Making and selling of ornaments among the Pokot and Turkana is an important trade. Most of these cultural products like beads, bracelets, and necklaces are made from local materials.

Basketry among the Turkana has grown over the years and is associated with Kapedo trading centre. The Turkana sell medicinal herbs to the Somalis who export them to Saudi Arabia.

e) Fishing

Fishing in Lake Turkana is another, long standing economic activity. Fishermen along Lake Turkana migrate to follow the patterns of fish movement. Fishing supports 12% of total population and is mainly practised along the western shores of Lake Turkana. The pastoralists also supplement their livelihoods by selling the fish.

f) Aloe production

Aloe turkanensis is a native plant found in the hills on the Turkana/Ugandan border and has been valued for many years for its ethno-medicinal qualities. In places such as Oropoi and Latea, it is used locally to treat malaria, flesh wounds, and eye infections and to moisturize dry skin. Recently, however, the production and processing of Aloe has been seen as a potential candidate activity for livelihood diversification. Several organizations e.g. KEFRI and ITDG Practical Action have attempted to promote the production, processing and marketing of commercial Aloe.

g) Charcoal production

Charcoal is primarily produced along the Turkwel and Kerio Rivers and is sold along the main highway between Kainuk in Pokot and Lodwar in Turkana.



Plate 8: Charcoal trade in Turkana

h) Casual, waged labour and trade

The demand for casual labour in Turkana is in the form of agricultural or building jobs. However, in the case of agriculture, most casual jobs are available in the wet season with some herding opportunities available in the dry season. Within Turkana, there is a distinct lack of opportunities for waged or salaried labour. Formal and informal employment, petty trade; mainly in urban and peri-urban centers support 8% of total population. Although one of the more isolated ethnic groups in Kenya, the Turkana still trade in small scale, selling livestock to buy grains and household needs. The Turkana traditionally traded livestock for iron with ethnic groups in the highlands of Uganda.

Trade also forms a significant part of the Pokot economy. Surplus livestock and produce such as milk, hides and horns are barter traded with farming communities in the hills for sorghum, maize, gourds, tobacco and other field and garden produce.

i) Honey production

According to Mwangi (2005), honey production is a commercially viable enterprise, especially along the riverine ecosystems in Turkana (Turkwel and Kerio Rivers) and higher altitude

locations close to the Ugandan border. The principal areas of honey production include Turkwel, Kalemunyang and Toyarabon (Turkwel Division); Lokapel and Kanaodon (Katilu Division); Kainuk, Loyapat (Kainuk Division), Lokwar, Ekwar, Kaptir, Nakwamuru, Kapelibok and Oropio. Local beehives are manufactured from logs cut from special types of trees. The most popular trees used to make beehives are the ‘Echoko’, locally known as a sycamore, and the ‘Edurukoit’, a type of Acacia.

j) Basket-making and handicrafts

Commercial basket-making (and associated activities) supports a network of producers, traders and transporters in Turkana and is especially important for the livelihoods of households located near urban centres and along dry-river valleys close to Lake Turkana. The most important sites for these types of activities in Turkana include Lodwar, Kalokol and Eliye Springs (for basket-making); Kataboi, Kerio and Turkwel (for mat-making). Weaving material is readily available from the Doum Palm. In Turkana, women are the main producers of baskets, other woven goods and handicrafts, while men dominate the production of carved wooden products. The principal products produced include: mats, baskets and brooms, and the assortment of wooden goods produced include Turkana seats/stools, dolls, spoons, milk jugs, and cow skin jugs. In addition, modern earrings, bracelets and necklaces are also produced.

2.3.9 Public Health

The lack of water in the area is a major cause of the poor standard of health endured by the both Turkana and Pokot. The health services in the area estimate that approximately 50% of the population suffers from water borne diseases due to lack of clean water.

The major diseases that have regularly been reported in the Turkana are malaria, skin diseases, respiratory tract infections, and diarrhea (Republic of Kenya 2007). Malaria can be prevented by the use of bed nets, but not everybody has the financial means to acquire nets. Most of these diseases are associated with poverty. In Pokot, the main diseases are Malaria, Respiratory Tract Infections, Diarrhoea and Skin Infections

Despite the fact that Turkana people are exposed to various diseases, there are very limited health centres in rural areas with and a doctor/patient ratio is estimated at 1:285,000 (Republic of Kenya 2011). The average distance to the nearest health facility is 50 kilometres. As mentioned elsewhere in this report, infrastructure is very poor, and there is no reliable public transport system. The result is that many people who need assistance never reach health facilities.

According to a 2007 study carried out among the rural Turkana population, HIV prevalence was 4.1% in rural areas and 8% in urban centers while in Pokot, the rates are lower at 1.27%. In the same year, data from the AIDS and Sexually Transmitted Infections Coordinator (DASCO) in Turkana Central district indicated a prevalence rate of 6.7%, increasing to 14% in some urban centers.

Table 2-10: Health statistics for Turkana

Parameter	District			County
	Turkana Central	Turkana North	Turkana South	
Total Population 2009	254,606	374,414	226,379	855,399
Women of reproductive age (15-49) years	55,192	70,139	24,402	149,733
Men of reproductive age (15-49) years	50,175	63,763	22,184	136,121

Total population of reproductive age	105,367	133,902	46,586	285,854
Estimated HIV Prevalence (15-49 years)	3.83%	3.83%	3.83%	3.83%
Est # of HIV positive individuals 15-49) 2009	8,793	11,174	3,888	23,855
Total number of house holds	45,917	58,200	20,301	124,418
Children under 1 year (12 months)	5,579	11,145	2,467	19,191
Proportion Children under 1 yr (12 months) %	2.43	3.82	2.43	2.9
Children under 5 years (60 months)	27,550	52,519	12,181	92,250
District Proportion children under 5 yrs (60 months) %	12.00	18	12.00	14.0
Under 15 year population	100,329	127,499	44,358	272,186
Proportion Under 15 yrs population %	43.70	43.70	43.70	43.7

One of the leading causes of death among people living with HIV/ AIDS is tuberculosis (TB) with high prevalence rates among both pastoral and urban communities. A 2008 study showed that 80% of TB patients in Lodwar District Hospital were HIV positive.

The existing health facilities in Turkana County include 3 District Hospitals at Lodwar, Katilu, and Lokitaung, Sub-District Hospitals (2), Dispensaries (91), Health Centres (6), Medical Clinics (19), Health Programs (3) and others (3). Infant mortality rates stand at 60 per 1000 while under five mortality rates are 12 per 1000. Malnutrition is also common.

In West Pokot, existing health Facilities include 1 District Hospitals, 27 Dispensaries and 3 Health Centres with a Doctor to Population Ratio of 1 to 84,528. Infant Mortality Rates stand at 108 per 1000 while under five Mortality Rates are 206 per 1000.

2.3.10 Education

The Turkana County has 175 pre-primary schools, 136 primary schools, eight secondary schools, two youth polytechnics and one medical training college. Enrollment in primary school is 122,883, with a teacher to pupil ratio of 1 to 51 while secondary school enrolment is 48,004 with a teacher to pupil ratio of 1 to 27.7. There are 2 tertiary institutions. Adult Literacy Classes have an enrolment of 562.

West Pokot on the other hand has 318 Primary schools with an enrolment of 105,452 and a Teacher to Pupil Ratio of 1:50. There are 34 Secondary schools with an enrolment of 9,897 and Teacher to Pupil Ratio of 1:36 The Adult Literacy Classes enrolment is over 1,400 (KNBS, 2009).

2.3.11 Poverty Levels

The people of Turkana fundamentally depend on the natural systems and natural resources for existence and development. However, due to the harsh environmental conditions prevalent in the area, poverty levels are high, with 71% of the Turkana population living below poverty line. Poverty hinders access to basic needs such as health care, nutrition and education and in the area, poverty often leads to over-use and destruction of the environment. While the county has a poverty level of over 71%, these level varies with the divisions as follows; Central (72%) Kaaling (57%) Kakuma (66%) Kalokal (71%) Katilu (51%) Kerio (52%) Kibish (59%) Lapur (55%) Loima(61%) Lokichar (65%) Lokichoggio (67%) and Lokitaung (67%).

In West Pokot nearly 53% of population lives in abject poverty. The rural and urban areas register counts of 53% and 65%, respectively (KNBS, 2009). The highest numbers of the poor are found in the divisions of Lelan, Kongelai, Alale and Chepararia. High prevalence of poverty is mainly attributed to unreliable weather patterns, unemployment, poor infrastructure and insecurity (cattle rustling). Insecurity deprives the people of their livelihoods, leading to abandonment of homesteads and disruption of economic activities, subjecting them to high levels of vulnerability. Insecurity also serves as a disincentive to investors and other development partners. Areas adversely affected by cattle rustling are Cheseгон, Sigor, Alale and Kacheliba divisions.

2.3.12 Gender

Turkana

Among the Turkana, division of labour exists along gender lines, dictating general social roles and distinct daily activities performed by members of the society. As with most societies in Kenya, women's roles among the Turkana continue are centred on the house. Within the household, it is the general responsibility of the women to provide food and comfort for the household.

Their specific roles given include: Fetching firewood and water for household use; preparing food and gathering wild fruits for domestic consumption. Other roles include: watering the livestock other than cattle (goats, donkeys and camels) by scooping water from the wells; Preparation for migration to new locations; Milking the stock and portioning it out into different uses for the household; Care for weak animals that are left around the homestead when the men move with the other stock including weak and sick cattle, goats and camels and pregnant livestock that cannot cover the long distance in search for pasture and water; and Processing of hides and skins after the animals are slaughtered.

Due to scarcity of water and harsh environmental conditions, the role of women in searching for water and firewood puts a lot of strain as they often walk long distances, especially in the dry season.

Women also socialize the children into the Turkana way of life. As the children grow older, women concentrate on guiding and counselling girls into responsible adults who can function effectively in the Turkana society

The Turkana men have the following related roles: Ensuring that the livestock get pasture, exploration of good grazing land and water when the drought sets in, providing health care for the animals in the form of traditional herbs or modern veterinary medicines when available and providing security to the animals and household members. This is because the area is prone to cattle raiding and bandit attacks from neighbouring ethnic communities.

The men also play a role in organizing family meetings to deliberate on matters relating to the clan and family, socialization of young boys into adult roles in the Turkana society by teaching them skills in herding (how to locate and identify good pasture/water source, herbs to cure diseases infecting the herd, etc), social adult skills of being a good husband and father and protecting the herd and family, and as custodians of cultural values and morals. Men also make all decisions related to animal slaughter, migration, marriage and dowry payment and rituals and their performance

Joint or common roles between men and women include:

- Agriculture: For the Turkana living along Turkwel River, the men plough, while women plant, weed, and harvest;
- Fishing: This is done mostly by men, while women process and sell the fish;
- Weaving: Weaving of mats, baskets and hats for sale is mostly done by women although a few men also do it; and
- Business: Both men and women start small business activities such as charcoal selling, kiosk ownership, etc.

Pokot

Women are the principal providers of subsistence labour, whose duties include cultivating the fields, cooking, milking, fetching water and firewood, gathering wild vegetables and fruits, caring for the calves and kids at home, and also herding livestock. They build an acacia thorn corral to protect the animals from predators, while women in Pokot agricultural areas also build granaries for family grain storage. Although the sale of livestock is in the control of the men, women retain income obtained from milk sales and use it for purchasing household needs. Children, both boys and girls, help in cultivating, herding and miscellaneous tasks such as gathering sticks and timber for building the house.

The men's main task is herding, which involves taking the animals to where there is enough pastures. Their other task is that of decision-making on behalf of the community. The hardest physical labour among the pastoralist Pokot is probably digging step wells in dry season riverbeds and watering the animals. Both men and women dig wells, but it is the responsibility of the woman to water the animals.

Traditional values are still strongly adhered to in Pokot society. This tradition is heavily biased against women, particularly when it comes to control over resources, benefits and decision making. There are social systems that ensure compliance and errant behaviour is punished severely. Immediately after girls are circumcised, suitors arrive and generally the one with the largest number of animals will take the girl. Most of the girls are about 13/14 years old.

2.3.13 Employment and Labour Market

Poor access to the rest of Kenya and vice-versa leads to isolation, few development opportunities and shortage of employment.

2.3.14 Cultural properties

Community sites of cultural importance were not encountered. However, there are graves within household compounds.

Cultural properties is adequately described under History and classification of the Turkana and History and Culture of the Pokot Community Sections.

2.3.15 Education

There are numerous nursery schools, e.g., Marich Pass Early Childhood Development (ECD), Orwa ECD, Roe ECD and the Junior Redeemed Church of East Africa (RCEA) Academy. Primary schools include Marich Primary and Orwa Primary. As well, there is a Teacher Advisory Centre Tutors programme meant to provide teachers with in school development guidance. There are no secondary or tertiary schools in the area. Girl children marry at early

ages, often before they have finished primary education. Their marriages are a source of wealth because bride price is paid the girls' parents.

The Turkana County has 175 pre-primary schools, 136 primary schools, eight secondary schools, two youth polytechnics and one medical training college. Enrolment in primary school is 122,883, with a teacher to pupil ratio of 1 to 51 while secondary school enrolment is 48,004 with a teacher to pupil ratio of 1 to 27.7. There are 2 tertiary institutions. Adult Literacy Classes have an enrolment of 562.

West Pokot on the other hand has 318 Primary schools with an enrolment of 105,452 and a Teacher to Pupil Ratio of 1:50. There are 34 Secondary schools with an enrolment of 9,897 and Teacher to Pupil Ratio of 1:36 The Adult Literacy Classes enrolment is over 1,400.

CHAPTER 3. DESCRIPTION OF THE PROPOSED PROJECT

3.1 THE GEOGRAPHICAL SETTING OF THE PROJECT AREA

3.1.1 Introduction

The ESIA covers the Road Section of 196 km from Marich Pass to Lodwar, part of the International Trunk Road A1. This is part of the road link from South Sudan to the port of Mombasa and forms part of Corridor 3 of the high priority Trans-National Road Corridors under the East African Community Road Network.

The section is overall in dilapidated condition with high observed traffic volumes consisting mainly of trucks travelling to South Sudan, buses and pick-ups. This road section is not adequately maintained despite a continuous increase in the traffic volume and loading.

The Project Road traverses three counties of Pokot Central, South Turkana and Central Turkana as shown in Figure 3-1.

The Marich Pass-Lodwar Road was built to bitumen standards in various phases between 1971 and 1985. The first upgraded section was between Lodwar and Marich Pass followed by Marich Pass to Kapenguria, northeast of Kitale on the A1. The road sections between Kapenguria and Lodwar were built mainly through Force Account Operations supported by financing and management assistance by the Norwegian government through its agency NORAD. Lodwar and Lokichoggio sections were built by international contractors between 1984 and 1989.

In part, the road was improved initially to support fisheries development in Lake Turkana by providing access to markets in Kenya's larger cities. The road connection was later seen as both an important catalyst for integration of Turkana District into the national economy and a vital link in the international road connection between Kenya and South Sudan.

During relief operations to South Sudan from the port of Mombasa, the road carried heavy vehicle traffic for which it was neither designed nor could support. The lack of regular maintenance also contributed to the road's accelerated deterioration. Portions of the present road, especially between Marich-Pass and Lodwar, are disintegrating, posing the risk of complete failure on lengthy sections.

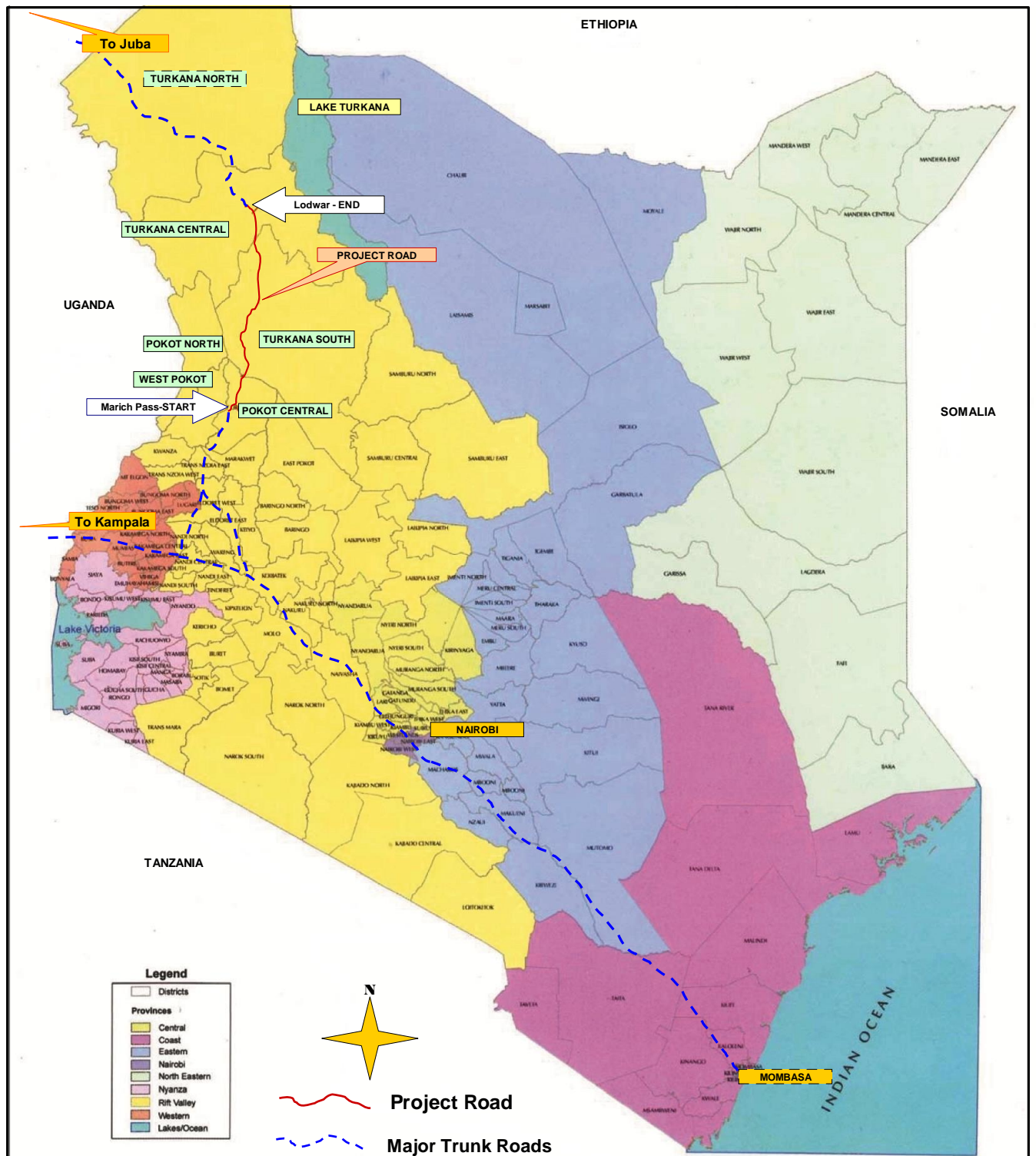


Figure 3-1: Location Map for the Marich Pass-Lodwar (A1) Project Road

On some stretches, all bituminous surfacing has been completely destroyed; these portions have been overlain with gravel to improve drivability. The road is kept passable with occasional grading, but, for the most part, the road has deteriorated to the point that it is unsafe, even at very slow speeds. Large trucks experience extreme difficulty in negotiating temporary detours. In general, the infrastructure in Turkana and West Pokot Counties is poor.

Only one major road passes through the area—Kapenguria to Lokichoggio—and it is located near the border with South Sudan distant from the most populated areas. During the rainy

season, many sections of this road become impassable, particularly when certain drifts—specifically, the Kawalase, Kalemng’orok, Lukakanyang, Kolobeyi and Marich Pass drifts—become impassable.

In the interior parts of Turkana, most of the roads and bridges are either damaged or ruined. To compound the problem of transport in Turkana County, there is no reliable public transport system.

For purposes of planning and design, the project road was divided into three sections:

1. Marich Pass to Kainuk, 30 kms;
2. Kainuk to Lokichar, 82 kms; and,
3. Lokichar to Lodwar, 84 kms.

3.1.2 Marich Pass to Kainuk, 30 km in Pokot Central District

This section between Marich Pass and Kainuk is in a complete state of disrepair. Moreover, the maintenance carried out on this section quickly fails. To compound the area’s isolation brought about by the road, there are no airstrips or railway lines. Orwa sub-location and Marich Pass are insecure because of their proximity to Kainuk where the Turkana live.

Marich Pass, where the road project originates, is a village in Orwa sublocation, Sekerr location, in the Pokot Central portion of West Pokot County. Sekerr location has four sublocations comprising Mbara, Sostin, Chepkondou and Orwa, with the road project passing through Orwa sublocation towards Kainuk.

Marich Pass’s name is derived from a deep rocky cleft carved where the river Moruny emerges from the Charangani hills onto the dry plains of the Lake Turkana basin. Marich Pass is home to the internationally known Marich Pass Field Studies Centre. The centre is primarily an educational establishment, catering for school and university groups on academic field-study courses, but tourists and independent travellers are also welcome to stay. The Centre is owned and managed by African Field Studies Centre Ltd, a private company registered in Kenya.

The area affected by road construction is under the sub-chief in Orwa sub-location. But, the district administrative offices are in Sigor located 7 kms from Marich Pass and Orwa Trading Centre. There is a police post in Marich Pass.



Figure 3-2: Existing Condition of Project Road on Section near Marich Pass

3.1.3 Kainuk – Lokichar, 82 Kms in Turkana South District

The district's roads are underdeveloped; the murram section between Kainuk and Lokichar is in serious disrepair. It is, however, frequently graded and patched unlike some other sections of the project road.

A district in Rift Valley Province, Lokichar serves as the district's headquarters. In addition to Kainuk and Katilu, Lokichar is also a division. The Office of the President is represented in Turkana South alongside the Ministries of Education, Agriculture, Livestock Production, Youth Affairs and Sports, Water and Irrigation, Finance and Health. Additionally, the Teachers Service Commission, Department of Registration of Persons (Ministry of State for Immigration and Registration), Department of Police and National Security Intelligence Service have a presence in Turkana South.

Settlements are concentrated around trading centers such as Kainuk, Kaakong, Kalemng'orok, Katilu and Lokichar where residents can, at minimum, find work. Some centres have become densely populated because of increased government-led security.



Figure 3-3: Businesses in Kainuk Trading Centre

3.1.4 Lokichar to Lodwar - 84 kms Turkana Central District

This section of the project road (Lokichar to Lodwar) is in the best condition of the three project sections of the Marich Pass-Lodwar Road. It is paved as it approaches Lodwar.

Turkana Central District includes three divisions—Central, Kerio and Kalokol divisions. Kerio division is the largest unit and Central, the smallest. Lodwar Municipality and Lodwar Town are both located in Central division. The road improvement project will affect two locations in Turkana Central, i.e., Kanamkemer, which borders Turkana South, and Kanamkemer Township.

Lodwar has an airstrip which is used by commercial airlines for daily flights between Nairobi and Lodwar. The airstrip is also used by the military and NGOs when delivering relief items.

Lodwar Town is most multicultural settlements in Turkana Central District. Whereas majority of the inhabitants are Turkanas, there are traders and NGO staff from across Kenya, making the district cosmopolitan. Area businesses are dominated by migrants from other parts of Kenya namely Somali, Kikuyu, Meru, Kamba, Luo and Luhya. Lodwar's economy is robust, supporting several banks such as Kenya Commercial Bank, Equity Bank, Kenya Post Office Savings Bank and Kenya Women Finance Trust as well as numerous MPESA outlets who serve as money transfer agents. Other prevalent businesses in the town are hotels and lodgings; petrol stations; sales of handicrafts, charcoal, livestock (mainly goats and sheep), fruits and

vegetables; bicycle repair; *boda boda* (for-hire motorbike transport); woodworking, particularly making and selling of furniture; and, metal smithing. Visitors en route to Lake Turkana and nearby local national parks usually stop-over in Lodwar where accommodation is available. Stopovers in Lodwar for air travellers are a necessity for at least one or two nights.



Figure 3-4: Representative business establishments in Lodwar Town

3.2 DESIGN DATA

For the most part, the improved Marich Pass-Lodwar Road will follow the existing road alignment. However, particular sections of the current road will be realigned to improve travel speeds and road safety. The right of way (ROW) and roadway will also be widened to meet international design standards. These re-alignments to increase the ROW widths will trigger displacement and relocation of current occupants and their properties will be necessary.

3.2.1 Road Classification

The project road is an international trunk road designated as class A and links centres of international importance (Mombasa – Nairobi – Juba). Class A roads are the highest class of road in Kenya. The major function of Class A roads is to provide mobility (as opposed to access).

3.2.2 Road Alignment

Marich Pass located in the West Pokot area constitutes the high point of the project culminating at around 1,460 m in elevation. From there, the elevation gradually goes down into the Turkana region to reach an approximate elevation of 500m in Lodwar.

For the first, thirteen kilometers, the elevation goes down to approximately 960m at the junction with the Nakuru – Sigor road. The rest of the alignment traverses rolling terrain in an arid to semi-arid area to reach Lodwar.

In order to optimize the cost estimates for the rehabilitation of the road between Marich Pass and Lodwar, the re-alignment of the road has been designed as near as possible of the existing road.

The realignments were necessary only in the areas where the existing alignment didn't respect the requirements of the Design Standards for a design speed of 100 km/h (or 80 km/h at the beginning of the first section between Marich Pass and Kainuk). The design speed is the first parameter which defines the road design. It depends on the context wherein the road is.

The design attempted to avoid affecting houses and other property on both sides of the existing road, where a slight local deviation from the existing alignment can limit the affected property to one side of the road only or on both sides.

3.2.3 Access Control

In consideration of the Class A category of the project road, full access control should ideally be exercised. However, the nature of development along the project road, particularly through the towns and villages, is such that to restrict access in a major way would entail the demolition of many houses and other properties in order to provide the service roads which would be necessary to channel traffic to a reduced number of main junctions.

It is reasoned that a more appropriate solution would be to adopt a reduced level of control. Therefore partial access control, as defined by the Road Design Manual, will be adopted. In effect access will be kept to the minimum consistent with optimal cost effectiveness and safety.

3.2.4 Road Reserve Width

The desirable road reserve width applicable for a Class A road is 60m, according to the Road Design Manual. This will be adopted for the entire project road.

Though a number of buildings in the villages along the road will be affected by the 60m road reserve, it is reasoned that it is a better long term solution to adopt this reserve width now (and pay appropriate compensation) rather than adopt a 40m reserve which at some future time will need to be increased to 60m.

This is because at the present time most of the buildings that might be affected are built of temporary materials, and these will attract relatively low levels of compensation. Whereas in the future (after further development has taken place) compensation costs would undoubtedly be relatively high due to temporary materials buildings being replaced by more permanent buildings, which would attract relatively high compensation payments.

3.2.5 Traffic Volume, Road Capacity and Cross-Sections

Traffic and Axle Load Surveys were done in order to enable pavement design to be carried out, and to determine whether and at what locations, climbing lanes are necessary.

The required capacity of the road has, in effect, been pre-determined by the adoption of the Class A designation for the road. The notes appertaining to Table 4.2.2 in Chapter 4 of the Road Design Manual (Note 3) state that "For A and B Class roads with design speeds greater than 90 km/h the highest standard of cross-section should be chosen." This resulted in the adoption of a Type II cross-section for the road with the dimensions shown in Table 3-1.

Table 3-1: Dimensions in meters of the type II cross-section

Type	Lanes	Surfacing	Total Width	Shoulder width	Carriageway width	Normal Cross-Fall (%)
II	2	Bitumen	10.00	1.50	7.00	2.5
				2.00		

The proposal is to adopt 2.00m wide shoulders generally (except where climbing lanes or bus bays are present, and in urban sections of road where footways are present). However, a berm of 0.50 m will be created in fill in order to put guardrails where it is required according to the contents of Note 1, appertaining to Table 4.2.1 in Chapter 4 of the Road Design Manual.

The reason for this proposal is to comply with relatively recent MOR thinking on shoulder widths for class A roads as all the class A roads currently under construction or constructed has already adopted 2.00m shoulders.

3.2.6 Longitudinal Drainage Ditches (Side Ditches and Cut-Off Ditches)

A simplified version of the side ditch types shown in the Road Design Manual has been adopted for the project road.

In the few cases where side ditch catchments are unusually large, individual calculation of ditch capacity has been undertaken in order to check that the design discharge can be accommodated, and the change of ditch section adjusted accordingly.

Erosion control measures have been provided in all side ditches susceptible to scour or erosion.

3.2.7 River Crossings

The alignment passes over some rivers or their tributaries such as Moruny, Wei Wei, Turkwell and Lokichar at various places. However, most of the drainage is constituted of normal culverts and major structures are far and few. Nonetheless, since the main structures were built quite some time back, they were found to be structurally unsuitable.

The existing bridge at Kainuk across Moruny River will be replaced with a new structure that is wide enough to accommodate the proposed lanes and with adequate hydraulic capacity.

There are neither alignment design considerations nor topographical features in proximity to the crossing site that would present impediments to incorporation of this bridge into the proposed works.

The existing carriageway width of 5.50m together with the 0.50m edge beams on either side add up to an overall deck width of only 6.50m and compares poorly with the required 11.0m for a highway of this standard. The deck width is thus inadequate for the proposed road.

The condition of the bridge is very poor with serious structural cracks evident on the slab soffit and the third pier set having moved apparently as a result of further settlement. The bridge bearings have become brittle with age.

The existing slab deck and deck girders are structurally inadequate and would not be able to support the expected loading. The pier support is also failing and is therefore inadequate for inclusion in the works.



Figure 3-5: Condition of existing bridge at Kainuk – deflection, cracks and ingress of water underneath the slab deck



Figure 3-6: Condition of existing bridge at Lodwar– Not wide enough, only one lane

Proposed bridges are as outlined in Table 3-2.

Table 3-2: Proposed Bridges

Bridge No.	Chainage	Crossing Name	No. of Spans	End Spans (m)	Inner Spans (m)	Total Length (m)	Skew (°)
1	28+637	Moruny River	5	14.696	20.995	92.377	30
2	91+442	Nakabosan	3	9.500	15.000	34.000	0

Spans and total lengths are measured from support centerlines along the centerline of the carriageway

These recommendations were made following the functional, conditional and structural adequacy assessment in conjunction with the hydraulic assessment based on hydrological studies of the pertinent catchments of the existing crossing structures along the road segment.

Drifts as crossing structures are not acceptable for this class of road and are thus not considered for inclusion in the proposed works. They will all be replaced with appropriate crossing structures.

Some of the box culverts will be replaced with new box culverts or bridges.

A total of 63 box culverts will be provided at various points along the proposed road. Based on opening sizes and number of cells, a total of 16 groups were identified. Within these groups, culvert barrel lengths vary as a function of the proposed depth of fill on each. A summary of the grouping of box culverts is presented in Table 3-3.

Table 3-3: Types of box culverts proposed

Number of Cells	1	2	3	4	5	More	Total
2.0 x 1.2m box culvert	3	0	0	0	0	0	3
2.0 x 1.5m box culvert	2	0	0	0	0	0	2
2.0 x 2.0m box culvert	5	0	0	0	0	0	5
3.0 x 2.0m box culvert	0	0	0	0	0	0	0
4.0 x 1.2m box culvert	1	0	0	0	0	0	1
4.0 x 1.5m box culvert	4	1	0	0	0	0	5
4.0 x 2.0m box culvert	23	9	1	0	0	1	34
4.0 x 2.5m box culvert	0	0	0	0	0	0	0
4.0 x 3.0m box culvert	3	1	1	3	3	2	13
Total	41	11	2	3	3	3	63

3.2.8 Alignment Soils

From interchange 0+000 to 29+000

The project road starts at Marich Pass, at the Junction of the A1 and B4 roads. The initial 29 kilometers are headed north changing slightly into northeast and lie on the geological map of the Sekerr Area. This section is bounded to the left by the prominent Sekerr Escarpment which is mainly composed of the major intrusions of granitic rocks which are foliated and with pegmatite complexes. This escarpment is extended by a series of schist formation. The road runs in parallel to a fault line which is the result of past extreme shearing in the ancient gneisses and schists. The drift geology is composed of reddish lateritic and sandy soils.

From interchange 29+000 to 58+000

From approximately chainage 29+000 the road swerves north east up to chainage 40+000. Thereafter, it maintains a north-westerly direction to chainage 58+000. This segment of road from approximately 29+000 to 58+000 lies on the geological map of the Kalossia Area. The drift geology is mainly composed of alluvium on the banks of rivers and most of the plains are covered by red and brown sands and gravels, the main constituent of which is derived from the physical weathering/breakdown of rocks of the Basement System. The predominant Basement System rock of the area is banded hornblende biotite gneiss.

Gneisses of this type generally cover very large portions of the area with little variation in strike or appearance.

From interchange 58+000 to 79+000

Similarly, the majority of the road portion from about 58+000 to 79+000 lies partly on the geological map of the Karasuk Area. The drift geology consists of red brownish silty Sand soils. These soils developed over the gneisses which are generally coarser and with a high content of angular quartz and feldspar fragments. Stone-mantles consisting of iron-stained angular fragments of vein quartz and country rock extend for many square kilometers over much of the higher ground and parts of the Turkwel plain. The solid geology is composed of biotite gneisses which are generally of fine to medium grain sometimes granitic and always

shows marked foliation due to the tendency of the mica flakes to align themselves in discrete layers.

From interchange 79+000 to 106+400

From approximately 79+000 to 106+400 the project area passes through some red brown silty Sand soils. These are mainly residual soils which are underlain by the basement system rocks from which they are derived. The rocks comprise of plagioclase amphibolites and granitoid gneisses. Typically, the rocks of the main amphibolitic group are redweathering black or greenish black, finely banded, fine-grained plagioclase amphibolites.

On the other hand, the granitoid gneisses are homogeneous buff-colored and lack foliation but do retain a faint gneissic orientation of the constituent minerals. Quartz or quartzo-felspathic lenticles are fairly common and are often stained a pinkish colour by iron oxide.

3.2.9 Material Sites

As an integral part of the soils and pavement investigation, a search was conducted to locate suitable construction material sites along the project road. The search included:

- Gravel material for possible application as sub base – Borrow area
- Material for embankments (fill and improved subgrade) – Borrow area
- Quarry stone for production of crushed stone and concrete – Hard stone area
- Water for compaction and concrete – Water zone
- Sand for concrete and mortar works – Sand area

The identified potential areas and collected samples were as follows:-

- 10 borrow areas each with 6 borrow pits dug and sampled at each area
- 2 hard stone areas with 5 points investigated at each area
- 4 sand areas with 4 pits dug and sampled at each area
- One major water source (perennial) was identified.

The descriptions of the encountered soils are presented.

3.2.10 Demand to be met

Traffic projections based on a full traffic survey, including, axle load determinations, classified traffic counts and origin-destination surveys were carried out the following locations:

- Eldoret
- Kitale
- Marich Pass
- Lokichar
- Lodwar

The traffic projections were established by taking into account “diverted” traffic from Ethiopia, as well as normal, generated and induced traffic.

“Diverted” traffic is the most influential traffic category when considering the pavement design for the road. This is because existing traffic on the road is relatively scarce and the assumptions proposed for the volume of traffic expected to divert from the Mombasa - Malaba road to the project road are significantly high.

Essentially the proportion of diverted traffic is very high compared to other categories of traffic (e.g. normal, generated, and induced) when arriving at the total projected traffic figures. The capacity to be met was established as Traffic Class of T2

3.2.11 Proposed Pavement Structures and Design life

Proposed Pavement Structures for a Traffic Class of T2 and the respective thicknesses of improved subgrade is presented below in Table 3-5

Table 3-4: Proposed Improved Subgrade and Pavement Structures

TRAFFIC CLASS – T2, MODIFIED TYPE 8 (Road Design Manual Part III, 1987) CONTRACT 1 – Marich Pass - Lokichar							
From (km)	To (km)	Existing Subgrade	Improved Subgrade	Sub-base	Base	Surfacing	Remarks
		Unsoaked CBR	CBR>15%	Cement/Lime Improved Base Quality	Graded Crushed Stone	Asphalt Concrete	
		Class	(mm)	(mm)	(mm)	(mm)	
0	4	S1	450	250	200	75	Final Alignment
4	7.5	S5	0	250	200	75	
7.5	16	S1	450	250	200	75	
16	19.5	S4	0	250	200	75	
19.5	27	S1	450	250	200	75	
27	28.5	S5	0	250	200	75	
28.5	35.5	S1	450	250	200	75	
35.5	40	S4	0	250	200	75	
40	50	S2	350	250	200	75	
50	52.5	S1	450	250	200	75	
52.5	57	S4	0	250	200	75	
57	65.5	S2	350	250	200	75	
65.5	68	S6	0	250	200	75	
68	83.5	S2	350	250	200	75	
83.5	91	S4	0	250	200	75	
91	106.4	S3	300	250	200	75	
Ordinary fill should have a CBR>8%							

3.3 DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

The total length of the project is about 196 km, and the alignment generally follows the existing road vertical and horizontal alignment, except as shown on the drawings or directed by the Engineer.

The site of the works is the area within the road reserve and any other places as may be designed in the contract.

The main construction activities to be performed by the Contractor during the construction period will be as follows:

- Site clearance and earthworks;
- Removal of the existing bituminous pavement;
- Scarification of the exposed surface;
- Filling – if necessary – with additional material and compaction of the bottom sub-grade;

- Laying graded crushed stone as a base;
- Widening of the existing road and embankments to give final width of carriageway and shoulders;
- Laying of base course to width of the pavement formation, bus bays and climbing lanes
- Laying of asphalt concrete on the full width of the carriageway on bus bays, service roads, cycle paths and widening;
- Applying a seal surface dressing
- Minor (ditches, culverts, drains) and major (bridge) drainage works;
- Installation of road furniture;
- Provision of pedestrian walkways at some trading centres.
- Construction of service roads, road parking areas and laybys at trading centres;

All these works will be carried out by the Contractor with maximum care concerning the traffic safety, and according to the Program of Works to be submitted from the Special Specifications.

3.4 SELECTION, ACQUISITION AND PREPARATION OF SITES FOR ACTIVITIES

Activity sites include:

- Road reserve and Work Site;
- Contractor's Camp Site;
- Engineers' Camp Site;
- Material Site (Borrow Pits);
- New Quarry Sites;
- Crusher Plant Site;
- Asphalt Plant Site.

3.5 THE COST OF IMPLEMENTING THE PROPOSED PROJECT

The Summary of the bill of Quantities for Contract 1 is presented in Table 3-6.

Table 3-5: Summary of Bills of Quantities for Contract 1 (Marich Pass to Lokichar)

Bill No.	Description	Amount (K.Shs)	% of Total Cost
1	Preliminary And Supervisory Services	566,776,041	5.61%
4	Site Clearance And Top Soil Stripping	221,443,557	2.19%
5	Earthworks	1,621,132,778	16.06%
7	Excavation And Filling For Structures	542,757,571	5.38%
8	Culverts And Drainage Works	513,151,805	5.08%
9	Passage Of Traffic	207,620,904	2.06%
12	Natural Material Base And Sub base	211,024,685	2.09%
13	Graded Crushed Stone Base	1,527,929,677	15.14%
14	Cement And Lime Treated Materials	1,149,969,066	11.39%
15	Bituminous Surface Treatment And Surface Dressing	524,058,360	5.19%
16	Bituminous Mixes	1,796,359,264	17.80%
17	Concrete Works	745,194,845	7.38%
20	Road Furniture	111,179,954	1.10%
21	Bridge Works	4,417,188	0.04%
22	Day Works	213,949,726	2.12%

25	HIV/AIDS Awareness Campaign	8,620,000	0.09%
26	Road Safety Awareness Campaign	8,185,000	0.08%
27	Concrete Piling	120,770,103	1.20%
A	Sub Total	10,094,540,524	
B	Add 10% Of Sub Total (A) Above For Variation Of Price (Financial Contingencies)	1,009,454,052	
C	Allow 10% Of Sub Total (A) Above For Physical Contingencies	1,009,454,052	
D	Total	12,113,448,629	

The Summary of the bill of Quantities for Contract 2 is presented in Table 3-7.

Table 3-6: Summary of Bills of Quantities for Contract 2 (Lokichar to Lodwar)

BILL NO.	Description	AMOUNT (KSHS)	% OF TOTAL COST
1.00	Preliminary And Supervisory Services	572,401,041	0.06
4.00	Site Clearance And Top Soil Stripping	206,804,618	0.02
5.00	Earthworks	2,139,137,938	0.21
7.00	Excavation And Filling For Structures	652,183,413	0.06
8.00	Culverts And Drainage Works	227,075,138	0.02
9.00	Passage Of Traffic	171,512,921	0.02
12.00	Natural Material Base And Sub base	217,551,148	0.02
14.00	Cement And Lime Treated Materials	1,560,015,480	0.15
15.00	Bituminous Surface Treatment And Surface Dressing	479,304,550	0.05
16.00	Bituminous Mixes	1,838,671,422	0.18
17.00	Concrete Works	1,779,315,182	0.18
20.00	Road Furniture	125,304,025	0.01
21.00	Bridge Works	16,382,548	0.00
22.00	Day Works	145,606,039	0.01
25.00	HIV/AIDS Awareness Campaign	9,700,000	0.00
26.00	Road Safety Awareness Campaign	6,745,000	0.00
A	Sub Total	10,147,710,463	
B	Add 10% Of Sub Total (A) Above For Variation Of Price (Financial Contingencies)	1,014,771,046	
C	Allow 7% Of Sub Total (A) Above For Physical Contingencies	710,339,732	
D	Grand Total	11,872,821,242	

The total cost of implementing the project is therefore estimated at K.Shs. 23,986,269,871

This cost is exclusive of the Bills for Environmental and Social Mitigation, Environmental Health and Safety and RAP. The Bill for Environmental and Social Mitigation is provided in Chapter 9.

CHAPTER 4. POLICY, LEGISLATIVE, REGULATORY AND ADMINISTRATIVE/INSTITUTIONAL FRAMEWORK

4.1 LEGAL FRAMEWORK

Applications of national statutes and regulations on environmental conservation suggest that the Coast Development Authority will have a legal duty and social responsibilities to ensure the proposed dam development is carried out without compromising the status of the natural resources in the area, environment resources, social and cultural setting as well as the economic potential of the local communities health and safety. This position enhances the importance of this environmental impact assessment for the proposed site to provide a benchmark for its sustainable operation. The key national laws that govern the management of environmental resources in the country have been briefly discussed below. It is noteworthy that wherever any of the laws contradict each other, the Environmental Management and Co-ordination Act 1999 prevails.

There are many laws and regulations governing issues of environmental concern in Kenya. The principal National legislation is the Environmental Management & Coordination Act of 1999 typically referred to as EMCA. EMCA empowers stakeholders to participate in sustainable management of the natural resources. It calls for Environmental Impact assessment (EIA) (under Section 58) to guide the implementation of environmentally sound decisions. Projects likely to cause environmental impacts require that an environmental impact assessment study to be carried out. It is under this provision that the current study is being undertaken.

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

4.1.1 The Environment Management and Co-ordination Act, 1999

The second schedule of EMCA stipulates that an EIA is required for:

4. Dams, rivers and water resources including –

- Storage dams, barrages and piers;
- River diversions and water transfer between catchments;
- Flood control schemes;
- Drilling for the purpose of utilizing ground water resources including geothermal energy.

The Act covers virtually all diverse environmental issues which require a holistic and coordinated approach towards its protection and preservation for the present generation without compromising the interests of the future generation to enjoy the same. Consequently, the Act provides for the legal regime to regulate, manage, protect and conserve biological diversity resources and access to genetic resources, wetlands, forests, marine and freshwater resources and the ozone layer to name a few.

The Environmental Management and Coordination Act (EMCA) 1999 harmonizes the various requirements of the other existing laws and regulations by stipulating that where the provisions of any existing law conflicts with itself, then the provisions of the EMCA shall prevail. This way, the EMCA is able to minimize any conflicts in enforcement of the various environmental laws and regulations as applied to the relevant sectors. EMCA represents the culmination of a series of initiatives and activities coordinated by Government and stakeholders. It accentuates the right of every person in Kenya to live in a clean and healthy environment and obliges each and every one to safeguard and enhance the environment. It is the master plan for the

environment in Kenya and contains a National Environment Policy, Framework Environmental Legislation and Environmental Strategy.

The Act consists of Sectoral Plans for the medium and long term intended to lead to sustainable development in the country. EMCA puts special emphasis on environmental management, pollutions and nuisances, and the necessity to safeguard the well-being of the populations.

The Environmental Management and Coordination Act (EMCA) 1999 is the national legislation guiding Environmental Management in Kenya. A draft bill (*Proposed Environmental Management and Coordination Act (EMCA) (Amendment) Bill 2013*) is before Parliament to further guide Environmental Management.

Topmost in the administration of EMCA is National Environment Council (NEC), which formulates policies, set goals, and promotes environmental protection programmes. The implementing organ is National Environment Management Authority (NEMA). EMCA comprises of the parts covering all aspects of the environment.

In relation to water resources, Section 42 of the Act deals specifically with the protection of rivers, lakes and wetlands. The Act forbids interference with water bodies without the express permission from the National Environmental Management Authority (NEMA) Director General. The permission can be granted subject to the findings of an Environmental Impact Assessment.

4.1.2 EMCA Regulations

Environmental Impact Assessment and Audit Regulation 2003

The Environmental (Impact Assessment and Audit) Regulations, 2003 thus expressly state in Regulation 3 that “the Regulations shall apply to all policies, plans, programmes; projects and activities specified in Part IV, Part V and the Second Schedule of the Act”.

Regulation 4(1) further states that:

“...no Proponent shall implement a project:

- (a) likely to have a negative environmental impact; or
- (b) for which an environmental impact assessment is required under the Act or these Regulations, unless an environmental impact assessment has been concluded and approved in accordance with these Regulations...”

Environmental Impact Assessment is a tool for environmental conservation and has been identified as a key component in on-going project execution. Section 58 of the Environmental Management and Coordination Act (EMCA) Number 8 of 1999, Second Schedule 9(i), and Environmental (Impact Assessment and Audit) Regulation 2003, stipulate that both new and old projects must undergo Environmental Impact Assessment and Audits. This is necessary as many forms of developmental activities cause damage to the environment and hence the greatest challenge today is to maintain sustainable development without interfering with the environment. There are many environmental problems and challenges in Kenya today among them land degradation, water management and environmental pollution. This is aggravated by lack of awareness and inadequate information amongst the public on the consequences of their interaction with the environment. According to Kenya Subsidiary Legislation, 2003 part V of the EIA and EA regulation, provides for environmental Audit and monitoring. The policy recommends the need for enhanced reuse/recycling of residues including waste water and use of non-waste technologies. It recommends participation of stakeholders in the management of

wastes within their localities. It encourages better planning in both urban and rural areas and provision of basic needs such as water, drainage and waste disposal facilities.

Water Quality Management Regulations, 2006 (Legal Notice No. 120) (Water Quality)

These apply to water used for domestic, industrial, agricultural, and recreational purposes; water used for fisheries and wildlife purposes, and water used for any other purposes. Different standards apply to different modes of usage. These regulations provide for the protection of lakes, rivers, streams, springs, wells and other water sources.

Regulation 8 of these regulations provides for compliance with water quality standards. It states that “all operators and suppliers of treated water, containerized water and all water vendors shall comply with the relevant quality standards in force as may be prescribed by the relevant lead agencies”.

Regulation 9 of these regulations provides for water quality monitoring. It states that the “Authority in consultation with the relevant lead agency, shall maintain water quality monitoring for sources of domestic water at least twice every calendar year and such monitoring records shall be in the prescribed form as set out in the second schedule to these regulations”. Table below shows the quality standards for sources of domestic water.

Table 4-1: Quality Standards for Sources of Domestic Water.

Parameter	Guide Value (Maximum allowable)
pH	6.5 – 8.5
Suspended solids	30 (mg/l)
Nitrate – NO ₃	10 (mg/l)
Ammonia – NH ₃	0.5 (mg/l)
Nitrite – NO ₂	3 (mg/l)
Total dissolved solids	1200 (mg/l)
Ecoli	Nil/100ml
Fluoride	1.5 (mg/l)
Phenols	Nil (mg/l)
Arsenic	0.01 (mg/l)
Cadmium	0.01 (mg/l)
Lead	0.05 (mg/l)
Selenium	0.01 (mg/l)
Copper	0.05 (mg/l)
Zinc	1.5 (mg/l)
Alkyl benzyl sulphonates	0.5 (mg/l)
Permanganate Value (PV)	1.0 (mg/l)

Everyone is required to refrain from any actions, which directly or indirectly cause water pollution, whether or not the water resource was polluted before the enactment of the Environmental Management and Coordination Act (EMCA) gazetted in 1999. It is an offence to contravene the provisions of these regulations with a fine not exceeding five hundred thousand shillings.

According to these regulations, “Every person shall refrain from any action which directly or indirectly causes, or may cause immediate or subsequent water pollution, and it shall be immaterial whether or not the water resource was polluted before the enactment of the Act”.

Waste Management Regulations, 2006 (Legal Notice No. 121)

The *Waste Management Regulations, 2006* aim to protect human health and the environment by streamlining the handling, transportation and disposal of various types of waste. The regulations place emphasis on waste minimization, cleaner production and segregation of waste at source. The regulations have classified various types of waste and recommended appropriate disposal methods for each waste type.

The regulation requires licensing of transporters of wastes and operators of disposal site (sections 7 and 10 respectively). In section 14 (1) every trade or industrial undertaking is obliged to install anti-pollution equipment for the treatment of waste emanating from such trade or industrial undertaking. The Developer shall ensure that the garbage collector contracted has a valid license from the National Environment Management Authority (NEMA).

The *Waste Management Regulations, 2006* states the life, health and wellbeing of people as a chief environmental value in relation to waste management.

This value is relevant to the Project as its alignment covers settled areas, areas of ecological value and areas of productive agricultural land. The Project is likely to introduce hazardous waste generation, industrial wastewater and storm water at its fixed facilities.

Objectives for waste management is based on the waste management hierarchy of avoid, reduce, reuse, recycle, recover, treat and dispose. There may be in excess of 1000 workers on construction sites along the Project who will generate tonnes of garbage daily. Assuming a construction period of 4 years, this garbage will be too much and must therefore be dealt with using any one of the waste management hierarchy.

The construction mitigation measures proposed in the EMP in regard to waste management comply with the *Waste Management Regulations, 2006* as they seek to ensure that pollution does not emanate from project activities and if it does, transmission to receptors that would be adversely affected is intercepted.

Noise and Excessive Vibration Pollution Control Regulations, 2009

The key environmental values for the acoustic environment are outlined within The Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 as follows:

PART II - GENERAL PROHIBITIONS**3. General Prohibitions.**

(1) Except as otherwise provided in these Regulations, no person shall make or cause to be made any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment.

(3) Any person who contravenes the provisions of this Regulation commits an offence.

4. Excessive vibrations.

(1) Except as otherwise provided in these Regulations, no person shall-

(a) make or cause to be made excessive vibrations which annoy, disturb, injure or endanger the comfort, repose, health or safety of others and the environment; or

(b) Cause to be made excessive vibrations which exceed 0.5 centimetres per second beyond any source property boundary or 30 metres from any moving source;

(2) Any person who contravenes the provisions of this Regulation commits an offence.

5. Permissible noise levels.

No person shall make, continue or cause to be made or continued any noise in excess of the noise levels set in the First Schedule to these Regulations, unless such noise is reasonably necessary to the preservation of life, health, safety or property

Table 4-2: Maximum Permissible Noise Levels

Zone		Sound Level Limits dB (A)		Noise Rating Levels (NR)	
		(Leq, 14h)		(Leq, 14h)	
		Day	Night	Day	Night
A	Silent zone	40	35	30	25
B	Places of worship	40	35	30	25
C	Residential; indoor outdoor	45	35	35	25
		50	35	40	25
D	Mixed residential	55	35	50	25
E	Commercial	60	35	55	25

Time Frame

Day: 6.01 a.m. – 8.00 p.m. (Leq, 14h)

Night 8.01 p.m. – 6.00 a.m. (Leq, 10h)

In the second schedule

Table 4-3: Maximum permissible noise levels for construction sites (measurement taken within the facility)

facility		Maximum Noise Level Permitted (Leq) in dB (A)	
		Day	Night
(i)	Health facilities, educational institutions, homes for disabled	60	35
(ii)	Residential	60	35
(iii)	Areas other than those described in (i) and (ii) above	75	65

Time Frame

Day: 6.01 a.m. – 6.00 p.m. (Leq, 12h)

Night 6.01 p.m. – 6.00 a.m. (Leq, 12h)

13. Construction at night.

(1) Except for the purposes specified in sub-Regulation (2) hereunder, no person shall operate construction equipment (including but not limited to any pile driver, steam shovel, pneumatic hammer, derrick or steam or electric hoist) or perform any outside construction or repair work so as to emit noise in excess of the permissible levels as set out in the Second Schedule to these Regulations.

15. Environmental Impact Assessment.

Any person intending to carry out construction, demolition, mining or quarrying work shall, during the Environmental Impact Assessment studies-

(A) Identify natural resources, land uses or activities which may be affected by noise or excessive vibrations from the construction, demolition, mining or quarrying;

(b) Determine the measures which are needed in the plans and specifications to minimize or eliminate adverse construction, demolition, mining or quarrying noise or vibration impacts; and

(c) Incorporate the needed abatement measures in the plans and specifications.

These Regulations determine that no person or activity shall make or cause to be made any loud, unreasonable, unnecessary or unusual noise that annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. In determining whether noise is loud, unreasonable, unnecessary or unusual, the following factors may be considered:

- Time of the day;

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

This regulation also relates noise to its vibration effects and seeks to ensure no harmful vibrations are caused by controlling the level of noise. Any person(s) intending to undertake activities in which noise suspected to be injurious or endangers the comfort, repose, health or safety of others and the environment must make an application to NEMA and acquire a license subject to payment of requisite fees and meeting the license conditions. Failure to comply with these regulations attracts a fine of KES 350,000 or 18 months jail term or both.

The sensitive receptors identified in close proximity to the Project include:-

- Wildlife habitats
- Pastures
- Residential areas
- Commercial centres including schools and hospitals
-

Draft Air Quality Regulations 2008

These guidelines spell out qualities of the environment that are conducive to prevention, control and abatement of air pollution to ensure clean and healthy ambient air. It provides for the establishment of emission standards for various sources such as mobile sources (e.g. motor vehicles) and stationary sources (e.g. industries) as outlined in the Environmental Management and Coordination Act, 1999. It also covers any other air pollution source as may be determined by the Minister in consultation with the Authority. Emission limits for various areas and facilities have been set. The regulations provide the procedure for designating controlled areas, and the objectives of air quality management plans for these areas.

The objective of these Regulations is to provide for prevention, control and abatement of air pollution to ensure clean and healthy ambient air. The general prohibitions state that no person shall cause the emission of air pollutants listed under First Schedule (Priority air pollutants) to exceed the ambient air quality levels as required stipulated under the provisions of the Seventh Schedule (Emission limits for controlled and non-controlled facilities) and Second Schedule (Ambient air quality tolerance limits).

Environmental Management and Co-Ordination (Fossil Fuel Emission Control) Regulations 2006

The *Environmental Management and Co-ordination (Fossil Fuel Emission Control) Regulations 2006* came into operation in 2007 and sets out emission standards for petrol and diesel powered motor vehicles and bars the introduction into the air of substances which result in harmful effects of such nature as to endanger human health, harm living resources and ecosystems, cause material damage or interfere with amenities and other legitimate uses of the environment.

These Regulations set out emission standards for internal combustion engines, provide for the licensing of persons who treat fuel and for the appointment of environmental inspectors for purposes of emission inspection and authorizes the National Environment Management Authority to enter into partnerships for purposes of emission inspection. The Authority shall administer a system of emission inspection of mobile and stationary internal combustion engines in Kenya. An environmental inspector shall have the powers as defined by sections

117 and 118 of the Environmental Management and Co-ordination Act. Fuel shall be treated with fuel catalyst by persons licensed to do so by the Authority.

The Environmental Management and Co-ordination (Controlled Substances) Regulations, No. 73 of 2007(EMCA),

Part II

6. (1) No person shall store, distribute, transport or otherwise handle a controlled substance unless the controlled substance is accompanied by material safety data sheet

(2) Any person producing or importing a controlled substance shall at the time of production, packaging or importation, ensure that the material safety data sheet accompanies the produced, packaged or imported substance

Part III

11 (1) No person, shall import into Kenya a controlled substance unless such person has a valid license issued by the Authority.

4.1.3 The Water Act 2002

According to Section 5 of this Act, the right to use of water from any water resource is hereby vested in the Minister, except to the extent that it is alienated by or under this Act or any other written law.

Section 4 (1) of the same Act states, that the Minister shall have and may exercise control over every water resource in accordance with this Act.

Subsection 2 states that it shall be the duty of the Minister to promote the investigation, conservation and proper use of water resources throughout Kenya and to ensure the effective exercise and performance by any authorities or persons under the control of the Minister of their powers and duties in relation to water. Subsection 3 further states that the Minister shall be assisted in discharge of his duties under this Section by Director of Water.

Section 25 (1) of this Act states that a permit shall be required for any of the following purposes:

- Any use of water from a water resource, except as provided by Section 26;
- The drainage of any swamp or other land;
- The discharge of a pollutant into any water resource; and
- Any purpose, to be carried out in or in relation to a water resource, which is prescribed by rules made under this Act to be a purpose for which a permit is required.

Part II, Section 18, of this Act provides for national monitoring and information system on water resources. Following on this, Sub-section 3 of the same Section, allows the Water Resources Management Authority (WRMA) to demand from any person or institution, specified information, documents, samples or materials on water resources. Under these rules, specific records may be required to be kept by a facility operator and the information thereof furnished to the authority.

Section 23 (1) of the Act states that the Authority shall not approve any community project unless:

- The proposed project is approved by the persons owning or occupying at least two-thirds of the particular area concerned in the project; and
- Provision is made by the project for adequate alternative supply of water to be supplied to permit holders likely to be adversely affected and unable to benefit from the scheme.

Sub-section 2 further states that no permit for the community project shall be cancelled or verified except with the consent of the Minister.

In order for WRMA to undertake its stipulated responsibilities, the Act provides for decentralized and stakeholder involvement. This will be implemented through regional offices of the Authority based on drainage basins (catchment areas) assisted by Catchment Area Advisory Committees (CAACs). At the grassroots level, stakeholder engagement will be through Water Resource User Associations (WRUAs).

4.1.4 Occupational Safety and Health Act, 2007

This is an Act of Parliament that provides for the safety, health and welfare of workers and all persons lawfully present at work places to provide for the establishment of the National Council for Occupational Safety and Health and for connected purposes. Section 3 (1) states “that the Act shall apply to all workplaces where any person is at work, whether temporarily or permanently”.

Under this Act, the duties of the Occupier are provided thus in Section 6:

- Every occupier shall ensure the safety, health and welfare at work of all persons working in his workplace.
- Without prejudice to the generality of an occupier's duty under subsection (1), the duty of the occupier includes:
 - The provision and maintenance of plant and systems and procedures of work that are safe and without risks to health;
 - Arrangements for ensuring safety and absence of risks to health in connection with the use, handling, storage and transport of articles and substances;
 - The provision of such information, instruction, training and supervision as is necessary to ensure the safety and health at work of every person employed
 - The maintenance of any workplace under the occupier's control, in a condition that is safe and without risks to health and the provision and maintenance of means of access to and egress from it that are safe and without such risks to health;
 - The provision and maintenance of a working environment for every person employed that is, safe, without risks to health, and adequate as regards facilities and arrangements for the employees welfare at work;
 - Informing all persons employed of
 - Any risks from new technologies; and
 - Imminent danger; and
 - Ensuring that every person employed participates in the application and review of safety and health measures.
- Every occupier shall carry out appropriate risk assessments in relation to the safety and health of persons employed and, on the basis of these results, adopt preventive and protective measures to ensure that under all conditions of their intended use, all chemicals, machinery, equipment, tools and process under the control of the occupier are safe and without risk to health and comply with the requirements of safety and health provisions in this Act.
- Every occupier shall send a copy of a report of risk assessment carried out under this section to the area occupational safety and health officer;
- Every occupier shall take immediate steps to stop any operation or activity where there is an imminent and serious danger to safety and health and to evacuate all persons employed as appropriate.
- It is the duty of every occupier to register his workplace unless such workplace is exempted from registration under this Act.

- An occupier who fails to comply with a duty imposed on him under this section commits an offence and shall on conviction be liable to a fine not exceeding five hundred thousand shillings or to imprisonment for a term not exceeding six months or to both

Part VI of the Occupational Safety and Health Act, 2007, addresses provisions concerning health.

These provisions are:

- Cleanliness;
- Overcrowding;
- Ventilation;
- Lighting;
- Drainage of floors; and
- Sanitary conveniences.

These provisions are to be enforced by the Department of Occupational Health and Safety of the Ministry of Labour.

Failure to comply with the OSHA, 2007 attracts penalties of up to KES 300,000 or 3 months jail term or both or penalties of KES 1,000,000 or 12 months jail term or both for cases where death occurs and is in consequence of the employer.

The Environmental Value represented by this Act is that it seeks to provide for the safety, health and welfare of workers and all persons lawfully present at workplaces. The dam area will become a workplace as defined by the Act and, henceforth, whether it is under construction or operation, all provisions of the said Act will apply.

Machinery Safety

Part VII of the Occupational Safety and Health Act, 2007 elaborately deals with machinery safety requirements, mainly from the point of view of avoiding accidents and injuries at work.

Safety –General Provisions

Part VIII of the Occupational Safety and Health Act, 2007 describes safety general provisions. Section 74 (1) provides for storage. It states that “all goods, articles and substances stored in a workplace shall be stored or stacked –

- In such a manner as will ensure their stability and prevent any fall or collapse of the stack;
- In such manner as not to interfere with the adequate distribution of the natural or artificial light, the natural ventilation systems, the proper operation of machines or other equipment, the unobstructed use of passageways, gangways or traffic lanes, and the efficient functioning of sprinkler systems, the unobstructed access to other fire extinguishing equipment within the workplace; and
- On firm foundations not liable to overload any floor.

Section 76 (2) states that “Every employer shall take necessary steps to ensure that workstations, equipment and work tasks are adapted to fit the employee and the employee’s ability including protection against mental strain”.

According to Section 76 (3) “Every manufacturer, importer and supplier or an agent of a manufacturer, importer and supplier of the machinery and equipment referred to in paragraph (1) shall ensure that the equipment complies with the safety and health standards prescribed under this Act and shall provide adequate and appropriate information including hazard warning signs”.

Section 76 (4) further states that “ An employer shall not require or permit any of his employees to engage in the manual handling or transportation of a load which by reason of its weight is likely to cause the employee to suffer bodily injury”.

Other provisions covered under this Safety – general provisions include:

- Section 77: Safe means of access and safe place of employment;
- Section 78: fire prevention;
- Section 79: Precautions in places where dangerous fumes are likely to be present;
- Section 81: Safety provisions in case of fire; and
- Section 82: Evacuation procedures.

Part IX of the Occupational Safety and Health Act, 2007 also provides for Chemical Safety, Part X provides for Welfare – General Provisions, Part XI Health, Safety and Welfare Special Provisions and Part XII special applications.

4.1.5 The Public Health Act (Cap. 242),

The *Public Health Act (Cap. 242)*, in Part IX Section 8 & 9 states that no person/institution shall cause nuisance or condition liable to be injurious or dangerous to human health. Any noxious matter or waste water flowing or discharged into a water course is deemed as a nuisance. Part XII Section 136 states that all collections of water, sewage, rubbish, refuse and other fluids which permits or facilitates the breeding or multiplication of pests shall be deemed nuisances. The Act addresses matters of sanitation, hygiene and general environmental health and safety. These provisions should be adhered to especially during the construction stage of the project. Appropriate mitigation measures should be instituted to comply with these requirements.

4.1.6 Energy Act Of 2006

The Energy Act of 2006 replaced the Electric Power Act of 1997 and The Petroleum Act, Cap 116. The Energy Act, amongst other issues, deals with all matters relating to all forms of energy including the generation, transmission, distribution, supply and use of electrical energy as well as the legal basis for establishing the systems associated with these purposes.

The Energy Act, 2006, also established the Energy Regulatory Commission (ERC) whose mandate is to regulate all functions and players in the Energy sector. One of the duties of the ERC is to ensure compliance with Environmental, Health and Safety Standards in the Energy Sector, as empowered by Section 98 of the Energy Act, 2006.

In this respect, the following environmental issues will be considered before approval is granted:

- The need to protect and manage the environment, and conserve natural resources;
- The ability to operate in a manner designated to protect the health and safety of the project employees; the local and other potentially affected communities.

Licensing and authorization to generate and transmit electrical power must be supported by an Environmental Impact Assessment Report (EIA) approved by NEMA.

4.1.7 National Land Commission Act, 2012

There are new land laws governing the management and administration of land in Kenya. The Ministry of Lands had hitherto spearheaded the formulation of land bills which were debated on by various stakeholders, passed by Parliament and assented to into law by H. E. the President of the Republic of Kenya on the 27th April 2012.

The National Land Commission Act, 2012 *is an Act of Parliament to make further provisions as to the functions and powers of the National Land Commission, 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.*

Under Articles 62(2) and (3) of the Constitution, the Commission has power to administer public land on behalf of the national government and county governments.

4.1.8 Land Registration Act, 2012

The Land Registration Act, 2012 is an Act of Parliament 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. This Act repeals; The Indian Transfer of Property Act 1882, The Government Lands Act, (Cap 280), The Registration of Titles Act, (Cap 281), The Land Titles Act, (Cap 282) and The Registered Land Act (Cap 300).

4.1.9 The Land Act, 2012 No.6 of 2012

The Land Act, 2012 is Act of Parliament to give effect to Article 68 of the constitution, to revise, consolidate and rationalize land laws; to provide for the sustainable administration and management of land and land based resources, and for connected purposes. This Act repeals; The Wayleaves Act, Cap 292 and The Land Acquisition Act, Cap 295.

The *Land Act, 2012* and the *Land Registration Act, 2012* make major changes to the substantive and procedural law respectively relating to land in Kenya. The two statutes have a major impact on contracts relating to land, charges, transfers and leases. There are changes to the law on creation of charges over land and the realization of such charges.

Section 3(1) of the *Land Act, 2012* provides that the Act shall apply to all land declared as:

- Public land under Article 62 of the Constitution;
- Private land under Article 64 of the Constitution; and
- Community land under Article 63 of the Constitution and any other written law relating to community land.

Section 4 sets out values and principles of land management and administration which are binding on and are to be adhered to by all state organs, state officers, public officers and all persons whenever any of them enacts, applies or interprets any provisions of the LA or makes or implements public policy decisions. These values and principles are:

- Equitable access to land;
- Security of land rights;
- Sustainable and productive management of land resources;
- Transparent and cost effective administration of land;
- Conservation and protection of ecologically sensitive areas;
- Elimination of gender discrimination in law, customs and practices related to land and property in land;
- Encouragement of communities to settle land disputes through recognized local community initiatives;
- Participation, accountability and democratic decision making within communities, the public and the Government;
- Technical and financial sustainability;
- Affording equal opportunities to members of all ethnic groups;
- Non-discrimination and protection of the marginalized;

- Democracy, inclusiveness and participation of the people; and
- Alternative dispute resolution mechanisms in land dispute handling and management.

In section 5, the Land Act 2012 recognizes the following forms of land tenure:

- Freehold;
- Leasehold;
- Such forms of partial interest as may be defined in the Act or other law, including but not limited to easements; and
- Customary land rights, where consistent with the Constitution.

Section 7 provides that title to land may be acquired through:

- Allocation (—allocation is vaguely defined in section 2 as —the legal process of granting rights to land);
- Land adjudication process;
- Compulsory acquisition;
- Prescription;
- Settlement programs;
- Transmissions;
- Transfers;
- Long term leases exceeding twenty one years created out of private land; or
- Any other manner prescribed in an Act of Parliament.

Thus where land is to be acquired, full compensation shall be paid promptly to all persons affected along the following parameters:

- Area of land acquired;
- Property value after valuation by the Land Commission
- Amount of the compensation payable;
- Market value of the property;
- Damages sustained from the severance of the land parcel from the land;
- Damages to other property in the process of acquiring the said land parcel;
- Consequences of changing residence or place of business by the land owners; and
- Damages from diminution of profits of the land acquired.

Subject to and in accordance with section 143 (1) and section 146, the Commission may, create a right of way which shall be known as public right of way.

144.(1) Unless the Commission is proposing on its own motion to create a wayleave, an application, for the creation of a wayleave , shall be made by any State department, or the county government, or public authority or corporate body, to the Commission.

(2) An application shall be made in the prescribed form and shall be accompanied by any prescribed information or other information that the Commission may, in writing require the applicant to supply and the Commission shall not begin the process of creating a wayleave until all prescribed or required information has been submitted to it.

Under section 110 (1) of Land Acts 2012 No.6 of 2012 land may be acquired compulsorily under this Part if the Commission certifies, in writing, that the land is required for public purposes or in the public interest as related to and necessary for fulfilment of the stated public purpose.

Part 2 of this section states that if, after land has been compulsorily acquired the public purpose or interest justifying the compulsory acquisition fails or ceases, the Commission may offer the original owners or their successors in title pre-emptive rights to re-acquire the land, upon restitution to the acquiring authority the full amount paid as compensation.

Section 111 (1) states that if land is acquired compulsorily under this Act, just compensation shall be paid promptly in full to all persons whose interests in the land have been determined. The commission shall make rules to regulate the assessment of just compensation.

Likewise where land is acquired compulsorily, full compensation shall be paid promptly to all persons affected in accordance to section 113 (1). (2) Subject to Article 40 (2) of the Constitution and section 122 and 128 of this Act, an award—

(a) Shall be final and conclusive evidence of—

- The size of the land to be acquired;
- The value, in the opinion of the Commission, of the land;
- The amount of the compensation payable, whether the persons interested in the land have or have not appeared at the inquiry; and

Under Section 148 and subject to the provisions of this section, compensation shall be payable to any person for the use of land, of which the person is in lawful or actual occupation, as a communal right of way and, with respect to a wayleave, in addition to any compensation for the use of land for any damage suffered in respect of trees crops and buildings as shall, in cases of private land, be based on the value of the land as determined by a qualified valuer.

The duty to pay compensation payable under this section shall lie with the State Department, county government, public authority or corporate body that applied for the public right of way and that duty shall be complied with promptly. This provision will guide land acquisition where necessary.

4.1.10 The Kenya Roads Act Of 2007

The Act stipulates the legal and institutional aspects of the road sub-sector policy. The Act provides for the establishment of three independent Road Authorities, namely: (i) Kenya National Highways Authority (KeNHA), responsible for the administration, control, development and maintenance of all class A, B and C roads in Kenya, (ii) Kenya Rural Roads Authority (KeRRA), responsible for rural and small town roads including class D, E roads and Special Purpose Roads and (iii) Kenya Urban Roads Authority (KURA) responsible for all City and Municipal Roads. The Authorities fall under the Ministry of Roads, which will retain the role of policy formulation, and general oversight of public roads including regulatory aspects such as technical standards.

Section 22 of the Act details the procedure for acquisition of any land required by an authority for the purposes of its functions under this Act.

The Kenya National Highways Authority (KeNHA), a parastatals currently in category PC 3A was set up under the Roads Act, 2007 and charged with the mandate to manage, develop, rehabilitate and maintain national roads and is an equal opportunity employer.

4.1.11 The Kenya Roads Board Act of 1999

The act encourages participation of all stakeholders in the road sector during the planning, design, construction and maintenance.

4.1.12 The Forest Act, 2005

Section 40 (1) states that:

“Where the Board is satisfied that utilization of a forest can be done through the granting of concessions, the Service may, by license, grant the same subject to an Environmental Impact

Assessment License in accordance with the Environmental Management and Co-ordination Act, 1999.”

Further, it states in Section 40 (2) that:

“the grantee of a concession shall –

- (a) Comply with the guidelines or management plans prescribed by the Service;
- (b) Protect the concession area from destruction and encroachment by other persons;
- (c) Ensure that the forest areas under his management are maintained for the conservation of biodiversity, cultural or recreational use;
- (d) Maintain the physical boundaries of the concession;
- (e) Take precautions to prevent the occurrence and spread of forest fires in connection with any or all operations within or outside the concession area; ensure that all structures and facilities constructed or operated by and in connection with any activities are maintained according to the conditions of the license;“

Section 40 (4) of the Act states that:

“The Board may withdraw a concession granted under this section where a grantee breaches any of the conditions prescribed under subsection (2)’”

4.1.13 The Wildlife Act

The Wildlife Bill, 2011 Part VIII, on Protection of Endangered and Threatened Ecosystems and Species, on Endangered and threatened ecosystems spells out the need and the means to safeguarding endangered species as follows: -

- 53-Protection of endangered and threatened ecosystems
- 54-Listing of endangered and threatened species
- 55-Restricted activities involving listed species
- 56-Recovery plans
- 57-Control of invasive species

The Wildlife Bill Section 53 (1), Contains in the Fifth Schedule, provision for Listing of endangered and threatened species and gives provision for listing of Invasive Species under Section 56.

Other existing aquatic environmental values include:

- Riverine habitats are primarily ephemeral and characterized by a uniform channel with a sandy/gravel substrate and little in-stream habitat. Due to their ephemeral nature, low abundance of habitat features and degradation from cattle and weeds, these rivers generally provide low value habitat for aquatic fauna.
- Aquatic habitats within the study area provide habitat for a range of generalist fauna and flora species.
- Due to these characteristics, the following need to be safeguarded in these habitats:

- Threat of invasive species from construction of the Project.

Existing balance so that these habitats continue to give the value of:

- Support for vulnerable, endangered or critically endangered species or threatened ecological communities.
- Support for populations of plant and/ or animal species important for maintaining the biological diversity of a particular biogeographic region.
- Support for populations of plant and/ or animal species important for maintaining the biological diversity of a particular biogeographic region.
-

Conservation of Biological Diversity Regulations, 2006

Part II of this regulation states that a person may not engage in any activity that may have an adverse impact in the environment without conducting an Environmental Impact Assessment. The Environmental Management and Co-Ordination (Conservation of Biological Diversity and Resources, Access To Genetic Resources And Benefit Sharing) Regulations, 2006, Part II Conservation of Biological Diversity stipulates as follows:-

4. Environmental Impact Assessment License.

(1) A person shall not engage in any activity that may-

- (a) Have an adverse impact on any ecosystem;
- (b) Lead to the introduction of any exotic species;
- (c) Lead to unsustainable use of natural resources, without an Environmental Impact Assessment License issued by the Authority under the Act.

4.1.14 The Employment Act (No 1 of 2007)

States on restriction in employing child of between thirteen and sixteen years of age to attend machinery, Section 58

(1) No person shall employ a child of between thirteen and sixteen years of age, other than one serving under a contract of apprenticeship or indentured learnership in accordance with the provisions of the Industrial Training Act, in an industrial undertaking to attend to machinery.

(2) No person shall employ a child in any opencast workings or sub-surface workings that are entered by means of a shaft or adit.

4.1.15 HIV/AIDS Prevention and Control Act No. 14 of 2006

The law prohibits various forms of sexual violence offences committed against men and women. These include rape, attempted rape, sexual assault, indecent acts, defilement, gang rapes, sexual harassment, child pornography, child prostitution, child sex tourism, exploitation of prostitution, incest, deliberate transmission of HIV and AIDS including other life threatening sexually transmitted diseases, and cultural and religious offences.

According to section 4 (1) the Government shall promote public awareness about the causes, modes of transmission, consequences, means of prevention and control of HIV and AIDS through a comprehensive nationwide educational and information campaign conducted by the Government through its various Ministries, Departments, authorities and other agencies. Pursuant to subsection (2), the educational and information campaign referred to in subsection (1) shall-

- (a) Employ scientifically proven approaches;
- (b) Focus on the family as the basic social unit;
- (c) Encourage testing of individuals; and
- (d) be carried out in schools and other institutions of learning, all prisons, remand homes and other places of confinement, amongst the disciplined forces, at all places of work and in all communities throughout Kenya.

Subsection (3) provides that in conducting the educational and information campaign referred to in this section, the Government shall collaborate with relevant stakeholders to ensure the involvement and participation of individuals and groups infected and affected by HIV and AIDS, including persons with disabilities.

Section 31 (1) provides that, no person shall be-

- (a) Denied access to any employment for which he is qualified; or
- (b) Transferred, denied promotion or have his employment terminated, on the ground only of his actual, or suspected HIV status.

KENHA will endeavor to promote educational and informational campaigns and organize for Voluntary Counselling and Testing throughout the project cycle. In addition, the proponent shall ensure that the contractors do not discriminate workers on the basis of their HIV status.

4.1.16 National Museums and Heritage Act 2006

The *National Museums and Heritage Act 2006* gives provision for an area of land of cultural significance to be set-aside or acquired under compulsory provision and declared a protected area under Sections 34 and 35 of the Act. This provides for the gazettelement of national monuments. Monuments gazetted under this Act fall under the management of the National Museums of Kenya. Several of these monuments include forests of cultural and biodiversity significance.

The Act consolidates the law relating to national museums and heritage; to provide for the establishment control, management and development of national museums and the identification, protection, conservation and transmission of the cultural and natural heritage of Kenya. It was set up in order to repeal the Antiquities and Monuments Act and the National Museums Act; and for connected purposes.

Among other definitions, under this Act, “cultural heritage” means— works of humanity or the combined works of nature and humanity, and areas including archaeological sites which are of outstanding value from the historical, aesthetic, ethnological or anthropological point of view;

The proponent will therefore ensure that the proposed project doesn’t fall within sacred sites, ruins, caves or areas of national significance before construction and if items of such value are encountered during project implementations, due process to surrender them to relevant authorities will be followed.

4.1.17 Constitution of Kenya on Culture

The *Constitution of Kenya*, Chapter Two on the Republic, Section 11 on Culture

11. (1) This Constitution recognizes culture as the foundation of the nation and as the cumulative civilization of the Kenyan people and nation.

(2) The State shall—

(a) promote all forms of national and cultural expression through literature, the arts, traditional celebrations, science, communication, information, mass media, publications, libraries and other cultural heritage;

(b) Recognize the role of science and indigenous technologies in the development of the nation; and

(c) Promote the intellectual property rights of the people of Kenya.

(3) Parliament shall enact legislation to—

(a) Ensure that communities receive compensation or royalties for the use of their cultures and cultural heritage; and

(b) Recognize and protect the ownership of indigenous seeds and plant varieties, their genetic and diverse characteristics and their use by the communities of Kenya.

4.2 POLICY PROVISIONS

4.2.1 The Constitution of Kenya

Article 42 of the Bill of Rights of the Kenyan Constitution provides that ‘every Kenyan 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'. Under Chapter 5 (land and Environment), Part 1 is devoted to land. It requires that land be used and managed in 'a manner that is equitable, efficient, productive and sustainable, and in accordance with the following principles;

- (i) Equitable access to land
- (ii) Security of land rights
- (iii) Sustainable and productive management of land resources
- (iv) Transparent and cost effective administration of land
- (v) Sound conservation and protection of ecologically sensitive areas

Part 2 of Chapter 5 of the constitution is dedicated to Environment and Natural Resources. Article 69 in Part 2 provides that the state shall;

- (i) Ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits
- (ii) Work to achieve and maintain tree cover of at least ten per cent of the land area of Kenya
- (iii) Encourage public participation in the management of, protection and conservation of the environment
- (iv) Protect genetic resources and biological diversity
- (v) Establish systems of environmental impact assessment, environmental audit and monitoring of the environment
- (vi) Eliminate processes and activities that are likely to endanger the environment
- (vii) Utilize the environment and natural resources for the benefit of the people of Kenya

Further, Article 70 states that if a person alleges that a right to a clean and healthy environment recognized and protected under Article 42 has been, is being or is likely to be, denied, violated, infringed or threatened, the person may apply to a court for redress. The sub-project should ensure compliance with the constitution in so far as equitable sharing of the resources, between the stakeholders. Further, the project should ensure the sustainability of livelihoods and biological resources within the project areas are protected. Any development proposals should also be cognizant of the increased powers under the Constitution given to communities and individuals to enforce their rights through legal redress.

The Constitution of Kenya, The provisions of Chapter IV (Protection of Fundamental Rights and Freedoms of The Individual) protects citizens from deprivation of property. No property of any description shall be compulsorily taken possession of, and no interest in or right over property of any description shall be compulsorily acquired, except where it is necessary for public interest.

Every person has also 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. Chapter V (Land and Environment) of the constitution gives provisions of protecting land, environment and natural resources. The State is required to:-

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

- f) Establish systems of EIA, environmental audit and monitoring of the environment;
 - g) Eliminate processes and activities that are likely to endanger the environment; and
 - h) Utilize the environment and natural resources for the benefit of the people of Kenya.
- Every person has a legal duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources.

4.2.2 The Kenya Vision 2030

Kenya Vision 2030 is the current national development blueprint for period 2008 to 2030 and was developed following on the successful implementation of the Economic Recovery Strategy for Wealth and Employment Creation which saw the country's economy back on the path to rapid growth since 2002. GDP growth rose from 0.6% to 7% in 2007, but dropped to between 1.7% and 1.8% in 2008 and 2009 respectively. The objective of the vision 2030 is to transform Kenya into a middle income country with a consistent annual growth of 10 % by the year 2030". The 2030 goal for urban areas is to achieve "a well-housed population living in an environmentally-secure urban environment." This will be achieved by bringing basic infrastructure and services namely roads, street lights, water and sanitation facilities, storm water drains, footpaths, and others.

One of the aims of the vision is to make Kenya to be a nation that has a clean, secure and sustainable environment by 2030. This will be achieved through promoting environmental conservation to better support the economic pillar. Improving pollution and waste management through the application of the right economic incentives in development initiatives is critical. The current land use practices in the country are incongruent with the ecological zones. For instance, large portions of land in high potential areas have been subdivided into uneconomic parcels, while some parts of land in the medium and low potential areas are rapidly being converted into agriculture, despite the fragile environment they are located in.

The Kenya Vision 2030 aspires for the country firmly interconnected through a network of roads, railways, ports, airports, water and sanitation facilities and telecommunications.

According to Vision 2030, Kenya is a water scarce country. The economic and social developments anticipated by Vision 2030 will require more high quality water supplies than at present.

The country, therefore, aims to conserve water sources and start new ways of harvesting and using rain and underground water. The 2030 Vision for water and sanitation is to ensure that improved water and sanitation are available and accessible to all.

4.2.3 State of the Environment Report 2010 (SoE)

Chapter 4 states that Kenya is home to five hot spots of globally important biodiversity and 61 important bird areas (IBAs). Kenya's known biodiversity assets include 7,000 plants, 25,000 invertebrates (21,575 of which are insects), 1 133 birds, 315 mammals, 191 reptiles, 180 freshwater fish, 692 marine and brackish fish, 88 amphibians and about 2 000 species of fungi and bacteria. The Country is ranked third in Africa in terms of mammalian species' richness with 14 of these species being endemic to the country. The country is famous for its diverse assemblage of large mammals like the African elephant (*Loxodonta africana*), black rhino (*Diceros bicornis*), leopard (*Panthera pardus*), buffalo (*Syncerus cafer*) and African lion (*Panthera leo*) (NEMA 2009a).

Of the 7,000 plant species occurring in Kenya, 146 species have been assessed according to the IUCN Threat Criteria (2008) and 103 have been categorized as being threatened (critically endangered, endangered or vulnerable). Although the country's flora numbers have shot up due to the influx of invasive alien species, the invasive species pose a major threat to indigenous biodiversity.

In order to effectively stem the loss of plant populations and the associated genetic diversity, the country should prioritize development of a national plant conservation strategy.

4.2.4 National Policy on Water Resources Management and Development

The National Policy on Water Resources Management and Development (Sessional Paper No. 1 of 1999) was established with an objective to preserve, conserve and protect available water resources and allocate it in a sustainable rational and economic way. It also desires to supply water of good quality and in sufficient quantities to meet the various water needs while ensuring safe disposal of wastewater and environmental protection. The policy focuses on streamlining provision of water for domestic use, agriculture, livestock development and industrial utilization with a view to realizing the goals of the Millennium Development Goals (MDGs) as well as Vision 2030. To achieve these goals, water supply (through increased household connections and developing other sources) and improved sanitation is required in addition to interventions in capacity building and institutional reforms.

In addition, the policy provides for charging levies on waste water on quantity and quality (similar to polluter-pays-principle) in which case those contaminating water are required to meet the appropriate cost on remediation, though the necessary mechanisms for the implementation of this principle have not been fully established under the relevant Acts. However, the policy provides for establishment of standards to protect the water bodies receiving wastewater, a process that is on-going.

4.2.5 Sessional Paper No. 6 of 1999 on Environment and Sustainable Development

Among the key objectives of the Sessional Paper No. 6 of 1999 on Environment and Sustainable Development (1993) are;

- (i) To ensure that from the onset, all development policies, programs and projects take environmental considerations into account,
- (ii) To ensure that an independent environmental impact assessment (EIA) report is prepared for any development before implementation,
- (iii) To ensure that effluent treatment standards which will conform to acceptable health standards.

Under this paper, broad categories of development issues have been covered that require sustainable approach. These issues include the waste management and human settlement sectors. The policy recommends the need for enhanced reuse/recycling of residues including wastewater and increased public awareness raising and appreciation of clean environment as well as the participation of stakeholders in the management of wastes within their localities. Regarding human settlement, the paper encourages better planning in both rural and urban areas and provision of basic needs such as water, drainage and waste disposal facilities among others for decent housing of every family.

4.2.6 The Land Policy

To restore the environmental integrity the government shall introduce incentives and encourage use of technology and scientific methods for soil conservation and maintain

beaches at high and low water marks and put in place measures to control beach erosion. Fragile ecosystems shall be managed and protected by developing a comprehensive land use policy bearing in mind the needs of the surrounding communities. Zoning of catchment areas to protect them from further degradation and establishing participatory mechanisms for sustainable management of fragile ecosystems will also be done. It will also develop procedures for co-management and rehabilitation of forest resources while recognizing traditional management systems and sharing of benefits with contiguous communities and individuals. Lastly all the national parks, game reserves, islands, front row beaches and all areas hosting fragile biodiversity are declared as fragile ecosystems.

Conservation and sustainable management of land based natural resources. The sustainable management of land-based natural resources depends largely on the governance system that defines the relationships between people, and between people and resources. To achieve an integrated approach to management of land based natural resources, all policies, regulations and laws dealing with these resources shall be harmonized with the framework established by the Environmental Management and Coordination Act (EMCA1999).

4.2.7 Culture Heritage Policy

To this end, the *Culture Heritage policy* has led to the *Draft Culture Bill* which seeks to address art and cultural history. The *Draft Bill* makes two broad distinctions in Traditional Knowledge (TK) and Expressions of folklore (EF). Although the draft offers definitions for each of these as follows:-

“Traditional knowledge” shall refer to any knowledge originating from a local or traditional community that is the result of intellectual activity and insight in a traditional context, including know-how, skills, innovations, practices and learning, where the knowledge is embodied in the traditional lifestyle of a community, or contained in the codified knowledge systems passed on from one generation to another. The term shall not be limited to a specific technical field, and may include agricultural, environmental or medical knowledge, and knowledge associated with genetic resources.

“Expressions of folklore” are any forms, whether tangible or intangible, in which traditional culture and knowledge are expressed, appear or are manifested, and comprise the following forms of expressions or combinations thereof:

- Verbal expressions, such as but not limited to stories, epics, legends, poetry, riddles and other narratives; words, signs, names, and symbols;
- Musical expressions, such as but not limited to songs and instrumental music;
- Expressions by movement, such as but not limited to dances, plays, rituals and other performances; whether or not reduced to a material form;
- Tangible expressions, such as productions of art, in particular, drawings, designs, paintings (including body-painting), carvings, sculptures, pottery, terracotta, mosaic, woodwork, metal ware, jewellery, basketry, needlework, textiles, glassware, carpets, costumes; handicrafts; musical instruments; and architectural forms;

•

4.2.8 Guidelines for Prevention and Control of Soil Erosion in Road Works

The guidelines provide brief introductions on the planning, costing and construction of soil and water conservation structures commonly used in rural road infrastructure delivery. The guidelines present illustrations real life examples and work methodologies that assist engineers and contractors to develop effective construction and supervision techniques, on the prevention and control of soil erosion in road works.

The guidelines provide basic information on techniques for the identification and assessment of challenges and planning of mitigation measures related to erosion control works. The guidelines also provide tips on, among others:

- The design and construction of waterways and soil erosion control measures in the road drainage systems
- Soil erosion control measures needed in the upper and lower catchment areas to reduce soil erosion and mitigate against anticipated damages from the road drainage discharge
- Some solutions for soil erosion control on road sections with specific conditions not catered for in standard designs,
- The use of Vetiver grass to stabilize and heal erosion damages, and
- Costing of works related to prevention and control of soil erosion

The Guidelines have been developed primarily to benefit Engineers and Technicians, Contractors and their Supervisors, Consultants and other potential users involved in road works that are often not aware of the extent of damages caused by uncontrolled runoff from the road servitude. Established Contractors, Professional Engineers, District Agricultural Officers, Environmentalists, Programme Managers and Planners may also use these guidelines as a reference for some of their planning, design and supervision works.

These guidelines are intended to introduce basic soil and water conservation principles and techniques, related to road works. They are by no means exhaustive.

Mitigation measures proposed in this report for mitigation of soil erosion impacts have borrowed from these guidelines.

4.2.9 Environmental Guidelines for Roads and Bridges, 2010

The Environmental guidelines for roads and bridges provide detailed analysis of environmental issues arising from road works along with mitigation measures that have been used successfully in national and international contexts. The guidelines identify the direct and indirect effects from road works on the biophysical environment – land, water, air, vegetation, etc. as well as the socio-economic and cultural environments for instance, public health, welfare and safety and valued traditions from the present and past.

The guidelines underscore the importance of public consultations and participation in all aspects of road transportation development, thereby ensuring accountability, fairness and sustainability.

However, the guidelines do not address environmental impacts from road transport, including:

- Vehicle emissions that degrade air quality, e.g. Carbon dioxide, ozone, nitrous oxides etc.;
- Road safety issues that arise from unsafe road designs, failure to correct black spots, etc.;
- Vehicle inspections that require repairs to ensure road-worthiness for all transport modes;
- Passenger safety viz. Use of seat belts; and
- Vehicle overloading.

Environmental guidelines for roads and bridges, 2010 cover the following guidelines for activities that can affect the water quality:

- Contractor camp guidelines;
- Site preparation guidelines;
- Earthworks guidelines;
- Drainage guidelines;
- Borrow pit guidelines;
- Rock quarries guidelines;
- Sand sources guidelines;

4.3 NEMA COMPLIANCE

The government established the National Environmental Management Authority (NEMA) as the supreme regulatory and advisory bodies on environmental management in Kenya under EMCA 1999. NEMA is charged with the responsibility of coordinating and supervising the various environmental management activities being undertaken by other statutory organs. NEMA also ensures that environmental management is integrated into development policies, programmes, plans and projects.

4.4 SECTORAL INTEGRATION

This integration encourages provision of sustainable development and a healthy environment to all Kenyans. The key functions of NEMA through the NEC include policy direction, setting national goals and objectives and determining policies and priorities for the protection of the environment, promotion of cooperation among public departments, local authorities, private sector, non-governmental organizations and such other organizations engaged in environmental protection programs and performing such other functions as contained in the act.

Other stakeholder authorities include Ministries of Water Resources and Irrigation, Agriculture, Environment and Natural Resources, Tourism and Wildlife, Lands and Settlement, Social and Cultural Services, Livestock as well as the Provincial Administration. The Kenya Wildlife Services is perhaps the ultimate authority over the wildlife management and works closely with the communities in respect of interactions of wildlife and the operations of water works.

4.4.1 Project Institutional Management Structure

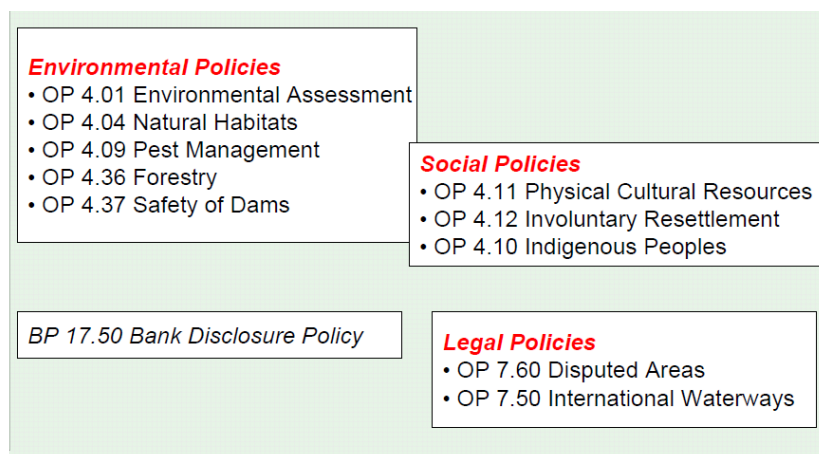
The World Bank – The Financier

The objectives of the World Bank Safeguard Policies are to:-

- Ensure that Environmental and Social issues are evaluated in decision making;
- Reduce and manage Risk of project/program;
- Provide a mechanism for Consultation and Disclosure of Information

Safeguard Policies are mechanisms for integration of Environmental issues into decision making, a set of specialized tools to improve development and Support participatory approaches and transparency.

These can be summarized as Sustainable Development. The safeguard policies are broadly summarised as follows:-



The Safeguard Policies apply to investment lending and sectoral adjustment lending. As such, the World Bank requires compliance with the Safeguard Policies as a responsibility of borrowers whose project they have financed as in the case for this project. The World Bank however recommends increased use of national environmental and social assessment systems

By virtue of its scope being a Class A road, the potential impacts place the project in Category “A” (potentially large impacts) under the World Bank categorization of projects based on likely adverse impacts.

KENHA – The Employer

KENHA will take the lead on execution of project activities (including preparation of tender and design documents, technical supervision of works, and contract management as well as planning, coordination and reporting for all project activities.

As a World Bank borrower, the project will be subjected to compliance with the World Bank Safeguard Policies on Environmental and Social issues.

Some of the relevant KENHA activities will be to:

- Provide an Environmental and Social Liaison Officer
- Maintain supervision services on the ESMP generated in this report.
- Conduct Annual Environmental Audits
- Keep up to-date records of all happenings of an environmental nature

Supervising Consulting Firm

KENHA will achieve these objectives through the appointed Supervising Consulting Firm who will have the relevant national and international experience.

The supervisor will ensure effective implementation of the ESMP. It is expected that the supervisor engages the services of an Environmental Expert who should in return understand the details of the recommendations on environment management and especially the proposed action plans, timeframes and expected targets of the ESMP. The Environmental Supervisory Expert should be the Liaison Person between the Contractor and KENHA on the implementation of environmental concerns as well as issues of social nature associated with the project.

The Contractor

The contractor will be required to establish an environmental office to continuously advise on environmental components of the project implementation. Elements in the Environmental and Social Management Plan are expected to be integrated in the project through the supervising environmental expert. The environmental officer of the contractor is also expected to fully understand the engineering and management aspects of the project for effective coordination of relevant issues.

4.5 THE WORLD BANK SAFEGUARD POLICIES

The objective of the World Bank's environmental and social safeguard policies is to prevent and mitigate undue harm to people and their environment in the development process. These policies provide guidelines for Bank and borrower staff in the identification, preparation, and implementation of programs and projects. Operational policies have often provided a platform for the participation of stakeholders in project design and have been an important instrument for building ownership among local populations.

4.5.1 Operational Policy (OP) 4.01-Environmental Assessment

The environmental assessment process provides insights to ascertain the applicability of other WB safeguard policies to specific projects. This is especially the case for the policies on natural habitats, pest management, and physical cultural resources that are typically considered within the EA process. The policy describes an environmental assessment (EA) process for the proposed project. The breadth, depth, and type of analysis of the EA process depend on the nature, scale, and potential environmental impact of the proposed project. The policy favors preventive measures over mitigatory or compensatory measures, whenever feasible.

The operational principles of the policy require the environmental assessment process to undertake the following:

- Evaluate adequacy of existing legal and institution frameworks, including applicable international environmental agreements. This policy aims to ensure that projects contravening the agreements are not financed.
- Stakeholder consultation before and during project implementation.
- Engage service of independent experts to undertake the environmental assessment.
- Provide measures to link the environmental process and findings with studies of economics, financial, institutional, social and technical analysis of the proposed project.
- Develop programmes for strengthening of institutional capacity in environmental management.

The requirements of the policy are similar to those of EMCA, which aim to ensure sustainable project implementation. Most of the requirements of this safeguard policy have been responded to in this report, by evaluating the impact of the project, its alternatives, existing legislative framework and, conducting public consultations and by proposing mitigation measures for the potential impacts identified.

4.5.2 OP 4.11-Physical Cultural Resources

This policy guides in preserving physical cultural resources and helps reduce chances of their destruction or damage. The policy considers Physical Cultural Resources (PCR) to be resources of archeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic or other cultural significance.

The policy is triggered by this project as during the study there were no observed physical or cultural resources to be affected by the project. Nonetheless the Contractor is responsible for familiarizing themselves with the following “Chance Finds Procedures”, in case culturally valuable materials are uncovered during excavation. Sample procedures are provided in Annex 1.

4.5.3 OP 4.12- Involuntary Resettlement

The objective of this policy is to avoid where feasible, or minimize, exploring all viable alternative project designs, to avoid resettlement. This policy is triggered in situations involving involuntary taking of land and property for purposes of re-alignments and RoW preservation. The policy aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts.

This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by (a) the involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) loss of assets or access to assets, or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or (b) the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons.

The policy prescribes compensation and other resettlement measures to achieve its objectives and requires that borrowers prepare adequate resettlement planning instruments prior to project appraisal of proposed projects. The objective of this policy to avoid where feasible, or minimize, exploring all viable alternative project designs, to avoid resettlement.

The policy requires the displaced persons and their communities, and any host communities receiving them, are provided timely and relevant information, consulted on resettlement options, and offered opportunities to participate in planning, implementing, and monitoring resettlement. Appropriate and accessible grievance mechanisms are established for these groups. In new resettlement sites or host communities, infrastructure and public services are provided as necessary to improve, restore, or maintain accessibility and levels of service for the displaced persons and host communities.

This policy will be triggered as the project causes the involuntary taking of land and other assets resulting in:

- 1) Relocation or loss of shelter;
- 2) Loss of assets or access to assets;
- 3) Loss of income sources or means of livelihood, whether or not the affected persons must move to another location;
- 4) Loss of land.

4.5.4 OP 4.04 - Natural Habitats

The policy seeks to ensure that World Bank-supported infrastructure and other development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products which natural habitats provide to human society. The policy strictly limits the circumstances under which any Bank-supported project can damage natural habitats (land and water areas where most of the native plant and animal species are still present).

4.5.5 OP 4.10 - Indigenous Peoples

This policy contributes to the Bank's mission of poverty reduction and sustainable development by ensuring that the development process fully respects the dignity, human rights, economies, and cultures of Indigenous Peoples. For all projects that are proposed for Bank financing and affect Indigenous peoples. The Bank requires the borrower to engage in a process of free, prior, and informed consultation. The provide financing only where free, prior, and informed consultation results in broad community support to the project by the affected Indigenous Peoples. Such Bank-financed projects include measures to (a) avoid potentially adverse effects on the Indigenous Peoples' communities; or (b) when avoidance is not feasible, minimize, mitigate, or compensate for such effects. Bank-financed projects are also designed to ensure that the Indigenous Peoples receive social and economic benefits that are culturally appropriate and gender and inter-generationally inclusive.

4.5.6 OP 4.36 - Forests

OP 4.36 applies to all World Bank investment operations that potentially have an impact on forests, regardless of whether they are specific forest sector investments. The objective of OP 4.36 is to assist clients to harness the potential of forests to reduce poverty in a sustainable manner, to effectively integrate forests into sustainable economic development, and to protect the vital local and global environmental services and values of forests.

The World Bank assists clients with the establishment of environmentally appropriate socially beneficial, and economically viable forest plantations to help meet growing demands for forest goods and services.

4.5.7 World Bank Policy on Access to Information

The World Bank Policy on Access to Information sets out the policy of the World Bank on public access to information in its possession. This Policy supersedes the World Bank Policy on Disclosure of Information, and took effect on July 1, 2010. This Policy is based on five principles:

- Maximizing access to information.
- Setting out a clear list of expectations
- Safeguarding the deliberative process
- Providing clear procedures for making information available
- Recognizing requester's right to an appeals process.

In disclosing information related to member countries/borrowers in the case of documents prepared or commissioned by a member country/borrower (in this instance, safeguards assessments and plans related to environment and resettlement: OP / BP 4.01, Environmental Assessments, and OP / BP 4.12 Involuntary Resettlement) the Bank takes the approach that the Country / Borrower provides such documents to the Bank with the understanding that the Bank will make them available to the public.

4.5.8 Alignment of WB and GOK Polices relevant to this ESIA

Both the World Bank safeguards and GoK laws are generally aligned in principle and objective:

- Both require Environmental Assessment before project design and implementation (which also includes an assessment of social impacts).
- Both require public disclosure of EIA reports and stakeholder consultation during preparation.

- While OP 4.01 of World Bank stipulates different scales of EIA for different category of projects, EMCA requires EIA for all sizes of projects, which require to be scoped as applicable.
- Where EMCA requires Strategic Environmental Assessments, OP 4.01 requires that an Environmental Assessment be conducted depending on the project category while an ESMF should be prepared for municipal projects.
- EMCA recognizes other sectoral laws while WB has safeguards for specific interests.
- The Bank requires that stakeholder consultations be undertaken during planning, implementation and operation phases of the project which is equivalent to the EMCA requirements.
- Additionally, statutory annual environmental audits are required by EMCA.

4.6 OTHER RELEVANT INTERNATIONAL CONVENTIONS

4.6.1 United Nations Framework Convention on Climate Change (UNFCCC)

The Convention on Climate Change sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The Convention enjoys near universal membership, with 191 countries having ratified.

Under the Convention, governments:

- Gather and share information on greenhouse gas emissions, national policies and best practices;
- Launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and
- Co-operate in preparing for adaptation to the impacts of climate change.

The Convention entered into force on 21 March 1994. The landmark UNFCCC was opened for signature at the 1992 United Nations Conference on Environment and Development (UNCED) Conference in Rio de Janeiro (known by its popular title, the Earth Summit). On June 12, 1992, 154 nations signed the UNFCCC that upon ratification committed signatories' governments to a voluntary "non-binding aim" to reduce atmospheric concentrations of greenhouse gases with the goal of "preventing dangerous anthropogenic interference with Earth's climate system." These actions were aimed primarily at industrialized countries, with the intention of stabilizing their emissions of greenhouse gases at 1990 levels by the year 2000; and other responsibilities would be incumbent upon all UNFCCC parties. The parties agreed in general that they would recognize "common but differentiated responsibilities," with greater responsibility for reducing greenhouse gas emissions in the near term on the part of developed/industrialized countries, which were listed and identified in Annex I of the UNFCCC and thereafter referred to as "Annex I" countries.

Kenya signed the UNFCCC on 12th July 1992, ratified it on 30th August 1994 and started enforcing it on 28th November 1994.

A section of the study explores the project's contribution to climate change bearing in mind Kenya's commitment to the above convention.

CHAPTER 5. ANALYSIS OF ALTERNATIVES TO THE PROPOSED PROJECT

5.1 ANALYSIS OF ALTERNATIVES TO THE PROJECT

The project road, is a branch of the main trunk route known as the Northern Corridor linking the Kenyan port of Mombasa on the Indian Ocean to landlocked EAC countries (and large portions of D.R.Congo's hinterland that are inaccessible from the Atlantic Ocean). Specifically the project road is a link along the Mombasa - Nairobi – Nakuru – Eldoret – Lodwar – Nadapal - Juba route into South Sudan.

There are currently three (3) main road corridors into South Sudan along which trade and commerce is conducted and goods, services distributed and passengers. Almost all of South Sudan's connections with the outside world which prior to the civil war flowed northwards to Kharoum, Port Sudan and Djibouti are now through these three road corridors. In recent months (March 2012) oil exports through existing long established Sudanese pipeline routes northwards have also been halted. There is thus complete dependence on Kenyan and Ugandan road networks and their condition determines, to a large extent, the cost of South Sudan's business with the outside world.

The key transport node for all three routes is Eldoret. Within Kenya all three routes have a common itinerary: i.e. Mombasa – Nairobi – Eldoret. At Eldoret two of the three routes separate towards Uganda. They continue in common but then finally separate within Uganda. Corridor A heading from Gulu to Kaya and Corridor B heading from Gulu to Nimule.

Starting from Eldoret the Corridors are:

- (1) Corridor A: Eldoret - Malaba - Jinja - Kampala – Gulu – Kaya – Yei -Juba,
- (2) Corridor B: Eldoret - Malaba – Jinja – Kampala – Gulu – Nimule – Juba,
- (3) Corridor C: Eldoret - Kitale – Marich Pass – Lodwar – Lokichogio – Nadapal - Juba.

All three routes are in constant use. However Route (3) Kitale-Juba has been in decline for a number of years due its deteriorating condition. This trend has accelerated in recent years to the extent that large portions can be considered to have degraded to gravel road standard.

The project road is a major component section of Corridor (3). In the recent past, when road condition was much better, goods, passengers and services flowed from Kenya to Juba via Lodwar and Nadapal. The project road's international function has declined - with traffic diverting to corridors (1) and (2) above.

This is not only adverse for the international economy but for the national and regional economy and therefore the reason for its selection for rehabilitation.

5.2 ANALYSIS OF PROJECT-RELATED ALTERNATIVES

This section will analyse alternatives in terms of project site, design, and construction techniques and “no construction alternatives”

5.2.1 Project Siting

The proposed route is the only one that was originally proposed and has not gone through alterations.

The siting of the project road follows the existing alignment with minor variations where the design so demands in order to meet required design standards.

The rationale for this is that land acquisition and involuntary resettlement impacts are avoided and minimized.

5.2.2 Design alternatives

Improvement of the road to gravel standards, may be a possible design alternative compared to bitumen standards.

Maintenance of gravel roads in good motorable condition in such an area will require frequent re-gravelling. Reconstruction may also be prompted since some parts of the road will be washed away whenever it rains and failures frequent owing to the Juba bound heavy traffic.

It would also mean that the road would be impassable during the rainy season. This will result in frequent use of scarce good quality gravel resulting in removal of vegetation, borrowing and hauling materials besides the regular financial expenditure. Gravel roads are also a source of dust pollution to the surrounding environment as evidenced by the current status of this road.

Hence the proposed design of paved road to bitumen standards is the most cost effective and environmentally sustainable. If well maintained; it may not require the use of additional material in its design life.

Adequate and cost effective engineering measures have been taken to arrive at the road alignment, both vertical and horizontal, material sites and material selection, siting of the hydraulic structures and pavement design.

5.2.3 Construction Techniques

The various techniques to improve the proposed road project would involve either use of both heavy machinery or labour intensive.

Labour intensive approach alone will have certain limitations, which include inability to excavate, inability to fill up road elevation and slow progress. In addition, the population patterns in the area are such that rampant labour shortages will be experienced. From a positive perspective labour intensive techniques are environmentally friendly compared to the use of heavy machinery. In respect to the new construction and rehabilitation and in the right of the fact that this is a Class A road, use of heavy machinery are favoured to labour intensive methods for the speedy implementation of the project.

5.2.4 No Construction Alternative

The no construction alternative would imply that this Class A road, an important Section of the Northern Corridor Road, be maintained in its present state.

This decision is unfavourable if the broader objectives for the Region, National and International Economic development are to be achieved.

Traffic Growth and other economic growth forecasts in the country, the East African region and South Sudan indicate possibility of rapid growth in the Turkana County and environs especially in light of the recently discovered oil. Such growth would require commensurate development in transport infrastructure.

The proposed Road diverts traffic from the A104 road and therefore, a ‘no construction alternative’ will hurt and hamper traffic dispersion from the A104 road.

While the “no project construction’ alternative may ensure non-interference in the biodiversity, social conditions without the project will suffer as a result of inaccessibility to the rest of the country and beyond, markets, educational services and health care facilities as well as delayed exit to international borders. The “no project construction would mean that this area with great tourism and oil extraction potential will continue to be isolated. It would also mean that especially the government will continue to incur heavy maintenance costs due to tear, wear and breakdown of their vehicles. And continue to experience hampered delivery of essential services, especially security.

CHAPTER 6. SOCIO-ECONOMIC SURVEYS

6.1 STUDY METHODOLOGY

The initial Socio-economic Impact Assessment Study exercise adopted an integrated participatory approach to determine the feasibility of the proposed road development. The study assessed the current socio-economic situation under the prevailing road conditions as well as the impacts of the road improvement. The socio-economic impact assessment focused on evaluating the impacts of the road on community social and economic well-being. Identification of the anticipated impacts was determined on the basis of the social and economic baseline conditions established and information obtained from the documents reviewed. Among the broad focal areas addressed included;

- (i) Social and cultural issues (social indicators such as health and safety, cross-cutting issues of gender, poverty and HIV/AIDS, demographic aspects, land use and urban trends, Typical modes of transport, welfare indicators including education, labour force, poverty and income levels, Resettlements activities)
- (ii) Economic issues (economic activities, tourism activities, trade and industry, acquisitions and compensations)
- (iii) Administrative and institutional arrangement (development actors and their roles in the project area notably line ministries, local authorities, state corporations and religious organizations among others, local, regional and international linkages to the project area, grassroots’ administrative divisions traversed/covered by the road and Conservation institutional structures)

The steps undertaken to determine the socio-economic feasibility for the proposed road project included:

Documentary (Literature) Review

Relevant documents were reviewed to obtain information on the baseline information in the three project districts of Kapenguria, West Pokot and Turkana Central in general and the road corridor in particular. This documentary review provided understanding local micro (social and

economic) conditions, data on demographic trends, land use sizes and practices, development strategies and plans (local and national). Intensive documentary review included the area maps.

Observations and field Assessment

Detailed field observation assessment were undertaken to enable determination of socio-economic activities within the proximity of the road route. Among the broad focal areas for which observations were done included settlement patterns, pastoralism, agriculture, institutional presence, commerce, trade and industry among others.

Public Consultations

In the main, the objectives of the consultations held during the period 18 to 24 June 2012 with communities to be affected—either directly or indirectly—by improvement of the Marich Pass to Lodwar Road were threefold:

To inform the affected public about the purpose of the forthcoming project;

To discuss more specifically the realignments and ROW expansion planned to the existing Marich Pass-Lodwar Road and their consequences to occupants located on these lands; and,

To solicit the issues and concerns from the affected communities about the forthcoming road-improvement project.

Consultation Locations

Consultations were held at eight locations, namely

- Marich-Pass
- Kainuk
- Kaakong'u
- Kalemng'orok'
- Lokichar
- Kasuroi
- Lochaang'ikamatak
- Lodwar

These locations are shown on section maps that display the planned road alignment in 5-km increments. Section 1 encompasses Marich Pass to Kainuk; Section 2, Kainuk to Lokichar; and Section 3, Lokichar to Lodwar.

Settlements situated along the road are indicated to give perspective to the location of the communities consulted and to the issues and concerns voiced by the people attending the consultations. In instances where settlements are shown on the map but not included in the list of eight consultation locations, several villages have been combined into one meeting. In every instance, however, all affected communities along the project road were notified and consulted.

Data Collection and Analyses

The data to describe the study area for the Marich Pass-Lodwar Road improvement project were collected from the following target populations:

- Community consultations (baraza) ;
- Personal interviews with key stakeholders, comprising representatives of district commissioners, government department heads and civil servants, councilors, chiefs and assistant chiefs, community opinion leaders and representatives from local NGOs; and

- Affected households, which are the foremost focus of the Social Impact Assessment (SIA).

Several methodologies were employed to collect the required data, including structured checklists for community consultations; semi-structured checklists to conduct personal interviews; and, systematized questionnaires to survey affected households.

The collected data were then collated and analyzed, after which the resulting statistics were tabulated. Following data analyses, the report on social impacts was written.

6.2 DATA COLLECTION SITES

Socio-economic interviews and consultations with the project-affected population in the previous studies were carried out in the districts of Pokot Central, Turkana South and Turkana Central. A total of 280 households were surveyed in the three districts that would be affected by the road project. The majority of people to be affected were from Turkana South. The sites where data were collected and the number of survey contacts are summarized in Table 6-1.

Table 6-1: Data Collection Sites and Interview Contacts

Data Collection Site (Settlement)	District	Number	Percentage
Marich Pass	Pokot Central	30	10.7
Kainuk	Turkana South	43	15.4
Kalemng'orok	Turkana South	24	08.6
Lokichar	Turkana South	11	03.9
Kasuroi	Turkana South	23	08.2
Lochaang'ikamatak	Turkana South	19	06.8
Lochoromoit	Turkana South	54	19.6
Kimabur	Turkana South	04	01.1
Loturerei	Turkana Central	21	07.5
Lodwar	Turkana Central	51	18.2
Total		280	100.0

Since the data so obtained is relevant, these findings will be maintained.

CHAPTER 7. IDENTIFICATION OF POTENTIAL POSITIVE AND NEGATIVE IMPACTS & PROJECT RISKS

7.1 INTRODUCTION

The objectives of this Chapter was to identify and describe all potential impacts that may be brought about by the proposed project and to prioritize all immediate and future concerns and differentiate between significant and non-significant Impacts

All potential environmental and social impacts attributed to the proposed project in the KeNHA 2013 Draft ESIA Report and other impacts were reviewed and validated. These encompassed environmental, ecological and social impacts, both positive and negative, as a result of interaction between the proposed project and the environment that were likely to bring about changes in the baseline environmental and social conditions discussed in Chapter 2.

The Consultant identified, analysed and described all potential impacts that may be brought about by the proposed road Project. Such are the impacts of the proposed project on the baseline environmental and socio-economic conditions or impacts of the surrounding environment on the Project (externalities).

The impacts were differentiated between

- d) Short, medium and long-term impacts;
- e) Reversible and irreversible impacts.
- f) Significant and insignificant Impacts

In particular, the focus was on the points along the study area that have higher environmental and social risk profile, such as:

- Impacts of bridge reconstruction at Lodwar and Kainuk;
- Wildlife crossings at South Turkana National Reserve and propose a technical solution (e.g. underpasses, speed calming measures, increased monitoring during construction and operation phases, etc.), based on the data and consultations with Kenya Wildlife Service;
- Availability of resources for construction to avoid pressures on already existing resources:
- alternative water sources, with references to JICA study on ground water in Turkana;
- Alternative fuel sources to avoid excessive clearing of vegetation to serve construction camp.

These and other impacts are addressed in ensuing sections.

7.2 PROPOSED MITIGATION FOR IDENTIFIED POTENTIAL NEGATIVE IMPACTS & PROJECT RISKS

The objective of this section is to propose feasible mitigation measures for the negative impacts identified.

Feasible Mitigation Measures to the identified negative environmental and social impacts that could result from the proposed project were identified. These mitigation measures were reviewed and revised based on the outcomes of public consultations discussed in Chapter 8.

Each predicted adverse impact is evaluated to determine whether it is significant enough to warrant mitigation. This judgment of significance has been based on one or more of the following: (a) comparison with laws, regulations or accepted standards; (b) consultation with the relevant decision makers and lead agencies; (c) reference to present criteria such as protected sites, or endangered species (d) consistency with government policy objectives (e) acceptability to the local community or the general public

Later, the cost effectiveness of such mitigation measures were analysed against viable alternatives. In the event that such suitable mitigation measures were not identified, this is clearly explained.

To avoid duplication and ambiguity, the feasible mitigation is explained after the impacts in ensuing sections.

7.3 POTENTIAL IMPACTS ON POPULATION CHANGE AND MIGRATION

7.3.1 Potential Impacts on Population Characteristics

Impact 1. Population characteristics of the different community groups along the proposed route will be affected by implementation of the road project. The indigenous

communities may undergo cultural alteration as a result of the project e.g. in dressing patterns and economic activities

Impact 2. There is likely to be high levels of in-migration of various other ethnic groups and expatriates as labour and support services for construction as well as businessmen during operation. This too will alter the population characteristics of the native communities. More so with inter-marriages

Impact 3. Potential for conflict in competition for employment opportunities between indigenous communities and migrant workers

Mitigation 1. Employing as many people as possible from the locality especially unskilled workforce will help them accept skilled labour from outside. This will promote cohesion and the spirit of the project.

Mitigation 2. The contractor should source labour from the indigenous communities along the road as much as possible.

Mitigation 3. As much as employment of local communities is encouraged, Turkana and Pokots cannot be put to work on either side. The historical animosities between the two groups would be a risk. Their engagement must be judiciously designed so as to eliminate conflict.

7.3.2 Potential Impacts on Human Settlement

Impact 1. Long distances between Kapenguria through Marich Pass to Lodwar and beyond imply that small centres along the project road may grow and develop into more important rest stops for motorists, tourists and passengers in transit to and from Lodwar and even as far as Southern Sudan. This is especially the case for Kainuk and Lokichar which have the potential for further growth. In tandem with the increased importance of the centres as rest stops will be an increase in population within these centres. The increase in urban population will in turn exert increased demand on natural resources especially firewood for cooking.

Impact 2. Increased conversion of nomadic pastoralists to a more sedentary way of life is also expected within the vicinities of these centres.

7.4 POTENTIAL IMPACTS ON SOCIO-ECONOMIC ENVIRONMENT

7.4.1 Potential Impacts on Public Health

Impact 1. Potential public health and safety issues will be both directly and indirectly associated with the activities of the project. The direct impacts include effects of dust, noise and fumes from machinery and construction traffic, as well as noise and fumes from the expected increase in truck traffic along the road. Construction workers will be most pre-disposed to these direct impacts, during the construction phase.

Impact 2. Noise and vibration during both construction and operation could have impacts on health in urban centres and the rural country.

Impact 3. There is likelihood of migration of commercial sex workers to service long-distance truck operators during stop-overs and construction workers who usually are unaccompanied by their spouses. This has indirect impacts on health and safety of the project workers associated primarily with human behaviour, and this includes the potential for transmission of STDs and HIV-AIDS.

Impact 4. Another impact is related to the creation of breeding grounds for water-borne diseases such as malaria, typhoid and bilharzias; Construction activities may create water-holding ditches. Also, containers left lying around can hold water for days, creating breeding grounds for mosquitoes.

7.4.2 Potential Impacts on forms of Social Organization and Co-Operation

Impact 1. The road when upgraded will also facilitate balancing of the workload between women and men considering that men may be motivated to take over some of the tasks that are currently performed by women. Such workload includes taking produce to markets on bicycles, and carrying water using trucks and animal traction. This will improve gender parity.

Impact 2. In-migration will also affect social organization and co-operation

Mitigation 1. Introduction of measures that intercept transmission of dust and other air pollutants likely to be generated to sensitive receptors when it cannot be entirely avoided. For example Surface dressing to be done on diversion routes and materials handling site routes through populated centres especially if these sites are near sensitive receptors.

Mitigation 2. Vehicles and construction machinery to be properly maintained and to comply with relevant emission standards.

Mitigation 3. The contractor to provide protective clothing like helmets, dust masks and ear muffs to construction crew.

Mitigation 4. Construction activities to be scheduled carefully to minimize the impact of noise from construction machinery. Night time's uses of certain noisy machines, such as pile drivers and concrete vibrators, to be regulated.

Mitigation 5. Intensify awareness on HIV/AIDS by use of bill boards in market centres, through staff training, community awareness campaigns, multi-media and workshops or during community 'Barazas' along the project road.

Mitigation 6. Condom dispensers to be located in appropriate locations within the camp and the camp environs such as in public toilets in market centers and the contractor to provide VCT centers along the route in collaboration with the ministry of health.

Mitigation 7. Enlighten personnel and community about Malaria and use of mosquito nets including proper hygiene and sanitation, Proper disposal of containers and other wastes that may act as mosquito breeding grounds.

7.4.3 Potential Impacts from Improved Access

Impact 1. There'll be overall improved access with traveling across the region taking shorter time with improved comfort.

Impact 2. It is envisaged that the upgrading of the project road will improve accessibility to social amenities and markets, of importance is accessibility to health facilities for the disadvantaged in the local community especially women.

Impact 3. Improved access to better health care in less time will lead to decreased mortality rates. This coupled with improved access to vaccination services will help lower mortality rates in the region and beyond.

Impact 4. Research and patrols by KWS scientists and Wardens will be more regular and data on wildlife in the area more accessible.

7.4.4 Potential Impacts on Road Safety and Accident Rates

Impact 1. Currently, accidents are caused by poor visibility as a result of dust, especially motorists veering off the road. While this situation will be largely mitigated by the bituminization of the road surface, accidents frequency and severity due to high speeds will increase. This will affect human beings, vehicles and wildlife. There is likelihood of more human, wildlife and bird collisions leading to kills along the road since, the speed of vehicles will increase without commensurate increase in the speed of crossing

humans and wildlife. Local people in the area have lived so long without good roads that there is a lack of awareness of the dangers of fast moving vehicles.

Impact 2. There will be increased possibility for accidents between vehicles, and with non-motorized transport such as cyclists, pedestrians.

Mitigation 1. To reduce accidents, appropriate road signs and road markings to be put in place to warn drivers of safety hazards especially while approaching bends, junctions, bridges, animal crossings, schools and shopping centers.

Mitigation 2. To reduce the possibility of vehicle and animals collisions vehicle speed shall not exceed posted speed limits and animal crossing warning signs shall be installed where appropriate.

7.4.5 Impact on Change in Occupational Patterns and in Economic Activities

Impact 1. The existing poor access by people from this region to the rest of Kenya and vice versa lead to isolation, few development opportunities and shortage of employment. During construction, the project is expected to generate several direct job opportunities for both skilled and unskilled labour. The categories of job opportunities during construction are expected to attract employees both locally and beyond the project area. Aside from direct employment, there are other forms of employment that will be created such as those associated with provision of goods and services to the permanent and temporary employees.

Impact 2. Indirect jobs will be created, upon completion of the road, in the following fields: commerce and trade, transport industry, tourism and adventure safaris and livestock trade, mining activities and irrigated agriculture

Impact 3. Through recruitment of labour locally, the workers will have an opportunity to learn an array of skills that relate to road construction. This may be difficult to quantify, but is still regarded as an important positive impact.

7.4.6 Impact on Economic Environment

Impacts on National Economy

Impact 1. Kenyan economy as a whole will benefit significantly from upgrading of the major regional/ international transport arteries such as the A1 project road to South Sudan. There will be substantial multiplier effects throughout the Kenyan economy from the transport infrastructure upgrading.

Impact 2. Kenya will have complete control of the logistics and transport chain between Kenya and South Sudan after creating the new direct access to South Sudan. Presently, the main trading and transport links are between Uganda and South Sudan, although the goods may originate in Kenya or being imported or exported through Mombasa port. The value added of this trade is substantial and rapidly growing as South Sudan develops.

Impact 3. Increased opportunity for exploitation and export of recently discovered oil resources

Impacts on Local Economy

Impact 1. The more immediate beneficiaries will be transporters, traders and freight forwarders, whether located in Nairobi, Mombasa or regional centres. These activities are labour intensive and will generate substantial additional employment.

Impact 2. There exists a close relationship between transport and primary production (agriculture, animal husbandry, fishing, forestry and mining). Without transport access, much of primary production is not feasible. Availability of transport attracts not only traders and transporters, but agricultural, animal husbandry and other extension

services. Other ripple effects will be availability of veterinary services and improved livestock productivity, improvement in irrigated agricultural areas and activity and improved fishing production in Lake Turkana. This may be accompanied by market value addition from subsistence consumption through building of cold storage facilities that allow marketing of fish to major markets south of Turkana North district such as Lodwar. Such cold storage may extend to livestock production from Lodwar and beyond for markets in Kitale, Kapenguria and Eldoret.

Impact 3. Equally important, expected improvement in educational and social services as a result of improved access will bring the influence area closer at par with more developed areas of the country. Equally important, improved access does also impact educational, health and other social services, which are essential for the population to develop and benefit from the increased economic activity. For children and students there will be improved access to education facilities. School enrolment rate for all especially girls is expected to improve.

Impact 4. On completion of the project, prices of commodities such as consumer goods and agricultural inputs are expected to reduce, since transportation costs will drop and shatter monopoly by a few traders that have sustained comparatively high prices of goods and services in the project area. This will have a ripple effect of increased trade, innovation, demand, supply and productivity.

7.4.7 Potential Impacts on Regional and Food Security/Insecurity Situation

Impact 1. Banditry is associated with inaccessibility and remoteness of the area. Key security and administration personnel interviewed indicate that they foresee a decrease in banditry upon completion of the road. Currently, banditry is associated with cattle rustling and inter- and intra-community clashes, and sporadic insurgency from Uganda and Southern Sudan. Improving the road would allow rapid deployment of security forces to areas with security concerns.

Impact 2. The provision of a more efficient transport system will integrate the entire region with substantial improvement on the current security situation by aiding patrols.

Impact 3. Turkana County and adjoining areas are prone to drought and famine, including massive death of livestock. Provision of relief food and other forms of humanitarian aid is therefore common. The road is expected to aid in rapid response to such emergencies which will in turn save human lives and livestock.

Impact 4. The completion of the road to bitumen standard will enable easier and faster access and mobility, for police and military, in areas where law enforcement has been at times a problem. Ethnic tensions, amid drought and competition for access to water and pastures which regularly give rise to conflicts will be promptly dealt with.

7.5 POTENTIAL IMPACTS ON PHYSICAL INFRASTRUCTURE

7.5.1 Potential Impacts on Waste Generation

Impacts on General Wastes – Solid and liquid

Impact 1. There is a wide variety of waste generated during construction. This includes debris, domestic and human waste, timber, stones, rock, metals, paper, plastics, etc. The quantity of waste can be substantial and can be both a health hazard and be of visual intrusion. Furthermore, there is potential for contamination of soils and watercourses as a result of improper disposal of liquid and solid waste from construction activities and construction camps.

Impact 2. Within the project area, the local communities are in dire need of water containers ranging from small cans to large containers. Careless disposal of used

containers for oil, lubricants, paint, and other toxic substances may land in the hands of such individuals who will use them as water containers with grave consequences to health.

Impact 3. There is increased likelihood of littering from traffic movement during operations. This could attract wild animals as food a source increasing the risk of road kills.

A Impacts of Hazardous Wastes

Impact 1. Accidental oil spills, and petroleum products and bitumen (amongst other liquid waste) particularly in and around machinery and plant yards, base camps and areas of concentrated activities, may infiltrate into soils and cause soil pollution. This is only possible during the construction phase of the project and the impact is expected to be minor and highly localized. However, the operational phase is forecasted to have increased traffic, some of them oil tankers which might imply increase in chances for oil spills in case of accidents. This latter impact is however considered insignificant.

Impact 2. If the machinery yard, workshops and labour camps are not properly protected, wild animals, including birds could be poisoned if they drink contaminated water within the yards caused by accidental spillage of oil, petroleum products, solvents and similar category of materials.

Mitigation 1. Areas dedicated for hazardous material storage shall provide spill containment facilitate clean up through measures such as: maximum separation from sensitive features (water bodies); clear identification of the materials present; access restricted to authorized personnel and vehicles only and dedicated spill response equipment.

Mitigation 2. Storage sites for petroleum products to be secured and signs to be posted which include hazard warnings, who to contact in case of a release (spill), access restrictions and under whose authority the access is restricted will be posted.

Mitigation 3. If stored outside, containers to be labelled and products stored in weather-proof containers on spill containment pallets and under a weather-proof tarp, the contractor/spill response coordinator will monitor periodically for leaks, and check to ensure that labels are still present and legible.

Mitigation 4. All containers to be inspected daily by the Contractors. A product inventory shall be maintained by the Contractor and retained for inspection upon request by NEMA.

Mitigation 5. Provide solid waste disposal system - a waste collector, NEMA recommended waste disposal manual and a waste collection bin for each housing unit, workshop, plant, structural shelter, etc.

Mitigation 6. Waste disposal site to have a stone perimeter wall at least 1.5 m high x 7 m long x 5 m wide at a far corner to contain disposed materials from wind and runoff. Keep records of all disposal/ potential disposal locations

Mitigation 7. Hazardous materials to be stored within dedicated areas at work camps and marshalling yards in full compliance with regulatory requirements and the contractor to ensure that all waste materials at the point of construction are transported to a place of safe disposal

Mitigation 8. All applicable laws, regulations and standards for the safe use, handling, storage and disposal of hazardous waste to be followed.

7.5.2 Potential Impacts on Service Interruption

Impact 1. There are likely associated risks or impacts of disruption of services, mainly power distribution, water transmission especially in bigger centres like Lodwar and traffic flow during construction due to diversion and other activities.

Impact 2. Mobile telephony and internet services will be altered during and after construction

Impact 3. Many services and facilities (such as schools, clinics, churches etc.), will have to be expanded and upgraded to meet the needs of the incoming population. This could constitute a significant benefit for the local community.

Mitigation 1. Provide appropriate signage to warn motorists and other road users of the construction activities, diversion routes to ward off traffic accidents

Mitigation 2. In the event that delivery trucks damage parts of the road, the contractor should repair the spots immediately.

Mitigation 3. The contractor should communicate any intended disruption of services to enable the people to prepare.

7.5.3 Potential Impacts on Mechanical Disturbance

Impact 1. Construction activities are associated with breaking of the hard pan on the existing corridor and opening up wider areas to ingress of stormwater to underlying layers. This will have the impact of robust vegetation growth for forest species and worse, *Prosopis*.

Impact 2. The project area receives low rainfall, which is erratic in most cases. Ordinarily, therefore, soil erosion is not a regular occurrence in the project area. However, occasional torrential rains or storms do occur, and this can cause severe soil erosion especially where ground cover is poor, as is the case in most of the project area. Soil erosion arising from road construction related activity could be both a short and long-term impact depending on whether measures are put in place to arrest it. The rate of soil erosion tends to increase with time. Therefore initially soil erosion will have a small magnitude effect, but once gully erosion has been initiated then the impact will have a progressively larger magnitude effect, following repeated episodes of torrential rains.

Mitigation 1. Encourage use of *Prosopis* for firewood, poles and for fencing by the construction workers and local community according to Kenya Wildlife Service.

Mitigation 2. Keep land clearance to a minimum and wherever possible avoid clearing areas of highly erodible soils and steep slopes which are prone to erosion.

7.5.4 Potential Impacts on Removal of Structure Sites

Impact 1. There is likelihood of demolition of existing structures where the proposed alignment affects them. Even though the magnitude of these demolitions is not expected to be major, such demolitions will lead to generation of large amounts of solid wastes.

Mitigation 1. The contractor to communicate with the owners on the demolition of structures that will be affected along the road.

Mitigation 2. Ensure that solid waste materials are properly disposed to suitable locations.

7.5.5 Potential Impacts on Regional Drainage

Impact 1. Alteration of natural drainage;

Impact 2. The road is an existing road, hence the impact of the existing road as a barrier to natural drainage can be observed. It is intended that the present effects of the road will be studied, as part of the overall design process, to improve drainage in general.

Provision has been made in the design for bridges, culverts, cut-off drains and side drains to improve drainage.

Impact 3. Accumulation and erosion of overburden and topsoil into roadside drainages, and onto peoples' farms and business premises and pollution of rivers

Impact 4. Likelihood of stormwater redirection into people's property during construction and operation

Mitigation 1. Where soil is stripped from a work site, it will be stockpiled in a location where natural drainage will not be impeded. This soil will be re used upon completion of construction activities.

Mitigation 2. Run-off to be diverted away from erosion susceptible slopes to prevent further site degradation.

Mitigation 3. Install soil erosion control devices e.g., scour checks, gabions

Mitigation 4. Side drains to be lined with concrete or stone pitched.

Mitigation 5. Ensure that provision that has been made in the design for bridges, culverts, cut-off drains and side drains to improve drainage are adhered to.

7.6 POTENTIAL IMPACTS ON FLORA AND FAUNA; - BIOLOGICAL ENVIRONMENT

7.6.1 Potential Impacts on Biota and Biodiversity Loss

The Consultant consulted with KWS at the headquarters in Nairobi, and in the local project area in Lodwar, Nasolot National Reserve and Kainuk Forest in order to realise a sustainable approach to the management of the wildlife during planning, construction and operation phases of the project. The recommendations are hereby incorporated in this ESIA report.

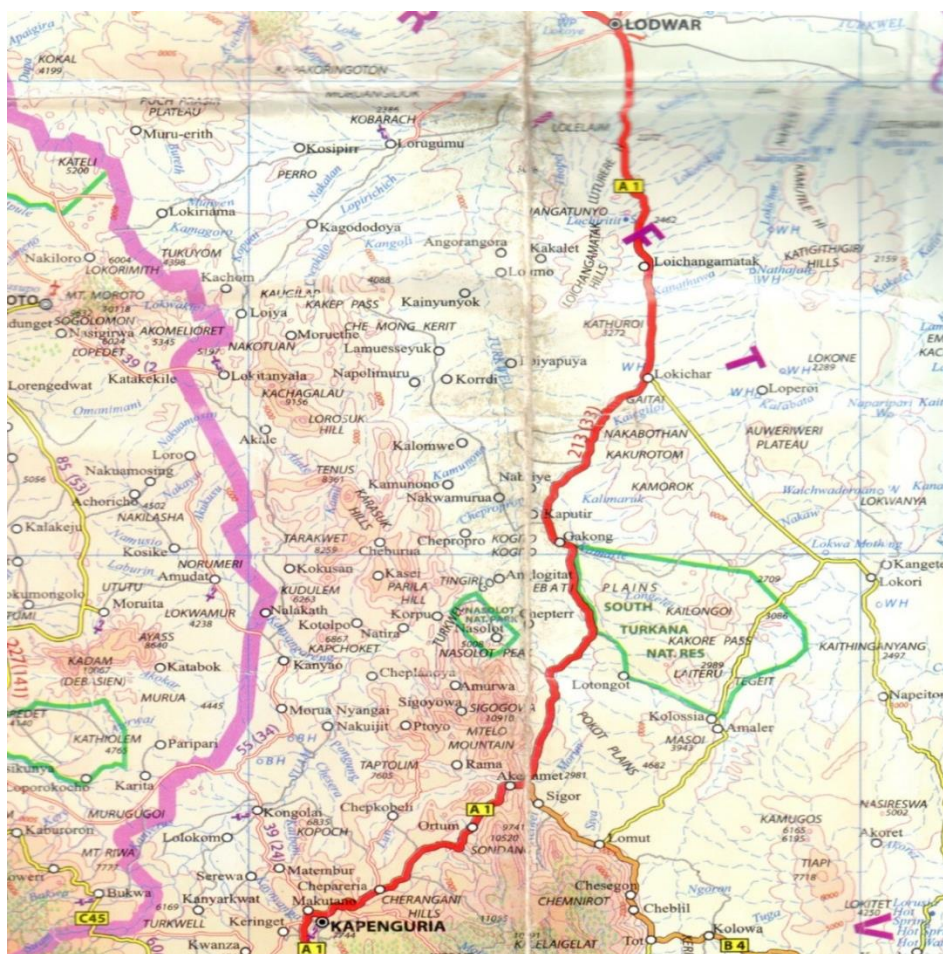


Figure 7-1: Location map showing some of the protected wildlife Habitats Traversed

There is less wildlife in the project area compared to similar environments across Kenya. This is partly because over the years, wildlife has been killed for a variety of reasons including bush meat. In addition, wildlife habitats have been degraded through high demand for charcoal and fuel wood especially to supply the refugee camps. However, there is still wildlife that disperses across the project area, some from as far as South Turkana Nature Reserve. This reserves are home to lions, cheetahs, zebras, hyenas, elephants, gazelles and dik diks, Elephants, Buffaloes, and Leopards, paangorine (amadillo) Advaak and anthill.

There is also the Nasolot Natural Reserve on border between Turkana South and Pokot Central Districts.

The small population and diversity of wildlife can be affected as follows:

Type of impact	Nature of impact	Most vulnerable species
The construction workers can provide a ready market for game meat. The workers may, by themselves, not be involved in hunting game for food, but the local community may entice them with cheap game meat. This could potentially affect the wildlife through reduction in their population.	Indirect impact Within 5 km radius of construction Camps	Ungulates such as antelopes, gazelles and avian species, notably guinea fowls
Direct impact through blasting at quarries; noise and vibration occasioned by machinery and construction workers can affect their feeding habits and even migration patterns. Some animals can be more aggressive in the face of such sudden noise and vibration.	Direct but sporadic impact. Within 2 km of quarry sites	All species
Cutting down sanctuary trees (trees above 5 m height with well-developed canopy) along the road to pave way for construction. These trees act as perching and nesting sites for a wide range of bird species. They also provide shade for mammals especially ungulates.	Direct impact and specific to where large trees would be felled.	Birds, especially weaver birds, ungulates
Death of wildlife occasioned by construction traffic.	Direct, especially in the evenings and early morning. Likely to be very low	Various species
Accidental spills of oil, petroleum products, solvents, bitumen, etc.	Direct impact	Birds, wild dogs, ruminants
Interruption of wildlife migration corridors especially elephants - local knowledge of KFS staff was used to identify elephant crossing points – wildlife crossings should be installed at these locations.	bridge areas, designed with truck size clearance are suitable locations to consider for wildlife underpasses-when the river is dry that is an under pass However, elephants were identified to cross at a different location	
Road kills will increase – speeds increase and not so animals movement speed for both large and small mammals		

Currently, KWS suffers information deficiency due to security and access challenges to conduct patrols and animal counts	KWS to increase ground patrols and research activities and continually monitor road kills oversee the road is improved	
--	--	--

Among the mitigation measures earlier proposed, are:

- Mitigation 1.* The Contractor(s) during the project construction to develop a workers code of conduct to ensure that their workers do not consume game meat from the area, whether supplied by the locals or killed by themselves.
- Mitigation 2.* Awareness creation to be carried out amongst the local people and the construction workers on the laws that relate to wildlife hunting and consumption, and the importance of wildlife as a natural resource and heritage.
- Mitigation 3.* The local administration to be involved in creating awareness amongst the local people, that killing game is illegal.
- Mitigation 4.* Empty containers and other waste to be managed carefully to avoid exposing wildlife to possible poisoning.
- Mitigation 5.* During operation, a programmatic approach is proposed, where greater surveillance by KWS and involvement of local communities is instituted to counteract possibilities for new trade in game trophies, skins and live animals.

7.6.2 Potential Impacts on Vegetation Clearance

- Impact 1.* The potential impact is considered low and is both short and long-term. The most important aspect of the project that may impact on vegetation is the need for cooking energy by the construction workers as opposed to clearing during construction. Workers may be tempted to cut down trees for firewood within the neighbourhood of the Contractor’s camp. The predominantly arid environment is not conducive for plant growth; hence the tree growth is extremely slow. The critical impact, therefore relates to the inability of the area to naturally regenerate after harvesting of the mature trees. This impact may be spread within about 5 - 10 km radius of any given camp makes its potential impact moderate in most cases, but could be high around larger camps.
- Impact 2.* On the other hand, the workers by themselves may not harvest trees but the locals may see an opportunity for income generation by selling firewood and/or charcoal to the contractors.
- Impact 3.* The vegetation cover in the project area is very low and this is even lower along the road corridor due to frequent disturbances. Nonetheless there is substantial tree cover along the sections through Marich Pass, Kainuk, Lokichar and Lodwar towns. Construction of the road will be accompanied by clearance of vegetation along the roadside, clearance for construction of access roads and other civil works. Impact of the project on vegetation is thus very specific to the site of the activities and therefore localized.
- Impact 4.* Additional vegetation clearance at quarries and borrow pits, and contractor camp sites will also contribute to overall vegetation loss. However, the diversity of natural vegetation in the project area is low, suggesting that vegetation clearance will not cause loss of rare species, species of medicinal and of major commercial values. No endangered trees or other plant species that are endemic to the area would be affected.
 - Mitigation 1.* Provide appropriate signage to warn motorists and other road users of the construction activities, diversion routes to ward off traffic accidents
 - Mitigation 2.* In the event that delivery trucks damage parts of the road, the contractor should repair the spots immediately.

Mitigation 3. The contractor should communicate any intended disruption of services to enable the people to prepare.

7.6.3 Impact on Land Use/Land Cover and Change in Designated Land-Use

Impact 1. A significant land use change likely to develop as a result of the project is urbanization. Some currently existing market centres may rapidly develop in to vibrant town centres to provide support services for the revamped transportation corridors e.g. overnight, accommodation, filling stations, markets, money transfers.

Impact 2. Such sporadic development may affect designated land use in some urban and other centres. Some pastoral land may convert to residential or commercial, even agricultural.

Impact 3. The disturbance of the land together with importation of construction materials from other regions will introduce new animal and plant species, some of which could be invasive and change the land cover of the project sites.

Impact 4. Urbanization and immigration is expected to increase the population in the area, due to opportunities that shall have been opened up, especially livestock trade, tourism, improved transport sector and others. This increase in population puts pressure on land use, land cover and change in designated land-use.

Impact 5. The project is likely to lead to direct land-take of privately or community owned land occasioning involuntary loss of access, use or even partial or full displacement and relocation of households, structures or other assets.

Mitigation 1. Encourage use of Prosopis for firewood, poles and for fencing by the construction workers and local community according to Kenya Wildlife Service.

Mitigation 2. Keep land clearance to a minimum and wherever possible avoid clearing areas of highly erodible soils and steep slopes which are prone to erosion.

7.6.4 Impact on Sensitive Ecosystems

Impact 1. The project location and implementation may affect and change wildlife migration corridors, especially the elephant.

Impact 2. Introduction of project-related structures e.g. bridges and animal crossings may introduce new sensitive ecosystems

Mitigation 1. The contractor to communicate with the owners on the demolition of structures that will be affected along the road.

Mitigation 2. Ensure that solid waste materials are properly disposed to suitable locations.

7.6.5 Impact on Habitat Change and Habitat Loss

Impact 1. The vegetation clearance activity will lead to interference with habitats causing total loss or change and leading to the destruction of bio-diversity.

Impact 2. Excavation and movement of earthworks will interference with bio-diversity on borrows sites, main road, and diversion and haulage routes.

Mitigation 1. Ensure that provision that has been made in the design for bridges, culverts, cut-off drains and side drains to improve drainage are adhered to.

7.7 IMPACTS ON AIR QUALITY

7.7.1 Impact on Air Quality due to Construction and Operation

Impact 1. There is expected reduction of dust pollution from the unpaved road once the road is rehabilitated. The existing road is currently gravel surfaced, and the passing of vehicles, coupled with strong winds, often generates high levels of dust which can affect

the health of travellers and those either residing or doing business along the road. During public consultations, some participants indicated that currently visibility can be poor due to the heavy dust clouds generated by traffic. It was observed that this has caused accidents, especially motorists veering off the road. This situation will be fully mitigated by the bituminization of the road surface.

Impact 2. Passage of increased number of vehicular traffic during construction and operation will introduce higher levels of other pollutants such as emissions of exhaust fumes, lead and associated gases such as carbon monoxide, hydrocarbons, and nitrous oxides from vehicles entering and exiting the site along with the operation of necessary equipment. These will need to be monitored over time.

Impact 3. Other dust pollution is expected to emanate from material extraction and stockpiling sites such as quarry sites, borrow sites, hard stone crusher site and sand as well as ballast stockpiles during hours of active operation.

Impact 4. This sustained high level of dust could impact negatively on various groups of the people who spend considerable time within the area adjacent to the road, such as construction workers and road side businesses. Construction workers at the road construction sites, quarries and borrow pits will be exposed to high dust levels under hot and dry environmental conditions for many hours each day.. Problem is, these impacts may not be immediately attributable to dust pollution, but are long term with very serious health implications on the workers.

Mitigation 1. Surface dressing to be done on diversion routes and materials handling site routes through populated centers especially if these sites are near sensitive receptors to reduce generation of dust.

Mitigation 2. Use Respiratory Protective Equipment (RPE) like masks on construction crew and all visitors to the site

Mitigation 3. Use equipment fitted with water suppression to minimize the amount of dust

Mitigation 4. Vehicles and construction machinery to be properly maintained and to comply with relevant emission standards.

Mitigation 5. The contractor to provide protective clothing like, dust masks to construction crew.

7.7.2 Impact on Ambient Noise Level

Impact 1. Noise generation and vibrations in an otherwise quiet environment from construction machinery and activities could adversely affect the local people as well as wildlife (sensitive receptors). Activities associated with road construction will cause increase in noise levels in the vicinity of the construction sites. This impact can be of concern at construction sites within the larger urban environments of Lodwar, Lokichar, Kainuk and Marich Pass.

Impact 2. These sensitive receptors could be affected in the long-term when truck traffic increases over time. The operation and maintenance phases of the project will be accompanied by significant increases in traffic, much of which will be composed of heavy and medium goods vehicles, which will in turn increase noise levels significantly along the road.

Impact 3. At quarries, explosives will be used for rock blasting. This will cause noise and vibrations in the vicinity of the site, way beyond ambient noise levels in addition to certain degrees of explosion being destructive to housing and other structures.

Mitigation 1. Noise mitigation may be achieved through a variety of measures that modify the noise source, noise path, or receiver characteristics. Noise barriers will not be economically practical since they are not cost effective for isolated

individual rural residences. To be effective, noise barriers must be continuous, without openings for driveways or access.

Mitigation 2. Construction activities to be scheduled carefully to minimize the impact of noise from construction machinery. Night time's uses of certain noisy machines, such as pile drivers and concrete vibrators, will be regulated.

Mitigation 3. The location and operation of asphalt batch plants to be sited as far as possible from sensitive noise receptors, such as shopping centres, health facilities and learning institutions.

Mitigation 4. Contractor to agree noise limits/ noise control stations with NEMA and obtain a Construction Noise Permit prior to the commencement of construction work

Mitigation 5. Positioning Powered Mechanical Equipment (PME) so that noise is directed away from sensitive areas;

Mitigation 6. Harmonized sleeping time

Mitigation 7. Contractor to prepare for approval by KENHA a Health Management Plan (HMP) detailing means to protect site workers and community from excessive noise and vibrations

Mitigation 8. Special care should be taken when construction is taking place near sensitive receptors such as schools and hospitals.

Mitigation 9. To the extent possible, heavy vehicles should not be used at night across populated areas especially Lodwar

Mitigation 10. Ensure that construction equipment is operating optimally and with operational noise mufflers where possible.

7.7.3 Changes in Micro-Climate

Impact 1. Potential for changes in micro-climate exists from borrow areas that are not rehabilitated.

Mitigation 1. Enforce rehabilitation for borrow sites by the contractors prior to closure of the contract.

7.8 WATER AND AQUATIC ENVIRONMENT

7.8.1 Impact due to Change in Hydrological Cycle

Impact 1. Destruction or alteration of local vegetation is likely to affect the hydrological cycle

Impact 2. Similarly, the sinking of boreholes to extract water for construction has similar impact

Mitigation 1. Acquire all the relevant licenses prior to drilling bore holes that tap deep aquifers and get Government approval, through an abstraction permit from the Ministry of Water development through the Water Resources Management Authority (WRMA), and a license from NEMA.

7.8.2 Impact on Water Quality (Surface/Ground)

Impact 1. Construction activities such as earthworks could lead to erosion and alteration of physical properties of surface and underground water resources

Impact 2. Oil spills, bitumen and greases generation by construction traffic as well as traffic during operation could lead to pollution by altering the chemical and biological characteristics of surface and ground water resources

Impact 3. There is potential for contamination of water resources as a result of improper disposal of liquid and solid waste from construction activities and construction camps.

Mitigation 1. Acquire all the relevant licenses prior to drilling bore holes that tap deep aquifers and get Government approval, through an abstraction permit from the Ministry of Water development through the Water Resources Management Authority (WRMA), and a license from NEMA.

Mitigation 2. Areas dedicated for hazardous material storage shall provide spill containment and facilitate clean up through measures such as: maximum separation from sensitive features (water bodies); clear identification of the materials present; access restricted to authorized personnel and vehicles only and dedicated spill response equipment

Mitigation 3. Provide solid and liquid waste disposal system - a waste collector, NEMA recommended waste disposal manual and a waste collection bin for each housing unit, workshop, plant, structural shelter.

7.8.3 Impact on Ground Water Levels and Recharge Potential

Impact 1. Over-extraction of water for construction purposes beyond the yield levels of the ground resources could affect the recharge potential.

Impact 2. Similarly, the distance between boreholes; if too close i.e. less than 800m radius apart.

Mitigation 1. Acquire all the relevant licenses prior to drilling bore holes that tap deep aquifers and get Government approval, through an abstraction permit from the Ministry of Water development through the Water Resources Management Authority (WRMA), and a license from NEMA.

7.8.4 Impact on Drainage System and Existing Water Bodies

Impact 1. Issues relating to access to water often lead to conflicts between whole communities. Other potential negative impacts include livestock-wildlife-human conflict, disease, salinity and water quality.

Mitigation 1. Carefully select any permanent water sources, to be handed to the communities upon decommissioning.

Mitigation 2. The contractor should consult the community on suitable location for sinking the boreholes

7.8.5 Impact on Sensitive Ecosystems, including Downstream and Upstream

Impact 1. If boreholes and other sources of water are established in areas of sensitive ecosystems, it will lead to damage of such ecosystems in a manner detrimental to their usefulness e.g. forest, wildlife reserve or protected areas

Impact 2. Overgrazing of land could be made worse, particularly by handing back to the community wells or boreholes that provide drinking water for livestock throughout the year. Without the rest periods that intermittent water supplies assure, forage conditions can deteriorate around the locations of wells or boreholes.

Impact 3. Another possible effect of water points on the vegetation is the creation of cattle trails and overuse of the surrounding areas as they take water. These trails encourage rill erosion, which later can develop to gully erosion in the event of heavy rains. Sheet erosion may also occur around water points, due to animals loosening the ground surface as they rest before and after taking water. The potential impacts of the provision of water for construction purposes are therefore indirect.

Mitigation 1. Acquire all the relevant licenses prior to drilling bore holes that tap deep aquifers and get Government approval, through an abstraction permit from the Ministry of Water development through the Water Resources Management Authority (WRMA), and a license from NEMA.

7.9 GEOLOGICAL AND OTHER ASPECTS

7.9.1 Any Climate Change Factors of the Project area

Climate Change Factors of the project area include human-induced (or anthropogenic) Greenhouse Gas (GHG) emissions such as:

- Vehicular GHG emissions, depletion of the ozone layer, global warming and climate
- GHG emissions related to the consumption of fossil fuels - depletion of natural vegetation cover and burning of biomass – firewood and charcoal affecting rainfall patterns and upsetting the natural water cycle as well as introduction of some GHG emissions
- GHG emissions from agricultural activities such as irrigation and greenhouses
- GHG emissions related to supply for electricity generation, transportation; energy use in commercial and residential buildings for lighting, cooking, space heating, and cooling; industrial production; and waste.

Such climate change presents unique challenges for areas and their growing populations.

These impacts are a result of the following climatic changes:

- Impact 1.* Warmer and more frequent hot days and nights over most land areas;
- Impact 2.* Fewer cold days and nights in many parts of the world;
- Impact 3.* Frequency increases in warm spells/heat waves over most land areas;
- Impact 4.* Increased frequency of heavy precipitation events over most areas;
- Impact 5.* Increase in areas affected by drought;
- Impact 6.* Increases in intense tropical cyclone activity in some parts of the world; and
- Impact 7.* Increased incidence of extreme high sea levels in some parts of the world.

Climate change mitigation and adaptation measures include:

- Mitigation 1.* There have been no attempts to conduct GHG emission inventories
- Mitigation 2.* Seek an integrated, multi-partner approach towards climate change action at the local level
- Mitigation 3.* Identify promising mitigation and adaptation measures that are supportive of more sustainable and resilient development paths
- Mitigation 4.* Encourage local action and participation from county governments, stakeholders and actors as indispensable for the realization of national climate change commitments agreed through international negotiations. Examples of local action

7.10 POTENTIAL IMPACTS ON VISUAL/AESTHETIC CHANGE

7.10.1 Visual Intrusion

Impact 1. The improved road will increase vehicular traffic for haulage of goods, tourism among other transportation purposes. This in turn draws a ripe opportunity for advertisers to broadcast their promotions such as bill boards. This leads to visual intrusion.

Impact 2. Hap-hazard disposal of solid and liquid waste can be substantial and can be a cause of visual intrusion.

Mitigation 1. KeNHA to set standards on advertising bodies on the need to observe road safety especially on the visual intrusion.

Mitigation 2. Ensure that solid waste materials are properly disposed to suitable locations through awareness creation.

7.10.2 Landscape Change

Impact 1. Quarries and borrow pits, cut slopes and material stockpiles when exposed to the public, often leads to visual intrusion. The landscape within the project area mainly

consists of monotonous plains dominated by shrub, dry woodland and volcanic rocks. The plains are continually interrupted by upland areas.

Impact 2. On the whole, there are few scenic sites along the road other than some wild animals, uniquely large herds of camels and livestock and picturesque volcanic hills. If the construction contracts specify that material sites/borrow areas and quarries are to be landscaped after use to blend with the landscape as far as is reasonably possible, visual intrusion associated with these activities would be swamped by the expansive landscape, hence impact would be minor.

Impact 3. Quite often, broken down machinery, structures and other facilities are left on the camp site at decommissioning. This could create visual intrusion. The impact will depend wholly on the decommissioning standards set out in the contract details.

Mitigation 1. Rehabilitation of disused quarries to safe standards or reconstruct them for reuse by the community.

Mitigation 2. Need to landscape the material sites/borrow areas and quarries after use to blend with the landscape as far as is reasonably possible.

Mitigation 3. Spoil materials including solid waste produced at camping sites for road construction crews should be properly disposed.

7.11 OCCUPATIONAL SAFETY & HEALTH IMPACTS AND CONCERNS

The objective of this section is to prioritize all immediate and future concerns and differentiate between significant and non-significant Occupational Safety and Health concerns at all work sites opened up by the Contractor.

All Occupational Health and Safety concerns likely to arise as a result of construction and operations of the proposed facility were reviewed. Recommendations on corrective and remedial measures have been made in the Occupational Safety & Health Management Plan (OSHMP) to be implemented under the Environmental and Social Management Plan (ESMP). The plan includes measures to prevent health hazards and to ensure safety in the working environment for the employees and the communities adjacent to the Project site and Project affected people.

7.12 OCCUPATIONAL INJURIES AND HAZARDS IMPACTS

Impact 1. Construction workers are likely to have injuries and hazards as the construction works unavoidably expose workers to occupational health and safety risks. The workers are also likely to be exposed to risk of accidents and injuries resulting from accidental falls, injuries from hand tools and construction equipment.

Mitigation 1. Ensure consistent use of PPE by workforce. The contractor should commit himself to strict implementation of OSHA regulations during construction and operations.

7.13 CONTRACTOR'S WORKERS' CAMP HEALTH, SAFETY AND SECURITY

Impact 1. Workers are likely to use non-potable water for domestic purposes

Impact 2. There is high possibility of prevalence of sexually transmitted diseases and HIV which can easily spread within camp and also to the local community and vice-versa; Lack of supervision turning the camp into an area for immorality and spread of HIV / AIDS;

Impact 3. Likelihood of congestion in the camp housing leading to spread of parasites and contagious diseases;

- Impact 4.* Poor site conservancy leading to bacterial infections and pollution of aquifer;
Impact 5. Likelihood of lack of first aid and health facility
Impact 6. Likelihood of disorderly storage of equipment leading to intrusion and potential for accidents;
Impact 7. Impacts from handling of toxic wastes and hazardous substances.

7.14 RISKS POSED BY THE PROPOSED PROJECT

7.14.1 Risks Identified on Project Route

Following visits to the project road, the following points along the study area were identified as having higher environmental risk for project. Several areas have been identified as high risk environmental areas:

1. Risks posed by Material Extraction Sites

The area between Kainuk and Kakong'u region falls within the Kenya Wildlife Service Conservation area, the South Turkana National Reserve. The area at which the A1 road traverses is home to wildlife and plant species. In addition, several points within the area have been earmarked as borrow areas for extraction of materials for road construction between km 30+000 and km 63+000. These borrow areas are:-

- Borrow Pit 04 located at 36+250
- Borrow pit 05 located at 44 + 800
- Borrow pit 06 located at 62 + 800

These borrow areas, in addition to requiring independent stand-alone EIA licences, will require Authorisation from KWS together with licensing and authorisation fee, a process that could delay the project further.

These borrow pits, when left open during operations or at the completion of material extraction in this particular area will collect water. This water will in turn become a watering point and attract the wild animals. This makes them vulnerable to hunting and poaching. If not restored, they become a micro-habitat with animal and plant life all their own.

During construction opening up of a borrow pits in the forest area which is an animals' sanctuary will disturb the animals. Presently, poaching is not developed, but may be encouraged by the presence of animals in the "watering areas" around the borrow areas when the new road opens.

Sand mining areas for construction were identified as follows:-

- Sand area 1 located at 0+800 Sited near River Turkwell
- Sand area 2 located at 29+ 500 within the conservation area sited at Turkwel river crossing A Hard stone Quarry area identified is situated 16.4 km away from Marich Pass into the Hills

2. Risks Posed to Forests

The forest between Lotongoi and Kakoi is rich with Acacia species. The construction of the road around this area will likely break the hard pan and allow penetration of the water below the hard pan. This will then encourage more growth of forest trees even with lower rainfall and probably increase the plant species diversity. There is likelihood that the specie *Proposis (Mathenge)*, a known invasive species found in the locality, will dominate the new growth of species.

Another potential long term impact relates to the advancement of the invasive weed, *Prosopis*. *Prosopis* is a very prolific seeder whose seeds are dispersed through the gut of livestock with a preference to invade freshly disturbed sites. Further the paved road will act as an impervious layer channelling run-off to the roadside which will readily support proliferation of *Prosopis* on the roadside as already evidenced along the paved section between Lodwar and Kakuma. Such proliferation will spread and pose visibility challenges to motorists as well as suppressing other native species. The impact of *Prosopis* invasion will be rampant at all disturbed sites, roadsides and borrow areas.

The main specie inhabiting the two forests is “*Acacia Senegal*”. Other species of *Acacia* like “*Acacia Tortilis*” and “*Acacia Mellifera*” are also there but in much smaller quantities.

The forest cover is the natural habitat for wildlife. Due to extreme heat the animals rarely move around during the day, preferring to move during the night. This becomes a high risk time in a high risk area.

The wildlife kills under the existing road are negligible. However there has not been any official census for the wildlife neither the animal kill count.

The major animal species at the two National Reserves (Turkana South and Nasolot) are Elephants, Buffaloes, Zebras, Lions, Leopards, Cheetahs, Pangorines, Hyenas, bushbuck, and baboon, the lesser Kudu and the Fringe - eared Oryx Wild dog, crocodiles and the Hippopotamus.

3. Social Risks posed by the Project – Employment opportunities

The informants pointed out to the long standing warlike activities among the two main communities – the Pokot and Turkana). This is likely to play out especially with regard to employment opportunities for casual and unskilled staff recruitment.

It would be good if these employment opportunities were to be distributed evenly among the two communities in a bid to maintain the peace and balance of the two groups within the respective regions where the road falls so as to prevent unnecessary conflict.

4. Social Risks posed by the Project – Security Threat

The section between Orwa Trading Centre and Kainuk Town is the border point between Turkana & Pokot counties. It is prone to sporadic attacks arising from cattle rustling. There is likelihood of attacks on road construction staff.

After Consultations with the county staff at Lodwar it is advised that the construction companies engage the services of Kenya Police Reservists (KPR) staff from both counties to guard both the construction workers and equipment.

With the recent discovery of oil in Turkana County, the Pokots want their boundary shifted to where this oil find is. This is an emerging major source of conflict between the Pokot and the Turkana. Although there is a police post at the boundary together with the Anti - Stock Theft Unit and the KWS stations, the cattle rustlers come in such huge numbers and so heavily armed out gunning the security forces stationed in these three areas.

5. Climate Change Risks

Common themes in climate change risks and vulnerabilities include:

- Climate change impacts may have ripple effects across many sectors of life.
- Climate change does not impact everyone within an area in the same way: gender, age, race and wealth have implications for the vulnerability of individuals and groups.
- In terms of development planning, failure to adjust zoning and building codes and standards with an eye to the future may limit the prospects of infrastructure adaptation and place lives and assets at risk.
- Climate change impacts can be long-lasting and can spread worldwide.

CHAPTER 8. PUBLIC PARTICIPATION AND CONSULTATIONS

The objective of this Chapter is to detail the consultations with Project - Affected Groups and Local Non-Governmental and other organizations about the Project's environmental aspects. Such public consultations are an integral part of the preparation of the ESIA. It entailed consulting about the Project's environmental aspects.

Public consultations for the proposed Marich Pass – Lodwar road were undertaken as follows:-

- i. General interviews
- ii. Initial detailed scheduled stakeholder participation meetings
- iii. Second Level scheduled stakeholder participation meetings

8.1.1 General Interviews

In-depth interviews were conducted with the following:

- County and sub-county administration;
- Districts heads of departments including the District Development Officers, Culture and social services; Agriculture and Livestock Development Officers; Educational officers and, Arid Lands;
- The local government – Turkana County Council officers
- MCA's and political activists;
- KWS staff
- KFS staff

8.1.2 Initial Public Participation Meetings

Consultative Public Participation (CPPs) meetings were held along the project road with the purpose of creating awareness on the proposed project and receiving comments and concerns from the primary stakeholders notably communities living along the project corridor.

In the main, the objectives of the consultations held during the period 18 to 24 June 2012 with communities to be affected—either directly or indirectly—by improvement of the Marich Pass to Lodwar Road were threefold:

- To inform the affected public about the purpose of the forthcoming project;
- To discuss more specifically the realignments and ROW expansion planned to the existing Marich Pass-Lodwar Road and their consequences to occupants located on these lands; and,
- To solicit the issues and concerns from the affected communities about the forthcoming road-improvement project.

The project was described for the attendees, underscoring the social and economic benefits of an improved road to residents in the service area. The maps upon which affected buildings,

structures and/or other properties had been highlighted were circulated to community members in each consultation session for their inspection and discussion.

Overall, the community consultations were held from 18th to 24th June 2012. The Consultations were held at eight locations, namely

- i. Marich-Pass - Marich Pass and Orwa Trading Centre Communities , 19 June 2012 by the local assistant chief
- ii. Kainuk - Kainuk Community attended by 120 people on 20 June 2012. The area Chief mobilised attendees.
- iii. Kaakong'u Kaakong'u Community on June 2012. The area assistant Chief mobilised attendees.
- iv. Kalemng'orok' Kalemng'orok Community on 20 June 2012 - The area Chief and the assistant chief mobilised attendees.
- v. Lokichar on 21 June 2012
- vi. Kasuroi on 21 June 2012.
- vii. Lochaang'ikamatak on 22 June 2012. The area community's senior chief whose administrative areas include Nagetei and Kimabur mobilised attendees.
- viii. Lodwar on 22 June 2012. The area chief in cooperation with two assistant Chief mobilised attendees. The area councillor was also in attendance.

8.2 SECOND LEVEL PUBLIC PARTICIPATION

The Scheduled Second Level Public Consultation forums were held in locations agreed on with the Client and in consultation with the stakeholders. The meetings will be advertised in writing posted to the various administration offices, learning institutions, churches and mosques or other such suitable venues. Local leadership will largely be relied upon to mobilise the participants.

The secondary public consultations for the proposed Marich Pass – Lodwar road were undertaken as follows:-

i. General interviews - The key issues associated with the road rehabilitation project relate to issues of land-take, biodiversity, heritage, pollution control, and disruption of livelihoods, community safety, traffic management, communicable diseases, and employment and trade opportunities.

Effort was not spared to contact all with information on the following issues:-

- Assessment of the baseline social and environmental conditions
- Consideration of feasible environmentally and socially preferable alternatives
- Protection of human rights, community health, safety, security, cultural property and heritage
- Protection and conservation of biodiversity,
- Sustainable management and use of renewable natural resources

A cross-section of persons thus consulted include the following:

- Various County and Sub-county administration;
- MCA's and political activists;
- Kenya Forestry Services (KFS) staff
- Kenya Wildlife Services (KWS) Officers along the project road. The KWS described the wildlife found along the alignment likely to be affected, particularly

the elephant migration corridors at Kaptir hills and at Kanabei. They recommended elephant crossing underpasses to be installed at these two locations.

ii. Initial detailed scheduled stakeholder participation meetings - Consultative Public Participation (CPPs) meetings were held with communities to be affected along the Marich Pass to Lodwar project Road—either directly or indirectly from 18th to 24th June 2012 at eight locations. The purpose of the consultations was creating awareness on the proposed project and receiving comments and concerns from the stakeholders.

These fora allowed the Lead Expert to present the project as designed and allow the stakeholders and PAPs to air their views on all possible environmental and socioeconomic impacts emanating from the proposed road rehabilitation and propose the best practical mitigation measures. The meetings served to disclose design details and associated social and environmental impacts of the proposed in order to negotiate community buy-in. Local residents, community elders and area administrators were invited to attend, through word of mouth by messengers and public addresses using motorbikes along the alignment road prior to the dates of the meeting.

iii. Second Level scheduled stakeholder participation meetings – In response to the TOR, these were held in locations agreed on with the Client, preferably the same locations where initial consultations were earlier held. The meetings were scheduled at nine locations namely; Marich Pass at Orwa, Kainuk Town, Kaakong’u Village, Lokichar town, Kasuroi in Lokichar location, Kalemng’orok Market centre, Lochwaang’kamatak, Loturerei and Lodwar town between 15th and 21st January 2015.

The stakeholders who attended included pastoral community members, a few farmers, local businessmen, elected representatives, representatives of local transporters, county officers and administrators among others.

A lot of issues were discussed, but the highlight of main issues of concern raised in these meetings is as follows:-

- Compensation for affected property - On land take for the existing 60m road reserve with minimal re-alignment, residents sought to understand how those affected by the project would be identified and compensated.
- Relocation – The stakeholders especially within the towns whose business premises are to be affected wondered where they would relocate to in order not to suffer livelihood losses.
- Livestock crossings – the stakeholders explained that they live on livestock – sheep, cows, goats, donkeys and camels are their livelihood. They therefore enquired that, in light of the increased number and speed of vehicular traffic, even above 120 k.p.h., when their livestock would be endangered, knocked to death and injury – what compensation will they receive?
- Employment - The participants inquired on whether employment would be available to them during construction and what criteria would be employed to recruit.
- Contracts for borrow areas - The stakeholders present wondered if the contractor would procure from them construction materials such as gravel, sand and aggregates and if they would be compensated for the same.
- Role of the vulnerable (disabled and the old) – The stakeholders explained that the old have grown old waiting for the promise of this road to be reconstructed.

- Increased Human accidents - The participants inquired what with projected increase in traffic accidents during construction and operation, who would be responsible to compensate victims, especially in ‘hit and run’ cases.
- Restoration of access roads – The stakeholders enquired if the town and market centre roads as well as rural access roads would be rehabilitated along with the rehabilitation of the A1 road.
- Consent and commencement for the road works – the stakeholders in all eight locations unanimously gave consent to the construction but wondered when the construction would commence. They expressed a desire to have both road contracts kick off simultaneously to avoid a scenario of longer delays.
- Fatigue about Meetings and Preparation for the coming road - the stakeholders loudly complained that they were tired of holding meetings about the proposed construction. They said that the next time they want to hold meetings it should be about the progress of the road works if not operation and wondered what contribution they would render to see the road works commence immediately.

The full list of those in attendance, the project presentation, consultative minutes and resolutions as well as the photographs taken during these meetings are attached in Chapter 11.

CHAPTER 9. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

9.1 MITIGATION

Based on the outcomes of adverse impacts and their significance, the Consultant prepared an Environmental and Social Management Plan comprising of a programme of assessing the impacts during implementation, operation and post operation phase including decommissioning.

The ESMP identifies feasible and cost-effective measures that may reduce potentially significant adverse environmental impacts to acceptable levels. The ESMP includes compensatory measures if mitigation measures are not feasible, cost-effective, or sufficient.

Specifically, the objectives of the ESMP are to:

- a) Identify and summarize all anticipated significant adverse environmental impacts (including those involving indigenous people or involuntary resettlement);
- b) Describe with technical details each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate;
- c) Estimate any potential environmental impacts of these measures; and
- d) Provide linkage with any other mitigation plans (e.g., for RAP, vulnerable and marginalized groups plan, physical cultural resources plan, or biodiversity assessment) required for the project.

In addition, the components of the ESMP deal with the following as may be relevant to the Project area:

- Environmental and social safeguards (management) during construction activities.

- Recommendation for timing, location, methods, costs and responsibilities concerning the monitoring programmes given.
- Plan for restoration of quarry areas/borrow areas and areas for dumping excavated material.
- Post construction Environmental and Social Monitoring Plan (with indicators).
- Assessment and recommendation concerning compliance monitoring of the socio-economic impact related to the concerns raised by the local residents in the area surrounding the proposed project site.
- Water quality monitoring is recommended to assess the impact of the new infrastructure on surface and ground water so that users are not exposed to water contamination or water-borne diseases.

9.1.1 Responsibility for ESMP Implementation

In order to ensure the sound development and effective implementation of the ESMP, some of the roles identified, responsibilities identified and authority of the various persons and organizations to be involved in the implementation of this ESMP are as follows:

- KeNHA;
- Ministry of Transport;
- National Environmental Management Authority;
- Resident Engineer.
- Environmental officer
- Social Officer and Community Liaison;
- Contractor;
- Turkana County Authority
- Kapenguria County Authority
- KWS – National & local
- KFS – National & local

Such responsibility to the various parties here identified is apportioned in the ESMP in Tables the tables below.

9.1.2 The Environmental and Social Management Plan (ESMP)

The Consultant paid special attention to the significant impacts (both positive and negative) in preparation of the ESMP and developed the Environmental and Social Management Plan (ESMP) in Table 9-1.

Table 9-1: Proposed Environmental and Social Management Plan (ESMP)

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
POPULATION CHANGE AND MIGRATION							
Population Characteristics	Local communities may undergo cultural alteration In-migration of various other ethnic groups and expatriates Conflict in competition for employment opportunities between indigenous communities and migrant workers	Short term	Employing as many people as possible from the locality especially unskilled workforce will help them accept skilled labour from outside. This will promote cohesion and the spirit of the project. The contractor should source labor from the indigenous communities along the road as much as possible.	8,800,000	Contractor	Construction and Operation	Population growth and ethnic composition. Integration level of migrants in host communities (survey). Possible field visits by social and envir. Specialists to road segment in question
Human Settlement	Growth of small centres into bigger towns e.g. Kainuk and Lokichar with increased demand for services Increased conversion of nomadic pastoralists to a more sedentary way of life		Turkana County Government to monitor such growth and possibly plan for it in physical development plans for respective centres NGO's to work and build capacity with nomadic pastoralists willing to convert to a sedentary way of life. Application of Chance Find Procedures		Contractor, NGO, RE		Number of pastoral drop-outs as a result of the rehabilitation Type of housing and accessible services before and after project implementation. Number of informal Settlements built by new settlers.

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
SOCIO-ECONOMIC ENVIRONMENT							
Public Health	Dust, noise and fumes from machinery and construction traffic pre-disposing workers to hazards Noise and vibration Creation of mosquito breeding grounds	Short and Long Term	Introduction of measures that intercept transmission of dust and other air pollutants likely to be generated to sensitive receptors when it cannot be entirely avoided. For example Surface dressing to be done on diversion routes and materials handling site routes through populated centres especially if these sites are near sensitive receptors. Vehicles and construction machinery to be properly maintained and to comply with relevant emission standards. The contractor to provide PPE like helmets, dust masks and ear muffs to construction crew. Construction activities to be scheduled carefully to minimize the impact of noise from construction machinery. Night time's uses of certain noisy machines, such as pile drivers and concrete vibrators, to be regulated. Enlighten personnel and community about Malaria and	36,900,000	Contractor , RE,	Construction	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
			use of mosquito nets including proper hygiene and sanitation, Proper disposal of containers and other wastes that may act as mosquito breeding grounds.				
	Potential for migration of commercial sex workers and transmission of STDS and HIV-AIDS		Intensify awareness on HIV/AIDS by use of bill boards in market centres, through staff training, community awareness campaigns, multi-media and workshops or during community ‘Barazas’ along the project road. Condom dispensers to be located in appropriate locations within the camp and the camp environs such as in public toilets in market centers and the contractor to provide VCT centers along the route in collaboration with the ministry of health.		Contractor , RE, Local NGO’s Ministry of Health	Construction	
Social Organization	Balancing of the workload between women and men In-migration					Preparational	Number and locations of Social unrest Number of conflicts between local people and new settlers. Changes in lifestyle activities among men and women

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Physical Cultural Resources	During civil works the contractor may encounter occasional objects of cultural heritage, such as graves.	Short-term	Although the ESIA and public consultations did not identify objects of cultural heritage at the road corridor or material sites, the contractor must include into the contract the Chance Find Procedures. Sample procedures provided in Annex 1.		Contractor, RE, Local NGOs, Ministry of Sports, Culture and the Arts	Construction	
Improved Access	Improved access with traveling across the region taking shorter time with improved comfort Improve accessibility to social amenities, health facilities and markets Decreased mortality rates		Monitoring during operation.			Operational	Traffic changes on rehabilitated road. Number of trips completed by locals per month. Time spent to access markets and basic social services.

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Road Safety and Accident Rates	Increased traffic accidents in frequency and severity due to high speeds - human, wildlife and bird collisions and accidents between vehicles, and with non-motorized transport such as cyclists,	Long term and Significant	To reduce accidents, appropriate road signs and road markings to be put in place to warn drivers of safety hazards especially while approaching bends, junctions, bridges, animal crossings, schools and shopping centres. To reduce the possibility of vehicle and animals collisions vehicle speed shall not exceed posted speed limits and animal crossing warning signs shall be installed where appropriate.		Contractor, local authorities, Proponent	Construction and Operational	Understanding of safety procedures and signs posted (survey). Number of police officers dedicated to police the road. Number of infractions notified (speed, drunken drivers, dangerous driving, etc.) Number of traffic calming devices and secure crossing points. Distance between road and human settlements.
Occupational Patterns and in Economic Activities	Influx of migrant workers during construction phase of the project. Disengagement and lack of ownership of the project by the locals during project operation.		Generate several direct job opportunities for both skilled and unskilled labour during construction Create indirect jobs upon completion of the road, in commerce and trade, transport industry, tourism and adventure safaris, livestock trade, mining activities and irrigated agriculture during operation			Construction and operation	Number of jobs created (directly and indirectly) and occupied by men and women. Number of new businesses (formal and informal) operated by men and women. Changes in goods and services access (in markets).

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Economic Environment	Kenyan economy as a whole will benefit- multiplier effects throughout the Kenyan economy from the transport infrastructure upgrading						
	<p>Increased opportunity for exploitation and export of recently discovered oil resources Open up the Turkana region for accelerated regional economic growth Improved access will impact educational, health and other social services, which are essential for the population to develop and benefit from increased economic activity.</p>		<p>Kenya will have complete control of the logistics and transport chain between Kenya and South Sudan after creating the new direct access to South Sudan.</p> <p>More immediate beneficiaries will be transporters, traders and freight forwarders, whether located in Nairobi, Mombasa or regional centres. The availability of transport will attract ripple effects not only traders and transporters, but improved production in mining, agriculture, livestock and other extension services. On completion of the project, prices of commodities such as consumer goods and agricultural inputs are expected to reduce</p>				

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Regional and Food Security/Insecurity Situation	Decrease in banditry upon completion of the road - currently, banditry is associated with cattle rustling and inter- and intra-community clashes, and sporadic insurgency Integrate the entire region with substantial improvement on the current security situation by aiding patrols Enhanced provision of relief food and other forms of humanitarian aid						Response time for security and relief operations before and after the rehabilitation
PHYSICAL INFRASTRUCTURE							
Waste Generation	Wide variety of solid and liquid waste generated during construction from activities and camps - human waste, timber, stones, rock, metals, paper, plastics are unsightly Accidental oil spills, and petroleum products and bitumen may infiltrate into soils and cause soil pollution during construction		Provide solid waste disposal system - a waste collector, NEMA recommended waste disposal manual and a waste collection bin for each housing unit, workshop, plant, structural shelter, etc. Waste disposal site to have a stone perimeter wall at least 1.5 m high x 7 m long x 5 m wide at a far corner to contain disposed materials from wind and runoff.	3,300,000	Contractor, R E, NEMA		Parameters of EMCA Waste Management Regulations 2006 and others such as OSHA. Waste accumulated along the road (number of sites or m3)

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
	<p>Careless disposal of used oil, lubricants, paint, and other toxic substances containers has health consequences for local residents who'll pick them up and use them for water containers</p> <p>Wildlife poisoning from drinking contaminated water within machinery yards caused by accidental spillage of oil, petroleum products, solvents and similar category of materials.</p> <p>Littering from traffic movement during operations</p> <p>Increased traffic during operation will increase chances for oil spills in case of accidents</p>	<p>Reversible</p> <p>Short term</p>	<p>Keep records of all disposal/potential disposal locations</p> <p>Hazardous materials to be stored within dedicated areas at work camps and marshalling yards in full compliance with regulatory requirements and the contractor to ensure that all waste materials at the point of construction are transported to a place of safe disposal</p> <p>All applicable laws, regulations and standards for the safe use, handling, storage and disposal of hazardous waste to be followed.</p> <p>Areas dedicated for hazardous material storage shall provide spill containment and facilitate clean up through measures such as: maximum separation from sensitive features (water bodies); clear identification of the materials present; access restricted to authorized personnel and vehicles only and dedicated spill response equipment</p>			<p>Construction</p>	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Service Interruption	Interference with traffic flow during construction due to diversion and other activities Interference with water supply services especially in bigger centres like Lodwar. Mobile telephony and internet services will be altered during and after construction Stretched local services e.g., schools, health facilities, churches	Reversible Short term	Provide appropriate signage to warn motorists and other road users of the construction activities, diversion routes to ward off traffic accidents In the event that delivery trucks damage parts of the road, the contractor should repair the spots immediately. The contractor should communicate any intended disruption of services to enable the people to prepare.		Contractor, RE, Proponent	Construction Operational	

<p>Mechanical Disturbance</p>	<p>Breaking of the hard pan on the existing corridor and opening up wider areas to ingress of stormwater to underlying layers. This will have the impact of robust vegetation growth for forest species and worse, Prosopis. Soil erosion arising from road construction related activity Soil disturbance from road building and associated excavation leading to soil displacement, slope failures, gullyng, clogging of drainage ways and sedimentation in watercourses or water bodies</p>	<p>Reversible and long term</p>	<p>Encourage use of Prosopis for firewood, poles and for fencing by the construction workers and local community according to Kenya Wildlife Service. Keep land clearance to a minimum and wherever possible avoid clearing areas of highly erodible soils and steep slopes which are prone to erosion. Preference for dry season construction Spreading and/or compaction of disturbed soils incorporated into BOQ Install sufficient number and size of culverts along the road, laghas and roadside ditches to minimize the amount of water that accumulates; more if the area is steep On steeper slopes, line entry and exit into drainage structures with riprap, gabion mattresses, sow grass or other local cover vegetation to anchor the soil. Add splash aprons or energy dissipaters at the outlet of culverts Ensure adequate maintenance of such drainage ways to prevent blockages and failure.</p>		<p>Contractor, RE, Local Community</p>	<p>Construction and Operation</p>	<p>Monitor vegetation growth Especially Prosopis. Monitor sediment and debris build-up in road ditches or culverts Measure stream flow and local hydrology so as to increase understanding of local conditions and cause & effect Evolution of erosion signs. Volume of sedimentation downstream of the road site.</p>
-------------------------------	--	---------------------------------	--	--	--	-----------------------------------	---

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Removal of Structure Sites	Demolition of existing structures where the proposed alignment affects them Generation of large amounts of solid wastes.	Reversible , Long term	The contractor to communicate with the owners on the demolition of structures that will be affected along the road. Ensure that solid waste materials are properly disposed to suitable locations.		Contractor, Proponent, MOL	Construction	
Regional Drainage	Road as barrier to natural drainage Alteration of natural drainage Interference of stormwater in privately owned property	Long term Significant Reversible	Ensure that provision that has been made in the design for bridges, culverts, cut-off drains and side drains to improve drainage are adhered to.		Contractor, RE, Proponent	Construction and Operational	
FLORA AND FAUNA; - BIOLOGICAL ENVIRONMENT							
Biota And Biodiversity Loss		Sort term Reversible long term, significant	The Contractor(s) during the project construction to develop a workers code of conduct to ensure that their workers do not consume game meat from the area, whether supplied by the locals or killed by themselves.	130,000,000	Contractor, KWS, Local Administration	Construction and Operation	Loss or decrease in important species in areas affected by the project Number of killed animals.

	<p>High demand for charcoal and fuel wood especially to supply the refugee camps</p> <p>Construction workers can provide a ready market for game meat within a 5 km of radius potentially affecting the wildlife through reduction in their population such as antelopes, gazelles and avian species, notably guinea fowls.</p> <p>Direct impact through blasting at quarries within a 2 km of radius; noise and vibration occasioned by machinery and construction workers can affect wildlife feeding habits and even migration patterns.</p> <p>Some animals can be more aggressive in the face of such sudden noise and vibration</p> <p>Cutting down sanctuary trees (trees above 5 m height with well-developed canopy) along the road to pave way for construction will affect biodiversity as these trees act as perching and nesting sites for a wide range of bird species especially weaver birds, and providing shade for mammals especially ungulates</p>		<p>Awareness creation to be carried out amongst the local people and the construction workers on the laws that relate to wildlife hunting and consumption, and the importance of wildlife as a natural resource and heritage.</p> <p>The local administration to be involved in creating awareness amongst the local people, that killing game is illegal.</p> <p>Empty containers and other waste to be managed carefully to avoid exposing wildlife to possible poisoning.</p> <p>During operation, a programmatic approach is proposed, where greater surveillance by KWS and involvement of local communities is instituted to counteract possibilities for new trade in game trophies, skins and live animals.</p>				
--	--	--	---	--	--	--	--

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
	Death of wildlife occasioned by construction traffic especially in the evenings and early morning. Accidental spills of oil, petroleum products, solvents, bitumen, etc. Will affect birds, wild dogs, ruminants						
Vegetation Clearance	<p>Aspect of the project that may impact on vegetation is the need for cooking energy by the construction workers as opposed to clearing during construction.</p> <p>The predominantly arid environment is not conducive for plant growth; hence the tree growth is extremely slow.</p> <p>The critical impact relates to the inability of the area to naturally regenerate after harvesting of the mature trees. Within a 5 - 10 km radius of camp</p> <p>Locals may see an opportunity for income generation by selling firewood and/or charcoal to the contractors.</p>	Short term, Long term, reversible	<p>Provide appropriate signage to warn motorists and other road users of the construction activities, diversion routes to ward off traffic accidents</p> <p>In the event that delivery trucks damage parts of the road, the contractor should repair the spots immediately.</p> <p>The contractor should communicate any intended disruption of services to enable the people to prepare.</p>		Contractor, RE,	Planning,, Construction and Operation	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
	Additional vegetation clearance at quarries and borrow pits, and contractor camp sites will also contribute to overall vegetation loss - vegetation clearance will not cause loss of rare species, endangered trees or other plant species that are endemic to the area, species of medicinal and of major commercial values	Short term, Long term, reversible				Planning,, Construction and Operation	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Land Use/Land Cover and Change in Designated Land-Use	<p>Some currently existing market centres may rapidly develop in to vibrant town centres to provide support services for the revamped transportation corridors</p> <p>Such sporadic development may affect designated land use in some urban and other centres. Some pastoral land may convert to residential or commercial, even agricultural.</p> <p>Introduction of new animal and plant species, some of which could be invasive and change the land cover of the project sites.</p> <p>Increased population in the area due to new opportunities puts pressure on land use, land cover and change in designated land-use.</p> <p>Project is likely to lead to direct land-take of privately or community owned land occasioning involuntary loss of access, use or even partial or full displacement and relocation of households, structures or other assets.</p>	Short term, Long term, irreversible	<p>Encourage use of <i>Prosopis</i> for firewood, poles and for fencing by the construction workers and local community according to Kenya Wildlife Service.</p> <p>Keep land clearance to a minimum and wherever possible avoid clearing areas of highly erodible soils and steep slopes which are prone to erosion.</p>		Contractor, RE	Construction	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Sensitive Ecosystems		Short term, long term, reversible	The contractor to communicate with the owners on the demolition of structures that will be affected along the road. Ensure that solid waste materials are properly disposed to suitable locations.		Contractor, RE	Construction	
Habitat Change and Habitat Loss	Some Habitat change can be associated with installation of wildlife and livestock crossings as well as intentional or sporadic introduction of new watering holes. This would in turn alter the behaviour and habitat of predators as well as prey. Such habitat change may result in loss of initial habitats.	reversible	Ensure that provision that has been made in the design for bridges, culverts, cut-off drains and side drains to improve drainage are adhered to. Minimize the number of borrow pits by increasing free haul distance in BOQ Establish conditions for borrow pit construction Require contractor to establish and implement a borrow pit management plan Engage local community authorities to take responsibility for long-term borrow pits in their areas		Contractor, RE, KWS, KENHA	Construction	Habitat fragmentation indices. Verify that subsequent use of borrow pit meets standards Verify natural regeneration on restored borrow pit sites and if necessary, replant Verify conformance with Borrow Pit Management Plan

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Micro-Climate	Potential for changes in micro-climate exists from borrow areas that are not rehabilitated.						
AIR QUALITY							

<p>Air Quality due to Construction and Operation</p>	<p>Reduction of dust pollution from the unpaved road once the road is rehabilitated Passage of increased number of vehicular traffic during construction and operation will introduce higher levels of other pollutants such as emissions of exhaust fumes, lead and associated gases such as carbon monoxide, hydrocarbons, and nitrous oxides Dust pollution is expected to emanate from material extraction and stockpiling sites such as quarry sites, borrow sites and sand as well as ballast stockpiles during hours of active operation This this sustained high level of dust could have long-term health implications on the workers and businessmen who spend considerable time within the road area Construction machinery - Vehicle movements over unsealed surfaces; Exposure of soils to wind erosion. Wind erosion of open active areas such as Material handling and temporary stockpiles; Spoil transportation; and Small concrete batching plant activity</p>	<p>Short term, Long term, irreversible</p>	<p>Use of Personal Protective Equipment (PPE) by workers and all visitors to the site Use equipment fitted with water suppression to minimize the amount of dust Vehicles and construction machinery to be properly maintained and to comply with relevant emission standards. The contractor to provide protective clothing like, dust masks to construction crew. Surface dressing to be done on diversion routes and materials handling site routes through populated centres especially if these sites are near sensitive receptors to reduce generation of dust.</p>	<p>151,700,000</p>	<p>KENHA , Supervising engineers, contractor</p>	<p>Construction</p>	
--	---	---	---	--------------------	--	---------------------	--

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
	<p>Greenhouse Gas (GHG) emissions arise from Products of combustion from fuel burning vehicles and equipment; smoke from agricultural waste and pastureland burning; Quarrying activities; and Vehicle movements on earth roads</p> <p>The amount of carbon dioxide emission is a leading environmental effect produced by vehicles</p>						
AMBIENT NOISE LEVEL							
Noise generation and vibrations	<p>Noise generation and vibrations in an otherwise quiet environment from construction machinery and activities could adversely affect the local people as well as wildlife (sensitive receptors).</p> <p>The operation and maintenance phases of the project will in turn increase noise levels significantly along the road.</p>		<p>Contractor to agree noise limits/ noise control stations with NEMA and obtain a Construction Noise Permit prior to the commencement of construction work</p> <p>Positioning Powered Mechanical Equipment (PME) so that noise is directed away from sensitive areas;</p> <p>Harmonized sleeping time</p>	1,850,000			

<p>Noise generation and vibrations</p>	<p>Explosives used for rock blasting at quarries will cause noise beyond ambient levels and vibrations in the vicinity of the site can be destructive to housing and other structures. Construction equipment and activities, mainly occurring along the alignment, quarry and borrow sites Along roads and tracks used to bring materials and equipment to the alignment Where blasting operations will be required including Quarry operations</p>	<p>Reversible Significant Short-term</p>	<p>Contractor to prepare for approval by KENHA a Health Management Plan (HMP) detailing means to protect site workers and community from excessive noise and vibrations Construction activities to be scheduled carefully to minimize the impact of noise from construction machinery. Night time's uses of certain noisy machines, such as pile drivers and concrete vibrators, will be regulated. The location and operation of asphalt batch plants to be sited as far as possible from sensitive receptors, such as shopping centers, health facilities and learning institutions Special care should be taken when construction is taking place near sensitive receptors such as schools and hospitals. To the extent possible, heavy vehicles should not be used at night across populated areas especially Lodwar Ensure that construction equipment is operating optimally and with operational noise mufflers where possible.</p>		<p>Contractor Supervising Engineer</p>	<p>Construction</p>	
--	--	--	--	--	--	---------------------	--

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
WATER AND AQUATIC ENVIRONMENT							
Change in Hydrological Cycle	Destruction or alteration of local vegetation is likely to affect the hydrological cycle Similarly, the sinking of boreholes to extract water for construction has similar impact	Long term, Significant	Acquire all the relevant licenses prior to drilling bore holes that tap deep aquifers and get Government approval, through an abstraction permit from the Ministry of Water development through the Water Resources Management Authority (WRMA), and a license from NEMA.	2,600,000	Contractor, NEMA, KENHA	Construction	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Water Quality (Surface/Ground)	<p>Construction activities such as earthworks could lead to erosion and alteration of physical properties of surface and underground water resources</p> <p>Oil spills, bitumen and greases generation by construction traffic as well as traffic during operation could lead to pollution by altering the chemical and biological characteristics of surface and ground water resources</p> <p>There is potential for contamination of water resources as a result of improper disposal of liquid and solid waste from construction activities and construction camps.</p>	Long term, Irreversible Significant	<p>Acquire all the relevant licenses prior to drilling bore holes that tap deep aquifers and get Government approval, through an abstraction permit from the Ministry of Water development through the Water Resources Management Authority (WRMA), and a license from NEMA.</p> <p>Areas dedicated for hazardous material storage shall provide spill containment and facilitate clean up through measures such as: maximum separation from sensitive features (water bodies); clear identification of the materials present; access restricted to authorized personnel and vehicles only and dedicated spill response equipment</p> <p>Provide solid and liquid waste disposal system - a waste collector, NEMA recommended waste disposal manual and a waste collection bin for each housing unit, workshop, plant, structural shelter.</p>		Contractor, NEMA KENHA	Construction	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Ground Water Levels and Recharge Potential	Over-extraction of water for construction purposes beyond the yield levels of the ground resources could affect the recharge potential. Similarly, if the distance between boreholes; if too close i.e. Within less than 800m radius, it will affect the Ground Water Levels and Recharge Potential	Long term, Irreversible Significant	Acquire all the relevant licenses prior to drilling bore holes that tap deep aquifers and get Government approval, through an abstraction permit from the Ministry of Water development through the Water Resources Management Authority (WRMA), and a license from NEMA.		Contractor, NEMA KENHA	Construction	
Drainage System and Existing Water Bodies	Issues relating to access to water often lead to conflicts between whole communities. Other potential negative impacts include livestock-wildlife-human conflict, disease, salinity and water quality.	Long term reversible	Carefully select any permanent water sources, to be handed to the communities upon decommissioning. The contractor should consult the community on suitable location for sinking the boreholes		Contractor, NEMA Local Community	Construction	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
Sensitive Ecosystems, including Downstream and Upstream	<p>If boreholes and other sources of water are established in areas of sensitive ecosystems, it will lead to damage of such ecosystems in a manner detrimental to their usefulness e.g. Forest, wildlife reserve or protected areas</p> <p>Overgrazing of land could be made worse, particularly by handing back to the community wells or boreholes that provide drinking water for livestock throughout the year. Without the rest periods that intermittent water supplies assure, forage conditions can deteriorate around the locations of wells or boreholes.</p> <p>Another possible effect of water points on the vegetation is the creation of cattle trails and overuse of the surrounding areas which encourage rill erosion, which later develop to gully erosion during heavy rains.</p>	Long term, significant	Acquire all the relevant licenses prior to drilling bore holes that tap deep aquifers and get Government approval, through an abstraction permit from the Ministry of Water development through the Water Resources Management Authority (WRMA), and a license from NEMA.		Contractor, NEMA	Construction	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
GEOLOGICAL AND OTHER ASPECTS							
Any Climate Change Factors of the Project area	Warmer and more frequent hot days and nights over most land areas; Fewer cold days and nights in many parts of the world; Frequency increases in warm spells/heat waves over most land areas; Increased frequency of heavy precipitation events over most areas; Increase in areas affected by drought; Increases in intense tropical cyclone activity in some parts of the world; and Increased incidence of extreme high sea levels in some parts of the world.	Long term Significant Irreversible	There have been no attempts to conduct GHG emission inventories Seek an integrated, multi-partner approach towards climate change action at the local level Identify promising mitigation and adaptation measures that are supportive of more sustainable and resilient development paths Encourage local action and participation from county governments, stakeholders and actors as indispensable for the realization of national climate change commitments agreed through international negotiations. Examples of local action	1,600,000	Contractor Supervising Engineers Local administration Local Community	Operational	

Impact Area	Impact Cause / Source	Nature of impact	Mitigation Action Plan	Costs (K.Sh.)	Responsible party	Time Range	Monitoring Framework
VISUAL/AESTHETIC CHANGE							
Visual Intrusion	The improved road will increase vehicular traffic for haulage of goods, tourism among other transportation purposes. This in turn draws a ripe opportunity for advertisers to broadcast their promotions such as bill boards. This leads to visual intrusion. Hap-hazard disposal of solid and liquid waste can be substantial and can be a cause of visual intrusion.	Short term reversible	KeNHA to set standards on advertising bodies on the need to observe road safety especially on the visual intrusion. Ensure that solid waste materials are properly disposed to suitable locations through awareness creation.	131,000,000	KENHA Contractor Supervising Engineer	Construction and operational	

<p>Landscape Change</p>	<p>Quarries and borrow pits, cut slopes and material stockpiles when exposed to the public, often leads to visual intrusion. The landscape within the project area mainly consists of monotonous plains dominated by shrub, dry woodland and volcanic rocks. The plains are continually interrupted by upland areas.</p> <p>On the whole, there are few scenic sites along the road other than some wild animals, uniquely large herds of camels and livestock and picturesque volcanic hills. If the construction contracts specify that material sites/borrow areas and quarries are to be landscaped after use to blend with the landscape as far as is reasonably possible, visual intrusion associated with these activities would be swamped by the expansive landscape, hence impact would be minor.</p> <p>Quite often, broken down machinery, structures and other facilities are left on the camp site at decommissioning. This could create visual intrusion. The impact will depend wholly on the decommissioning standards set out in the contract details.</p>	<p>Long term Reversible Insignificant</p>	<p>Need to landscape the material sites/borrow areas and quarries after use to blend with the landscape as far as are reasonably possible.</p> <p>Spoil materials including solid waste produced at camping sites for road construction crews should be properly disposed.</p>		<p>Contractor Supervising Engineers</p>	<p>Construction</p>	
-------------------------	--	---	--	--	---	---------------------	--

Table 9-2: Proposed Occupational Health and Safety Management Plan (OHSMP)

Impact	Impact Cause / Source	Nature	Mitigation Action Plan	Costs	Responsibility	Time Range	Monitoring
EHS	<p>Creation of stagnant water bodies in borrow pits and quarries which act as habitats for disease vectors</p> <p>Increased risks of drowning accidents</p> <p>Increased risk of vector-borne diseases</p> <p>Risk of dam failure</p> <p>Increased seismicity risk</p> <p>Noise pollution from operating plant and machinery</p> <p>HIV & AIDS</p>	<p>Long term</p> <p>Irreversible</p> <p>Significant</p>	<p>Ensure alcohol free work force</p> <p>Draft operational policies on safety e.g. Alcohol use, speed limits</p> <p>Keep verifiable records of all accidents and incidences</p> <p>Spread awareness to curb vandalism of safety equipment and other installations</p> <p>Draft and operational manuals in line with OSHA for approval by KeNHA</p> <p>Posting of clear and prominent warning signage at appropriate potential points of entry to hazardous areas</p> <p>Installation of barriers like fences around reservoir and other locations to prevent access to facilities by unauthorized persons</p> <p>Local education especially to young people and school children regarding the dangers of trespassing, HIV/AIDS awareness campaigns and provision of condoms</p>	<p>Incorporated in Table 9.4</p>	<p>KeNHA</p> <p>Design engineers,</p> <p>Contractor</p> <p>Supervising Engineer</p>	<p>Construction</p>	
Noise & Vibration	<p>Construction equipment and activities, mainly occurring along the alignment, quarry and borrow sites</p> <p>Along roads and tracks used to bring materials and equipment to the alignment</p>	<p>Reversible</p> <p>Significant</p> <p>Short-term</p>	<p>Contractor to agree noise limits/ noise control stations with NEMA and obtain a Construction Noise Permit prior to the commencement of construction work</p> <p>Positioning Powered Mechanical Equipment (PME) so that noise is directed away from sensitive areas;</p>		<p>Contractor</p> <p>Supervising Engineer</p>	<p>Construction</p>	

Table 9-3: Proposed Wildlife Conservation and Management Plan (WCMP)

Impact	Impact Cause / Source	Nature	Mitigation Action Plan	Costs of Mitigation	Responsibility	Time Range	Monitoring Framework
Wildlife	Road corridor will interrupt Wildlife migration corridors especially elephants Increased risk of wildlife kills due to collisions and high traffic speeds. The current situation has no or negligible kills due to poor state of the road and low speeds. Opened up borrow and quarry sites could store rain water and become attractions for wildlife watering. Adverse impacts from these include animals crossing the road and associated accidents, hunters and poachers turning such sites into luring grounds borrow pits near the road create habitats or traps for animals or hunters	Long term Reversible Significant	Install wildlife crossing structures - bridge areas are suitable locations to consider for underpasses-when the river is dry that is an under pass Box and pipe culverts (underground tunnels) to be installed in all known locations where smaller mammals and reptiles cross However identified historical crossings were identified far from bridge sites at Kaptir hills crossing and Kanabei crossing KWS should continually monitor road kills oversee the road is improved Siting of such borrow and quarry sites to be done at locations not likely to attract wildlife outside of protected areas. Any quarry or borrow pits inside the protected areas will require independent EIA and authorisation from KWS according to the new Wildlife Act They are also charged a conservation fee for the impact	Incorporated in Table 9.4	KeNHA Design engineers, Contractor Supervising Engineer KWS	Construction Operation	
	Increased risk of poaching especially during operation in which case transport of such game trophies is		Establish a police post at every wildlife crossing KWS to increase wildlife security surveillance and patrols to deter poaching adequate signage showing animals crossing to warn drivers to reduce		KeNHA Design engineers, Contractor Supervising Engineer KWS	Operation	

Impact	Impact Cause / Source	Nature	Mitigation Action Plan	Costs of Mitigation	Responsibility	Time Range	Monitoring Framework
	easily enhanced. Wildlife crossings are ripe targets for poachers Speeding motorists due to the good road will collide with wildlife especially evenings Solid wastes such as banana peels attracts wildlife, baboons, monkey on the road		wildlife related accidents e.g Antelope crossings Installation of speed calming effects just before wildlife crossing areas There should be awareness to warn road users of rampant wildlife occurrences so that they drive with caution A solid waste management program should be put in place by the road authorities during operation				
	The road improvement will enable Movement between Lodwar and Kitale for KWS researchers and patrols. Currently, data on the Turkana south and Nasolot national reserves is scanty. It will also allow Security against wildlife poaching						

9.1.3 Cost of Environmental and Social Mitigation

The impact of an environmental effect is more often not directly measurable in terms of money. This is a setback when one wants to take the environmental and social aspects into consideration in the societal cost benefit optimization of a project such as the Proposed Rehabilitation of Marich Pass - Lodwar (A1) Road. Efforts have however been made to developed methods to monetarise the impacts of all kinds of environmental effects and have come up with tools to express these impacts in terms of money by following fundamental principles of economics.

Described below are the three categories of the commonly practiced techniques together with a description of their characteristics.

Approach 1. Market Value Approaches to Costing

These techniques derive value from comparisons of costs and revenues. The price or cost of the environmental resource is used and these are easily observable in market data for prices. Parameters checked for variation will include;

- Change in productivity - change in availability, quality or quantity of an output
- Change in income – change in availability, quality or quantity of an output
- Replacement cost – for individuals, groups or society replace an entire asset, part of an asset, or quality of an asset,
- Preventative expenditure – if/how much individuals, groups or society spend money to defend their environment
- Relocation cost –for individuals, groups or society relocate an activity or assets

Approach 2. Surrogate Market Approaches to Costing

These techniques derive value from comparisons of costs and revenues in related markets. This will look for prices or costs of surrogate goods or services. Elements of consideration are;

- Value of close substitute- is in effect taken as value of affected interests
- Wages to labour- change in wages depicts value of change in environment
- Market prices of good with an environmental characteristic- change of its price indicates change in characteristics as well.

Approach 3. Simulated Market Approaches to Costing

These techniques derive value from hypothetical questions because there are no observable market data on prices or costs. It answers questions simulating a market situation. Techniques involved include;

- Trade-off game between alternatives each with a different level of environmental effect,
- Contingent valuation -purchasing of an environmental good/service or asset.(willingness to pay)
- Contingent ranking – comparison of environmental effects with other effects
- Priority evaluator – choice of quantities to purchase in market setting

The following is the estimates for Environmental and Social Mitigation of impacts emanating from the proposed project including health and safety and wildlife management.

Table 9-4: *Bill of Quantities for Environmental and Social Mitigation*

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
1.00	POPULATION CHANGE AND MIGRATION						
1.11	Population Characteristics -	In-migration of various other ethnic groups and expatriates	Employing as many people as possible from the locality especially unskilled workforce will help them accept skilled labour from outside. This will promote cohesion and the spirit of the project.	LS	2	3,000,000	6,000,000
1.12			The contractor should source labor from the indigenous communities along the road as much as possible.	LS	2	500,000	1,000,000
1.13		Conflict in competition for employment opportunities between local communities and migrant workers	In the format of the project organize grievance redress committee and engage local leadership into resolution of potential conflicts.	PM	6	300,000	1,800,000
2.00	SOCIO-ECONOMIC ENVIRONMENT						
2.11	Public Health	Dust, noise and fumes from machinery and construction traffic pre-disposing workers to hazards	Introduction of measures that intercept transmission of dust and other air pollutants likely to be generated to sensitive receptors when it cannot be entirely avoided. For example Surface dressing to be done on diversion routes and materials handling site routes through populated centres especially if these sites are near sensitive receptors.	No.	10	500,000	5,000,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
2.12		Noise and vibration	Vehicles and construction machinery to be properly maintained and to comply with relevant emission standards.	LS	1	2,000,000	2,000,000
2.13			The contractor to provide protective clothing like helmets, dust masks and ear muffs to construction crew at all work sites.	No.	10	300,000	3,000,000
2.14			Construction activities to be scheduled carefully to minimize the impact of noise from construction machinery. Night time's uses of certain noisy machines, such as pile drivers and concrete vibrators, to be regulated.	LS	1	100,000	100,000
2.15		Potential for migration of commercial sex workers and transmission of stds and HIV-AIDS	Intensify awareness on HIV/AIDS by use of bill boards in market centres, through staff training, community awareness campaigns, multi-media and workshops or during community 'Barazas' along the project road.	No.	6	500,000	3,000,000
2.16			Condom dispensers to be located in appropriate locations within the camp and the camp environs such as in public toilets in market centers and the contractor to provide VCT centers along the route in collaboration with the ministry of health.	No.	30	100,000	3,000,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
2.17		Creation of mosquito breeding grounds	Educate personnel and community about Malaria and use of mosquito nets including proper hygiene and sanitation, Proper disposal of containers and other wastes that may act as mosquito breeding grounds.	LS	1	300,000	300,000
2.21	Social Organization and Co-Operation	In-migration		LS	1	500,000	500,000
2.41	Road Safety and Accident Rates	Increased traffic accidents in frequency and severity due to high speeds - human, wildlife and bird collisions and accidents between vehicles, and with non-motorized transport such as cyclists,	To reduce accidents, appropriate road signs and road markings to be put in place to warn drivers of safety hazards especially while approaching bends, junctions, bridges, animal crossings, schools and shopping centers.	LS	50	300,000	15,000,000
2.42			To reduce the possibility of vehicle and animals collisions vehicle speed shall not exceed posted speed limits and animal crossing warning signs shall be installed where appropriate.	LS	50	100,000	5,000,000
3.00	Physical infrastructure						
3.11	Waste Generation	Wide variety of solid and liquid waste generated during construction from activities and camps - human waste, timber, stones, rock, metals, paper, plastics are unsightly	Provide solid waste disposal system - a waste collector, NEMA recommended waste disposal manual and a waste collection bin for each housing unit, workshop, plant, structural shelter, etc.	No.	4	800,000	3,200,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
3.12		Careless disposal of used oil, lubricants, paint, and other toxic substances containers has health consequences for local residents who'll pick them up and use them for water containers	Waste disposal site to have a stone perimeter wall at least 1.5 m high x 7 m long x 5 m wide at a far corner to contain disposed materials from wind and runoff.	No.	4	200,000	800,000
3.13		Littering from traffic movement during operations	Keep records of all disposal/potential disposal locations	No.	4	100,000	400,000
3.14		Accidental oil spills, and petroleum products and bitumen may infiltrate into soils and cause soil pollution during construction	Hazardous materials to be stored within dedicated areas at work camps and marshalling yards in full compliance with regulatory requirements and the contractor to ensure that all waste materials at the point of construction are transported to a place of safe disposal	No.	4	500,000	2,000,000
3.15		Increased traffic during operation will increase chances for oil spills in case of accidents	All applicable laws, regulations and standards for the safe use, handling, storage and disposal of hazardous waste to be followed.	No.	4	50,00	200,000
3.16		Wildlife poisoning from drinking contaminated water within machinery yards caused by accidental spillage of oil, petroleum products, solvents and similar category of materials.	Areas dedicated for hazardous material storage shall provide spill containment and facilitate clean up through measures such as: maximum separation from sensitive features (water bodies); clear identification of the materials present; access restricted to authorized personnel and vehicles	No.	4	400,000	1,600,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
			only and dedicated spill response equipment				
4.00	POTENTIAL IMPACTS ON DEVELOPMENT RESOURCES						
4.11	Service Interruption	Interference with traffic flow during construction due to diversion and other activities	Provide appropriate signage to warn motorists and other road users of the construction activities, diversion routes to ward off traffic accidents	No.	20	25,000	500,000
4.12		Interference with water supply services especially in bigger centres like Lodwar.	Inform all service consumers, in sufficient lead time, of intended interruptions, of how long the interruptions are likely to be and for what reason	LS	1	200,000	200,000
4.13		Power lines, Mobile telephony and internet services will be altered during and after construction	KeNHA to enter into services agreements with the local WSP companies	No.	2	300,000	600,000
4.14		Stretched local services e.g., schools, health facilities, churches	For services to be interrupted for the duration of the project construction, the schedule of the construction work will be designed to keep the service interruptions at a minimum.	LS	1	100,000	100,000
4.21	Mechanical Disturbance	Breaking of the hard pan on the existing corridor and opening up wider areas to ingress of stormwater to underlying layers. This will have the impact of robust vegetation growth for forest species and worse, <i>Prosopis</i> .	Encourage use of <i>Prosopis</i> for firewood, poles and for fencing by the construction workers and local community according to Kenya Wildlife Service.	LS	1	200,000	200,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
4.22		Soil erosion arising from road construction related activity	Keep land clearance to a minimum and wherever possible avoid clearing areas of highly erodible soils and steep slopes which are prone to erosion.	LS	1	100,000	100,000
4.31	Removal of Structure Sites	Demolition of existing structures where the proposed alignment affects them	The contractor to communicate with the owners on the demolition of structures that will be affected along the road.	LS	1	100,000	100,000
4.32		Generation of large amounts of solid wastes.	Ensure that solid waste materials are properly disposed to suitable locations.	LS	1	300,000	300,000
4.41	Regional Drainage	Road as barrier to natural drainage	Ensure that provision that has been made in the design for bridges, culverts, cut-off drains and side drains to improve drainage are adhered to.	LS	1	200,000	200,000
4.42		Alteration of natural drainage	The Contractor will build drainage works to suit the altered topography.	LS	1	500,000	500,000
4.43		Interference of stormwater in privately owned property	The preventive measures will include the necessary construction of cofferdams, street piling, relocation of a water course (that causes wetness), construction of proper drainage channels, diversion channels, needful grouting of rock fissures, the supply and operation of the necessary bailing and pumping equipment.	LS	1	500,000	500,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
5.00	FLORA AND FAUNA; - BIOLOGICAL ENVIRONMENT						
5.11	Biota And Biodiversity Loss	High demand for charcoal and fuel wood especially to supply the refugee camps	The Contractor(s) during the project construction to develop a workers code of conduct to ensure that their workers do not consume game meat from the area, whether supplied by the locals or killed by themselves. Reserve the use of fuel to authorized sources.	LS	1	50,000	50,000
5.12		Construction workers can provide a ready market for game meat within a 5 km of radius potentially affecting the wildlife through reduction in their population such as antelopes, gazelles and avian species, notably guinea fowls.	Awareness creation to be carried out amongst the local people and the construction workers on the laws that relate to wildlife hunting and consumption, and the importance of wildlife as a natural resource and heritage.	LS	1	200,000	200,000
5.13		Direct impact through blasting at quarries within a 2 km of radius; noise and vibration occasioned by machinery and construction workers can affect wildlife feeding habits and even migration patterns.	The local administration to be involved in creating awareness amongst the local people, that killing game is illegal.	LS	1	400,000	400,000
5.14		Some animals can be more aggressive in the face of such sudden noise and vibration	Empty containers and other waste to be managed carefully to avoid exposing wildlife to possible poisoning.	LS	1	100,000	100,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
5.15		Cutting down sanctuary trees (trees above 5 m height with well-developed canopy) along the road to pave way for construction will affect biodiversity as these trees act as perching and nesting sites for a wide range of bird species especially weaver birds, and providing shade for mammals especially ungulates	During operation, a programmatic approach is proposed, where greater surveillance by KWS and involvement of local communities is instituted to counteract possibilities for new trade in game trophies, skins and live animals. It is recommended that a police post be established at each of the proposed wildlife crossing points.	No.	2	300,000	600,000
5.16		Death of wildlife occasioned by construction traffic especially in the evenings and early morning.	Install Wildlife crossings at identified Elephant crossing locations along their migratory routes at Kaptir hills crossing and Kanabei crossing;	No.	2	60,000,000	120,000,000
5.17		Accidental spills of oil, petroleum products, solvents, bitumen, etc. Will affect birds, wild dogs, ruminants	Provide collection bands at maintenance yards. Carry out remediation for accidental spills	No.	4	500,000	2,000,000
5.21	Vegetation Clearance	Aspect of the project that may impact on vegetation is the need for cooking energy by the construction workers as opposed to clearing during construction.	Provide appropriate signage to warn motorists and other road users of the construction activities, diversion routes to ward off traffic accidents	No.	40	25,000	1,000,000
5.22		The predominantly arid environment is not conducive for plant growth; hence the tree growth is extremely slow.	In the event that delivery trucks damage parts of the road, the contractor should repair the spots immediately.	No.	4	500,000	2,000,000
5.23		The critical impact relates to the inability of the area to naturally regenerate after harvesting of the mature trees. Within a 5 - 10 km radius of camp	The contractor should communicate any intended disruption of services to enable the people to prepare.	LS	1	200,000	200,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
5.00		Locals may see an opportunity for income generation by selling firewood and/or charcoal to the contractors.	Enable local Patrols by KFS staff to ensure that unauthorized charcoal burning does not happen, especially from forest resources	LS	1	300,000	300,000
5.24		Additional vegetation clearance at quarries and borrow pits, and contractor camp sites will also contribute to overall vegetation loss - vegetation clearance will not cause loss of rare species, endangered trees or other plant species that are endemic to the area, species of medicinal and of major commercial values	replant with original vegetation at the completion of the project	LS	1	200,000	200,000
5.31	Land Use/Land Cover and Change in Designated Land-Use	Some currently existing market centres may rapidly develop in to vibrant town centres to provide support services for the revamped transportation corridors	Encourage use of <i>Prosopis</i> for firewood, poles and for fencing by the construction workers and local community according to Kenya Wildlife Service.	LS	1	50,000	50,000
5.32		Such sporadic development may affect designated land use in some urban and other centres. Some pastoral land may convert to residential or commercial, even agricultural.	Keep land clearance to a minimum and wherever possible avoid clearing areas of highly erodible soils and steep slopes which are prone to erosion.	LS	1	50,000	50,000
5.33		Introduction of new animal and plant species, some of which could be invasive and change the land cover of the project sites.	Keep vigilance against introduction of known or emergent invasive species. Conduct regular monitoring.	LS	1	200,000	200,000
5.34		Increased population in the area due to new opportunities puts pressure on land use, land cover and change in designated land-use.	Spread awareness on impacts of such pressure to the residents	No.	4	250,000	1,000,00

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
5.35		Project is likely to lead to direct land-take of privately or community owned land occasioning involuntary loss of access, use or even partial or full displacement and relocation of households, structures or other assets.	Addressed in RAP	LS	1	0.00	0.00
5.51	Habitat Change and Habitat Loss		The contractor to communicate with the owners on the demolition of structures that will be affected along the road.	LS	1	50,000	50,000
5.52			Ensure that solid waste materials are properly disposed to suitable locations.	LS	1	300,000	300,000
5.51			Ensure that provision that has been made in the design for bridges, culverts, cut-off drains and side drains to improve drainage are adhered to.	LS	1	400,000	400,000
5.61	Micro-Climate	Potential for changes in micro-climate exists from borrow areas that are not rehabilitated.	Implement restoration of borrow sites before the closure of contracts.	No.	3	300,000	900,000
6.00	Air quality						
6.11	Air Quality due to	Reduction of dust pollution from the unpaved road once the road is rehabilitated	Use of Personal Protective Equipment (PPE) by workers and all visitors to the site	LS	1	400,000	400,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
6.12	Construction and Operation	Passage of increased number of vehicular traffic during construction and operation will introduce higher levels of other pollutants such as emissions of exhaust fumes, lead and associated gases such as carbon monoxide, hydrocarbons, and nitrous oxides	Use equipment fitted with water suppression to minimize the amount of dust. The Contractor will abate excessive dust by sprinkling water at least three times a day during day-working. This measure will be applied to the project road and the construction road and thoroughfares. During hot seasons, there will be at least two vehicles sprinkling water in opposite directions within a 5 km stretch of the construction (diversion) road.	No.	50	500,000	25,000,000
6.13		Dust pollution is expected to emanate from material extraction and stockpiling sites such as quarry sites, borrow sites and sand as well as ballast stockpiles during hours of active operation	Vehicles and construction machinery to be properly maintained and to comply with relevant emission standards.	LS	1	5,000,000	5,000,000
6.14		This this sustained high level of dust could have long-term health implications on the workers and businessmen who spend considerable time within the road area	The contractor to provide protective clothing like, dust masks, changeable working clothes and nose gauze to construction crew.	No.	300	100,000	30,000,000
6.15		Construction machinery, Vehicle movements over unsealed surfaces; Exposure of soils to wind erosion. Wind erosion of open active areas, Material handling and temporary stockpiles; Spoil transportation; and Small concrete batching plant activity	Surface dressing to be done on diversion routes and materials handling site routes through populated centers especially if these sites are near sensitive receptors to reduce generation of dust.	No.	20	4,500,000	90,000,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
6.17		Quarrying activities; and Vehicle movements on earth roads	Contractor to employ Traffic Calming mechanisms	No.	10	100,000	1,000,000
6.18		The amount of carbon dioxide emission is a leading environmental effect produced by vehicles	Carry out baseline GHG and other gaseous emissions surveys	LS	1	300,000	300,000
7.00	AMBIENT NOISE LEVEL						
7.11	Noise generation and vibrations	Noise generation and vibrations in an otherwise quiet environment from construction machinery and activities could adversely affect the local people as well as wildlife (sensitive receptors).	Contractor to agree noise limits/ noise control stations with NEMA and obtain a Construction Noise Permit prior to the commencement of construction work	LS	1	400,000	400,000
7.12		The operation and maintenance phases of the project will in turn increase noise levels significantly along the road.	Positioning Powered Mechanical Equipment (PME) so that noise is directed away from sensitive areas;	LS	1	400,000	400,000
7.13		Explosives used for rock blasting at quarries will cause noise beyond ambient levels and vibrations in the vicinity of the site can be destructive to housing and other structures.	Contractor to adhere to normal working hours and ensure prior notification of adjacent settlements on the schedule of blasting.	LS	1	50,000	50,000
7.14			Contractor to prepare for approval by KENHA a Health Management Plan (HMP) detailing means to protect site workers and community from excessive noise and vibrations	LS	1	200,000	200,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation				
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.	
7.15			Construction activities to be scheduled carefully to minimize the impact of noise from construction machinery.	LS	1	50,000	50,000	
7.16			The location and operation of asphalt batch plants to be sited as far as possible from sensitive receptors, such as shopping centers, health facilities and learning institutions	LS	1	200,000	200,000	
7.17			Quarry operations	Special care should be taken when construction is taking place near sensitive receptors such as schools and hospitals.	LS	1	50,000	50,000
7.18				To the extent possible, heavy vehicles should not be used at night across populated areas especially Lodwar.	LS	1	0	0
7.20				Ensure that construction equipment is operating optimally and with operational noise mufflers where possible.	LS	1	0	0
8			WATER AND AQUATIC ENVIRONMENT					
8.11	Change in Hydrological Cycle	Destruction or alteration of local vegetation is likely to affect the hydrological cycle	Avoide destruction of vegetation due to construction or operation of the Project;	LS	1	300,000	300,000	
8.12		Similarly, the sinking of boreholes to extract water for construction has similar impact		LS	1	300,000	300,000	

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
8.21	Water Quality (Surface/Ground)	Construction activities such as earthworks could lead to erosion and alteration of physical properties of surface and underground water resources	Install sediment traps	LS	1	300,000	300,000
8.22		Oil spills, bitumen and greases generation by construction traffic as well as traffic during operation could lead to pollution by altering the chemical and biological characteristics of surface and ground water resources	Areas dedicated for hazardous material storage shall provide spill containment and facilitate clean up through measures such as: maximum separation from sensitive features (water bodies); clear identification of the materials present; access restricted to authorized personnel and vehicles only and dedicated spill response equipment	LS	1	500,000	500,000
8.23		There is potential for contamination of water resources as a result of improper disposal of liquid and solid waste from construction activities and construction camps.	Provide solid and liquid waste disposal system - a waste collector, NEMA recommended waste disposal manual and a waste collection bin for each housing unit, workshop, plant, structural shelter.	LS	1	400,000	400,000
8.31	Ground Water Levels and Recharge Potential	Over-extraction of water for construction purposes beyond the yield levels of the ground resources could affect the recharge potential.	Observe the permit requirements	LS	1	50,000	50,000
8.32			Avoid close distance between boreholes; if too close i.e. Within less than 800m radius, it will affect the Ground Water Levels and Recharge Potential	LS	1	50,000	50,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
8.41	Drainage System and Existing Water Bodies	Issues relating to access to water often lead to conflicts between whole communities. Other potential negative impacts include livestock-wildlife-human conflict, disease, salinity and water quality.	Carefully select any permanent water sources, to be handed to the communities upon decommissioning.	LS	1	300,000	300,000
8.42			The contractor should consult the community on suitable location for sinking the boreholes	LS	1	100,000	100,000
8.51	Sensitive Ecosystems, including Downstream and Upstream	Potential overgrazing of land could be worsened, depending on the siting of community wells or boreholes that provide drinking water for livestock throughout the year.	Acquire all the relevant licenses prior to drilling bore holes that tap deep aquifers and get Government approval, through an abstraction permit from the Ministry of Water development through the Water Resources Management Authority (WRMA), and a license from NEMA.	LS	1	100,000	100,000
8.52				LS	1	100,000	100,000
8.53				LS	1	100,000	100,000
9	GEOLOGICAL AND OTHER ASPECTS						
9.21	Any Climate Change Factors of the Project area		Conduct baseline GHG emission survey	LS	1	400,000	400,000
10	VISUAL/AESTHETIC CHANGE						
10.12		Hap-hazard disposal of solid and liquid waste can be substantial and can be a cause of visual intrusion.	Ensure that solid waste materials are properly disposed to suitable	LS	1	500,000	500,000

Serial Number	Impact Area	Impact Cause / Source	Mitigation Action Plan	Costs of Mitigation			
				Unit	Qt	Unit Price K. Shs.	Item Price K. Shs.
			locations through awareness creation.				
10.21	Landscape Change	Quarries and borrow pits, cut slopes and material stockpiles when exposed to the public, often leads to visual intrusion.	Need to landscape the material sites/borrow areas and quarries after use to blend with the landscape as far as is reasonably possible.	No.	25	5,000,000	125,000,000
10.22		Changes to local landscape due to establishment of borrow sites	The Contractor will cut to spoil in order to prepare Spoil Sites or Backfill Sites. There are previous disused borrow pits or quarries which are scarring the landscape in the vicinity of the road that can be developed as Spoil or Backfill Sites. The material will be hauled as soon as it is excavated from the road alignments.	LS	1	200,000	200,000
11	ESMP Implementation and Contract Administration						
11.11	ESMP Implementation and Contract Administration	Allow a Lump sum for material testing, miscellaneous account and environmental mitigation measures to be used as directed by the Engineer		LS	1	5,000,000	5,000,000
11.12		Scheduled bi-monthly or quarterly Environmental awareness and education meetings for the stake holders and the public in general		LS	1	3,000,000	3,000,000
11.13		ESMP Implementation Costs and Associated Administration Costs		LS	1	50,000,000	50,000,000
11.14		Institutional and financial support and Capacity improvement for ESMP Implementation and Associated Administration Costs		LS	1	5,000,000	5,000,000
		GRAND TOTAL FOR ENVIRONMENTAL AND SOCIAL MITIGATION					467,950,000

9.2 DEVELOPMENT OF ENVIRONMENTAL AND SOCIAL MONITORING AND EVALUATION PLAN (ESMEP)

The ESMEP identifies the monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed. This consists of specific description and technical details of monitoring measures including staffing requirements and costs.

Specifically, the monitoring section of the ESMP provides:

- e) A specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and
- f) Monitoring and reporting procedures to
 - Ensure early detection of conditions that necessitate particular mitigation measures, and
 - Furnish information on the progress and results of mitigation.

For clarity and isolation of details whenever required, the Monitoring Plan is presented as a stand-alone table but with linkages to the ESMP.

Specific descriptions, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, and definition of thresholds that will signal the need for corrective actions as well as deliver monitoring and reporting procedures have been reviewed.

Time frames and implementation mechanisms, reporting responsibilities, staffing requirements and cost outlays have been provided.

The key monitoring indicators were identified for measuring the impact of the project on the biophysical and social environment and specify the time frame through the baseline study and socio-economic studies.

A coherent Environmental and Social Monitoring and Evaluation Plan (ESMEP) is provided that identifies the organizational responsibilities, the methodology, and the schedule for monitoring and reporting. The Monitoring and Evaluation Plan has three components i.e., performance monitoring, impact monitoring and completion audit.

Monitoring and evaluation tasks include the following:

- Identification of key indicators and specify the time frame for monitoring and reporting;
- Preparation of a monitoring and evaluation plan;
- Review arrangements for internal monitoring of resettlement activities by the implementing agency, supplemented by independent external monitoring as considered appropriate by the GoK and the World Bank;
- Ensure complete and objective information; performance monitoring indicators to measure inputs, outputs, and outcomes for resettlement activities and means of verification;

Monitoring and evaluation will help to oversee that the Updated ESIA is implemented as designed and approved, to verify that funds for implementation of the ESIA are provided by the Project authorities in a timely manner and in amounts sufficient for their purposes, and that such funds are used in accordance with the provisions of the ESIA.

9.2.1 The ESMEP

A comprehensive Environmental and Social Monitoring and Evaluation Plan (ESMEP) is proposed to help check effectiveness of the mitigation measures as proposed and environmental compliance with relevant statutory requirements during project implementation. For ease of understanding and execution, it is split into Environmental and Social Impacts Monitoring (Table 11-5), Occupational Health and Safety Impacts Monitoring (Table 11-6) and Wildlife Conservation Impacts Monitoring (Table 11-7).

Table 9-5: *ESMEP for Environmental and Social Impacts*

Issue	Parameters to be measured	Actions to be taken	Where	Monitoring Frequency	Responsibility	Project Phase
Labour and Employment	<ul style="list-style-type: none"> Numbers and equity of local personnel deployed – Pokots and Turkanas 	<ul style="list-style-type: none"> Establish the baseline conditions of employable personnel using identified parameters Respond to any complaints arising in relation to labour and employment such as lack of equity promptly Establish documented instances of labour unrest and underlying reasons or solutions 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Air Quality	<ul style="list-style-type: none"> Pollutants of concern associated with project processes 	<ul style="list-style-type: none"> Establish the baseline conditions of air quality using identified parameters Differentiate between existing ambient conditions and project-related impacts. Data on emissions and ambient air quality generated through the monitoring to be representative of the emissions discharged by the project over time. Audit of inventory on noise PPE issued to who when for contractors workers and the supervising team Assessment of the use and suitability of PPE issued Sampling and analysis methods should apply national or international methods for sample collection and analysis, such as those published by the International Organization for Standardization. Respond to any complaints arising in relation to air quality such as dust promptly. 	<ul style="list-style-type: none"> Designated air Quality monitoring stations such as at the quarry sites and areas of active earthworks off-site or fence line monitoring 	<ul style="list-style-type: none"> Continuous undertaking Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> County government Project contractor, KeNHA EIA unit 	<ul style="list-style-type: none"> Construction Operation

Issue	Parameters to be measured	Actions to be taken	Where	Monitoring Frequency	Responsibility	Project Phase
Noise	<ul style="list-style-type: none"> As stipulated in the First & Second Schedules of the Noise & excessive vibrations EMCA Regulations 	<ul style="list-style-type: none"> Establish the baseline conditions of ambient noise Monitor if noise levels at sensitive receptors during day and night comply to those stipulated Conducting regular site audits to ensure that noise control measures are properly implemented. Respond to any complaints arising in relation to noise. 	<ul style="list-style-type: none"> Designated noise monitoring stations such as at the quarry sites and areas of active earthworks 	<ul style="list-style-type: none"> Continuous undertaking Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> ESIA unit 	<ul style="list-style-type: none"> Construction Operation
Water Resources Mgnt and Water Quality	<ul style="list-style-type: none"> dissolved oxygen levels in the waters, the turbidity and pH levels other parameters according to the regulations provided for by EMCA & Water Act 2002 	<ul style="list-style-type: none"> Establish the baseline conditions of water resources and quality using identified parameters Differentiate between existing baseline conditions and project-related impacts. Respond to any complaints arising in relation to water resources and quality promptly. 	<ul style="list-style-type: none"> Designated monitoring stations such river crossings, borehole locations and areas of active earthworks 	<ul style="list-style-type: none"> Regular basis Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> ESIA unit respective agencies such as WRMA, NEMA especially if complaints abound 	<ul style="list-style-type: none"> Construction Operation
Waste Generation – Liquid and solid wastes	<ul style="list-style-type: none"> Amounts of waste generated – liquid or solid 	<ul style="list-style-type: none"> Establish the baseline conditions of waste generation using identified parameters Differentiate between existing baseline conditions and project-related impacts Inspect waste storage areas to make sure that wastes are being stored properly Review register to identify any dramatic changes in waste generation 	<ul style="list-style-type: none"> Designated monitoring stations such quarry sites, contractor’s camp, locations of demolitions and areas of active earthworks 	<ul style="list-style-type: none"> Weekly basis Monthly reviews Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> ESIA unit 	<ul style="list-style-type: none"> Construction Operation

Issue	Parameters to be measured	Actions to be taken	Where	Monitoring Frequency	Responsibility	Project Phase
		<p>patterns and possible opportunities for waste minimization.</p> <ul style="list-style-type: none"> Respond to any complaints arising in relation to waste generation such as littering promptly 				
Services Delivery Impacts	<ul style="list-style-type: none"> Frequency and duration Service interruption such as water supply, traffic flow, telephony 	<ul style="list-style-type: none"> Establish the baseline conditions of service delivery using identified parameters Differentiate between existing baseline conditions and project-related impacts Number and content of Service agreements entered into with the respective bodies Set up acceptable performance criteria and follow it up. Respond to any complaints arising in relation to services deliveries such as delayed journeys promptly 	<ul style="list-style-type: none"> Areas of active Constructions 	<ul style="list-style-type: none"> Weekly Basis Monthly audits Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> ESIA unit Respective bodies 	<ul style="list-style-type: none"> Construction Operation
Land Use/Cover/ Designated use Impacts	<ul style="list-style-type: none"> Pest species and weeds; Fauna strike and mortality 	<ul style="list-style-type: none"> Prepare a photographic record prior to construction commencing Use this photographic record as a baseline against which to measure the success of rehabilitation recommend adaptive management for specific weed invasions in habitats adjacent to the project corridor during construction monthly visual inspections of the rehabilitated areas for a period of 12 months after construction Check that design requirements have been met in relation to keeping to the alignment to avoid the impacts or in 	<ul style="list-style-type: none"> Designated monitoring stations such as borrow sites, contractor's camp, route alignment and areas of active earthworks 	<ul style="list-style-type: none"> Regular Basis Monthly audits Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> ESIA unit KWS Local Agency Scientists 	<ul style="list-style-type: none"> Construction Operation

Issue	Parameters to be measured	Actions to be taken	Where	Monitoring Frequency	Responsibility	Project Phase
		installation of features such as culverts and bridges <ul style="list-style-type: none"> Review the institutional set-up or outsource for specific monitoring Monitor rehabilitation success through weekly inspections in the first four weeks after seeding, and then monthly until 80% cover has been achieved Respond to any complaints arising in relation environmental interference such as sensitive ecosystems promptly 				
Road Safety	<ul style="list-style-type: none"> Frequency and severity of traffic accidents 	<ul style="list-style-type: none"> Establish the baseline conditions of traffic accidents using identified parameters Assess numbers and severity of traffic accidents over time Differentiate between existing baseline conditions and project-related impacts Respond to any complaints arising in relation to traffic accidents such as black spots promptly 	<ul style="list-style-type: none"> Areas of active Construction Completed operational sections of the road 	<ul style="list-style-type: none"> Weekly Basis Monthly audits Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> RE Contractor ESIA unit Respective bodies 	<ul style="list-style-type: none"> Construction Operation
Regional Security / insecurity	<ul style="list-style-type: none"> Frequency and severity of cattle raids and flare ups of inter-community hostilities 	<ul style="list-style-type: none"> Establish the baseline conditions insecurity hotspots using identified parameters Assess numbers and severity insecurity flare-ups over time Differentiate between existing baseline conditions and project-related impacts Respond to any complaints arising in relation to insecurity such game killings or poaching promptly 	<ul style="list-style-type: none"> Areas of active Construction Completed operational sections of the road 	<ul style="list-style-type: none"> Weekly Basis Monthly audits Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> RE Contractor ESIA unit County government Respective bodies 	<ul style="list-style-type: none"> Construction Operation

Table 9-6: ESMEP for Occupational Health and Safety Impacts Monitoring

Issue	Parameters to be measured	Actions to be taken	Where	Monitoring Frequency	Responsibility	Project Phase
Hazardous wastes	<ul style="list-style-type: none"> Oil spills 	<ul style="list-style-type: none"> Establish the baseline conditions of hazardous waste generation using identified parameters Differentiate between existing baseline conditions and project-related impacts Maintain a waste register for all hazardous wastes and operation wastes. Inspect fuel storage areas and clean up and repair any ineffective storage areas. 	<ul style="list-style-type: none"> Designated monitoring stations such quarry sites, contractor's camp and garages 	<ul style="list-style-type: none"> Weekly basis Monthly audits Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> ESIA unit Respective bodies 	<ul style="list-style-type: none"> Construction Operation
Explosives	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Ensure only properly qualified personnel carry out operations by inspecting their records Inspect register for all blasting operations for occurrences Assess the adequacy of explosives storage unit Respond to any complaints arising in relation to explosives such as noise or injury promptly 	<ul style="list-style-type: none"> Designated monitoring stations mainly quarry sites and sites of active construction such as rocky terrain 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> ESIA unit Respective bodies such as Mines and geology, Quarry manager 	<ul style="list-style-type: none"> Construction Operation
Radioactive materials	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Respond to any complaints arising in relation to radiation promptly 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Construction Operation
Occupational Hazards and general safety	<ul style="list-style-type: none"> Frequency and severity of accidents to workers as well as local population, domestic animals and wildlife 	<ul style="list-style-type: none"> Establish the baseline conditions of occupational hazards related accidents using identified parameters Differentiate between existing baseline conditions and project-related impacts Ensure existence and appropriateness of an operator O&M manual for all work sites 	<ul style="list-style-type: none"> Areas of active Work sites Administrative and technical practices 	<ul style="list-style-type: none"> Weekly basis Monthly audits Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> ESIA unit Contractor 	<ul style="list-style-type: none"> Construction Operation

Issue	Parameters to be measured	Actions to be taken	Where	Monitoring Frequency	Responsibility	Project Phase
		<ul style="list-style-type: none"> • Ensure proper adherence by the operators to the O&M manuals. • Respond to any complaints arising in relation to occupational hazards promptly such as burning by chemicals • Inspect register for PPE issued to all work sites • The PPE issues should conform to OSHA standards • Development of O&M manual with clearly spelt out standard operating procedures will ensure consistent maintenance practices by all operators despite staff turnover or even sub-contracted operations 				
Fire Safety	<ul style="list-style-type: none"> • Frequency and severity of fires attributable to the project 	<ul style="list-style-type: none"> • Establish the baseline conditions of wild fires using identified parameters • Differentiate between existing baseline conditions and project-related impacts • Conduct Fire safety audits at all work sites 	<ul style="list-style-type: none"> • Areas of active construction or accommodations of project staff 	<ul style="list-style-type: none"> • Weekly basis • Monthly audits • Quarterly monitoring • Annual environmental audit 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •

Table 9-7: ESMEP for Wildlife Conservation Impacts Monitoring

Issue	Parameters to be measured	Actions to be taken	Where	Monitoring Frequency	Responsibility	Project Phase
Wildlife populations	<ul style="list-style-type: none"> Wildlife kills 	<ul style="list-style-type: none"> Establish the baseline conditions of wildlife populations using identified parameters Differentiate between existing baseline conditions and project-related impacts Keep a register of wildlife kills for a period of 12 months after construction 	<ul style="list-style-type: none"> Areas of active Work sites 	<ul style="list-style-type: none"> Weekly basis Monthly audits Quarterly monitoring Annual audit 	<ul style="list-style-type: none"> KWS ESIA unit Consultant 	<ul style="list-style-type: none"> Construction Operation

It is the responsibility of the Client to implement the ESMP monitoring as well as determine when it's implemented through periodical audits during implementation and operations phase in order to check effectiveness of the mitigation measures as proposed and environmental compliance with relevant statutory requirements.

Before the project commences, baseline monitoring at and in the vicinity of the alignment and key component sites of ambient noise, air quality and all other relevant environmental and social issues should be undertaken to assess background levels, in order to differentiate between existing ambient conditions and project-related impacts. It is at this time that the locations for monitoring will be identified and shown on a map.

It is recommended that the Client establishes/appoints/contracts an ESIA monitoring unit for daily operations during the contract execution in order to ensure adherence to the ESMP, to attend to matters arising and assess the effectiveness of mitigation measures proposed together with identify and attend to emergent impacts not captured in this report.

In addition, it is recommended that Quarterly monitoring and reporting must to be carried out by the combined team of the Client's ESIA monitoring unit and the Contractors ESIA Compliance team. The findings and recommendations for such monitoring will be submitted to the Supervising Engineer for Action.

The following is the proposed institutional arrangements responsible for carrying out the monitoring for ESIA mitigation measures:-

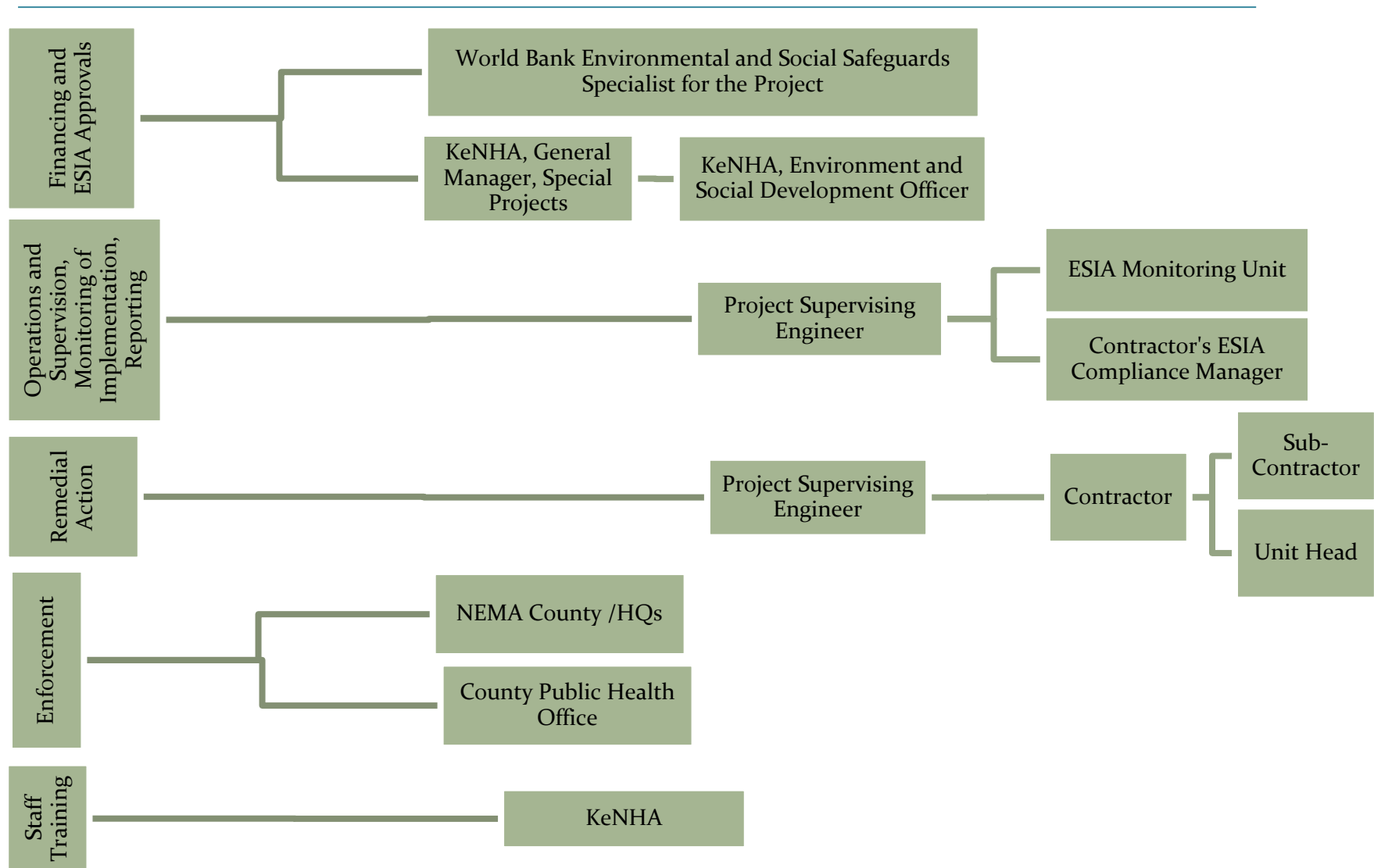


Figure 9-1: Proposed Hierarchy of Responsibility and Reporting for ESIA monitoring

9.3 RECOMMENDATIONS FOR CAPACITY DEVELOPMENT AND TRAINING

To support timely and effective implementation of environmental project components and mitigation measures, the ESMP draws on the EA's assessment of the existence, role, and capability of environmental units at KeNHA and ministry level. Where necessary, the ESMP recommends the establishment or expansion of the units, and the training of staff, to allow implementation of ESIA recommendations. This will provide a specific description of institutional arrangements which is responsible for carrying out the mitigation and monitoring measures (e. g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training).

CHAPTER 10. CONCLUSIONS AND RECOMMENDATIONS

The objectives of this chapter is to wrap up the findings of ESIA for the Project.

10.1 FINDINGS

Overall, the Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road (Package 2) has the following benefits

- When completed, the road is expected to contribute to economic growth in the region through increased trade and better access for landlocked countries to the port of Mombasa. It is envisaged that by completing this link to bitumen standard, trade between Kenya and Southern Sudan will increase, with benefits accruing to the people of both countries, and in particular to the people who reside along the road route corridor and the adjacent areas.
- Research and patrols by KWS scientists and Wardens will be more regular and data on wildlife in the area more accessible.
- There'll be overall improved access with traveling across the region taking shorter time with improved comfort.
- It is envisaged that the upgrading of the project road will improve accessibility to social amenities and markets, of importance is accessibility to health facilities for the disadvantaged in the local community especially women.
- Improved access to better health care in less time will lead to decreased mortality rates. This coupled with improved access to vaccination services will help lower mortality rates in the region and beyond.
- Employment and skills transfer/improvement opportunities will be created for the local population; this will improve the general socio-economic wellbeing of the community
-

10.2 CONCLUSION

The ESIA concludes that the project will have substantial positive environmental benefits. It will enable easier and faster access, mobility and security along the road corridor. The adverse impacts on the physical and natural environment are mostly confined to the construction phase of the project and will be largely not significant, and can be avoided or managed through the recommended mitigation measures and monitored during programme implementation. To ensure sustainability of the proposed project, it is ensure timely allocation of funds to environmental and social management aspects identified in this assessment.

Chapter 11: Summary of Stakeholder Consultations

Attached

Annex 1: Chance Find Procedures

Chance finds procedures are an integral part of the project ESMP and civil works contracts. The following wording is proposed:

If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the Ministry in charge of managing cultural heritage and related resources in the country (Ministry of Sports, Culture and the Arts) take over;
- Notify the supervisory Project Environmental Officer and Project Engineer who in turn will notify the responsible local authorities and the Ministry of Sports, Culture and the Arts immediately (within 24 hours or less);

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

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

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

Construction work may resume only after permission is given from the responsible local authorities or the responsible ministry concerning safeguard of the heritage.

Chapter 11: Public Consultations

The overall objective of the Government is to involve communities in policy formulation and implementation at the local level. More specifically, the Community Action Planning Programme objective is to put in place a durable system of intra-community co-operation through collective action, which creates communal discussion forums for the implementation of development activities.

Section 17 of the Environmental (Impact Assessment and Audit) Regulations 2003 states that an EIA Study should “seek the views of persons who may be affected by the project.” Public consultations for the proposed Marich Pass – Lodwar road were undertaken as follows:-

- i. General interviews
- ii. Initial detailed scheduled stakeholder participation meetings
- iii. Second Level scheduled stakeholder participation meetings

RECORD OF GENERAL INTERVIEWS WITH PERSONS OR AGENCIES

The key issues associated with the road rehabilitation project varies but will often relate to land-take, employment opportunities, disruption of livelihoods, biodiversity, heritage, pollution control, community safety, traffic management, loss of remoteness, communicable diseases and trade opportunities.

Effort was not spared to contact as many with information on the following issues:

- Assessment of the baseline cultural, social and environmental conditions
- Protection of cultural property and heritage
- Consideration of feasible environmentally and socially preferable alternatives
- Protection and conservation of biodiversity, including endangered species and sensitive ecosystems in modified, natural and critical habitats, and identification of legally protected areas
- Sustainable management and use of renewable natural resources (including sustainable resource management through appropriate independent certification systems) Protection of human rights and community health, safety and security (including risks, impacts and management of project’s use of security personnel)
- Land acquisition and involuntary resettlement
- Efficient production, delivery and use of energy

A cross-section of persons was consulted. In-depth interviews were conducted with the following:

- County and sub-county administration;
- Districts heads of departments including the County Development Officers, Culture and social services; Agriculture and Livestock Educational officers and, Arid Lands
- The local government – Turkana County Council officers
- MCA’s and political activists;
- KWS staff
- KFS staff

Table 1: Persons Met in planning the Updated ESIA for Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road

No	Date	Designation	Name	Contacts
1	Jan. 8, 2015	Deputy County Commissioner (DCC) Turkana Central	David Nyachuma	0724837058
2	Jan. 8, 2015	Senior Chief, Kalapata - Turkana Central	Philip Elmir	
3	Jan. 8, 2015	KWS Assistant Warden II, Turkana County	Mr. Paul Wambugu	0727880633
4	Jan. 9, 2015	KWS Warden, South Turkana Game Reserve	Mr. Mbaka	0701432493
5	Jan. 9, 2015	KWS Officer in-charge, South Turkana Game Reserve	Adan Jire	0724658209
6	Jan. 9, 2015	Research Scientist, Kenya Forest Research Institute (KeFRI)	Jesse Owino	
7	Jan. 9, 2015	Department of Co-operatives	Mr. Kennedy Onyambu Mr. Benson Akul	0726803390 0727007042
8	Jan. 15, 2015	Deputy County Commissioner (DCC) Pokot South, Acting DCC West Pokot and Acting County Commissioner (CC), Kapenguria	Mr. Hezron Nyamberia	0721584761
9	Jan. 17, 2015	County Commissioner, Turkana South	Elijah Kodor	0722980504

The following is an overview of issues discussed relevant to the Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road.

a) Overview from Deputy County Commissioner (DCC), West Pokot

Challenges occasioned/related to by existing A1 Road:-

- Currently, only a few police are able to respond to security hotspots and even then, do so long after the event has happened
- Whenever an ethnic tensions rise between the Pokots and Turkana arise, either group barricades the road
- Cattle rustling is commercial to markets in Nairobi and Kampala
- Expectations Regarding Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road
- Rapid response to security operations by police officers will take less time.

- Rehabilitation of this road to bitumen standards is eagerly awaited and welcome by the people. They said, “We need the Road” It will facilitate the export of gold mined from Sekerr hills Also facilitate the mining of cement at Alale
- The Pokot County is rich with diverse products such as animal husbandry of cows, sheep and goats including grade cows for milk, bee keeping and poultry. The road will facilitate trade and access to markets for these products. The Salmach area has good soils for irrigation.
- The road improvement would be a major boost to such business. A K.Shs. 30 Million slaughter house and KMC meat processing plant is under construction at Nasukuta near Chepareria with plans to have the meat transported from there to markets in Nairobi, Eldoret and beyond using refrigerated trucks.
- Produce from irrigation-fed agriculture at Sigor will benefit

b) Overview from KWS, Nasolot Game Reserve

Wildlife Issues:-

- Elephants, buffaloes, lions, cheetah, buffalo, leopards, pangorine (amadillo), advaark and ant hills. Also pythons, hyenas and antelopes, dik dik, oryx. There are no zebras. These are few; they have been extensively hunted for game meat.
- Bird species include pelicans, plover, quill and the secretary bird
- Elephants are the only migratory specie. All others are resident.
- Elephants move to Lomut National Reserve in Baringo through Salmach near Marich
- Pass and on to Orwa, passing near the gate to South Turkana and cross the Kainuk River.
- The crocodile is abundant as it is not hunted.
- Elephants are found in Sibilo National Park
- Wildlife conflicts between communities and KWS exist

This area has the Nasolot and Turkana South Game Reserve. Lokitip National Reserve will be soon gazetted. The area has both oil and underground water. Temperatures are regularly 37° Celsius

Lake Turkana is currently expanding due to the Omo River Poaching is not developed in the area traversed by existing A1 road

Challenges occasioned/related to by A1 Road:-

- Banditry raids on motorists for money and variables is increasing
- The poor condition of the road hinders patrols for wildlife security and data collection for research e.g. wildlife census or even kills.
- Whenever wildlife threats happen, we can only call for aerial surveillance using helicopters from Nairobi.
- Borrow pits left unattended could become watering points attracting mass movement of wildlife as well as potential traps for wildlife for hunters
- Look out for established watering points, not ideal to establish borrow areas there.
- Borrow areas discouraged within protected areas ! they will be individually subjected to independent EIA and attract a conservation charge from KWS

- Expectations Regarding Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road Increased human-wildlife interactions
- Wildlife kills may increase due to the high speeds of the improved road, travellers feeding the animals during operation or trash strewn on roadsides by travellers.
- A wildlife crossing at a location between Nasolot and Turkana National reserve is recommended. Also, local knowledge can be used to establish wildlife crossing outside of the protected zones.
- Smaller wildlife can use culverts and box culverts on laghas as crossings
- The Improved road may attract poachers of game trophies
- Develop an independent Wildlife Action Plan in the ESIA report to effectively address the wildlife issues It will make KWS patrols and research easier. Spread public awareness to road users not to feed wildlife.
- Road to have adequate signage concerning wildlife crossings. Also speed calming humps at approaches to such crossings be installed. Put up signage showing elephant movement corridors during operation phase.
- Establish two elephant crossing underpasses - at Kaptir hills and at Kanabei. Such elephant crossings could be used as traps by poachers. A police post established at the two locations will deter this.

c) Overview from Kenya Forest Research Institute

Forestry Related Information:-

- There"s a new forest established between Lotongoi and Kakoi. These are not exactly forests but woodlands. The trees are less than 10m high.
- The road traverses an area rich with Acacia Senegal species and Acacia Tortilis (branched).
- *Prosopis* is also abundant -it is noted as a very aggressive invader. Problems associated with the *Prosopis* specie include constipation, thorns, injury, death, teeth and invasiveness.
- The trees are economically useful for firewood, charcoal burning, building and fencing poles, fruit sources, chair manufacture, gum, palms and bee keeping for honey. Indeed fuelwood and charcoal are the only sources of fuel used.



Some of the woodland resources encountered

- Communities use the trees for fuelwood, fodder, medicinal and construction among others.

- Local community has a knowledge challenge - limited woodland conservation and rehabilitation techniques. KeFRI does capacity building in areas such as teaching locals new technologies e.g. burning charcoal utilising small trees as charcoal is a high income earner. Once people learn, then it can become a livelihood.
- The construction work will bring about land clearing and mechanical disturbance. This will break the hard pan and allow more growth of forests. Any small rainfall will have a better yield than now.
- The forest is habitat to wildlife. Animal kills are negligible. Animals move at night to avoid extreme heat.
- The forest cover is 6% in the Turkana County, most of the land is arid. The Kerio River has had no flow for 3 consecutive years now. Forest cover is 100% in the Turkwell Ecosystem.

Challenges occasioned/related to by A1 Road:-

- Challenges associated with firewood collection include:- snakebites, thorns, insecurity, distance, scorpions, water, injury, spiders, availability, food, wildlife and transportation
- There is noted reduction in densities of trees and other plants
- The growth of the forest species as a result of construction activities will encourage proliferation of *Prosopis*
- Construction workers will be free, even encouraged to use firewood from the *Prosopis*. This is one of the management strategies KeFRI is employing in the management of the specie. It is abundant, they cannot exhaust it. The *Prosopis* is used in Kakuma refugee camp for poles and fencing.
- Construction workers may need security support services
- Expectations Regarding Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road
The road will boost delivery of forestry services to the people such as increased trainings on woodlands management, *Prosopis* management, research and demonstrations of researched products, outreach visits. It will open up the area and facilitate delivery of inputs
- Increase policing of woodland resources

d) Overview from Department of Co-operatives

Co-operatives Related Information:-

- There is a fish factory at Lake Turkana. During the 1997 market liberalisation, donors moved out in haste such as Norad. At that time, the Lodwar-Kalokol was tarmacked. The Turkana Fishermen Co-operative Society has 9 branches having Business Management Units (BMU) with funding from United States Africa Development Foundation (USDF)
- There is basket weaving from Turkana Handicraft ! carried out in villages and sold in towns

Challenges occasioned/related to by A1 Road:-

- Agricultural production is irrigation based
- Bringing inputs such as seeds from Kitale is challenging
- Transport charges are high.

- Business operators charge higher due to the high cost of transport
- The security situation along the road is such that the construction workers will need more protection especially from the Kenya police reservists (KPR) who know the terrain better.
- Expectations Regarding Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road
The road will open up the area for business and quick transportation of products to markets e.g. livestock, and fish
- A slaughter house is under construction to supply meat to Kitale. The road will be a welcome boost. The road will bring about more businesses and turnover will be higher

e) Overview from County Commissioner (CC), Turkana Central

Challenges occasioned/related to existing A1 Road:-

- The Turkana people have produce which they cannot sell outside of the County due to no road Cattle rustling are no longer traditional for dowry and such other requirements. It is commercial to far markets in Nairobi, Eldoret or Bungoma.
- Expectations Regarding Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road
- This Lesseru-Nadapal project is very important.
- Rapid response to security operations by police officers will take less time.
- Rehabilitation of this road to bitumen standards is eagerly awaited and welcome by the people. They have waited for this for too long
- The road will bring benefits to local communities, more so the ripple effect of access to markets for livestock, increased demand for goods and services as well as direct employment
- Rehabilitation of this road will raise the status of other access roads, hastening their upgrading as well.

11.1 INITIAL PUBLIC PARTICIPATION MEETINGS

Consultative Public Participation (CPPs) meetings were held along the project road with the purpose of creating awareness on the proposed project and receiving comments and concerns from the primary stakeholders notably communities living along the project corridor.

Overall, consultations with communities to be affected 'either directly or indirectly' by improvement of the Marich Pass to Lodwar Road were held from 18th to 24th June 2012 at eight locations, namely

- i. Marich-Pass - Marich Pass and Orwa Trading Centre Communities , 19 June 2012 by the local assistant chief
- ii. Kainuk - Kainuk Community attended by 120 people on 20 June 2012. The area Chief mobilised attendees.
- iii. Kaakong"u Kaakong"u Community on June 2012. The area assistant Chief mobilised attendees.

iv. Kalemng"orok" Kalemng"orok Community on 20 June 2012 - The area Chief and the assistant chief mobilised attendees.

v. Lokichar on 21 June 2012

vi. Kasuroi on 21 June 2012.

vii. Lochaang"ikamatak on 22 June 2012. The area community's senior chief whose administrative areas include Nagetei and Kimabur mobilised attendees.

viii. Lodwar on 22 June 2012. The area chief in cooperation with two assistant Chief mobilised attendees. The area councillor was also in attendance.

The main objectives of the community consultations held during the period 18 to 24 June 2012 were threefold:

1. To inform the affected public about the purpose of the forthcoming project;
2. To discuss more specifically the realignments and ROW expansion planned to the existing Marich Pass-Lodwar Road and their consequences to occupants located on these lands; and,
3. To solicit the issues and concerns from the affected communities about the forthcoming road-improvement project.

The project was described for the attendees, underscoring the social and economic benefits of an improved road to residents in the service area. The maps upon which affected buildings, structures and/or other properties had been highlighted were circulated to community members in each consultation session for their inspection and discussion.

11.2 SECOND LEVEL PUBLIC PARTICIPATION

Purpose of the Meetings

The purpose of the Second Level Public Consultations was to enable interested * affected parties to present their concerns and opinions regarding the proposed project and solidly anchor the findings of the initial consultations. The consultations further enabled identification of potential impacts as well as local sources of information, expertise and knowledge, highlighted community concerns about the effects of road changes on their lifestyles and welfare as well as technical gaps, and encouraged participation of primary stakeholders in the development of workable solutions.

Public hearings were carried out as required under the World Bank Operation Policies and Kenya's EMCA (1999). The specific objectives of the public consultation and participation meetings were:-

- i. To create awareness on the proposed Project ;
- ii. To inform the people about the Environmental and Social Impact Assessment (ESIA)
- iii. To inform the people about the documentation process that incorporates documented agreements with the people to reduce chances of grievances
- iv. To present useful channels for collecting the views and concerns of the Project Affected Persons (PAPs); and

v. To make effective communication with Project - Affected People to gain support for the Project (social license to operate).

vi. To inform the PAPs of the institutional arrangements by which they can communicate their concerns to Project authorities throughout planning and implementation, and measures to ensure that such vulnerable groups as indigenous people, ethnic minorities, the landless, women, child headed households and affected persons with disability are adequately represented;

Schedule of Meetings

The consultations were initiated following the submission of the Updated Draft Report for approval. The Scheduled Second Level Public Consultation forums were held in locations agreed on with the Client and in consultation with the stakeholders. This was most preferably done in the same locations where similar consultations were initially held. Local leadership was largely relied upon to mobilise the participants.

The meetings were scheduled in the following locations:-

Table 2: Schedule of Second Level Public Consultation Meetings

Date & time	Venue	Location	Chief's name	Contact	District
Thursday - 2.00 pm 15-1-2015	Marich Pass	Orwa		0722174568	Pokot Central
Friday - 9.00 am 16-1-2015	Kainuk	Kainuk	Phillip Apangole	0710-695106	Turkana South
Friday - 1.00 pm 16-1-2015	Kainuk	Kainuk	Phillip Apangole	0710-695106	Turkana South
Saturday - 9.00 am 17-1-2015	Lokichar	Lokichar	Josephine Okal	0714140117	Turkana South
Saturday - 2.00 pm 17-1-2015	Kasuroi	Lokichar	Josephine Okal	0714140117	Turkana South
Sunday 1.00 pm 18-1-2015	Kalemng'orok	Katilu	Allan Lokeum Aleper	0714655158	Turkana South
Monday - 1.00 pm 19-1-2015	Lochwaang" Kamatak	Lochwaang" kamatak	Yohan Ekitela	0714404694	Turkana South
Tuesday - 10.00 am 20-1-2015	Loturerei	Kanamkemer	Lucas Lotuko	0701270908	Turkana Central
Wednesday - 9.00 am 21-1-2015	Lodwar town	Lodwar	Margaret Alima Lomosingo	0710445973	Turkana Central

Of these meetings planned, the meeting scheduled on Thursday 15th January 2015 at Marich pass did not take off as there were no attendees. All other meetings were carried out as planned. It is also worth noting that no meeting had been held at Loturerei in Kanamkemer Location during the Initial Public Consultations.

The stakeholders included community members and groups, County officials or their representatives, relevant Government agencies (e.g. KWS, WRMA), NGOs, Project -Affected Groups, institutions and other local organizations.

Deliberations and Findings

Project information was translated into local Turkana dialects since majority of participants lacked understanding of English or Kiswahili and have no access to public media and information exchange. Special effort was made to reach vulnerable groups especially the disabled and the aged.

The Consultant, on behalf of the proponent, organised the public hearings, presented the technical details of the planned rehabilitation describing the social, economic and cultural status of the project area, sought the views of the stakeholders, and furnished the requisite replies/information to the questions/ issues that arose during the hearing and kept records of these meetings. These views are incorporated and documented within the Appendices of the Updated Draft ESIA Report, in Chapter 11. Such documents include the list of those in attendance, the project presentation, minutes and resolutions as well as the photographs taken during these meetings were attached as part of the report.

The highlight of main issues of concern raised by stakeholders in these meetings that could improve on this Environmental Assessment's relevance, help to identify real and perceived issues, and probably reduce overall project cost are as follows:-

- Terms of material extraction from borrow areas - The stakeholders present wondered if the contractor would procure from them construction materials such as gravel, sand and aggregates and if so, if they would be compensated for the same. They were informed that materials required must meet certain engineering standards and be in such quantities as to justify economical extraction and use. As such, they were advised that the Contractor, with the Supervising Engineer would first investigate the suitability and amount of the materials prior to extraction, and if found suitable, the Contractor would negotiate with them and enter into a written agreement with the land owner upon successful negotiations concerning the timing and extent of the extraction as well as detail the land restoration measures upon expiry of the extraction lease.
- Role of the vulnerable (disabled and the old) The stakeholders explained that the old have grown old waiting for the promise of this road to be reconstructed. Time and time again, they readied themselves for the coming work but lo and behold, it never came. They expressed that they still desire to contribute their labour to see the realisation of a good road with all its associated benefits and could work with their hands under the shades of the trees along the *laghas* on areas such as and harvesting and ballast collection.
- Employment - The participants inquired on whether employment would be available to them during construction and what criteria would be employed to recruit. They were informed that all unskilled labour will be sourced locally and other skilled labour will follow the discretion of the procured contractor depending on his staffing requirements. They

were informed that however, the Contractor will be advised to observe equitable distribution of such recruitment to all the communities along the road in order to avoid or eliminate social unrest.

- Increased Human accidents - The participants inquired what with projected increase in traffic accidents during construction and operation, which would be responsible to compensate victims, especially in "hit and run" cases. They requested for speed calming measures to be installed at approaches to villages, schools and settlements. They were informed that "hit and run" cases are usually police cases and also the preserve of insurers. They were also informed that appropriate road signage would be carried out at all important crossings or other such features, nevertheless cautioned that a Class A road, especially this A1 road is designed for high speed. Therefore, they were persuaded to be careful to follow all instructions given towards their safety and to employ judicious conduct on the road
- Compensation for affected property - On land take for the existing 60m road reserve with minimal re-alignment, residents sought to understand how those affected by the project would be identified and compensated. They also wondered what would happen in cases where they received allotment letters for parcels of land from the Turkana County Council and yet the parcels happen to fall within the road reserve. They were informed that this would be handled through the Resettlement Action Planning (RAP) which is different from the ESIA. However, they were informed that those with property within the 60m reserve would only be compensated for the affected property and livelihood in proportion to the magnitude of the impact as the land is not theirs. Those affected outside of the existing 60m road reserve where fresh acquisition has to be carried out would be fully compensated for land, property and livelihood to the extent of the impact.
- Relocation - The stakeholders especially within the towns whose business premises are to be affected wondered where they would relocate to in order not to suffer livelihood losses. They explained that they have authentic allotment letters issued to them by the formerly Turkana County Council and now that the land elsewhere belongs to the Turkana County Government they would not be able to acquire relocation ground. There was also a perception that since these are county allotted parcels, displacement emanating from the proposed improvement of the A1 road would be in a linear translation, in which case, business premises on the first front row would displace those behind them on the second row and likewise those on the second row would displace those on the third row and so on. They were informed that these issues would be addressed under the RAP study and that they needed to raise them within the resettlement committees so formed in order for a solution that works to be arrived at.
- Livestock crossings - the stakeholders explained that livestock are their livelihood. Main livestock varieties comprise of cattle, camels, goats, donkeys and sheep. They explained that they drive the animals far and wide, crossing the road severally, in search for pasture and water. They explained that during the dry seasons, the lughas and the river at Kainuk were the main sources of water and that their animals sometimes walk unaccompanied by a herder. They therefore enquired that, in light of the increased number and speed of vehicular traffic, even above 120 k.p.h., when their livestock would be endangered, knocked to death and injury - what compensation would they receive? They were informed that under the current national policies, in the event of vehicular-livestock collisions, the livestock owner is sought to pay for the damages. To this reply,

they murmured aloud in disapproval. Prodded on why such loud disapproval and what solutions they themselves would recommend, they suggested that adequate size and number of livestock crossing underpasses be introduced. They suggested that if box culverts at all lagha crossings would accommodate the camel, they would be adequate for all other livestock crossing. They suggested that they would in addition, identify other crossing locations when such lagha crossings are far apart and notify the ESIA Expert on the same. They were informed that such box culverts are big enough to accommodate the camels with a clearance of 4m height.

- Restoration of access roads - The stakeholders enquired if the town and market centre roads as well as rural access roads would be rehabilitated along with the rehabilitation of the A1 road. They were informed that these other roads fall within the domain of other institutions such as KURA, KERRA and the Turkana County Government and would therefore not be rehabilitated under the proposed works.
- Consent and commencement for the road works - the stakeholders in all eight locations unanimously gave consent to the construction but wondered when the construction would commence. They were informed that the procurement process was in progress and that the purpose of these meetings was to seek their consent or objection to the project implementation. They also requested that construction scheduling should be such that road works in Turkana County begin and run simultaneously with that in Pokot County. They were of the view that if road construction work in Pokot County commenced ahead of their County, the Pokot would see to it that road works in Turkana does not happen.
- Fatigue about Meetings and Preparation for the coming road - the stakeholders unanimously declared that they were tired of holding meetings about the proposed construction. They said that the next time they want to hold meetings it should be about the progress of the road works if not operation and wondered what contribution they would render to see the road works commence immediately.

Minutes of the meetings are presented below.

11.3 MARICH PASS – ORWA TRADING CENTRE IN ORWA LOCATION ON THURSDAY 15-1-2015

The meeting was to be held at 2.00 pm. It did not take place as there were no attendees by the time the Consultant arrived.

The area sub-Chief is Peter Yola. The Acting Pokot South Deputy County Commissioner (DCC) is Hezron Nyamberia.

Following discussion with the sub-chief and DCC, the meeting was called off and could not be re-scheduled due to the tight schedule and logistics around the other planned meetings.

11.4 KAINUK TOWN IN KAINUK LOCATION ON FRIDAY 16-1-2015 AT 12.30 PM

11.4.1 Minutes of Meeting

The Kainuk Location Chief is Phillip Eyanae Apangole. The assistant chief Kainuk Sub-Location is Sarah Lochodo. The Assistant County Commissioner for Kainuk Division is Simon Mutemi.

Minutes of Environmental and Social Impact Assessment Public Consultation and Disclosure Meeting held on 16th January 2015 at Kainuk Town,

1. GENERAL

The meeting started at 12.30 am with a word of prayer by one of the attendants.

2. INTRODUCTION

The Kainuk Location Chief Mr. Eyanae Apang'ole welcomed all present and introduced the Environmental Impact Assessment Team and the Agenda of the day.

Those introduced included the area assistant County commissioner, Mr. Simon Mutemi, Sarah Lochondo, the assistant chief of Kainuk Sub-location, Kalistus Napula, assistant chief of neighbouring Kamoei sub-location of Kaptir location, the Chairlady of the Maendeleo ya Wanawake in the location, the Lobokot Ward of Turkana South Mrs. Margaret Arot, the Lobokat Ward Administrator on roads, Mr. David Erukudi and the Vice - Chairlady of the Maendeleo ya Wanawake, Lobokot Ward, Mary.

In his introduction, the Environmental Expert, (Dr. Oonge) explained that development of roads in the country is mandated to Kenya National Highways Authority (KeNHA) for Class A, B & C roads, Kenya Urban Roads Authority (KURA) for town roads and Kenya Rural Roads Authority (KeRRA) for rural roads comprising of Class D and E Roads. He explained that the Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road is part of the Northern Corridor Roads in an effort to improve access to Nadapal and South Sudan - the Northern Corridor links the Kenyan Port of Mombasa on the Indian Ocean to landlocked East African countries. He explained that the agenda of the meeting was to inform all stakeholders and community members present of the intended construction and explain the design components so that the stakeholders would give feedback on their views for implementation. He urged all to follow the presentation keenly and inquire on all issues that were not clear or that needed discussion.

3. THE PRESENTATION S

1. Presentation by the Environment Lead Expert, Eng. Dr. Oonge

The Environmental Expert, (Dr. Oonge) took the opportunity to appreciate all present and explained the purpose of the meeting. He explained that such consultations and disclosure had been carried out in June 2012 and that the day's meeting would mainly address the issues of likely impacts of the road on the bio-physical and social environment as well as the impacts of the environment on the road improvement and hopefully gain community 'buy-in' to the project.

He said the purpose of the meeting was to inform the community on aspects of proposed road development and of the expected project impacts, give the stakeholders opportunity and a forum to participate and ask questions, and air their views and suggestions.

He quoted and explained the various national laws, policy framework, World Bank Safeguard Policies and regulations that govern Environmental and Social Impact Assessment and such public consultation meetings. The Environmental Management and Co-ordination Act that requires an Environmental Impact assessment Study be carried out and that such a meeting to be held in order to involve all stakeholders and Project-Affected-Persons. He highlighted the role of public consultation and disclosure in an infrastructure project as well as the need for active participation from members of the public whose natural habitat, physical, cultural and others resources may be affected.

He presented the baseline data and explained that his presentation was formulated based on what was found on the ground during environmental and social survey. The consultant explained the environmental and social impacts expected.

For each stage he explained the impacts so far envisaged and proposed mitigation measures including the responsibility for implementing such mitigation. He explained that the adverse impacts as a result of proposed rehabilitation would be explained under four broad categories namely:

- Planning (current stage) - He made it clear that at the planning phase, a significant impact would be the direct land take of privately owned land as a result of road re-alignment occasioning relocation of mainly business premises. He explained that compensation for affected persons and properties would be handled through comprehensive RAP, a process that was already in progress.
- Construction – He explained that there would be vegetation clearance to pave way for the construction, dust and noise generated during earthworks and from various other work sites like asphalt mixing plant and the hard stone crusher site, opening up of borrow areas that would scar the landscape and pose falling risk for livestock. He explained that mitigation for these was provided in the ESMP including water spraying for dust, regulated working hours for noise and use of PPE for construction workers.
- Operation - He also explained that there would be increased vehicle-human – livestock-interactions during the operation stage with more traffic at high speed and that this would cause collisions likely to result in fatalities or injuries. He explained that once opened up, the road would be a conduit for many business and travel opportunities in less time and improved comfort.
- Closure – he explained that the road was not likely to be decommissioned at the expiry of the design life but rather certain component would be restored back to pre-development status such as opened up borrow areas and project management offices.

He explained that the positive impacts (benefits) of the planned rehabilitation include the following among others-

- Decreased journey times
- Decreased cost of travel and transportation of commodities
- Hasten response to security or drought emergencies, more frequent in the area
- Ripple economic benefit from trade and commerce such as increased production of goods and services e.g. livestock inputs, access to better healthcare
- End isolation and remoteness in the area occasioned by poor access
- Boost national and international trade

Details and summary of the presentation are as per attached in Section 11.2

2. *Presentation by the Assistant County Commissioner, Mr. Simon Mutemi*

The Assistant County Commissioner affirmed that he was present in the capacity to represent the Government of Kenya.

He explained the strategic positioning of the A1 Road as a link between the country and South Sudan. He explained that the proposed rehabilitation would bring about economic benefits such as reduced time of travel from Kitale to Lodwar and that the benefits far outstrip the adverse impacts.

He thanked the Lead environmental expert saying that he had well educated the stakeholders. He explained that the planning for the intended road project is a process, saying that, earlier on, they had only heard and read about it in the newspapers, but that now, the signs had come closer home. He therefore urged all to be a little patient, and that eventually, the road will come.

He committed to work with the chiefs and the assistant chiefs in all Kainuk division and urged the young people who had attained 18 years and above to register with the National Bureau Of Registration (NBR) for issue of identity cards and also collect their birth certificates.

He also committed to work with the county administration and security committees to ensure successful operations.

4. *THE DISCUSSIONS*

A question and answer session followed.

The Consultant invited the members present to air their views and ask questions. The area chief explained that due to the high number of participants and sometimes the likelihood of repetition, five questions would be invited and answered in every run.

- Q1 Mr. Samuel Kapengu, an elder from Natorobweo was glad that after many years of waiting, the government has decided to rehabilitate the road and sought clarification on the state of the access roads joining the A1 road – would they be rehabilitated along with the A1 road?*
- Q2 Mr. Samuel Aliwa – from Naregare Kamar Village – he decried that very many times they'd been told the road would be done, and now again, he sought to know when exactly this would be done and how the road works would affect their livelihood for those living near the road. In addition, he sought to understand what kind of jobs would be available for the local people during the construction.*
- Q3 Mr. Samuel Ewoton – from Lochipikori village sought to understand that some buildings that had been marked “X”, if they be affected and if so, how they'd be paid? He also wondered what documentation were needed in order to enter into an agreement for the Contractor to compensate me?*

- Q4 Mr. Paul Lorot, a Turkana youth from Nadapal, Irionor and Kailoseget villages, wondered that if the A1 Road is from Kitale to Juba, and they are at the border with the Pokots at Kainuk, would they be recruited and mixed to work alongside with the Pokots during employment?*
- Q5 Mary, Vice - Chairlady of the Maendeleo ya Wanawake ,Lobokot Ward, wondered what would be done to assist crossing livestock and wildlife? She singled out a popular wildlife crossing at Kanabei 3-4 km from Kainuk towards Lodwar and livestock crossings at Kalemng'orok. Buildings here were built without due consideration that one day the road would be improved, will access roads be done?*
- A(1) the Environmental Expert explained that general practice was that when such a Class A road was rehabilitated, only may be one side road can be done within market centres, more so to allow for diversion during construction.
- A (2) the Environmental Expert explained the tendering process for the procurement of a Contractor was underway. He further explained that the record of proceedings for this meeting along with the discussion on salient issues is the licence the World bank requires in order to release the money for construction. He explained that due compensation for livelihood would be carried out in line with on-going RAP.
- A (3) the Environmental Expert explained a title deed would be required if land adjudication has happened. Else, other administrative avenues of identifying bonafide owners would be pursued using especially the chief's office. About whether the compensation would go to the tenant or the land-owner, he explained that the tenant in business premises would be compensated for the livelihood, while as the land-owner would be compensated for the structure and the building structure. He further explained that revenue for compensation for such loss was the responsibility of the Government of Kenya through the Ministry of Lands and that the Contractor was not responsible for such compensation.
- A (4) the Environmental Expert asked the question back to the stakeholders on what the prospects of co-working between the Pokots and the Turkana. There was unanimous agreement that Pokots work in Pokot and Turkanas work in Turkana, they should not be mixed.
- A (5) the Environmental Expert explained that animal crossings would be allowed for two types of animals – wildlife and livestock. He explained that box culverts would be installed at laghas and other appropriate livestock crossing points that the stakeholders would identify and that locations for wildlife crossing would be agreed with KWS. On the issue of access roads, the Expert explained that rural access road is under the mandate of Kenya Rural Roads Authority (KeRRA) and the county government. He explained that under the current institutional framework, only urban roads could be rehabilitated alongside the A1 road if the contract so stipulated.
- Q6 Apalotony longekale from Narekakamene commented that that the work schedule for the whole road i.e. from Marich Pass to Lokichar and to Lodwar and the other two lots should be such that the work starts and proceeds simultaneously within the Pokot and Turkana Counties. He expressed concern that if road was done in Pokot first, they would derail road works in Turkana.*
- Q7 Apalotony Longekale from Narekakamene who had earlier asked Q3 commented that he had travelled in most parts of the country and seen signage informing road users on the names of the various areas where they were e.g. Turkana County. He wondered of this road rehabilitation would be accompanied by such.*
- Q8 Dorcas Apusie from Kainuk centre inquired to know how much notice would be issued to move kiosks and business premises prior to construction.*
- Q9 Peter Yole Alopa of Kainuk Centre commented that they've been promised so many times about the commencement of work on this road. He lamented that in December,*

they are informed that work would commence in January. Come January, they again are promised that it would commence in December. Now, where is this KeNHA, is it in Nairobi, Kitale or where? How come there is no maintenance carried out on this A1 road, when trees fall on the road, we clear them ourselves, potholes are so many, and must we always wait this long?

- Q10 Margaret Arop- If only a small portion is affected e.g. a quarter to half a metre wide, and a house is therefore slightly affected, will that too be relocated?*
- Q11 Joseph Ekimet the access roads here appear very thin. How wide should access roads be?*
- Q12 Daniel Ekwam – Our children are in school on the other side of the road. They need to constantly cross the A1 road. Will there be signage to show this? How will the bitumen be heated up, using hands or machinery?*
- Q13 Petro Kaituko from Nadapal commented that compensation ought to precede construction, commencing early enough. He said that road authorities should not appear abruptly and evict people from their houses and business premises. Sufficient notice ought to be given.*
- Q14 Jane from Nadapal sought to understand if those on the row behind the first row adjacent to the road would be apportioned access to their property.*

- A (6) the Environmental Expert explained that such scheduling depends on the Contractors procured and on the approval of the method statements they put forward for work.
- A (7) the Environmental Expert explained that this is the responsibility of the County government, they are the ones who know where important boundaries exist and what promotional messages they would be interested in sending out.
- A (8) the Environmental Expert explained that the cut-off date established during the RAP exercise should serve as enough notice.
- A (9) the Environmental Expert explained that the commencement of work will depend on successful procurement of contractors by KeNHA. On the maintenance status of the road, he explained that he had no response.
- A (10) the Environmental Expert explained that this depends on the kind of effect, if a housing structure is so affected, it will be compensated in full.
- A (11) the Environmental Expert explained that the road reserve depends on the Class of road. He explained that the conventional reserve of Class C and D roads is 40m wide while town roads significantly vary with some being as low as 12m.
- A (12) the Environmental Expert explained that, yes, appropriate signage will be installed whenever the road encounters a feature of significance like the school, hospital etc. Such will also often be accompanied with speed calming measures such as rumble strips. He also explained that bitumen will be heated using appropriate equipment and no longer by hand.
- A (13) the Environmental Expert explained that this opinion would be incorporated in this report.
- A (14) the Consultant explained that it was the responsibility of the County Planners to show plots demarcation and the access roads. He explained that this was KeNHA's mandate.

5. THE RESOLUTION

The recommendations arrived at all were in favour of seeing the speedy commencement of the road rehabilitation work.

6. AOB

The public consultation meeting ended and stakeholders left at their leisure.

7. CLOSING PRAYER

The meeting ended at 3.00 pm with a word of prayer from Pastor Bernadict Lokal.

11.4.2 List of Attendance – Scanned Copies

2

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KAINUK LOCATION: KAINUK DISTRICT: TURKANA SOUTH
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
001	SIMON M. MUTEMI	20742131	DDP - DO	0727718287	<i>[Signature]</i>
002	EYANAE L. ADANGOLE	4090393	DDP - Chief	0710695106	<i>[Signature]</i>
003	Ksukudi E. David	205333/2	TCC Turkana County Govt.	0729708621	<i>[Signature]</i>
004	Margret Arot	12907094	M4WO chairlady	0721156227	<i>[Signature]</i>
005	Mary Inoni	12908796	M4WO V. chairlady Lobokat	0719642020	<i>[Signature]</i>
006	SARAH A. LOKILO	1328695	GOP. Assistant Chief - KAINUK	0716985552	<i>[Signature]</i>
007	Calistus K. Ngepu	4762165	DDP - Kalamwal Assistant Chief	0729341856	<i>[Signature]</i>

2

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KAINUK LOCATION: KAINUK DISTRICT: TURKANA SOUTH
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	ELWIMANI	4773597	Karhasenge	07041899970	<i>[Signature]</i>
	LUKIMIA MUYA		NADAPAL	-	<i>[Signature]</i>
	ETOOT AKAL		LOCHUPKORI	-	<i>[Signature]</i>
	JAMES GUSI		NADAPAL	-	<i>[Signature]</i>
	GWAL LOGIELAN ACHUKA	7973209	NADAPAL	0717 296723	<i>[Signature]</i>
	SHINAB MUSA		LOCHUPKORI	-	<i>[Signature]</i>
	AKIRU LOGIO		NADAPAL	-	<i>[Signature]</i>
	ROSEAN KOKIR	6101858	NADAPAL	-	<i>[Signature]</i>
	AFIKODI LOMUO		LOTONGUNA	-	<i>[Signature]</i>
	GWAL NAKALI LOKIFI	4783706	LOTONGUNA	-	<i>[Signature]</i>
	ALUPIE ISATA NEASIKE	1018731	NALIBAMUN	-	<i>[Signature]</i>
	NAMODU NAMATE		NALIBAMUN	-	<i>[Signature]</i>
	NGISIPAN AMODOLE		MARKET	-	<i>[Signature]</i>
	ANNATH NAKONG LOKIRU	30438489	NADAPAL	-	<i>[Signature]</i>

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: AT KAINUK		PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		DISTRICT: TURKANA SOUTH:	
VENUE:		LOCATION: KAINUK		DATE:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	MARY MUGOMI LOKONG	20605875	MARKET	0715686589	<i>[Signature]</i>
	NAMONI LOKOL	20559726	MARKET	-	<i>[Signature]</i>
	NGAKITO LOKATO	21421467	LOTONGNA		
	LILLIAN LOKOL		NALIBAMUN		
	ELIZA MUKUDI MUKUDI		LOTONGNA		
	EWOI NAKIA		MARKET		
	NGUUKUI AKALMAN		LOTONGNA		
	ELTA AHA NATUKURI Atengny		NGIRIONOTUK		
	SUSAN EBET		MARKET		
	EXALE AGNES	18425028	NALIBAMUN	0711405971	<i>[Signature]</i>
	PAULINA GWOTON	9245370	NGIRIONOTUK	-	<i>[Signature]</i>
	GLADYS GOUKUDI EKUTAH	27033039	NADAPAL	-	<i>[Signature]</i>
	BENJAMIN LOKIRU	30457097	NADAPAL	-	<i>[Signature]</i>
	ITAO AKJOM LOLEM	8367881	NADAPAL	-	<i>[Signature]</i>

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: AT KAINUK		PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		DISTRICT: TURKANA SOUTH:	
VENUE:		LOCATION: KAINUK		DATE:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	Maryet Arot	12907094	M-100 charlady T. 20th Sub-county	0721156227	<i>[Signature]</i>
2	Labotus L. Napalo	4762165	Kalometar Sub-loc Turkana/Kainuk district	0729341856	<i>[Signature]</i>
3	Samuel LOCHAGA		NADAPAL	0729052548	<i>[Signature]</i>
4	KENNEDY EKENO	2640036	NADAPAL	0799984000	<i>[Signature]</i>
5	Abraham JKARU	29292575	MARKET	0718021227	<i>[Signature]</i>
6	JOBERTO LOKUIS	22092026	LOTONGNA	0709846863	<i>[Signature]</i>
7	LOPHIA LOBUR	23335700		0727041594	<i>[Signature]</i>
8	Emmanuel Marua Esore	23593294	Maregaikaras	0720597949	<i>[Signature]</i>
9	Ekend Ewotat		Maregaikaras		<i>[Signature]</i>
10	Joseph Sumua	12454167	Nalibamun	0713139277	<i>[Signature]</i>
11	Joseph Kinyonyi Ngora	4762140	Ngomutulu	0729705614	<i>[Signature]</i>
12	Santosh MESS Adony	5562230	Ngomutulu	0726922807	<i>[Signature]</i>
13	Lebule Lebulester	6152035	Lebungidoni	0726932307	<i>[Signature]</i>
14	James Eshen	2377207	Kapuku	0706390320	<i>[Signature]</i>

2

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KAINUK LOCATION: KAINUK DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
16	YAMUS EMBO	12907164	NALIBAMUN	0702075776	[Signature]
10	Fred Adimatic	30914582	Damonetun	0718062519	[Signature]
17	Peter Ngolokwang	12433983	Lochipkori	0712697018	[Signature]
18	KWELAK CHRISTOPHER	24567219	MARKET	0706404255	[Signature]
19	Peter Achuka	7477547	MARKET	0720537864	[Signature]
20	AYO Bismark	28513232	KOPUTIRO	0774858729	[Signature]
21	Longelech Joseph	10123883	NALIBAMUN	0710911324	[Signature]
22	EKA STEVEN	28774474	KOPUTIRO	0717255761	[Signature]
23	Samuel (E) EMBEN	2261962	LOTONGONA	0712431921	[Signature]
24	ESMION PUS EMBEN	78742622	MARKET	0710176364	[Signature]
25	PAUL EKESO	12907150	MARKET	- -	[Signature]
26	MOSES LOVELL	0778902	KALOSEGET	- -	[Signature]
27	FRENCH ELIJAH	29520018	NADAPAL	0713700991	[Signature]
28	NIRAIKE JONAH	25111624	NALIBAMUN	0728385595	[Signature]

2

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KAINUK LOCATION: KAINUK DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	JOSEPH LINAUB	21421505	NALIBAMUN	07121124650	[Signature]
2	DANIEL LOMUEN	8332710	NYRONDIUK	0710694805	[Signature]
3	JONATHAN LOMURIA	12407203	MARKET	0716710510	[Signature]
4	JOHN ESINYEN	5172630	LOROGON	0712929359	[Signature]
5	AMOSIONG ESEKON	---	LOCHIPKORI		[Signature]
6	JOHN LOKWANG	---	MARKET		[Signature]
7	LOMATUKAE LOKEYA	---	---		[Signature]
8	MUSA LOSIKE	---	---		
9	JAMES LOMULEN	---	---		
10	EYANAE NGARAMOE	---	---		
11	DANIEL - EKUWAM	1257984	KOPUTIRO	0717-285-231	[Signature]
12	PETER EMATHE	4794607	KAINUK	0710910325	[Signature]
13	ESIRI NAKORER	0282963	KAINUK	-	
14	LOMULEN NGIDOTO	-	KAINUK	-	

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD					
AT KAINUK		LOCATION: KAINUK		DISTRICT: TURKANA SOUTH:	
VENUE:		DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
15	LOKWIANG TIYA		NALIBAMUK		
16	ARUDE EDUSINE		NALIBAMUK		
17	EDUKIO NANCY	27713515	LOTONGUNA	0710695112	
18	ATANAE LOWOTE		KOPUTIRO		
19	ARUNIE NAPUNDAN		NAREGAEKAMAR		
20	MART AKIORDI		LOTONGUNA		
21	MARGREI AKIDOR		KOPUTIRO		
22	CHRISTINE LORE	2605593	LOTONGUNA		
23	EREGAE ACHUMA	4799220	NATOROBWO		
24	PAULINA LORUW		NADAPAL		
25	VANICE LOKOLI		LOTONGUNA		
26	SELINA NIABO		LOTONGUNA		
27	ALICE ETANAE		LOTONGUNA		
28	JECINIA AKIRU		LOTONGUNA		

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD					
AT KAINUK		LOCATION: KAINUK		DISTRICT: TURKANA SOUTH:	
VENUE:		DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	ENYLINE NAKENO	80856496	MARKET	0701736870	
2	REGINA NATUK	22752734	NARENGAEKAMAR	0717395115	
3	ISTHER ELIM	205606243	MARKET	0725214775	
4	JOYCE ARUDE ASWYEN	3336135	LOTONGUNA	0714776865	
5	MARGRET APUNGURE	2557496	MARKET	0714891158	
6	ELIZABETH RECHO		NALIBAMUK		
7	AKIMAT LONGELICH		NALIBAMUK		
8	EBEI LONGOR		LOCHIKORI		
9	AKOLOING HOKIYWI		LOTONGUNA		
10	JEAN AKAI		LOCHIKORI	0729563872	
11	JEAN ETUKON		MARKET		
12	ASIKI NGASIKI	21200113	NALIBAMUK	0711700266	
13	SARAH LOTAPARIN		LOCHIKORI		
14	ANNAH LONGO		MARKET		

APREYO YADIM NORAK	KOMUSIA KOKO Ida	25851295 4775912	NATOROBINO NATOROBINO NHIRONOTUKU MARKET MARKET	0729846397	
HAIMA ROSEMARY	Nankora		KOPURIPU		f
EKADELI	ENJOI		NALOBORWA MARKET		P P E
ABINTEN MARY HELEN ALICE	EKOMWA ASOKON NANTATT Nkor	2005588	LOCHIKOLET		Xst
BREANE LEANI	ACMUKA ASIMIT	1172762	MARKET	0701378923	w
APUNGURE APUA	EKITOG EKUSI		NAREGAREKAMAR Market		and
ABIGAE ELAMACH	WANJALA ENALAN	29629398 4785967	NALIBAMUN NAREGAREKAMAR	0708545188	R
NAMUYA LONSOLETON	LOBOWA Lokol	2082223	Market Market		on
MOSES EYABO	EBENTO EKANALE ADONI	27060748 28667205	Market Market Nanggakarion	6714809589	st Edu st

LONGOROT ENRASE BOPHAKISOMIE 44362256 KAILDS66E1 ~~44362256~~
 ENRASE DITANIL AGURENANIL KAILDS66E1 ~~KAILDS66E1~~
 PHILIP INGOLAN EFOR LOBUHE 2123303 NATOKIBUO ~~2123303~~
 ERONG ERINGWEL LOPUS Market ~~Market~~
 LOROT NAKAWA Kaulaceget ~~Kaulaceget~~
 JOSEPH ENKUNI EDAPAL 09130445 NAREGAKANAS 070500967 ~~070500967~~

	ID		ph	
15 Philip Kapua	3258005	LOJUNGUNA	07238283	07238283
16 SIMON LOIRIAN	12434262	NAREGAE KAMAR	0725332653	0725332653
17 PHILIP ELIM	22668842	NAREGAKANAS	071370503	071370503
18 Benjamin Ngwoko	07146729	KOPUFIRO	0710560775	0710560775

NO	NAME	IA NO	VILLAGE / Organization	TELEPHONE NO./ Contact Address	Signature
29	JOHN NAKGEELE	1290 0897	KALIBANUN	0718636667	
30	ELIAS BOMBE	30436855	KOLUPO	070691923	
31	CHARLES GARERATE	25654525	NARAGATEKAMAR	-	
32	LONAR ATUKO KOOLO	84607625	NALIBANUN	07055832018	
33	SAMMY EDOLY	014445865	LOTONGUNA	-	
34	ZACHARIA KALIMUN	27146564	LOCHIKOON	714667355	
35	ZOSWA GWA	0300/4	MARIBUN	0706883949	
36	SIMON LOKIRU	31074700	NALIBANUN	0705547956	
37	MIKE EMORU EYANUN	83318453	NALIBANUN	-	
38	EMABELI LONKOR	-	NARANGA IKAMAR	-	
39	K DREGAE KEBO APALLO	21071154	NALIBANUN	-	
40	SAMUEL EWOTON	1725385	LOCHIKOON	0702977415	
41	CHARLES EYANUN	0325810	NALIBANUN	071124287	
42	CONWAY E. EYANUN	3044912	LOTONGUNA	0704970250	
-	JAMES GROT	10125841	LOCHIKOON	-	
-	LOCHIDO LOKITOG	-	KOLOPO	-	
-	KARENKI SAMUEL	3322881	NALIBANUN	0700955664	
-	JOSEPH GWAJO	9826211	LOTONGUNA	0729388623	
-	ALPHA PETER	10124412	MARIBUN	0710514725	
-	R.H. EKIYE	4266017	LOTONGUNA	-	
-	PETER NGACHURO	12433986	NALIBANUN	0716147141	
-	DORCAS EYUSITE	12434008	NALIBANUN	0710505236	
-	MARY NGILIMO	12908796	LOTONGUNA	07195248204	
-	ANNACH LOMETO	-	Market	0719642020	

MILLICENT	EKOMOL	28797167	NARAGAE KAMAR	071708774	071708774
AKITELA	ESJORE		NADAPAL		
RESTINA	LOBUKA	28759831	MARKET		
SELINA	ATANAE	NAP	NADIGAE KAMAR	070325940	
SIMON	KAEKIR	400290400	NARAGAE KAMAR	0706691372	
LEATH	ENYANG	-	NRI DIONTOUK	-	
ASEKON	JALOMOE	-	NARAGAE KAMAR	-	
BRIDAR	EKAROLON	-	NATODOEND	-	
ANNATH	APALOTOM	20559759	NARAGAE KAMAR	0701292069	
ASINTEN	NABOR	8587895	NARAGAE KAMAR	-	
LEATH	AJORE	-	NADIGAE KAMAR	-	
LOISE	EMURIN	5939640	NARAGAE KAMAR	0707804357	
ANST	EKOMOL AMANANITP	-	NADAPAL	-	
AKAM	ANNATH	-	LOCHIKORI	-	
KINONGEA	BEARL	-	NADAPAL	-	
ATUKUR	EMALAN	-	NADAPAL	-	
WILSON	LOBUIN	8298930	KALLOSEGAT	0716710513	
NKIRO	LOKUTAB	394691	NADAPAL	-	
ERHOTO	LONGOR GROT	-	NADAPAL	-	
TERESA	NAREM	480054	NADAPAL	-	
LEATH	EMALAN	24003418	NADAPAL	-	
		29962465	NATODOEND	-	
			NATODOEND	-	

11.4.3 List of Attendance –

The following is the List of Attendance for the Public Consultation Meeting for the Proposed Rehabilitation of Marich- Pass Lodwar Road Project held at Kainuk Town in Kainuk Location of Turkana South District on 16th January 2015. 179 people registered as shown in Table 11-1.

Table 11-1: List of Attendance, Kainuk Centre, in Kainuk Location on Friday, 16th January 2015

No.	Name	ID. No.	Village/ Organization	Institution/ Institution/	Telephone No./ Contact Address
1	Simon M. Mutemi	20742131	OOP-DO		0727718087
2	Eyanae L. Apangole	4090393	OOP-Chief		0710695106
3	Erukudi E. David	20533312	TCG- Govt	Turkana County	0729708621
4	Margaret Arot	12907094	MYWO Chairlady		0721156227
5	Mary Imoni	12907094	MYWO Chairlady Lobokat		0719642020
6	Sarah A. Lochodo	1325696	OOP- Kainuk	Assistant Chief	0721688885
7	Calistus L Naputo	4726165	OOP- Chief	Kalomwal Assistant	0729341856
8	Elumani	4773597 Loyokou	Kailosengt		0704899720
9	Lokimia Muya		Nadasal		
10	Etoot Akal		Lochipkori		
11	James Ewoi		Nadapal		
12	Ewoi Logiglan Achuka	7973209	Nadapal		0717276923
13	Sainab Musa		Lochipkori		
14	Ekiru Logir		Naragaikamar		
15	Reuben korir	6101356	Naragaikamar		
16	Arukudi Lomuyo		Lotonguna		
17	Ewal Nakali Lokipi	4783706	Lotonguna		
18	Alupie Isaya Ngasike	101831	Nalibamun		
19	Namoru Namaye		Nalibamun		
20	Ngisipaam Amodoole		Market		
21	Annah Nakong Lokiru	30458489	Nadapal		
22	Mary Mojong Lokwang	20605875	Market		0715686589
23	Namoni Lokol	20559726	Market		
24	Ngatiko lokato	21421467	Lotonguna		
25	lilian Lokol		Nalibamun		
26	Eliza Arukudi		Lotonguna		
27	Ewoi Nakua		Market		
28	Ngurukui Akalnan		Lotonguna		
29	Natururi Alonyang		Ngirionotuk		
30	Susan Ebei		Market		
31	Ekaale Agnes	13425028	Nalibamun		0711405771
32	Paulina Ewoton	9245370	Ngirionotuk		

No.	Name	ID. No.	Village/ Organization	Institution/ Institution/	Telephone No./ Contact Address
33	Gladys Erukudi Ekutan	27033039	Nadapal		
34	Benjamin Lokiru	30457297	Nadapal		
35	Itao Akuom Lolem	8367881	Nadapal		
36	Margaret Arot	12907094	MYWO South Sub-County	Chairlady T.	07211156227
37	Calistus L. Napulo	4762165	Kalomwal Turkana/ Kainuk Division	Sub-location	0729341856
38	Samwel Lochara		Nadapal		0729032548
39	Kennedy Ekono	2640036	Nadapal		0707984088
40	Abraham Jkaru	29798575	Market		0718081207
41	Lobenyo Lokui	23098926	Lotonguna		0729346863
42	Lopaga Lobur	23335700	Lotonguna		0729041594
43	Emmanuel Marika Ejore	23593294	Maregaikaras		0720597949
44	Ekeno Ewoyat		Maregaikaras		
45	Joseph Sukuta	12434167	Nalibamun		0713139678
46	Joshua Njoroge	4762440	Ngirionotuk	Kinyanjui	0729768624
47	Santas Moses Adeng	5562230	Ngirionotuk		0726932807
48	Lobuk Lokureter	6152035	Lelangakari		0720932807
49	James Esingen	28771207	kopuru		0706395524
50	Dalmas Elabo	12907164	Nalibamun		0702075776
51	Ewoi Abdimalick	30914582	Ngirionotuk		0718062519
52	Peter Ngolrkwang	12433983	Lochipkori		0712697018
53	Eneillar Christopher	24567219	Market		0706404285
54	Peter Achuka	7477547	Market		0720537564
55	Aiyo Bismark	28513232	Koputiro		0714858729
56	Longesech Joseph	10123883	Nalibamun		0710711324
57	Ekai Steven	28774474	Koputiro		0717285761
58	Samwel E Ekioton	28161968	Lotonguna		0712431931
59	Esinyen Pius Erevide	78742622	Market		0710176804
60	Paul Ekeno	12907180	Market		
61	Moses Loyele	0278902	Kailoseget		
62	Ereng Elijah	29520018	Nadapal		0713700991
63	Ng'asike Jonah	25111624	Nalibamun		0728395595
64	Joseph Limano	21481803	Nalibamun		0712424650
65	David Lomton	8332710	Ngirionotuk		0710694805
66	Jonathan Lomuria	12907203	Market		0716710510
67	john Esinyen	5172634	Lorogon		0712929359
68	Amosiong Esekon		Lochipkori		
69	John Lokwang		Market		
70	Lomatukae Lokeya				
71	Musa Losike				
72	James Lomulen				

No.	Name	ID. No.	Village/ Organization	Institution/ Contact Address	Telephone No./
73	Eyanae Ng'aramoe				
74	Daniel Ekuwam	1257984	Koputiro		0717285231
75	Peter Emathe	4794609	Kainuk		0710910325
76	Ekiru Nakoele	0282953	Kainuk		
77	Lemulen Ngidoto		Kainuk		
78	Lokwang Tiya		Nalibamun		
79	Arupe Epusiye		Nalibamun		
80	Edukio Nancy	27713516	Lotonguna		0710695112
81	Atanae Lowete		Koputiro		
82	Arunye Napundan		Naragaikamar		
83	Mary Akatorot		Lotonguna		
84	Margaret Akidor		Koputiro		
85	Christine Lore	2605593	Lotonguna		
86	Eregae Achuka	4799220	Natorobwo		
87	Paulina Loruu		Nadapal		
88	Vanice Lokoli		Lotonguna		
89	Selina Atabo		Lotonguna		
90	Alice Etanae		Lotonguna		
91	Jecinta Akiru		Lotonguna		
92	Evyline Nakeno	20856496	Market		0701736870
93	Regina Natuk	22782734	Narengakamar		0717395715
94	Esther Elim	205606213	Market		0725214775
95	Joyce Arupe Esinyen	3336135	Lotonguna		0714776865
96	Margaret Apungure	4557469	Market		0714891158
97	Elizabeth Recho		Nalibamun		
98	Akimat Longelich		Nalibamun		
99	Ebei Lomgor		Lochikori		
100	Akolong Yoliyoli		Lotonguna		
101	Leah Akai		Lochikori		0729563872
102	Leah Etukon		Market		
103	Asili Ngasike	21200113	Nalibamun		0717700466
104	Sarah Lotaparin		Lochikori		
105	Annah Lometo		Market		
106	Apeyo Komusia	25831295	Natorobwo		0729846397
107	Norah Kokoi	4775912	Natorobwo		
108	Halima Idd		Ngirionotuk		
109	Rosemary Nongori		Market		
110	Ekadeli Ewoi		Market		
111	Asinyen Ekomwa		Koputiro		
112	Mary Asekon		Natorobwo		
113	Hellen Nanyait	20257588	Market		
114	Alice Nkor		Lochikori		

No.	Name	ID. No.	Village/ Organization	Institution/ Institution/	Telephone No./ Contact Address
115	Eregae Achuka				
116	Leah Asimit	11572762	Market		0701378923
117	Apungure Ekitoe		Narengakamar		
118	Apua Ekusi		Market		
119	Abigael Wanjala	29629398	Nalibamun		0708545788
120	Elamach Enalan	4788967	Narengakamar		
121	namuya Lobowa		Market		
122	Longeleton Lokol	2082273	Market		
123	Moses Ebento	27000948	Market		0719809589
124	Etabo Ekalale Adouni	28667205	Narengakamar		
125	Long'oroy Emase Harsome	44782255	Kailoseget		
126	Emesa Lothang Akurenyang		Kailoseget		
127	Philip ing'olan Epur Loboche	31693508	Natorobwo		
128	Ereng Epungora Lopus		Market		
129	Lorot Nakawa		Kailoseget		
130	Joseph Emekwi Edapal	3130445	Narengakamar		0705200967
131	John Makerere	12908097	Kailoseget		0718636669
132	Elias Emase	30436355	Koputiro		
133	Charles Eregae	25854525	Narengakamar		0706619923
134	Lowar Atuko Kooli	34607625	Nalibamun		
135	Sammy Eddy	0014445865	Lotonguna		0705832018
136	Zacharia Kalotom	27146564	Lochipkori		0714667355
137	Lorwa Erupe	30014	Market		
138	Simon L. Lokiru	31074700	Market		0706883949
139	Mike Emoru Eyanggan	23318453	Nalibamun		0703547986
140	Ekadeli Longor		Narengakamar		
141	Loregae Kebo Apallo	21071154	Nalibamun		
142	Samwel Ewoton	1725385	Lochipkori		0702937415
143	Charles Eyamai	0325810	Nalibamun		0721124204
144	Cornelius E. Esuron	30449212	Lotonguna		
145	James Erot	10125841	Lochipkori		0704970250
146	Lochodo Lokitoe		Koputiro		
147	Kapengi Samwel	3322881	Natorobwo		0700995664
148	Joseph Emojo	8326211	Lotonguna		0729388673
149	Apopa Peter	10124412	Market		0710514725
150	E H Ekiyeyes	4766017	Lotonguna		0716147141
151	Peter Ngachuro	12433986	Natorobwo		0710535236
152	Dorcas Epasiye	12434008	Nalibamun		0729298204
153	Mary Ngilimo	1298796	Lotonguna		0719642020
154	Annah Lometo		Market		

No.	Name	ID. No.	Village/ Organization	Institution/ Contact Address	Telephone No./
155	Millicent Ekomol	28797167	Narengakamar		0717087994
156	Akitela Ejore		Nadapal		
157	Regina Lobuka	28759831	Market		0703259210
158	Selina Ayanal		Narengakamar		
159	Simon Kaekir	400290400	Narengakamar		0726691372
160	Leah Enyang		Ngirionotuk		
161	Asekon Jalomeo		Narengakamar		
162	Ekidor Ekajolon		Natorobwo		
163	Annah Apalotom	20559759	Narengakamar		0701292069
164	Asinyen Nabor	8587895	Narengakamar		
165	Leah Ajore		Narengakamar		
166	Loyse Emuria	5739640	Narengakamar		0707804351
167	Awoi Ekomol Amangip		Nadapal		
168	Akai Annah		Lochipkori		
169	Kiyonga Ekaal		Nadapal		
170	Atukuri Ewalan		Nadapal		
171	Wilson Lobuin	8298930	Kailoseget		0716710513
172	Ngiro Lokutano		Nadapal		
173	Echoto Longor Erot	4800554	Nadapal		
174	Teresa Narem	24303418	Sodom		
175	Leah Ewalan	29762465	Natorobwo		
176	Philip Kapua	3258205	Lotonguna		0723329283
177	Simon Loirian	12434262	Narengakamar		0725332653
178	Philip Elim	22668842	Narengakamar		0712370505
179	Benjamin Ngirotin	27146729	Koputiro		0710560775

11.4.4 Photographs of the Meeting



Plate 11-1: Project presentation at Kainuk – a translator was necessary



Plate 11-2: On-going registration of attendees – most attendees were illiterate, needed assistance



Plate 11-3: Large section of women stakeholders following proceedings



Plate 11-4: Attendees were served refreshments



Plate 11-5: area Chief and ACC listen to proceedings



Plate 11-6: meeting venue under local trees



Plate 11-7: All in favour for the road rehabilitation work



Plate 11-8: All ready for the road rehabilitation work

11.5 KAAKONG’U VILLAGE IN KAINUK LOCATION ON FRIDAY 16-1-2015 AT 4.00 PM

11.5.1 Minutes of Meeting

The Kainuk Location Chief is Phillip Eyanae Apangole. The assistant chief Kaakong’u Sub-Location is John Kang’iro. The Assistant County Commissioner for Kainuk Division is Simon Mutemi.

Minutes of Environmental and Social Impact Assessment Public Consultation and Disclosure Meeting held on 16th January 2015 at Kaakong’u Village,

1. GENERAL

The meeting started at 16.30 pm with a word of prayer by Pastor Reuben Atimokori.

2. INTRODUCTION

The Kaakong’u Sub-Location Assistant Chief Mr. John Kang’iro welcomed all present and introduced the Environmental Impact Assessment Team and the Agenda of the day.

Those introduced included the village elders as well as Pastor Reuben Atimokori who was also the translator.

In his introduction, the Environmental Expert, (Dr. Oonge) explained that development of roads in the country is mandated to Kenya National Highways Authority (KeNHA) for Class A, B & C roads, Kenya Urban Roads Authority (KURA) for town roads and Kenya Rural Roads Authority (KeRRA) for rural roads comprising of Class D and E Roads. He explained that the Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road is part of the Northern Corridor Roads in an effort to improve access to Nadapal and South Sudan - the Northern Corridor links the Kenyan Port of Mombasa on the Indian Ocean to landlocked East African countries. He explained that the agenda of the meeting was to inform all stakeholders and community members present of the intended construction and explain the design components so that the stakeholders would give feedback on their views for implementation. He urged all to follow the presentation keenly and inquire on all issues that were not clear or that needed discussion.

3. THE PRESENTATION S

1. Presentation by the Environment Lead Expert, Eng. Dr. Oonge

The Environmental Expert, (Dr. Oonge) took the opportunity to appreciate all present and explained the purpose of the meeting. He explained that such consultations and disclosure had been carried out in June 2012 and that the day’s meeting would mainly address the issues of likely impacts of the road on the bio-physical and social environment as well as the impacts of the environment on the road improvement and hopefully gain community ‘buy-in’ to the project.

He said the purpose of the meeting was to inform the community on aspects of proposed road development and of the expected project impacts, give the stakeholders opportunity and a forum to participate and ask questions, and air their views and suggestions.

He quoted and explained the various national laws, policy framework, World Bank Safeguard Policies and regulations that govern Environmental and Social Impact Assessment and such public consultation meetings. The Environmental Management and Co-ordination Act that requires an Environmental Impact assessment Study be carried out and that such a meeting to be held in order

to involve all stakeholders and Project-Affected-Persons. He highlighted the role of public consultation and disclosure in an infrastructure project as well as the need for active participation from members of the public whose natural habitat, physical, cultural and others resources may be affected.

He presented the baseline data and explained that his presentation was formulated based on what was found on the ground during environmental and social survey. The consultant explained the environmental and social impacts expected.

For each stage he explained the impacts so far envisaged and proposed mitigation measures including the responsibility for implementing such mitigation. He explained that the adverse impacts as a result of proposed rehabilitation would be explained under four broad categories namely:

- Planning (current stage) - He made it clear that at the planning phase, a significant impact would be the direct land take of privately owned land as a result of road re-alignment occasioning relocation of mainly business premises. He explained that compensation for affected persons and properties would be handled through comprehensive RAP, a process that was already in progress.
- Construction – He explained that there would be vegetation clearance to pave way for the construction, dust and noise generated during earthworks and from various other work sites like asphalt mixing plant and the hard stone crusher site, opening up of borrow areas that would scar the landscape and pose falling risk for livestock. He explained that mitigation for these was provided in the ESMP including water spraying for dust, regulated working hours for noise and use of PPE for construction workers.
- Operation - He also explained that there would be increased vehicle-human – livestock-interactions during the operation stage with more traffic at high speed and that this would cause collisions likely to result in fatalities or injuries. He explained that once opened up, the road would be a conduit for many business and travel opportunities in less time and improved comfort.
- Closure – he explained that the road was not likely to be decommissioned at the expiry of the design life but rather certain component would be restored back to pre-development status such as opened up borrow areas and project management offices.

He explained that the positive impacts (benefits) of the planned rehabilitation include the following among others-

- Decreased journey times
- Decreased cost of travel and transportation of commodities
- Hasten response to security or drought emergencies, more frequent in the area
- Ripple economic benefit from trade and commerce such as increased production of goods and services e.g. livestock inputs, access to better healthcare
- End isolation and remoteness in the area occasioned by poor access
- Boost national and international trade

Details and summary of the presentation are as per attached in Section 11.2

4. THE DISCUSSIONS

A question and answer session followed.

The Consultant invited the members present to air their views and ask questions and explained that owing to the high number of participants and the likelihood that same question might be repeated, five questions would be invited and answered in every run.

- Q1 Mr. Ezekiel Lowi, an elder from Kaakong'u inquired that since on that side of the road they are pastoralists (right side), their animals frequently crossed the road to the other side (left side) to the watering points. In light of the increased traffic whereby the rehabilitated road would become like the Nakuru-Eldoret Road with many vehicles at high speed, what will happen so that our livestock cross the road safely?*
- Q2 Mr. John Chichi from Notorobwo sought to know what would happen if the planned re-alignment of the road passes through people's plots and houses, would the government compensate them? He wondered that the reference of their land as "communal land" meant that then, there was no bonafide owner and that such land was therefore deemed to belong to the Turkana County government, formerly Turkana County council.*
- Q3 Erastus Eyanae of Nariamo explained that they have two animal types- human and livestock – explaining that the livestock comprised of camels, donkeys, chicken, cattle, sheep and goats. He explained that accidents will happen with these animals as a result of the road improvement. He therefore wondered what the compensation would be in case of such accidents. He also revisited the issue of communal land – stating that that land referred to as "communal land is theirs, and no one can take it away". He sought to know how much the contractor would compensate them for use of their communal land during construction, including graves*
- Q4 Roselyn Akai of Natorobo said that they have shambas near the road. She also sought to know if there would be due compensation if their shambas are affected by the construction.*
- Q5 Lokolman Maleri of Kadengoi Village explained that the local people have no objection to the planned road rehabilitation but repeatedly, wanted to know what would happen if the contractor's vehicles collided with their livestock. He exclaimed that even they are government people, just like the road is.*
- A(1) the Environmental Expert explained that there was a lagha right where the meeting was held and that a large box culvert would be installed to allow passage of water during the rainy seasons, in which time, there was no need for the livestock to cross over. He enquired of the people if such a box culvert would suffice as a livestock crossing during the dry season. The people enquired if it would have enough clearance to accommodate passage of the camel to which the Environmental Expert enquired if 4m high was adequate. To this the community replied in the affirmative. Some grumbled that the camel is very difficult to guide but it was eventually agreed that a box culvert with sufficient clearance to accommodate a camel would be allowed for.
- A (2) the Environmental Expert explained that there is already an existing 60 m wide reserve and that compensation would only be due where re-alignment left the 60m reserve.
- A (3) the Environmental Expert explained that "communal land" was not equivalent to "owner not found", but that it was rather, a land tenure system implying that administrative channels would be followed to identify the authentic owners. He also explained that, as a businessman, the contractor was under no obligation to pay anyone, but rather enter into contracts for material extraction.
- A (4) The Environmental Expert explained that if the *shamba* is within the 60m reserve, then they should not expect compensation for land but for planted crops. If however the *shamba* falls outside of the 60m, it would not be affected.
- A (5) The Environmental Expert explained that human traffic accidents were covered and subject to motor vehicle insurance policy. However, he gave a case study whereby, along Naivasha

Road, criminal gangs used to waylay travellers by pushing a live donkey to cross the road in the dead of night on the path of approaching speeding buses. This would result in accidents whereby the buses rolled, thereby injuring the travellers. The criminals would then descend on the hurting passengers and rob them before rushing back into their hideouts. This necessitated the adoption of a law, whereby, in case of vehicle-livestock collisions, in the hope of deterring such criminal activity, the livestock owner is pursued to compensate for associated damages. He explained that it is therefore the onus of the livestock owners to ensure safety of livestock on the road at all times.

There was much grumbling and disapproval to this. Erastus Eyanai protested that if that is what happens in other parts of the country, then they would push for legislation within the Turkana County that demands that the vehicle owners compensate the livestock owners in scales of livestock equivalent since livestock is their livelihood. He gave an example of 5 cattle for every one fatality. Similarly, he cited a local case whereby, fibre optic ducts were installed but the cables were left exposed. This caused accidents and injuries for their cattle. A complaint was launched with the fibre optic operator, who was forced to pay up. He said that here, unlike in ukambani and elsewhere where people have one or two animals, people have many animals and a single accident can result in mass fatalities

Q6 Erastus Eyanai of Nariamo explained that among the roadside trees likely to be affected by the vegetation clearing were some cultural trees such as shrines and medicinal trees. He wondered what the compensation would be if these were affected. He also enquired where the contractor would source sand, rock and water for construction from, since these were theirs. He enquired that, in the light of the fact that local residents are not wide travelled to highly trafficked areas, would adequate signage be employed for their safety?

A (6) The Environmental Expert sought clarification on the names of the cultural tree species and what happens in the event that such trees naturally fell by themselves. On material extraction for sand and stone, the consultant explained that the contractor will enter into material mining contracts with affected land-owners specifying the extent of the extraction, necessary remediation and closure, upon expiry of the contract. He advised the community members to let such contracts be known even by the RE for their effective implementation. He explained that appropriate and adequate signage would be put up during construction. Mr. Erastus Eyanai led the community in identifying the cultural trees affected and named them as follows; esekon, ewio, esenyenait, ekunoit, edome, ebei, elamach, esekon, ekalale for fruits, edung for fruits too, egong – medicinal for diarrhea and vomit. To this, the consultant responded that such compensation will be handled under RAP.

Q7 Mr. Peter Ewar commented that Kaakong'u is the central bank of Turkana as far as the drought season is concerned- meaning that livestock from all other regions is brought here for pasture and water during the droughts. He proposed that there were three locations within Kaakong'u sublocation where livestock crossing box culverts would be necessary – at Apitau, at Lomunyenkiyon and at Natweli towards a pastoralists water pan. He also requested for speed humps on location to reduce vehicle speeds and avoid accidents.

A (7) The Environmental Expert explained that these views would be incorporated in this report.

Q8 The Kaakong'u sub-chief, Mr. John Kanyaru sought to know if the Contractor would put up a dormitory for Kaakong'u Primary School, which has 356 kids and comprises a nursery, classes and a dining hall. He explained that the school has dormitories for girls but none for boys, and that it lacked fencing. He cited this as a much needed help owing

to increased insecurity in the area. He related that if the children of the area are not educated, all this development effort would end up not helping them as intended.

A (8) The Environmental Expert explained that this issue was outside of the road project, but would be included in the report, maybe one group say the Client, the Contractor or other stakeholders would pick it and implement it as Corporate Social Responsibility.

5. *THE RESOLUTION*

The recommendations arrived at all were in favour of seeing the speedy commencement of the rehabilitation work on the A1 road.

6. *AOB*

The public consultation meeting ended and stakeholders left at their leisure.

7. *CLOSING PRAYER*

The meeting ended at 18.42 pm with a word of prayer from Pastor Erai.

11.5.2 List of Attendance – Scanned Copies

POKOT CENTRAL:

VENUE: _____ DATE: _____

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	EMORI KERO				
	ALIMYIT LONDANGAME	300M53			
	JONA E K WANGIRO	4780401	A/dwils	0700323116	
	AKABO EKADELI EKIRU	21803863	KADENGOI	—	—
	NAPUR EPANAT LODLO	20640863	KADENGOI	—	—
	AUGUSTINE LOSNTEN BUPE	30009829	KADENGOI	0705846210	—
	AKAT EMETO	21146661	KADENGOI	—	—
	NICKSON LODERO	32419300	NAPITAV	0704839400	

POKOT CENTRAL:

VENUE: _____ DATE: _____

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	MANUAT EKAI	—	KADENGOI	—	—
	FELISTAI AKAI	—	NATOROBUO	0706614113	—
	ERENG ANGARAT Ngiro	9245436	KADENGOI	—	—
	JAMES KERO	102050528	KADENGOI		
	LOKWANI KALAE	27810683	NATATIR	0703798415	
	AMASE AKIRU	—	NATOROBUO	—	—
	ETIBONG LOPWANI EKITOE	30010398	KADENGOI	—	—
	LOKWA LOKWANI EBOME	30096600	KADENGOI	—	—
	ALIMLIM EKAI WAKAE	30009309	KADENGOI	—	—
	ROCHMUT LORWANE AMUSI	30418870	NAPITAV	—	—
	AGIPENOK EKUNANI LOKWANI	4794478	KADENGOI	—	—
	LOKWANI ESEKONY		NATATIRA	—	—
	AKIRU EKADELI	4765074	KADENGOI	—	—

No.	Name	ID No.	Village/Institution/ Organization	Telephone No./ Contact Address	Signature
	Amurim Ewas homofa	4766712	Kodengor		
	Nabengo Ebwangan	-	Natorobwo		
	Axistela Atot Apalehina	25291728	Natorobwo		
	Agnes Ngikar Festus	20518297	Kodengor		
	Akuru Ebwangan	-	Napitau		
	Paulina Atwal	-	Kodengor		
	Alice Akano		Natorobwo		
	Elizabeth Akar kavung	12434025	Natorobwo		
	Agalala Namada	-	Kodengor		
	Akuuta lobei		Natorobwo		
	EPHIGURE REBECCA KOKUINI	30019567	Napitau		
	KANLEMU NGINGOROKO	30010453	Napitau		
	ENIDOR MOTOINGOLE	22782996	Napitau		

NU. IDNIE	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
DAVID ATUKO	85293785	KADAMBOI	0718484515	[Signature]
DORACAS AKURU	-	Kodengor	-	[Signature]
AKERIT LOROT	-	Kodengor	-	[Signature]
EUSTON ATABO	-	Nawaiyatera	-	
Anna Fakoo	-	Napetas	-	
Elizabeth Zoro	-	Nawaiyatera	-	
Waresy Namuron	-	Natarabo	-	
Alic Ausialate	8592386	Nawaiyatera	-	
Abandim korst Ekai	80021627	Kodengor	-	
Weyanwemo Nagialan	30871080	Nawaiyatera	-	
Lemungu kamuk hokodok	4794337	Netorobo	-	
Nakidor hower Namuk	30039623	Natoroboo	-	
Nabemjo hokoi	-	Nawaiyatera	-	

FOKOF CENTRAL:

VENUE: _____ DATE: _____















No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	EVANG EKIDOR KANKIRO	32811777	NATOROBWO	0704370287	
	EMMAN KELTA - LOBUIN		NATOROBWO	0704370285	
	STEPHEN ATOTI LOKOLEWA	30009543	NATOROBWO	0704115578	
	DANSON LOKOLYER ELOTO		NATOROBWO	0712232202	
	AKIM E MAPLO	30412784	NATOROBWO	0703215460	
	NADIKO E. BASSIL	30002342	KADENGO	0717030060	
	JAMES LOKUAS		KADENGO		
	EGIRON EGILAN	31693617	KADENGO	0702868802	
	EUTONGROT NADKO	30017846	LOMONTEN		
	ATMONIKOR EMUTA	7489565	NAPITAU		
	JOREGAE MARWAJ		NADYATIRA		
	HELLEN NADKODI	24383910	NATOROBWO		
	IKABELI LONYETT		NAPITAU		

FOKOF CENTRAL:

VENUE: _____ DATE: _____

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	SONGILAN KIMBO	6211322	KAKONG	070448676	
	MOTARO - NALEMU		"		
	MAFIKA ESTONIG		"		
	ERENE IAVYA		"		
	NBUKITA LOKABUKU		"		
	ELAZ TAWO	0488180	"		
	EMGIA LOYANGOLE	9245506	"		
	EKENO IMAL	20958763	"		
	ERABELI LOUSANGAMU		"		
	MARU ESTUAPUS		"		
	NANGILOT SAMAL		"		
	ESIMON EIPA		"		
	EKIDIA ALERER		"		

POKOT CENTRAL:

VENUE:		DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	ELTO ETAPAK		KAKONKO		
	LUGU KEMULE		"		
	JAMES ERAT		"		
	JOSPH LODRO		"		
	PETER ENJA	12911623	KAKONKO	0727443623	
	TATA EAM		"		
	NGUGU LOKAKU		"		
	MATHEN KEMAKU	27155621	"		
	NATHAN ISAKUTE		"		
	AMASE AKIAU THAK LODRO		"		
	MARITHA ENAL		"		
	JACKSON E. ENASE	20799643	KAKONKO	0727986938	
	ANGATKA LOBRO				
	MAGAT ERAT				

NAME	ID No	VILLAGE	TEL	Sign	Date
LOURIANA EIPA	29397270	KADENGO			
IPEN ETOO ELWOM	32524362	KADENGO			
NGIBETO ACHOKA	21391447	NATOKOBWO			
ANNA EBENTO		KADENGO			
LOLOL ELWOM MOEKOL		KADENGO			
Reube. Amgikon	20487223	KADENGO	072778208		
JOSEPH FERENAE	28293560	NATOKOBWO	0717489198		
Imokol William TAKUNYI	30009287	KADENGO			
AKAI NYANKKAN ALONOKOU	9528437	KADENGO			
EVEN EIPA WABULIZ		KADENGO			
David lowoLONGE	4765449	NATOKOBWO	0701039016		
JOHNICE AKUT IKETELA	24112771	NATOKOBWO			
SUSAN ASINYEN		NATOKOBWO			
ROSELYNE AKAI		NATOKOBWO			
SOLINA NATIIR		NATOKOBWO			
MARGARET NACHOTO	4594879	NATOKOBWO			
MARIA KEBE	25781656	NATOKOBWO			
EMMANUEL KAKIBAN		NATOKOBWO			
AMEROSE GRIBI		NATOKOBWO			
LOKINTONB ALEPEO IKOEL	25995682	NATOKOBWO			
ABUNTA LOBEI ESEKON	30020870	NATOKOBWO			

NAME	ID NO	VILLAGE	TEL	SIGN	Date
TATA EBEI	-	NAPITWA	-	##	
MUKWA NAKIRINGO LOKOR	-	NATYATIIR	-	##	
NAMU ABULO	208773279	NATOKO BWO	-	-	
EMASE EKIREKA	30418864	KADENGOI	-	-	
AKIYELA AGOT APKOLIND	25291728	KADENGOI	-	-	
ASAKI EKITYELA NAKENGOI	26753592	KADENGOI	-	-	
NGILE BEE LOPELENGORIA	4764734	KADENGOI	-	-	
KWALENG NGINGOROKO	30010453	NATYATIIR	-	-	
JECENTA ATENEN EB00T	4775618	KADENGOI	-	-	

11.5.3 List of Attendance –

The following is the List of Attendance for the Public Consultation Meeting for the Proposed Rehabilitation of Marich- Pass Lodwar Road Project held at Kaakong’u Village in Kainuk Location of Turkana South District on 16th January 2015. 116 people registered as shown in Table 11-2.

Table 11-2: List of Attendance, Kaakong’u Village, in Kainuk Location on Friday, 16th January 2015

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
1	Evans Ekidor Kangiro	32811797	Natorobwo	0704370287
2	Enyan ketita Lobuin		Natorobwo	0704370285
3	Stephen Atoti Lokolong	30009548	Natorobwo	0704115583
4	Danson Lokoliver Eloto		Natorobwo	0712232202
5	Akim E. Kapelo	30418784	Natorobwo	0708215460
6	Nadiko E. Bassil	30002842	Kadengoi	0717080060
7	James Lokwar		Kadengoi	
8	Egiron Egialan	31693617	Kadengoi	0702860002
9	Euyongorot Nadiko	30017846	Lomunyen	
10	Amonikor Emuya	7489565	Naapitan	
11	Loregae Marwas		Naoyatiira	
12	Hellen Napokoi	24388910	Natorobwo	
13	Ikadeli Lonyeit		Naapitan	
14	Emeri Kerio			
15	Arinyit Lomudangamoe	30019563		
16	John E.E. Kangiro	4780401	A/Chief	0700323116
17	Atabo Ekadeli Ekiru	31803863	Kadengoi	
18	napur Epakan Loolio	29649863	Kadengoi	
19	Augustine Losinyen Erupe	30009829	Kadengoi	0708846216
20	Akai Emeto	21146661	Kadengoi	
21	Nickson Lodero	32419360	Naapitan	0704839400
22	Meng'at Ekai		Kadengoi	
23	Felistas Akai		Natorobwo	0706614113
24	Eregae Arangat Ngikuruka	9245436	Kadengoi	
25	James Keino	102050526	Kadengoi	
26	Lokwawi Kalala	27810683	Naoyatiira	0703798415
27	Amase Akiru		Natorobwo	
28	Etidong Lopenani Ekitoe	30010398	Natorobwo	
29	Lochoi Lokonyi Edome	30009660	Kadengoi	
30	Alimlim Ekai Lokaale	30009309	Kadengoi	
31	Wachuch Lorwane Namusi	30418870	Naapitan	
32	Ngipenyok Ekuwam Lokwani	4794478	Kadengoi	
33	Lokwawi Esekeny		Naoyatiira	
34	Akiru Akadeli	4765074	Kadengoi	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
35	Amurim Ewai Lmaita	4766712	Kadengoi	
36	Nabenyo Ebwangan		Natorobwo	
37	Akitela Arot Apalolimo	25291728	Natorobwo	
38	Agnes Ngikor Festus	20518297	Kadengoi	
39	Akiru Ebokon		Naapitan	
40	Paulina Atool		Kadengoi	
41	Alice Akeno		Natorobwo	
42	Gladys Akai Loreng	12434025	Natorobwo	
43	Angela Namabla		Kadengoi	
44	Akuuta Labeli		Natorobwo	
45	Epungure Rebecca Lokeuni		Naapitan	
46	Kaaleng Ngingoroko	30010453	Naapitan	
47	Ekidor Motongole	22782996	Naapitan	
48	David Atuko	28293785	Kadengoi	0718484515
49	Doracas Akiru		Kadengoi	
50	Arerit Lorot		Kadengoi	
51	Ewoton Atabo		Nawaiyatera	
52	Anna Fekdo		Naapitan	
53	Mercy Namuron		Natorobwo	
54	Alice Auwialote	8592386	Nawaiyatera	
55	Alimlim lorot Ekai	30021627	Kadengoi	
56	Loyanaenoe Nagialan	30071050	Nawaiyatera	
57	Memuya lemuth Lokaeleli	4794337	Natorobwo	
58	Nakidor Lowoi Namuth	30039623	Natorobwo	
59	Nabenyo Kotoi		Nawaiyatera	
60	Longolan Limeru	5211322	Kaakong	0704488766
61	Matoro nalemu		Kaakong	
62	Mafika Estonil		Kaakong	
63	Ereng Ibuya		Kaakong	
64	Ngikito Lokadukui		Kaakong	
65	Ekal Tawoi	0488180	Kaakong	
66	Emeja Lonyangole	9245506	Kaakong	
67	Ekeno Imal	20958763	Kaakong	
68	Ekadeli Lomudangamoe		Kaakong	
69	Moru Etuliapus		Kaakong	
70	Nangorot Samal		Kaakong	
71	Esinyon Eipa		Kaakong	
72	Ekidor Alepor		Kaakong	
73	Eloto Eyapan		Kaakong	
74	Lugui Enemule		Kaakong	
75	James Erot		Kaakong	
76	Joseph Codero		Kaakong	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
77	Peter Ewar	12911623	Kaakong	0727443623
78	Tata Ebei		Kaakong	
79	Ngupe Lokajeli		Kaakong	
80	Mathew Emanikor	27155021	Kaakong	
81	Nayanae Iswakete		Kaakong	
82	Amase Akiru		Kaakong	
83	Martha Ekai		Kaakong	
84	Jackson E. Emase	20799543	Kaakong	0727986938
85	Angaika Lobiro		Kaakong	
86	Magat Ekai		Kaakong	
87	Louriana Eipa	29387270	Kadengoi	
88	Ipem Etoot Ekouma	32524362	Kadengoi	
89	Ngibeyo Achoka	21391448	Natorobwo	
90	Anna Ebenyo		Kadengoi	
91	Lokok Ekwam Morukol		Kadengoi	
92	Reuben Atimarkori	20487223	Kadengoi	0127782108
93	Joseph Eregae	28293560	Naapitan	0717489198
94	Ignolol William Takunyi	30009287	Kadengoi	
95	Akai Nyamakan Arionokou	9528437	Kadengoi	
96	Eyen Eipa Ongolol		Kadengoi	
97	David Lokolong	4765479	Natorobwo	0701039016
98	Johnke Akut Ekitala		Natorobwo	
99	Susan Asinyen		Natorobwo	
100	Roselyne Akai		Natorobwo	
101	Selina Nayiir		Naapitan	
102	Margaret Nachoto	4894879	Naapitan	
103	Maria Kebo		Natorobwo	
104	Emmanuel Ekabilan		Natorobwo	
105	Ambrose Lokorio		Naapitan	
106	Lorinyon Alepem Ikoel	28995682	Naoyatiira	
107	Akuuta Lobei Esekon	30020870	Naoyatiira	
108	Tata Ebei		Naapitan	
109	Makaa Nakiringo Lolok		Naoyatiira	
110	Nami Abulo	208773279	Natorobwo	
111	Emase Ekitela	30418864	Kadengoi	
112	Akitela Arot Apalolimo	25291728	Kadengoi	
113	Isaac Ekitela Narogoi	28753592	Kadengoi	
114	Ngilebei Lopelengoria	4764734	Kadengoi	
115	Kaaleng Ngingoroko	30010453	Naoyatiira	
116	Jecenta Atewon Eboot	4775618	Kadengoi	

11.5.4 Photographs of the Meeting



Plate 11-9:



Plate 11-10:



Plate 11-11:



Plate 11-12:

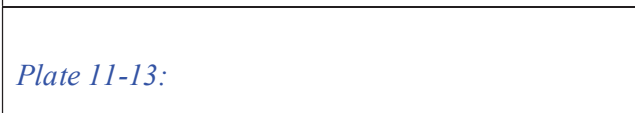


Plate 11-13:

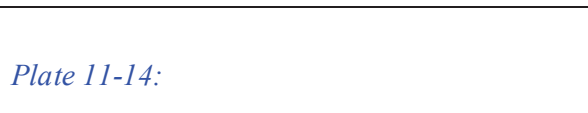


Plate 11-14:



Plate 11-15:

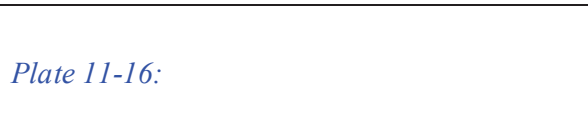


Plate 11-16:

11.6 LOKICHAR TOWN IN LOKICHAR LOCATION ON SATURDAY 17-1-2015 AT 10.45 AM

11.6.1 Minutes of Meeting

The Lokichar Location Chief is Josphine Okal. The assistant chief Kapese Sub-Location is John Kang'iro. The Deputy County Commissioner for Turkana South County is Mr. Elijah Kodoh.

Minutes of Environmental and Social Impact Assessment Public Consultation and Disclosure Meeting held on 17th January 2015 at the livestock sale yard, Lokichar Town.

1. GENERAL

The meeting started at 10.45 am with a word of prayer by Pastor John Achuka.

2. INTRODUCTION

The Lokichar Location Chief Ms. Joshine Okal welcomed all present and introduced the Environmental Impact Assessment Team comprising Eng. Dr. Oonge, Nancy Mukui and Timothy Koome. She also introduced the Agenda of the day.

In his introduction, the Environmental Expert, (Dr. Oonge) explained that development of roads in the country is mandated to Kenya National Highways Authority (KeNHA) for Class A, B & C roads, Kenya Urban Roads Authority (KURA) for town roads and Kenya Rural Roads Authority (KeRRA) for rural roads comprising of Class D and E Roads. He explained that the Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road is part of the Northern Corridor Roads in an effort to improve access to Nadapal and South Sudan - the Northern Corridor links the Kenyan Port of Mombasa on the Indian Ocean to landlocked East African countries. He explained that the agenda of the meeting was to inform all stakeholders and community members present of the intended construction and explain the design components so that the stakeholders would give feedback on their views for implementation. He urged all to follow the presentation keenly and inquire on all issues that were not clear or that needed discussion.

3. THE PRESENTATION S

1. Presentation by the Environment Lead Expert, Eng. Dr. Oonge

The Environmental Expert, (Dr. Oonge) took the opportunity to appreciate all present and explained the purpose of the meeting. He explained that such consultations and disclosure had been carried out in June 2012 and that the day's meeting would mainly address the issues of likely impacts of the road on the bio-physical and social environment as well as the impacts of the environment on the road improvement and hopefully gain community 'buy-in' to the project.

He said the purpose of the meeting was to inform the community on aspects of proposed road development and of the expected project impacts, give the stakeholders opportunity and a forum to participate and ask questions, and air their views and suggestions.

He quoted and explained the various national laws, policy framework, World Bank Safeguard Policies and regulations that govern Environmental and Social Impact Assessment and such public consultation meetings. The Environmental Management and Co-ordination Act that requires an Environmental Impact assessment Study be carried out and that such a meeting to be held in order to involve all stakeholders and Project-Affected-Persons. He highlighted the role of public consultation and disclosure in an infrastructure project as well as the need for active participation from members of the public whose natural habitat, physical, cultural and others resources may be affected.

He presented the baseline data and explained that his presentation was formulated based on what was found on the ground during environmental and social survey. The consultant explained the environmental and social impacts expected.

For each stage he explained the impacts so far envisaged and proposed mitigation measures including the responsibility for implementing such mitigation. He explained that the adverse impacts as a result of proposed rehabilitation would be explained under four broad categories namely:

- Planning (current stage) - He made it clear that at the planning phase, a significant impact would be the direct land take of privately owned land as a result of road re-alignment occasioning relocation of mainly business premises. He explained that compensation for affected persons and properties would be handled through comprehensive RAP, a process that was already in progress.

- Construction – He explained that there would be vegetation clearance to pave way for the construction, dust and noise generated during earthworks and from various other work sites like asphalt mixing plant and the hard stone crusher site, opening up of borrow areas that would scar the landscape and pose falling risk for livestock. He explained that mitigation for these was provided in the ESMP including water spraying for dust, regulated working hours for noise and use of PPE for construction workers.
- Operation - He also explained that there would be increased vehicle-human – livestock-interactions during the operation stage with more traffic at high speed and that this would cause collisions likely to result in fatalities or injuries. He explained that once opened up, the road would be a conduit for many business and travel opportunities in less time and improved comfort.
- Closure – he explained that the road was not likely to be decommissioned at the expiry of the design life but rather certain component would be restored back to pre-development status such as opened up borrow areas and project management offices.

He explained that the positive impacts (benefits) of the planned rehabilitation include the following among others-

- Decreased journey times
- Decreased cost of travel and transportation of commodities
- Hasten response to security or drought emergencies, more frequent in the area
- Ripple economic benefit from trade and commerce such as increased production of goods and services e.g. livestock inputs, access to better healthcare
- End isolation and remoteness in the area occasioned by poor access
- Boost national and international trade

Details and summary of the presentation are as per attached in Section 11.2

2. Comments by the deputy County Commissioner, Turkana South County, Mr. Elijah Kodoh

The Deputy County Commissioner, Turkana South County explained that this was a greatly important Project. He agreed that the local people had waited for too long to get the rehabilitation work commence, but that now, the messenger had brought very good news. He caused laughter when he told the people that “if I were you, I’d slaughter a goat for this messenger and send them back to KeNHA with a message “bring this road quickly!”

He said that the road would bring benefits to the local communities, more so, far, the ripple effects of access to markets for livestock along with increased demand for goods and services, and therefore trade.

In light of long-standing insecurity between the Turkana’s and the Pokots, he said that the road would help banditry in the area. The road rehabilitation would also raise the status of other adjoining roads, so that work of building all roads can begin.

He explained that from Kainuk, priority for all unskilled labour should be only from local Turkana communities. However, in the event of shortages, Kenyans from other counties would be recruited. He urged the youth to enrol in colleges for plant operators and other such skills that the road construction would require so that by the time those employment opportunities arise, they’d be found ready to seize them, otherwise there’ll be no preferential treatment in skilled labour requirements since the Contractor is a business person requiring excellent service and with a time

frame for delivery of work. He explained that the good thing with acquiring such skills is because they would benefit the individuals elsewhere, even if not necessarily on the expected project.

He also discussed that in such large infrastructure projects like even the Tullow Oil Explorers who concluded the exploration in 2014, opportunities abound, not just in direct employment but also in other peripheral support activities like food vending and provision of accommodation, which besides, could enable one to be an employer.

He explained that under the existing road condition, the bus fare from Lokichar to Kitale was K. Shs. 3,000. He prodded the stakeholders on what they estimated the fare would be on a good road to which they replied, approximately K.Shs. 1000. In addition, the rehabilitated road would enable travel to kitale and back in the same day unlike under the existing road.

He urged all that they'd be unwise if they engaged in activities that would deter or delay the project.

He urged all to join hands so as to support the progress of the road works and guided the people to ask only questions that would build the project.

4. THE DISCUSSIONS

A question and answer session followed.

The Consultant invited the members present to air their views and ask questions and explained that owing to the high number of participants and the likelihood that same question might be repeated, five questions would be invited and answered in every run.

- Q1 Mr. Michael Ekutun Eremon, IDP, Lokichar wondered that a 60m wide reserve is too wide and sought to know if the Contractor would compensate those affected. He also sought to know if there'd be sufficient notice prior to eviction for those affected. On employment, he alleged that when the contractors come, they demand that every employee must have a degree as a minimum criteria and then they offer very low remuneration for the services. Besides, they bring too many foreigners to the extent that the locals fail to benefit.*
- Q2 Matthew Esinyeni of Kapese Location remarked that, thanks be to God if this road is going to be rehabilitated in the manner described. He said that he was pained by the state of this A1 road in comparison with other roads in the country like in nakuru and elsewhere. He wondered why the two contracts from Marich pass to Lokichar and Lokichar to Lodwar would not commence simultaneously and proceed concurrently. He urged the stakeholders to avoid bringing their livestock to the road once the project commenced and not to leave them unaccompanied*
- Q3 David lodis of Nalemsogon sought to know if there were any effects from the road beyond the 60m reserve – if only the verandah of my building structure is affected to the extent of one foot?*
- Q4 James Losomat of Nogokem (Kambi Moto) expressed joy about the proposed rehabilitation but quipped that “this song had been sang too many times”*
- Q5 Area Chief Josphine Ekol explained that there are many contractors in Lokichar – owned by women and youth who have a lot of machinery to do road works. She said these are eligible to do the work. She also said that there was enough local capacity for various job cadres such as supervisors and plant operators. In addition, she said*

Lokichar town has various buildings providing food and accommodation, and contractors need not bring along containers with them to live in.

Q6 Joseph Lore from IDP, Lokichar commented that even if there were various skills required, there are skills which can be learnt in a day. He said that if trainers for such skills would be brought in, many people including women are willing to train and build the road

A (1-2) The Environmental Expert explained that there'd be due compensation for affected property, subject to RAP such that for encroachment, only the structure and livelihood will be compensated for and not the land. He explained that since it is the Kenya Government that compensates for such loss, compensation funds must first undergo budgetary approvals before they are paid out. He further explained that if the reserve requires land acquisition, then compensation would be for land, livelihood and structures. He informed the stakeholders who were desirous of skilled employment to enrol in colleges to gain those skills, early enough before the road works commence. On when the road would come, he explained that procurement of contractors was underway and due process must be followed.

A (3) The Environmental Expert explained that if only a small section of the house was affected, then the whole house is affected.

A (4) The Environmental Expert explained that the comment is noted.

A (5) The Environmental Expert explained that the chief's comments would be incorporated in the ESIA report

A (6) The Environmental Expert explained that the contractor is not a trainer but a business man and it would be well advised that anyone desirous of skilled employment put their own effort to gain the requisite skills.

Q7 Mr. Patrick Lankole of Kamarese lamented that the last time this a1 road was rehabilitated, a lot of livestock and people were injured, and due compensation was not followed. He wondered if the scenario would be any different in the light of proposed rehabilitation.

Q8 Uchumi Ekitela, youth from Kapese said that all employers who come to Turkana demand a certain minimum experience besides training. He enquired that, since now they were being advised to enroll for skills training, and there will not be sufficient time or opportunity to gain this experience prior to the road works, does it mean that then the Turkana are not eligible to do any work? He wittingly added that the one experience the local Turkana's have that hardly anyone would beat is the experience to endure the scorching harsh sun in which case they could endure any work all day long for work such as supervision.

Q9 Ekiru erege, a youth from Akamabusi repeated the same query that, if I go to school, the contractor will ask for experience.

Q10 Antony Orogoi, a youth from Nalemsogon wondered that he witnessed the survey work at Kalemng'orok whereby the road reserve was shrunk to 30m wide down from 60m wide at the market centre. He wondered why KeNHA wanted a wider road reserve in Turkana and yet in other places like in Nakuru, it was not this wide.

A (7) The Lead Environmental Expert explained that the prevailing law demands that the owner of livestock compensates for the damage in the event of vehicle-livestock accidents. He also explained that the motor vehicle insurance policy allows for the compensation of injured persons.

A (8-9) The Lead Expert explained that this criteria for qualifications and experience was not new but is the criteria used all the time everywhere when procuring for services. He added that its always the prepared who are able to take advantage of such opportunity and that is the

reason why this discussion early in time should benefit anyone really interested in gaining skilled employment sets to be prepared, before the time comes

A(10) The Lead Environmental Expert explained that such reduction in width of road reserve is necessary sometimes, at the discretion of the Client in urban settings so as to minimize relocation impacts.

5. THE RESOLUTION

The recommendations arrived at all were in favour of seeing the speedy commencement of the rehabilitation work on the A1 road.

6. AOB

The public consultation meeting ended and stakeholders left at their leisure.

7. CLOSING PRAYER

The meeting ended at 1.30 pm with a word of prayer by one of the stakeholders.

11.6.1 List of Attendance – Scanned Copies

5

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD

PROJECT: AT LOKICHAR LOCATION: LOKICHAR DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
40	James Eleleuni	32030774	Kasuroi	0718379570	
41	James Kula	9244248	Market	0711769715	
42	Ekena Lokoi Naporen	6582935	Nalemsekon	0711624395	
43	Henry aname Etoot	4975309	Nalemsekon	0725868903	
44	Antony Kariyu	12731333	Market	0722963774	
45	EMURIA EKIRU ALEMU	9523081	Narengelup	0723167146	
46	Etulom Lochadae	33027715	Kapese		
47	Paul Lokure	27811378	IDP	0717341819	
48	Etimlim Apuwa Ekale	32885403	Kapese		
49	BOLLIDS EREGAE	27502235	NAKWAKITELA	0711925836	
50	JOHN ELEMEN	24572108	NAKWAKITELA	0708235170	
51	Lokomola Kapese	21435599	Narengelup	0702716399	
52	Daniel Kirooch Boib	13692217	Narengelup	0729080822	

5

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD

PROJECT: AT LOKICHAR LOCATION: LOKICHAR DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	Florida Ngizelan AKOYAN	21359902	Achukule	-	
	Andunqure EChamon Ekale	4770195	Market Lokichar	-	-
	Makitela Jalinga	30236036	Kapese	-	-
	Margaret Ewai Lokwarinae	4720498	Achukule	-	-
	Alice Emanikov	27492612	Market	-	-
	Mary Akomwa Nabukut	24690096	Market	-	-
	Ekalale Ekale	2296598	Kapese	0711711335	-
	Samuel Jung Ewest	13293561	Ngainorakim		-
	Mary EKINOT ARIKOT	9007827	Nalemsekon		-
	IRREGAE EKIRU BORNVICTOR	31024592	AKANAPUSI	0714092293	
	JANE ARONYE	2603435	KAPESE		-
	LOMURCHANA LOKOPON ENANIC	12907807	ODKODDOROK		-
	DURCUS AJIKON EKUNOM	27724602	MILIMANI		-

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD					
AT LOKICHAR		LOCATION: LOKICHAR		DISTRICT: TURKANA SOUTH:	
VENUE:		DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	EMMANUEL KARAO LOJIMAN	28192544	LONARLOKAKIM	0713 960496	
	ACTAN KAGOLAN KOKOLE	49704537	NALENGLOP		
	LOCHUKUDI MILYA ANIRO	31492360	ADIFI MORU		
	NANCY NABANI NAKADIO	29462680	ADIFI MORUNGOR		
	DANUNTA ACHUKA LOKAMAR	29119652	ADIFI MORUNGOR		
	JOSEPH LOPOLOI EAPA	26711156	ACHUKALE		
	John Epil	9855466	Lokichar	0724169449	
	Joseph Loyo Tita	24581860 24581860	Kapese		
	MARGARET NASKEY	12434111	MARKET		
	PETER ENOALAN LOKHUCH	28297330	ADIFI MORUNGOR		
	Longotom KONTIPAD EREKAE	21253680	MARKET	0716351443	
	JACKSON LOWASA LOKIK	25403305	MARKET	0713 44 7479	
	ROBERT EKONON	22669798	Check point	0727522095	

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD					
AT LOKICHAR		LOCATION: LOKICHAR		DISTRICT: TURKANA SOUTH:	
VENUE:		DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
27	TERIA EKAI RODGERS	28245487	Narengelup	0703 23 0487	Tindil
28	ECIOM NIAON ESURON	30198824	NALEMUSEKON		Atis
29	PETER-EKENO	24036411	KAKONGU		Atis
30	JAMES Ewai Achusa	12467767	MORUNGOR	07 20 32 8018	Atis
31	GABRIEL IRAND ECHIRAN	28567630	MILLITANI		Atis
32	Sammy LOBOR	27502207	KOSIKIRIE	0727586514	SO
33	Antony Lopezon	33034250	Nawayatira		SO
34	Simon Etanae	33034464	Kapese	07 038 69231	SO
35	SAMUEL EKUWOM	26220452	NALEMUSEKON	0710908023	SO
36	EDUNGU CARRICK	28080560	Narobai West	07 2848389	Atis
37	Samuel Essexon		Market	0718250381	Atis
38	Joseph ngetich		Market	0706220849	Atis
39	IRIA Peter Ekono	28451766	IDP		Atis

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: LOKICHAR		DISTRICT: TURKANA SOUTH:	
AT LOKICHAR VENUE:		DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	Robert Barasa	25578441	K. POSTER	071608034	[Signature]
14	Robert Barasa	25578441	K. POSTER	071608034	[Signature]
15	JUSTUS LOKIRU	32086376	KAPESSE	0707256405	[Signature]
16	Zachaus Nyanga	30359639	NARENGUP	0723166334	[Signature]
17	NATKORICH EREGAF	3004270	KAPESSE	0706050422	[Signature]
18	Ekoyne philip		KASURDI		[Signature]
19	Ngitima Ewai		Kangirega	0703823183	[Signature]
20	Epungure Nabukoi	26608148	Kapese		[Signature]
21	Lowoza Lotengo		Kapese		[Signature]
22	Musa Lokaale		Kapese		[Signature]
23	Ekono Aruke		Kapese		[Signature]
24	A chuwa kapoloi		Lokorekoro		[Signature]
25	Lokichar Moses	4767489	Lokwamesing		[Signature]
26	Loko Ekoo Lokwani		NAKWAKITELA		[Signature]

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: LOKICHAR		DISTRICT: TURKANA SOUTH:	
AT LOKICHAR VENUE:		DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	Etjahn Odondi Kadob	7453354	GOVT	0722-980504	[Signature]
2	EVASTUS LEMSYAN	28741490	N/W EST	0722499043	[Signature]
3	KONE ROBERT	27714924	NARENGUP	0729206852	[Signature]
4	JOHN ESEKON	30287153	NAKWAKITELA	0701903865	[Signature]
5	LOWOTI WERTONIS	29660009	ACHUKULE	0702920962	[Signature]
6	Lowoza aparukaile				
7	ROBERT NALOROT	4749174	MARKET	0712732033	[Signature]
8	Napetele Mery		Nalemsekon		[Signature]
9	Jesenta Ayikai		Nalemsekon		[Signature]
10	Esther Noot Esura	27453911	Nalemsekon		[Signature]
11	Akoni KIRANDU	2922376	ACHUKULE	0727043611	[Signature]
12	ALBUKA WILLIAM	29196316	K. poster	0728424310	[Signature]
13	James Eyanai	32426119	K. poster	0703569135	[Signature]

DATE: POKOT CENTRAL:

VENUE:		DATE:		POKOT CENTRAL:	
No.	Name	ID No.	Village/Institution/ Organization	Telephone No./ Contact Address	Signature
	William Amodeoti	0764388	IDP	0712570580	
	MARGARET MATO	12637296	KAPESE		
	JACKSON ANOJONG	28073523	KAPESE		
	PAULINE AKAI KOKOI	29762296	MARKET	0717843057	
	EBETEI ENYBAH	20931831	IDP	0729060234	
	SCHOLAR JUMA LOKUA	21143831	MARKET		
	LEMUNA EKERIIMO MOTES	1060636	KAPESE		
	KOPIN LOPETEI KOKOLER	23359887	Kosikiria		
	EMANNE GILASTI	24489458	Kosikiria	0703662552	
	MARY NAWALESO	21331957	Kosikiria		
	LOBUK KOLIDOR LONGODE	26534106	Kambimoto		
	KSEKON NAKETEI	26361179	Kambimoto		
	IKORI LOTUKOT	4771954	Kambimoto		
	MICHAK EDUPU	23019859	Nawaitara		

VENUE: POKOT CENTRAL

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	WILLIAM AMODDITI	0764388	IDP	0712570560	
	MARGARET MATYO	12637296	KAPESE		
	JACKSON AMOJONG	28073523	KAPESE		
	PAULINE AKH KOKOI	29762296	MARKET	0717843057	
	EBETEI ENEBAN	20731831	IDP	0729060234	
	SCHOLAR JUMA LOKALA	21143831	MARKET		
	LEMUNA EWERIIMO MOPES	1060636	KAPESE		
	LOPIU LOPETET LOKOLEL	23559887	KOSIKIRIA		
	EMKNAE GILATIS	24489458	KOSIKIRIA	0703662552	
	MARY NARALESO	21331957	KOSIKIRIA		
	LOBURIK BOLIDOR LONCOLE	26534106	Kambimoto		
	ESKON NAPETEI	26361179	Kambimoto		
	IKORI LOTUKOT	4771954	Kambimoto		
	MICHAEL EDUPU	23019859	Nankiteng		

5

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT LOKICHAR LOCATION: LOKICHAR DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1.	Nancy Muki	71481344	Far Kaha Chief	0722698674	[Signature]
2	JOSEPHINE AKIOL BEN	4764337	LOKICHAR	0714140117	[Signature]
3	JOHN NGDILE	4799946	LOKICHAR	0712929249	[Signature]
4	GEORGE AKAMISI	73271910	IDP Morulet	0714143237	[Signature]
5	SEPH KERE	31684995	IDP Kamanye	0728688263	[Signature]
6	MAKE EICUTIAN	2144940	LOKICHAR	0726703086	[Signature]
7	LOKUMANI PETER	1056435	IDP Morulet	0726518053	[Signature]
8	ENKIRON LOKU	2765027	IDP Morulet	0704124576	[Signature]
9.	SAMONI SEKUT	4000855	LOKICHAR	0728611642	[Signature]
10	PAULO BUNDA	20253177	IDP Morulet	0711807106	[Signature]
11	LOSONAT AMANI	8596876	LOKICHAR	0718486979	[Signature]
12	EBELYO LOROKOI	4765725	LOKICHAR		[Signature]
13	KHALEN EWOTON	5731619	LOKICHAR		[Signature]

14

5

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT LOKICHAR LOCATION: LOKICHAR DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	EKITERA EKAMAS		Kapese	0712774421	[Signature]
	TERALE LOMONGIN		IDP	0729333646	[Signature]
	EMURIA SAMUEL		Kapese		[Signature]
	PETER KOKOI		IDP	0728844041	[Signature]
	MARGRET EKUNEM	12637296	Kapese	07	[Signature]
	ENGOMO AREGAI		Kapese		[Signature]
	ESTER ENUBAN		Kapese		[Signature]
	APITA ENUKAN		Kapese		[Signature]
	ABIR ASEKON		KAPESE		[Signature]
	CHARLES LOKATOI	5675093	KAPESE	0711158341	[Signature]
	UCHUMHT EKITERA	29560574	KAPESE	072936920	[Signature]
	LOKOMOLICHAR KIYANGA	23975574	KAPESE	071721565	[Signature]
	FRANCIS EKAL		Kapese	0711799012	[Signature]

5

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT LOKICHAR LOCATION: LOKICHAR DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	ESTHER LITON	13324283	KAPESE	0714606521	<i>[Signature]</i>
	NAKAWI ELIWO	6861721	KAPESE	-	<i>[Signature]</i>
	ZIPORAH EDAANG	10926531	KAPESE	0714210344	<i>[Signature]</i>
	AKEND LOMULEN		KAPESE	-	<i>[Signature]</i>
	ANNAH LORU		KAPESE	-	<i>[Signature]</i>
	AMODOI ECHAR		KAPESE	-	<i>[Signature]</i>
	ENBI BEPOOO		"	-	<i>[Signature]</i>
	DEKON PUSKOL		"	-	<i>[Signature]</i>
	AMEYAN ETABO		"	-	<i>[Signature]</i>
	MARTHA EGIRO		"	-	<i>[Signature]</i>
	NAWOI ESUBUCU		"	-	<i>[Signature]</i>
	NASIKE LORIMAKENH		"	-	<i>[Signature]</i>
	ELIPAN EKUTAN		"	-	<i>[Signature]</i>

5

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT LOKICHAR LOCATION: LOKICHAR DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	John Kamati	12907495	KAPESE	109 ⁰⁷¹⁸²⁴⁵⁰⁴ ₁₀₉₁₀₁₀₁₂	<i>[Signature]</i>
	John Ngirion	25126608	"	071744255	<i>[Signature]</i>
	Amador Ekeon		KAPESE	0702129537	<i>[Signature]</i>
	Juhang Eganuel	12433027	"	0706384544	<i>[Signature]</i>
	STANLEY ERUP & LONKONO	31057228	KAPESE	07184222 10	<i>[Signature]</i>
	JAMES ESINTAI LONKOP	12907169	TONYOUTU	0729147575	<i>[Signature]</i>
	PAULO LOLENY	30226824	NARENGELUP	0918905379	<i>[Signature]</i>
	ESINTAI JAMES	25272224	Kapeese	0718499322	<i>[Signature]</i>
	Matthew Mwachams	12434070	Kapeese	072058250	<i>[Signature]</i>
	Paulo Engonyit		Kapeese	0718303370	<i>[Signature]</i>
	Charles adupu		Kapeese	07-	<i>[Signature]</i>
	John Ekai		Kapeese	0700586654	<i>[Signature]</i>
	Marco Egiro		Kapeese	0714234641	<i>[Signature]</i>

Names	Id no	Village	Phone no	Sign	Signature
Paul Lokaselo	23334057	Kanapuse	0726297850		
David Eyanaga	10987357	Narengelo	0716733130		
Miriam Akper	24838945	Achukule	0718183718		
Samuel Lokoeadi	32086315	Milimani	0723166341		
Philip Ewai	24677849	IDP	0700167720		
Aule Ekai demin	31024849	Milimani			
James Lomukony		Kapepe	0707675531		
Chahis EPUR	31353520	Kapepe	0705106500		
ESORAN Evaline	29302918	Kosiviria	0717841112		
Mary Lochulo	25787924	Milimani	0711313794		
ADWIER Lowon	12877249	Kapepe	0725611406		
JARUS EMURIA	24564111	ACHUKULE	0707005085		
SARAH AMUDOI	24034403	KAPEPE	0719466088		
PURIRIT NAIKE	28464181	MARATHULUP	0725498780		
James Lokapelo	27032975	Market			
Susan Etupan	20620434	Market	0704753309		
IRINE EMATHI	27504322	Narengelo	0705866742		
Ladiah chebeti	31065578	Narengelo	0711925670		
Galmai Lammoo	08637626				

Josephat EKANAT	24238850	NAWOTIATIRA	0707797585
ANNAH ATIR		KAP	0713542219
ALICE NATILA	33 087826	NALENGELOP	0704167644
ANNA NARETO KEMENTO	20 488877	NALENGELOP	
ESTHER LOKITILA	28185695	KAPESE	
EDMOND EREI EWEKIT	29085933	NAWOTIATIRA	0726931710
LODUAL LOBAL	240497670	KAPESE	0728567739
Hellen AROT		KAPESE	0728306077
JAMES ENDI KICHUMANI	12467767	KAMARESE	0720328018
ROBERT LOWTED EDAPAL	32928658	Kanta postg	0726694209
MARLIHA ATOOT KUMIA	22347706	KENTIA PUSIA	
MOSES SIKUTA KORO	11756641	NALENGELOP	
Mgatothim KRODOLLE	32874940	NALENGELOP	
APRILIGUDE ENAM IPER	4794028	AKANAPUS	0706277879
NAPANIO EKIM LOUALAH	21230734	KAPESE	0707800157
ROBERT ROMITKA LUKUMI	1181335	MARUET	0705657569
PETER EKUMAN ERUKOH	25044190	KAPESE	
ALINA WIONGOR	4729247	KAPESE	
ADWA LODIO	31373247	KAPESE	

KAADA LODLEL LODIP	26236874	KAPESE	
LONGOLI EDAPAL ESEKON	25035569	KAPESE	
LO REGAE EMURIA	21357840	KAPESE	
AMURIA LOKUT LOSAQICH	9245278	MARKET	
SUWAN LOCHUMTA	11180530	KAPESE	
RICHARD NAGILI	20249788	MARKET	
SAMUEL EBELI ARUHO	8223703	KAPESE	
MARGARET LOSENY	—	KAPESE	
EMOTE NGAPYOK	25491809	KAPESU	
LOLWO EKAL LODLO	9526079	KAPESE	
BERLY ANANAI	3249839	MARKET	
JOSEPH EKAL LOGIELAN	12707706	KAPESE	
JAMES LOMUKUN	29141108	KAPESE	
JOHN EKABELI ERENG	11512132	KAPESE	
JOYCE MEKENTA	20744736	MARKET	
LOKOHONI LOMUHINI	6238356	Naleng'lop	
NGASIKE ECHARIAT	32159973	KAPESE	
EIPA EDUKAE KOLEKORI	—	KAPESE	
REBECA EGIRIN EKABELI	29505826	MARKET	0706253721
NAKOTON EMERIO	21361258	KAPESE	
MIRE ERAMU LOGILAE	29812190	NALENG'LOP	0706124708
LOPUSE LOBUIN	4770147	MARKET	
NANCY ADOT EKIRU	32743212	Naleng'lop	0700708481

LOBOGOTI	EKIOTI	4765853	Kemys posta
JAMISON	LOMWA	26770856	MARKET
JAMES	ERIMAT	20115892	Milimani
CAROLINE	EKIMAT	32522182	milimani
SUSAN	AKAJAPTAN	25056873	milimani
EKUTAN	LOYANAE	20961138	Market
ERUMAN	ANDI STEPHEN	21420179	Town Chini
CElestine	KYANAE	21867049	Market
Francis	Jobu	23240117	KGC
ANNATH	AKURU MONGING	24399718	Checkpoint
John	NAMURON KIVAKA	12907600	IPP
EKAT	EKIMAE	20954580	Kapese
HELEN	IBOGONI	26226616	IPP
MARY	NAMURU LOILET	23571494	IPP
Jeremiah	NAMURON	32782582	KGC
MARADELI	ELAND	24848563	NhooxkTIRA
John	Ngaule Kolu	4799946	Nachola
Patrick	LONYURUK	31977428	IPP
Ngaperit	IKOEL	9829698	NalengeDop
EKIATAK	EKIRAN	12936937	Kapese
MUSA	EKIDOL LOKOL	21265871	Kapese
TERETA	LOKWANG	29495450	Kapese
LOCHUCH	EREGAE	31746770	Market
Christopher	MEMU	12435389	Kapese
James	LOTOT EKUTAN	26489582	Market
LONOSA	LUYAE	29713772	Kapese
CHARLES	LOKATON	5675693	Nalengelet
			IPP

KINDO	290 8145	KAPESE	0701085598
EKIDOR	3193268	MARKET	0715785702
LOPIKA	30286434	MARKET	0725533400
TOMNY	31982260	MARKET	0714770197
JOHN EKAL NAKUK	12908179	MARKET	
JOSEPH JOCHAM	22782531	Nalengjelop	
Sammy JOTOMOH	23495408	Nalengjelop	
Andrew Ewofon KAIKE	31507004	Nalengjelop	0719882627
PETER MURON MAXULA	27866214	KAPESE	0723207138
ALICE LODS LELE	31480688	MARKET	0700261146
RUTH LOTAPUS	24042798	KAPESE	0728880652
JACOB IDAPAL	31616077	Nalengjelop	0729369063
NGIKURCHANA MERIT	32174670	Nalengjelop	0712292257
MARIAK LOTUKOI	22842617	Nalengjelop	0707719013
DAVID JOJIMO	28274521	MARKET	
HELLEN LOTUK KADO	0588730	MARKET	
JAMES TOKI	13769643	MARKET	079827408
LOHOKA EKAT	27998164	MARKET	
LODIQRE ECHUNAH	28779096	MARKET	
LOPIKA LOCHOR LOPIKA	20748893	Nalengjelop	
JOSEPH LOKOL ELIMAH	12437265	IDP	0702820864

ASIMIT	21874785	MARKET	0702206351
DANIEL	28776292	MARKET	0703139503
LOKWANG	28596985	MARKET	0706521153
JECENTA	20692789	MARKET	
SALIM AKIRU	30359303	MARKET	
MERCY	29973317	MARKET	
ETIMOM	10122117	KENTA POSTA	0710179255
AKALALE	30182797	NAWITATIRA	
AKIOT EBEL	16029208	MARKET	0701282306
EMAFAPAH	1967676	MARKET	0716500850
NTANGA	21323340	IDPS	0706505945
LOKARACH	12907445	Nalengelop	0701405415
EMADELI	12638837	Kapeza	17670350
EMADELI		NAWAKARA	073820761
EMADELI	28596990	Nalengelop	0708433485
EMADELI	248C1917	Nalengelop	0719701446
EMADELI	14517581	Nalengelop	0711365423
EMADELI	27963086	Kapeza	0724934179
EMADELI	21374422	NAWITATERA	0728611671
EMADELI	20857415	NAWAKITERA	
EMADELI			

Name	ID	NO	
Elizabeth Edau Ekim	—	1167409	—
Ngisanyana Naitira Matet	—	25124446	— Katibu Lokicher 070885825
Lokera	—	12907870	— " "
Antony	—	33034250	— Lokicher " "
Elin	—	29611049	— " " " "
Peter	—	9052847	— Sigata mawman
Brenon Ekohingob Etey	—	31810486	— Napu Simoru
Ebei Ayane homing	—	20205917	— Katibu - Kasikuria
Eli Tiala Ekavan Lovetath	—	12936937	— Loumakau - IDP - 071667621
Lokucha Iroo	—	Sn no. 2387487191	— Oyatira
Alice Eunira Epuv	—	" 2390045436	— Kapete
Eunira Apura Elalala	—	32885403	— Lokicher - Kapete
Anwah Eron Komauko	—	3241186	— 07104582821
Moses	—	4283354	— Kapete
Akim	—	22575875	— Lokicher - Kapete
Mohica	—	28515023	— Lokicher - Kapete
Silverster Hezozoh Elkai	—	3008362	— Lokicher - Kapete
Echakan	—	26657243	— Lokicher - Kapete
Nabei Ecankan	—	31816197	— Lokicher - Kapete
Benson Eunira Lapeyok	—	Sn no. 2390045533	— Nalobola - 0716595705
Kobli Erupe Efaat	—	25600375	— Navenyem - 0912029971

James Echoto	9043663	Latang'lop	072 5822455
John Lawoto	3808942	Kepepe	
Daniel Lopeitan	29450165	Naweritara	

Loki Char
List of attendees

No	Name	ID. Number	Village Institution	Telephone No.	Signature
15	JOSEPH NAWAIA	7571626	LOKICHAR		
16	EROKAT BANJAL	8593533	IDP Moruloh	0701585688	Japan
17	ELUY KARINANDY	4794531	LOKICHAR.		J. Ken
18	NANKUCHO LOMURIA	4765691	LOKICHAR		M. D. C. M. O.
19	EK EBO EHAL	33037800	LOKICHAR		J. Ken
20	John. Lohwal	3808942	LOKICHAR		John
21	LOKACHIL EDAPAL	0842296	LOKICHAR		John
22	LOWOSY LEENX	4754208	LOKICHAR		John
23	KEBO LOKUDU	4769184	LOKICHAR		John
24	EGARU LOMURIA	4763737	LOKICHAR		John
25	EPEYON AMACHAR	7571729	LOKICHAR		John
26	NADIKO LOMAKIRIAN	21416690	LOKICHAR		John
27	JOSEPH EGARU.	0333900	LOKICHAR.		John
28	ERUMU EWOON	12407977	LOKICHAR.		John

11.6.2 List of Attendance –

The following is the List of Attendance for the Public Consultation Meeting for the Proposed Rehabilitation of Marich- Pass Lodwar Road Project held at Lokichar Town, in Lokichar Location of Turkana South District on 17th January 2015. 331 people registered as shown in Table 11-3.

Table 11-3: List of Attendance, Lokichar Town, in Lokichar Location on Saturday, 17^h January 2015

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
1	James Eleleuni	32030774	Kasuroi	0718379570
2	james Kula	9244248	Market	0711789715
3	Ekeno Lakoi Naporen	6582935	Nalemsekon	0711624345
4	Henry Oname Etoot	4975309	Nalemsekon	0725868903
5	Antony Kirigu	12731333	Market	0722963774
6	Emuria Ekiru Alemu	9528081	Narengelup	0723167146
7	Etulom Lochadae	33037715	Kapese	
8	Paul Lokare	27811378	IDP	0717341819
9	Elimlim Apua Ekalale	32885403	Kapese	
10	Collins Eregale	27502235	Nakwakitela	0711925836
11	John Eleman	24572148	Nakwakitela	0708235130
12	Lokomole Lepese	21435599	Narengelup	0703716399
13	Daniel Kipkoech Boit	136922217	Narengelup	0729080822
14	Florida Logielan Akooyan	21359902	Achukule	
15	Andungure Achuman Ekal	4770195	Market	
16	Makitela Jalinga	30236036	Kapese	
17	Margaret Ewoi Lokwarimoe	4720498	Achukule	
18	Alice Emanikor	27492612	Market	
19	Mary Akomwa Nabutut	24680096	Market	
20	Ekalale Ekale	2296598	Kapese	0711711535
21	Samwel juma Ewest	13293561	Nainokakim	
22	Mary Ekunoit Arikot	9007827	Nalemsekon	
23	Eregae Ekiru Bornvictor	31824592	Akanapusi	0714092293
24	Jane Arunye	2603435	Kapese	
26	Lokurchana Lokopon Enande	12907807	Orokodoyiok	
27	Dorcas Ajokon Ekuwom	27924602	Milimani	
28	Emmanuel Kamar Lotiman	28192544	Lonanokakim	0713960496
29	Achan Angolan Lokoler	4770537	Nalenglop	
30	Lochukudi Muya Aniro	31472350	Adifi Moruong'or	
31	Nancy Namoni nakadi	29482680	Adifi Moruong'or	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
32	Dawnita Achuka Lokamar	29119652	Adifi Moruong'or	
33	Joseph Lopolei Eapo	26711156	Achukule	0724169449
34	John Epil	9855466	Lokichar	
35	Joseph Laiyio Tiya	24581860	Kapese	
36	Margaret Naskei	12434111	Market	
37	Peter Ewalan Lochuch	28297330	Adifi Moruong'or	
38	Longorem Konyipad Eregae	21258680	Market	0716351443
39	Jackson Lowasa Lotik	254033305	Market	0713447479
40	Rober Ekonon	22669498	Checkpoint	0727522095
41	Teria Ekai Rodgers	28245487	Narengelup	0703230487
42	Echom nixon Esuron	30198824	Nalemsekon	
43	Peter Ekeno	24036411	Karongu	
44	James Ewoi Achuma	12467767	Moruongore	0720328018
45	Gabriel Ikaal Echakan	23867630	Milimani	
46	Sammy Lobor	27502207	KOSTKTRIE	0727586514
47	Antony Lopeyon	33034250	Nawoyatiira	
48	Simon Eyanae	33034454	Kapese	0703869231
49	Samuel Ekuwom	26220450	Nalemsekon	0716908013
50	Edungu Carrick	28080560	Nairobi West	0728118389
51	Samuel Esekon		Market	0718250381
52	Joseph Ngetich		Market	0706220849
53	Iria Peter Ekeno	28451766	IDP	
54	Rober Barasa	25578441	Kapese	0716018034
55	Justus Lokiru	32086376	Kapese	0707256405
56	Zacheus Nyanga	30359639	Narengelup	0723166334
57	Nakorich Eregae	30042170	Kapese	0706050427
58	Ekoyene Philip		Kasuroi	
59	Ngitira Ewoi		Kangirega	0703823183
60	Epungure Nabukoi	25608148	Kapese	
61	Lowoya Lotenge		Kapese	
62	Musa Lokkaale		Kapese	
63	Ekeno Aruuke		Kapese	
64	Achuwa Kapoloi		Lokorokoro	
65	Lokichar Moses	4767489	Lokwamosing	
66	Ekoroo Lokwawi		Nakwakitela	
67	Elijah Odondi Kodoh	7953384	Government	0722980504
68	Evantus Lameyan	28741490	N/West	0722499043
69	Kone Robert	27714924	Narengelup	0729206852
70	John Esekon	30287153	Nakwakitela	0701903863
71	Lowute Westone	29660009	Achukule	0702920852

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
72	Lowoiye Aparukule			
73	Rober Maskorot	4479174	Market	0712732033
74	Napetete mary		Nalemsekon	
75	Jecenta Akekoi		Nalemsekon	
76	Esther Itoor Esuran	27453911	Nalemsekon	
77	Akorn Alexeander	25222576	Achukule	0727043615
78	Achuka William	29196316	Kapese	0728424310
79	James Eyanai	32426119	Kapese	0703569138
80	Brian Ekeno	28345024	Milimani	0708930594
81	Kosiyaye Samson	9245554	Market	0702352685
82	Susan Lochamba	11180530	Market	0729844882
83	Magurate Aruoto	29660920	Milimani	0706037875
84	Ewoton Emase	25055682	Nakwakitela	0706338912
85	Alipan Echwaa	4765359	Nawoyatiira	
86	Anna Atiri	30354828	IDP	0713542219
87	Esinyoi Ikuwom	5607087	Nawoyatiira	
88	Mike Ekamu Logilae	29812190	Narengelup	0708124708
89	Lodunga Ekapeli Pulukol	8588311	Lothikiria	
90	Ekale Achuwa	28293855	Kapese	0706701803
91	Nalenyio Echoto Nguome		Narengelup	
92	Ngirawoi Ngorok Latonae	30763352	Kapese	0717839652
93	William Amodoyi	6764388	IDP	0712570580
94	Margaret Maiyo	12637296	Kapese	
95	Jackson Amojong	28073523	Kapese	
96	Pauline Akai Kokoi	29762296	Market	0717843057
97	Ebeteti Eyeban	20731831	IDP	0729060234
98	Schola Jama Lokala	21143831	Market	
99	Lemuya Ekerilimo Modes	1060636	Kapese	
100	Lopiu Lopetet Lokoler	23359887	Kosikeria	
101	Eyanae Gladys	24489458	Kosikeria	0703662552
102	Mary Nakaleso	21331957	Kosikeria	
103	Lokuria Lokidor Longore	26530106	Kambimoto	
104	Esekon Napetet	26361179	Kambimoto	
105	Ikori Lotukoi	4771954	Kambimoto	
106	Michah Edupu	23019859	Naweitera	
107	Nancy Mukui	11481344	KeNHA	0722698674
108	Josephine Akiru Ekal	4764337	Lokichar	0714140117
109	John Ngile	4799946	Lokichar	0712929249
110	George Akiamaisi	23211910	IDP	0714143237

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
111	Seth Loree	21684995	IDP	0728688263
112	Make Ekutuan	2164996	Lokichar	0726303086
113	Lokwam N. Peter	1056435	IDP	0726518053
114	Enchron Lokui	4765027	IDP	0704124574
115	Simon Segut	4000855	Lokichar	0728611642
116	Paulo Esuran	20353177	IDP	0711807106
117	Losomat Aiyan	8596876	Lokichar	0718486979
118	Ebenyo Lorogoi	4765725	Lokichar	
119	Kaalem Ewoton	5731619	Lokichar	
120	Ekitela Akamais		Kapese	0712774421
121	Terace Lomongin		IDP	0729888646
122	Emururia Samuel		Kapese	
123	Peter Koro		IDP	0728884041
124	Margaret Ekuwom	12637296	Kapese	
125	Engomo Aregai		Kapese	
126	Esther Enukan		Kapese	
127	Apita Enukan		Kapese	
128	Atir Asekon		Kapese	
129	Charles lokaton	5675093	Kapese	0711158341
130	Uchumhi Ekitela	29560574	Kapese	0729369520
131	Lokomolichar Kiyonga	28955554	Kapese	0717701505
132	Francis Ekal		Kapese	0711797012
133	Esther Liton	13324288	Kapese	0714606571
134	Nakawi Eliwo	6861721	Kapese	
135	Ziporrah Edang	10986535	Kapese	0714210344
136	Akeno Lomuleng		Kapese	
137	Anna Lorin		Kapese	
138	Amodoi Echar		Kapese	
139	Ewoi Epodo		Kapese	
140	Izakon Puskol		Kapese	
141	Amenyan Etabo		Kapese	
142	Maritha Egiron		Kapese	
143	Nawoi Esuguru		Kapese	
144	Nasike Loriangareng		Kapese	
145	Elipan Ekutan		Kapese	
146	John Kamais	12907995	Kapese	0710544544
147	John Ngirotin	25126608	Kapese	0717442558
148	Amodoi Eremon		Kapese	0712129537
149	Julius Eyanewe	12433027	Kapese	0706384544
150	Stanley Erupe Lomokono	31057758	Kapese	0713422216
151	James Lesinyen Lotipok	12907169	Tonyoutu	0729147575

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
152	Paulo Loleny	30286884	Narengelup	0718705397
153	Esinten James	28272324	Kapese	0718979327
154	Mathew Macharious	12434070	Kapese	0720562950
155	Paulo Engonyit		Kapese	0718303370
156	Charles Adupu		Kapese	
157	John Ekai		Kapese	0700158654
158	Marko Egiron		Kapese	0714834641
159	Paul Lokasekel	2334057	Kapese	07252975510
160	David Eyanae	10987357	Narengelup	0716733130
161	Miriam Aleper	24838945	Achukule	0718183718
162	Samuel Lokopodi	32086315	Milimani	0723166341
163	Philip Ewoi	24577849	IDP	0700167720
164	Aule Ekai Derrick	31024849	Milimani	
165	James Lomukony		Kapese	0707675531
166	Charles Epur	31553520	Kapese	0705108500
167	Esuran Evalline	29302918	Kosikeria	0717841192
168	Mary Locholo	25787924	Milimani	0711313794
169	Daniel Lowoi	12827249	Kapese	0725611406
170	Jairus Emuria	27564111	Achukule	0707005085
171	Sarah Amondi	24034403	Kapese	0719468088
172	Purity Mike	284641181	Narengelup	0728498780
173	James Lokapelo	27032975	Market	
174	Susan Eyapan	20620434	Market	0704753009
175	Irine Emathi	27504322	Narengelup	0705868742
176	Lidia Chebeti	31065578	Narengelup	0711925673
177	Gabriel Loyomo	28637626	K. Poster	0723920893
178	Patrick Elimlim	32175323	Market	0714063039
179	Josphat Eyamat	24238850	Nawoyatiira	0707797585
180	Alice Natela	33037826	Narengelup	0704167644
181	Anna Napeto Abenyo	20488877	Narengelup	
182	Esther Lokitala	28185695	Kapese	
183	Edome Ebei Ewesit	29085933	Nawoyatiira	0726931718
184	Lodual Lobon	24049767	Kapese	0728567739
185	Hellen Arot		Kapese	0728306077
186	James Ewoi Achuman	12467767	Kamarese	0720328018
187	Robert Lokited Edapal	32923658	Kenya Posta	0726694209
188	Maritha Atoot Kwiya	22347706	Kenya Posta	
189	Moses Sikuta Torot	11756641	Narengelup	
190	Ngatotin Amodole	32874940	Narengelup	
191	Apungure Enam Iper	4774028	Akanapusi	
192	Napanio Ekiru Longialan	21230734	Kapese	0706277879
193	Robert Lomiyan Lukuu	1184335	Maruet	0707600157

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
194	Peter Ekuwan Erukon	25044190	Kapese	0705657569
195	Alimu Kiong'or	4729247	Market	
196	Apua Lodio	31373247	Kapese	
197	Paulina N. Lotunyeny	28466910	Kapese	0713722797
198	Anna Atiir		IDP	0713542219
199	Kaada Looel Lodip	26236874	Kapese	
200	Longoli Edapal Esekon	25035569	Kapese	
201	Loregae Emuria	21357840	Kapese	
202	Amuria Lokut Losaricho	9245275	Market	
203	Susan Lochumpa	11180530	Kapese	
204	Richard Nagilu	20249788	Market	
205	Samuel Obeki Akiyo	8223703	Kapese	
206	Margaret Loseny		Kapese	
207	Ekote Ngipeyok	25491809	Kapese	
208	Loliwo Ekal Lodio	9526079	Kapese	
209	Bercy Ayanai	32419839	Market	
210	James Lomukun	29141108	Kapese	
211	John Ekadeli Ereng	11512132	Kapese	
212	Joyce Makenya	20744736	Market	
213	Lokononi Lomulin	6238358	Narengelup	
214	Ngasike Echariat	32159973	Kapese	
215	Elipa Edukae Kolerori		Kapese	
216	Rebecca Eguron Ekadeli	29505826	Market	
217	Nakonon Emekwi	21361258	Kapese	0706253731
218	Mike Ekamu Logilae	29812190	Narengelup	0708124708
219	Lopusie Lobuin	4770147	Market	
220	Nancy Arot Ekiru	32743212	Narengelup	0700708481
221	Joseph Ekal LogielaN	12907706	Kapese	
222	Lorogoi Ekitoi	4765853	Kenya Posta	
223	Samson Lomwa Eado	26710856	Market	
224	James Eiyana	20115892	Milimani	
225	Caroline Ekimat	32522182	Milimani	
226	Susan Akalapatan	25056893	Milimani	
227	Ekutan Loyanae	20961138	Market	
228	Eruwan Awoi Stephen	21420179	Lokichar	
229	Celestine Ayanae	21867049	Market	
230	Francis Lobu	23240117	AGC	
231	Annah Akiru Amojong	24399718	Checkpoint	
232	John Namuron Maraka	12907600	IDP	
233	Ekai Ekalale	20254580	Kapese	
234	Hellen Ibogoni	26226616	IDP	
235	Mary Nakiru Loilet	23571494	IDP	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
236	Jeremiah Namuron	32782582	AGC	
237	Nakadeli Elaar	24848863	Nawoyatiira	
238	John Ngaiale koli	4799946	Nachola	
239	Patrick Lonyunduk	31979428	IDP	
240	Naperit Ikoel	9829698	Narengelup	
241	Ekitiala Ikaran	12930937	Kapese	
242	Musa Ekidor Lokot	21265871	Kapese	
243	Teresa Lokwawa	29495450	Kapese	
244	Lochuch Eregae	31940770	Market	
245	Christopher Alemu	12433389	Kapese	
246	James Lotoot Ekutan	26487882	Narengelup	
247	Lowosa Eregae	29913772	Kapese	
248	Charles Lokatol	5675093	IDP	
249	Kamar Eyangan		Kapese	0701085898
250	Ekidor Emuron J.	31932668	Market	0715785702
251	Lodura Korot Simon	30286434	Market	0725533400
252	tony Ekiru Emuto	31982260	Market	0714770197
253	John Ekal Nakua	12908179	Market	
254	Joseph Locham	22782531	Narengelup	
255	Sammy Loyokon	23495458	Narengelup	
256	Andrew Lewoton Kaile	31507004	Narengelup	0719882627
257	Peter Muron Masula	27866214	Kapese	0723207138
258	Alice Loro Lele	31480688	Market	0700261146
259	Ruth Loyapus	24042798	Kapese	0728860652
260	Jacob Edapal	31616077	Narengelup	0729369063
261	Ngikurchana Aperit	32174670	Narengelup	0712292257
262	Marita Lotukdi	22842617	Narengelup	0707719013
263	David Lolimo	28274521	Market	
264	Hellen L. Eado	0588730	Market	
265	James Yoki	13769643	Market	0729827408
266	Lochara Ekai	29998164	Market	
267	Loregae Achuman	28779096	Market	
268	Lopika Lochor L.	20748893	Narengelup	
269	Joseph Lokol Eliman	12437265	IDP	0702820864
270	Musa Lowaya Kangole	30286768	Kapese	
271	Asimit C. Ekadeli		Market	0702206351
272	Daniel N/ Longorreleae	21874785	Market	
273	Lokwam Esekon Achuman	28776292	Market	0703139503
274	Jecenta Akai Ekeno	28596985	Nawoyatiira	
275	Selina Akiru	20692789	Market	0706521153
276	Mercy Ekusi Kapelo	30359303	Market	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
277	Etulom Kaloi	29973317	Market	
278	Anesit Ekalale Mangorok	10122117	Kenya Posta	
279	Aipa Atoot Ebei	30182797	Nawoyatiira	0710179255
280	Tiwan E. Etangan	16029208	Market	
281	Emmanuel Nyanga	1967676	Market	0701282306
282	Esther Ibongon Lokarach	21323340	IDP	0716500850
283	Rebecca N. Ecadeli	12907445	Narengelup	0706508945
284	Susan Eregei	12638837	Kapese	0701405415
285	Nakuchor Ekapolon		Nakwakitela	0717670350
286	Violent Elim Tawoi	28596990	Narengelup	0708433485
287	Diana kangole	24861917	Narengelup	0719701446
288	Peter Ekwam	14517581	Narengelup	0711365423
289	James Ekiru	27963086	Kapese	
290	Lokitela Ekidor Namate	21374422	Nawoyatiira	0724936179
291	Aita Ekiru Erukun	20857415	Nakwakitela	0728611671
292	Caron Ekeru Idou	27563947	Kapese	0718798765
293	Elizabeth Edan Ekiru	11674109		
294	Ngisanyana N. Matet	25124448	Katilu	0708857825
295	Lokora L. Ellal	12907870	Katilu	
296	Antony Lopeyon	33034250	Lokichar	
297	Elik L. Jacob	29611049	Lokichar	
298	Peter Longore	9052847	Suguta M	
299	Eremon E. Eteng	31810486	Napusimoru	
300	Ebei Ayanae lomong	20205917	Katilu	
301	Akitiala E. Lorrotech	12936937	loromakau	
302	Lokucha Iroo	2387487191	IDP	0716676211
303	Alice Emuria Epur	2390045436	Oyatira	
304	E. Apuwa Ekalale	32885403	Kapese	
305	Annah Erron Lomanko	3241186	Lokichar	0710582821
306	Moses Kwiya Napetawo	4283354	Kapese	
307	Akiru Lodite Erupe	22575875	Market	0712759215
308	Monicah Akai Ekitela	28515023	Narengelup	0716901329
309	Sylvester Hezegoh Elkai	30038362	Nachola	0717612416
310	Echakan L. Lokulla	26651243	Town Chini	
311	Nabei Achakan	31816197	Town Chini	
312	Beson E. Lopeyok	2390045533	Nachola	0716595703
313	Kooli Erupe Etoot	25600375	Narengelup	0712029971
314	James Echoto		Narengelup	
315	John Lowoto	3808942	Kapese	
316	Daniel Lopeitan	29450165	Nawoyatiira	0723822455
317	Joseph Nawar	7871626	Lokichar	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
318	Erogat Bantal	8593533	IDP	0701585688
319	E. Karinoniley	4794531	Lokichar	
320	Nakuchio Lomurwa	4765691	Lokichar	
321	Ekebo Ekal	33037800	Lokichar	
322	John Looret	3808942	Lokichar	
323	Lokachil Edapal	0842296	Lokichar	
324	Lowost Leeny	4784208	Lokichar	
325	Kebo Lokudu	4769184	Lokichar	
326	Ekaru Lomuria	4763737	Lokichar	
327	Ereyon Amachar	7871329	Lokichar	
328	Nadiko Lomokiriyon	21410690	Lokichar	
329	Joseph Ekiru	0333900	Lokichar	
330	Eruumu Ewoton		Lokichar	
331	Simon Epeyon	12907927	Lokichar	

11.6.3 Photographs of the Meeting



Plate 11-17: Lokichar chief addressing stakeholders

Plate 11-18: Women Stakeholders follow proceedings

Plate 11-19: Project presentation and keen listening

Plate 11-20: Project presentation and Translation



Plate 11-21:Stakeholder at question time



Plate 11-22:Stakeholder expressing views



Plate 11-23: on-going registration of attendees



Plate 11-24: refreshments for stakeholders

11.7 KASUROI VILLAGE IN LOKICHAR LOCATION ON SATURDAY 17-1-2015 AT 2.30 PM

11.7.1 Minutes of Meeting

The Lokichar Location Chief is Josphine Okal. The Deputy County Commissioner for Turkana South County is Mr. Elijah Kodoh.

Minutes of Environmental and Social Impact Assessment Public Consultation and Disclosure Meeting held on 17th January 2015 at Kasuroi Village.

1. GENERAL

The meeting started at 14:30 pm with a word of prayer by the area chief.

2. INTRODUCTION

The Lokichar Location Chief Ms. Joshine Okal welcomed all present and introduced the Environmental Impact Assessment Team comprising Eng. Dr. Oonge, Nancy Mukui and Timothy Koome. She also introduced the Agenda of the day.

In his introduction, the Environmental Expert, (Dr. Oonge) explained that development of roads in the country is mandated to Kenya National Highways Authority (KeNHA) for Class A, B & C roads, Kenya Urban Roads Authority (KURA) for town roads and Kenya Rural Roads Authority (KeRRA) for rural roads comprising of Class D and E Roads. He explained that the Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road is part of the Northern Corridor Roads in an effort to improve access to Nadapal and South Sudan - the Northern Corridor links the Kenyan Port of Mombasa on the Indian Ocean to landlocked East African countries. He explained

that the agenda of the meeting was to inform all stakeholders and community members present of the intended construction and explain the design components so that the stakeholders would give feedback on their views for implementation. He urged all to follow the presentation keenly and inquire on all issues that were not clear or that needed discussion.

3. THE PRESENTATION S

3. Presentation by the Environment Lead Expert, Eng. Dr. Oonge

The Environmental Expert, (Dr. Oonge) took the opportunity to appreciate all present and explained the purpose of the meeting. He explained that such consultations and disclosure had been carried out in June 2012 and that the day's meeting would mainly address the issues of likely impacts of the road on the bio-physical and social environment as well as the impacts of the environment on the road improvement and hopefully gain community 'buy-in' to the project.

He said the purpose of the meeting was to inform the community on aspects of proposed road development and of the expected project impacts, give the stakeholders opportunity and a forum to participate and ask questions, and air their views and suggestions.

He quoted and explained the various national laws, policy framework, World Bank Safeguard Policies and regulations that govern Environmental and Social Impact Assessment and such public consultation meetings. The Environmental Management and Co-ordination Act that requires an Environmental Impact assessment Study be carried out and that such a meeting to be held in order to involve all stakeholders and Project-Affected-Persons. He highlighted the role of public consultation and disclosure in an infrastructure project as well as the need for active participation from members of the public whose natural habitat, physical, cultural and others resources may be affected.

He presented the baseline data and explained that his presentation was formulated based on what was found on the ground during environmental and social survey. The consultant explained the environmental and social impacts expected.

For each stage he explained the impacts so far envisaged and proposed mitigation measures including the responsibility for implementing such mitigation. He explained that the adverse impacts as a result of proposed rehabilitation would be explained under four broad categories namely:

- Planning (current stage) - He made it clear that at the planning phase, a significant impact would be the direct land take of privately owned land as a result of road re-alignment occasioning relocation of mainly business premises. He explained that compensation for affected persons and properties would be handled through comprehensive RAP, a process that was already in progress.
- Construction – He explained that there would be vegetation clearance to pave way for the construction, dust and noise generated during earthworks and from various other work sites like asphalt mixing plant and the hard stone crusher site, opening up of borrow areas that would scar the landscape and pose falling risk for livestock. He explained that mitigation for these was provided in the ESMP including water spraying for dust, regulated working hours for noise and use of PPE for construction workers.
- Operation - He also explained that there would be increased vehicle-human – livestock-interactions during the operation stage with more traffic at high speed and that this would cause collisions likely to result in fatalities or injuries. He

explained that once opened up, the road would be a conduit for many business and travel opportunities in less time and improved comfort.

- Closure – he explained that the road was not likely to be decommissioned at the expiry of the design life but rather certain component would be restored back to pre-development status such as opened up borrow areas and project management offices.

He explained that the positive impacts (benefits) of the planned rehabilitation include the following among others-

- Decreased journey times
- Decreased cost of travel and transportation of commodities
- Hasten response to security or drought emergencies, more frequent in the area
- Ripple economic benefit from trade and commerce such as increased production of goods and services e.g. livestock inputs, access to better healthcare
- End isolation and remoteness in the area occasioned by poor access
- Boost national and international trade

Details and summary of the presentation are as per attached in Section 11.2

4. THE DISCUSSIONS

A question and answer session followed.

The Consultant invited the members present to air their views and ask questions and explained that owing to the high number of participants and the likelihood that same question might be repeated, five questions would be invited and answered in every run.

- Q1 Mr. Lokaare Lolo of Kaapo Village explained that his plot falls within the 60m road reserve and he has planted trees on it, which he values very much. He sought to know if he'd be compensated if these trees were to be destroyed.*
- Q2 Nyakaran sought to understand where she would relocate to since she was on the third row of plot allocation. On further prodding on the clarity of this perception, the stakeholders explained that allocation of plots for business establishments at market centres was issued by the Turkana County Council in rows. There was a front row, a second row and a third row. There was fear that relocation of affected first row occupants implied linear displacement and translation of plot owners behind them on the second row and so on, displacement of occupants on the third row.*
- Q3 Maria, an elderly lady from Kasuroi lamented that she is old and her house is very close to the road, why does KeNHA need too much land*
- Q4 Napokori Kula explained that the camel is a difficult animal, afraid of passing through narrow openings. Other livestock would pass when forced through narrow openings but not so the camel. He pointed to a culvert on location of the meeting and exclaimed that the so promised box culverts should not be that size.*
- Q5 Peter Earnest Ekeno from Kasuroi reiterated that the box culvert will be dark and the camels will be afraid to cross. He suggested that the camels be allowed to cross at grade with installation of speed humps. He also suggested that the locals should be engaged by the contractor during construction, in a walk around to identify suitable locations for livestock crossings He also sought to know if full compensation would be carried out whenever a plot or housing structure would be halfway affected as this would cause it to lose the value of the whole.*

-
- A (1) The Lead Environmental Expert explained that due compensation procedures set up in the Rap would be followed.
- A (2) The Lead Environmental Expert explained that this displacement by linear translation was not expected and that if her land parcel was not directly affected by the land take, then its only the front row owner whose land was affected would be subject to relocation and due compensation. The stakeholders were advised to pursue those matters within the resettlement committees set up.
- A (3) The Environmental Expert assured Maria that she'll be compensated accordingly.
- A (4-5) The Lead Environmental Expert explained that the country over, similar bridge culverts were installed as livestock crossings for pastoral communities including the camel in Narok, Laikipia, Kajiado and Marsabit and does not see reason why it would not work in Turkana.

5. THE RESOLUTION

The recommendations arrived at was that all present were in favour of seeing the speedy commencement of the rehabilitation work on the A1 road.

6. AOB

The public consultation meeting ended and stakeholders left at their leisure.

7. CLOSING PRAYER

The meeting ended at 4.30 pm with a word of prayer by one of the stakeholders.

11.7.2 List of Attendance – Scanned Copies

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
01	KAMARET LALIM NAKUWA	32086156	KAKUSL	N/A	[Signature]
02	ILLIMWEL EWIOR APALO	28312129	LOBUR-AREGON	N/A	[Signature]
03	LORUKIA NAMUTH LOKALE	49748977	KENKERE-ARUKAN	N/A	[Signature]
04	SELINA LOKWANI BMEUN	30036939	KIMIRIK	N/A	[Signature]
05	AKEEU LOKALE NGIRO	29769358	LOBUR-ARENZAN	N/A	[Signature]
06	EWA EYANAE CHUMCHUM	20949349	KASUROI	N/A	[Signature]
07	SARAH AMODU LINDAN	24849468	NARISWAMUKU	N/A	[Signature]
08	LOKUYEK LOKUKIA	3005365	KIMIRIK	N/A	[Signature]
09	EDEGAE LOKUSI EKITERA	26351369	KAPPA	N/A	[Signature]
10	APORON LOKALE NGIRO	8596392	KAKUSL	N/A	[Signature]
11	ASINYEN EITON LODIPON	8593136	KENKERE-ARUKAN	N/A	[Signature]
12	ASINYEN ESURON LOKWANI	30030395	KIMIRIK	N/A	[Signature]
13	ORUKOT NAKUA LOMELEU	1936070	KAKUSL	N/A	[Signature]

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
01	MARCY MUYA LOKWANI	470223	KENKERE-ARUKAN	N/A	[Signature]
02	LOMEIYOPO LOKWANI	25122084	KAKUSL	N/A	[Signature]
03	JEDENYAT LINDAN	28964565	KIMIRIK	0717829034	[Signature]
04	JAN EWEWI ENIANDU	23968317	KIMIRIK	0728387429	[Signature]
05	NABENYA LOKWANI ENKALE	20547477	KAKUSL	-	[Signature]
06	MARCERET ASURO EYANAE	26236314	NARISWAMUKU	-	[Signature]
07	ELIMLIM TERIA	20688006	KASUROI	-	[Signature]
08	SARAH KOTI LOKWANI	26495682	KAKUSL	-	[Signature]
09	AGNES EWA	29923769	KENKERE-ARUKAN	-	[Signature]
10	AGERIO LOKWANI	29440151	KAKUSL	-	[Signature]
11	ANOSIT LODONGOI URO	24041966	KAPPA	-	[Signature]
12	KAMALS LOROT ENKALE	21413558	KENKERE-ARUKAN	-	[Signature]
13	ENABELI ECHOTO	21365239	KENKERE-ARUKAN	-	[Signature]

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	DAVID AKORU	27535046	KIMIRIK		
	LOTENSAN ESEKON	12907618	KIMIRIK		
	KLASIKE APALO	28667395	KEKOROEAKWAN		
	KAJUKON KOKOT	21362979	KIMIRIK		
	CYNTHIA AKUDJ		KIMIRIK		
	ELIZABETH AKALE	27473134	KIMIRIK		
	LOKEMGE INGOLAN	28726389	KEKOROEAKWAN		
	DORCAS ETUR	24830994	KIMIRIK		
	KODOKET EGIRON	20253783	KADOKOLD		
	ELENYI TYCRO	24849481	KEKOROEAKWAN		
	ETILEV KOKOT	30037195	KEKOROEAKWAN		
	ALIM LOWALAN	20033447	KEKOROEAKWAN		
	LOWDI LOWALAN	30821535)		

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	NAREGAC APETE	26491619	KIMIRIK		
	LOKOT EKIAD	26361417 KEKOROEAKWAN	KEKOROEAKWAN		
	LOWALC ERAT	30034136	KEKOROEAKWAN		
	KODIO ERUW	4764396	KEKOROEAKWAN		
	KOKOT EKILEV	27484046	KEKOROEAKWAN		
	KULA KODOKET	35922210	KIMIRIK		
	JOSEPH ERAT	12437891	KIMIRIK		
	NIKAN ESIMEN	8592812	KEKOROEAKWAN		
	KALWANI ESIMEN	12908082	KEKOROEAKWAN		
	PHILIP ERAC	0238913	KAMESER SIL		
	NATABO ESIMYEN	20295550	KASUROI	0703569397	
	DORCAS AKAI EGIALAN	31364628	KIMIRIK		
	PASCALINA ASIMTI	26361274	KASUROI		

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH
VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	MARGADET EKURETE		KASUROI		
	JEREMIAH LOWALAN ECHOTO	28964565	KASUROI		
	LOKEMER ECHUMAN		KEKOROKWAN		
	EWOI LOIKWAWI		KEKOROKWAN		
	LOBUKIA ATOOT		KEKOROKWAN		
	EMASE AKIRU		KEKOROKWAN		
	EPORON CHUMAN		KEKOROKWAN		
	CHRISTINE AKAI		KIMIRIK		
	ELIMLIM TERIA	20588006	NADIONOMOR		
	AZAI AMDOI KOLE	21643041	LOBURARENGAN		
	LOWOI LOTIR LOWOKI	30020588	LOBURARENGAN		
	ETABO NGITKA ERAN	31810017	NAICOUKORI		
	AKIDOR ERAN LOIKWAWI	4771197	NAICOUKORI		

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH
VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	ELIM NAWWA		KIMIRIK		
	LOREE LOTONDA		KADANGOLO		
	LOLIM NAWWA		KAIKOL		
	IPASO EPA		KEKOROKWAN		
	ESERON EKIRU		LOMESOK SIL		
	BOYEL EKIRU)		
	NAROTEN EUSTON		KADANGOLO		
	NARUKOI NAWWA		KAIKOL		
	EKIRU		KEKOROKWAN		
	JEREMIA LOWALAN		KIMIRIK		
	ANATAKORI NGIRCHA		KAPD		
	NAROKORI KULA		KAPD		
	KOVALG KOLA		KOLITAK		

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD

AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH:

VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	ERIM CEARAN	30022116	KAKOL		
	NASIMEN EKALALE	24663001	KIMIRIK		
	ALIM KUWA	4765759	KAPOD		
	KAWAKAN EDVIZ	27454035	KAPOD		
	EDVIZ AMODOI	27437784	KAPOD		
	NATUM EKIDON	4765985	KADONROLO		
	KAKOL EKIDON	31450468	KADONROLO		
	LENYEN EKIDON	30022412	KADONROLO		
	ESIKON KOKEMER	25122132	KOKOROKWAN		
	PETER EWESIT	26409880	EBUR ARERANGAN		
	AUBSIT KADONGORI	24041966	KAPOD		
	GRADCCI ECHOTO	21365239	KAPOD		
	KAMALS KORT	21413558	KOKOROKWAN		

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD

AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH:

VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	LOBENTE LEAWAI		KOKOROKWAN		
2	LOVUKI ENAN	29753915)		
3	EPYON ENAI)		
4	JACKSON KOKWUKA	29495418	KIMIRIK	0713279934	<i>[Signature]</i>
5	KADDELI KAPELO	20262690	KADONROLO	0713238152	
6	ENAI AMODOI	4765656)		
7	LOCHONG ACHUKA	8562734	.		
8	OPUNKURE OSGEON		KOMESKIL		
9	KONKOR LIIDAM)		
10	KANGIRO KCHIT		KAPOD		
11	EKAI NEMEKUYA		KAPOD		
12	JOSEPH KOKWANGOROM	8707121	KADONROLO		<i>[Signature]</i>
13	GRADCCI KOCLENGIRO		KAKOL		

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
01	LOYENI ELIBIT	4770718	TIRKWEK	0719215931	LE
02	ESTHER NAKOMWA AMURON	27500985	KATUDAO	0706522113	EB
03	BUKANGOR KANGIRO	N/A	KATUDAO	N/A	EB
04	LORUNYE ERONGAT NADOTO	29129755	KATUDAO	N/A	LE
05	NAKOLONYOI KIYAN KIYONGA	8593453	NARIENOMOKU	0704540347	NE
06	AUGENI EPONIG LOMOKURIA	8593036	AMORU-ARWAKAN	N/A	AE
07	ADEGARE LODOK	-	KAPOO	N/A	AD
08	KANKAR KIMARIC	8692820	NATUDAO	N/A	AK
09	GLADYS LOKALITA	24280765	KIMIRIK	0715766966	GL
10	MARLORET ERUPE		NARIENOMOKU		NE
11	DOKUS ZUABELI	30022235	LOBUR-ARWAKAN	0707037425	DE
12	AKIRU EKITERA	21349190	NARIENOMOKU		AK
13	RUTH NACHICH LOREGAR	30380829	NARIENOMOKU	0713112999	RU

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
01	REBECCA LOTUKOI ANGEYEN	25035014	LOMSEKSIK	N/A	RE
02	MARY EPEYAN ESEKON	9007922	NARIENOMOKU	N/A	ME
03	KALAPATA WILIAN TOPIS	8593636	LOMSEKSIK	N/A	KA
04	GRACE EMATHE ELIBIT	24851972	LOBUR-ARWAKAN	N/A	GE
05	ECHUDANG ANGELA BEGELAN	30826874	KAIKEL		EB
06	KAWO ATEIT	27492568	NANANZAKUNA	N/A	KA
07	SAMUEL EBEL EKHABELI	28396604	LOBUR-ARWAKAN	0719882732	SE
08	ESEKON EKIRU ERUWAM	29816685	KIMIRIK	N/A	ES
09	ELIZABETH APUA	26351138	KIMIRIK	N/A	EL
10	JAYCE NAIIR NAMUNYIN	20560007	KIMIRIK	N/A	JE
11	REBECCA AKIRU	N/A	LOBUR-ARWAKAN	N/A	RE
12	NAKOLONT ETOT LORUMUKIA	8592546	LOBUR-ARWAKAN	N/A	NE
13	AMATHE LOTIYO NAROV	4788625	NARIENOMOKU	0727680912	AO

6

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KASUROI LOCATION: KASUROI DISTRICT: TURKANA SOUTH
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	AKUDO EKENO LONGOR	30022425	NAALIMO		
2	LOTURIE ERUPE KAPELO	30760977	NAALIMO	077724373	
3	NANGOROT KAPELO	33091872	" " "		
4	EKARAN LUKONO EPORON	31058723			
5	JOHN LOOHUCH NGITIRA	24351991	KASUROI	071440263	
6	EKAL ENJOR NATINI	25122175	" " "		
7	ENGOLAN AKIRU	33892212	" " "		
8	IKADUKOM LOKAO LOOHUCH	24281464	" " "		
9	NALINGIN LOKAAGE LOPEWEN	30030252	" " "	0715084093	
10	LOKALALE KANGIRO ECHOTO		" "	0709202828	
11	KAMARET LOLIM			0707257666	
12	LOKORTYEK LORUKAA NAMITH	30055265	KASUROI	0709254762	
13					

No	Name	ID. NO.	Village	Phone No.	Signature
1.	ARITEA EMBUSUMUZI	21323485	KESWASE-AMURU		[Signature]
2.	AKHUMAT EMBUSUMUZI	28288777	KESWASE-AMURU		[Signature]
3.	EPUNGUWE ATANYI LOWO	4771527	KADUNU-ALUO		[Signature]
4.	CHRISTINE ATONENYANG	28983837	NALONUMOKU		[Signature]
5.	MARGARET ATABO EBALITAT	26361433	NALONUMOKU		[Signature]
6.	Eyolon hotire	21407817	KESWASE-AMURU		[Signature]
7.	NASIMYON LOMWA MORUNZARE	24886234	KESWASE-AMURU		[Signature]
8.	ERONGOT LUMWA LOSERA	20185607	KESWASE-AMURU		[Signature]
9.	LOCTURHA LOKUKIA-NAMUNIA	27539744	KESWASE-AMURU		[Signature]
10.	SELINDA BOYELET AKIRU	26433309	LOBUR-ANENGAN		[Signature]
11.	ALICE LOSEL	26887196	NALONUMOKU		[Signature]
12.	AMUNDI KONGARE	4771249	NALONUMOKU		[Signature]
13.	BUCOT ESBEREL EKONDEL	8587830	NALONUMOKU		[Signature]
14.	NAMUKU ECHILAR WEN	8592607	TILAWEL		[Signature]
15.	LOMULEN NAKIRO KODI	25085589	KESWASE-AMURU		[Signature]
16.	WAHUSI LOMYAM EBEI	0143079	TILAWEL		[Signature]
17.	MARGARET ISUKET LOKURU	30024945	KIMUK.		[Signature]
18.	LOBE EPUNGUWE EMBUSUMUZI	21408360	KESWASE-AMURU		[Signature]
19.	REGINA LOKATYO KUMARET	29678473	NALONUMOKU		[Signature]
20.	MARGARET AULE LOKURU	124483787	NALONUMOKU		[Signature]
21.	MARGARET LEMWA ANKIBALAN	8592924	LOHUL		[Signature]
22.	NATINI LOKIPUK MABAKA	8589260	KESWASE-AMURU		[Signature]
23.	EMAN NEMEKUYA	21174490	KESWASE-AMURU		[Signature]

No.	Name	ID Number	Village	Id No.	Signature
1.	AKYIYIYI ECILOI	26352411	KO RVU	---	[Signature]
2.	AKAC LOMUKILON	12908161	KEKOKOBE-AKUMU	---	[Signature]
3.	KELIG ABUT LOMOKILON	286444493	KEKOKOBE-AKUMU	---	[Signature]
4.	ELAMBEH LOKAMONWA	8971238	KAMUS	---	[Signature]
5.	EKUTAN LSTIANG PETER	29569032	KAMUS	81715283	[Signature]

11.7.3 List of Attendance –

The following is the List of Attendance for the Public Consultation Meeting for the Proposed Rehabilitation of Marich- Pass Lodwar Road Project held at Kasuroi Village, in Lokichar Location of Turkana South District on 17th January 2015. 128 people registered as shown in Table 11-4.

Table 11-4: List of Attendance, Kasuroi Village, in Lokichar Location on Saturday, 17^h January 2015

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
1	David Akoru	27538046	Kimiriik	
2	Lotengan Esekon	12907618	Kimiriik	
3	Ngasike Apolo	28667395	Kekoroekwaw	
4	Kajokon Lorot	21362979	Kimiriik	
5	Cynthia Akiru		Kimiriik	
6	Elizabeth Akale	27493134	Kimiriik	
7	Lokemer Ingolaw	28726389	Kekoroekwaw	
8	Dorcas Etiir	24830994	Kimiriik	
9	Lodoket Egiron	20253783	Kadongolo	
10	Eliny Iyerio	24849481	Kekoroekwaw	
11	Ekilen Lorot	30037195	Kekoroekwaw	
12	Azim Lowalan	30033447	Kekoroekwaw	
13	Lowoi Lowalan	30021535	Kekoroekwaw	
14	Naregae Apele	26491619	Kimiirik	
15	Lokol Ekiru	26361417	Kekoroekwaw	
16	Lokaale Ekai	30034136	Kekoroekwaw	
17	Lodia Ekiru	4764396	Kekoroekwaw	
18	Lorot Ekileu	27454046	Kekoroekwaw	
19	Kula Lodoket	30022210	Kimiirik	
20	Joseph Ekai	12437891	Kimiirik	
21	Ngikan Esinyen	8592812	Kekoroekwaw	
22	Lokwawi Esinyen	12908082	Kekoroekwaw	
23	Philip Ekal	238913	Lomeseksii	
24	Natabo Esinyen	20295550	Kasuroi	
25	Dorcas Akai Eglalan	31364628	Kimiirik	
26	Pascalina Asimit	26361274	Kasuroi	
27	Margaret Ekurete		Kasuroi	
28	Jeremiah Lowalan Echoto	28964565	Kekoroekwaw	
29	Lokemer Echuman		Kekoroekwaw	
30	Ewoi Lokwawi		Kekoroekwaw	
31	Lorukea Atoot		Kekoroekwaw	
32	Emasi Akiru		Kekoroekwaw	
33	Eporon Chuman		Kekoroekwaw	
34	Christine Akai		Kimiirik	

No.	Name	ID. No.	Village/ Organization	Institution/ Address	Telephone No./ Contact Address
35	Elimlim Teria	20588006	Narionomor		
36	Akai Amodoi Kole	21643041	Loburarengan		
37	Lowoi Lorir Lowoki	30020588	Loburarengan		
38	Etabo Ngitira Ekaran	31810017	Nakouekori		
39	Akipor Ekaran Lokwawi	4771197	Nakouekori		
40	Elim Nawar		Kimiirik		
41	Loree Lotonia		Kadongolo		
42	Lolim Nakuwa		Kaikoi		
43	Ipasso Eipa		Kekoroekwaw		
44	Esekon Ekiru		Lomeseksii		
45	Boyel Ekileu		Lomesek Sii		
46	Nakoyen Ewoyon		Kadongolo		
47	Narukoi Nakuwa		Kaikoi		
48	Ekiru		Kekoroekwaw		
49	Jeremia Lowalan		Kimiirik		
50	Angatakori Ngirega		Kapoo		
51	Napokori Kula		Kapoo		
52	Lokale Loroo		Kolidak		
53	Elim Ekaraw	30022116	Kaikoi		
54	Nasinyen Ekalale	24863001	Kimiirik		
55	Alim Kula	4765759	Kapoo		
56	Lowalan Edung	27454035	Kapoo		
57	Edung Amodoi	27437784	Kapoo		
58	Natuom Egiron	4765985	Kadongolo		
59	Lokol Egiron	31480468	Kadongolo		
60	Lenyen Egiron	30022412	Kadongolo		
61	Ejikow Lokemen	25122132	Kekoroekwaw		
62	Peter Ewesit	26409880	Ebur Areawgaw		
63	Awosit Loidongori	24041966	Kapoo		
64	Ekadeli Echoyo	21365239	Kapoo		
65	Kamais Lorot	21413558	Kekoroekwaw		
65	Lobenyo Lokwawi		Kekoroekwaw		
66	Lotukoi Eyan	29953915	Kekoroekwaw		
67	Epeyon Ekai		Kekoroekwaw		
68	Jackson Lokuruka	24495418	Kimiirik		
69	Lokadeli Kapelo	20262690	Kadongolo		713279434
70	Ewoi Amodoi	4765686	Kadongolo		713238152
71	Lochong Achuka	8562734	Kadongolo		
72	Epungure Esekon		Lomesek Sii		
73	Longor Liidam		Lomesek Sii		
74	Kangiro Achiit		Kapoo		

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
75	Ekali Ngimekuya		Kapoo	
76	Joseph Lokwangorom	8707121	Narionomor	
77	Ekadeli Koelengiro		Kaikoi	
78	Loyen Elibit	4770718	Tirkwel	719215931
79	Esther Nakomwa Amuron	27500985	Natudao	706522113
80	Bukangor Kangiru		Natudao	
81	Lorunye Erongat Nadoto	29129755	Natudao	
82	Nakolonyoi Eiyani Kiyonga	8593453	Narionomor	704540347
83	Akeno Epong Lomokurion	8593036	Amoru-Akwaan	
84	Aregae Lobor		Kapoo	
85	Nangor Kamaret	8592820	Natudao	
86	Gladys Loufilia	24280765	Kimiirik	715766966
87	Margret Erupe		Narionomor	
88	Dorcas Ekadeli	30022235	Loburarengan	707037425
89	Akiru Ekitela	21349190	Narionomor	
90	Ruth Nachuch Loregai	30380839	Narionomor	713112999
91	Regina Lotukoi Akoyen	25035014	Lomesek Sii	
92	Mary Epeyon Esekon	90007722	Narionomor	
93	Kalarata Walan Topos	8593636	Lomesek Sii	
94	Grace Emathe Elibit	24851972	Loburarengan	
95	Echudang Angela Egielan	30826874	Kaikoi	
96	Kawoto Ateit	27492563	Nanangakina	
97	Samuel Ebei Ekhabeli	28396604	Loburarengan	719882737
98	Esekon Ekiru Eruwam	27816685	Kimiirik	
99	Elizabeth Apua	26351138	Kimiirik	
100	Joyce Natiir Namunyin	20560007	Kimiirik	
101	Rebecca Akiru		Loburarengan	
102	Nakolewe Etout Lorutomukia	8592546	Kekoroekwaw	
103	Amathe Lotiyo Naroo	4784625	Narionomor	727680702
104	Akuda Ekeno	30022425	Naalimo	

No.	Name	ID. No.	Village/ Organization	Institution/ Institution/	Telephone No./ Contact Address
	Longor				
105	Loturue Erupe Kapelo	30760977	Naalimo		77784373
106	Nangorot Kapelo	28071278	Naalimo		
107	Ekarani Lukono Eporon	31058723	Naalimo		
108	John Lochuch Ngitiira	24851991	Kasuroi		714140263
109	Ekal Enggor Natini	25122175	Kasuroi		
110	Engolon Akiru	28293812	Kasuroi		
111	Ikadukom Lokayo Lochuch	24831464	Kasuroi		
112	Nalingin Lokaale Lopelesh	30030258	Kasuroi		715034093
113	Lokalale Kangiro Echoto		Kasuroi		709233888
114	Kamaret Lolim		Kasuroi		707257666
115	Lokoriyek Lorukaa Namuth	30055365	Kasuroi		702254762
116	Mary Muya Likemea	4762223	Kekoroekwaw		
117	Lomeriyopo Lokwawi	25122084	Kaikoi		
118	Jeremiah Lokwalan	28964565	Kimiirik		
119	John Emekwi Enipono	23963317	Kimiirik		
120	Nabenyo Lokwawi Ekalale	20547412	Kaikoi		
121	Margret Aruro Epongi	26236314	Narionomor		
122	Elimlim Teria	20588006	Kasuroi		
123	Sarah Kolo Lokwawi	26475682	Kaikoi		
124	Agnes Ewoi	29923169	Kekoroekwaw		
125	Agerio Lokwawi	29440151	Tirkwel		
126	Awusit Loidongori Luro	24041966	Kapoo		
127	Kamais Lorot Ekileu	21413558	Kekoroekwaw		
128	Ekadeli Echoto	21365239	Kekoroekwaw		

11.7.4 Photographs of the Meeting



Plate 11-25: Attendees listen to presentation



Plate 11-26: The women were present



Plate 11-27: Project Presentation & translation



Plate 11-28: The elders paid attention



Plate 11-29: Area chief illustrates a point



Plate 11-30: Question time



Plate 11-31: More questions and views



Plate 11-32: Stakeholders of all ages

11.8 KALEMNG'OROK VILLAGE IN KATILU LOCATION ON SUNDAY 18-1-2015 AT 1:15 PM

11.8.1 Minutes of Meeting

The Katilu Location Chief is Allan Lokeum Aleper. The Assistant Chief Kalemng'orok Sub-Location is Henry Ezabo. The Deputy County Commissioner for Turkana South County is Mr. Elijah Kodoh.

Minutes of Environmental and Social Impact Assessment Public Consultation and Disclosure Meeting held on 18th January 2015 at Kalemng'orok Market Centre.

1. GENERAL

The meeting started at 1:15 pm with a word of prayer by Pastor John Ereng of the AIC Church.

2. INTRODUCTION

The Assistant Chief Kalemng'orok Sub-Location, Mr. Henry Ezabo, welcomed all present and introduced the Environmental Impact Assessment Team comprising Eng. Dr. Oonge, Nancy Mukui and Timothy Koome.

In his introduction, the Environmental Expert, (Dr. Oonge) explained that development of roads in the country is mandated to Kenya National Highways Authority (KeNHA) for Class A, B & C roads, Kenya Urban Roads Authority (KURA) for town roads and Kenya Rural Roads Authority (KeRRA) for rural roads comprising of Class D and E Roads. He explained that the Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road is part of the Northern Corridor Roads in an effort to improve access to Nadapal and South Sudan - the Northern Corridor links the Kenyan Port of Mombasa on the Indian Ocean to landlocked East African countries. He explained that the agenda of the meeting was to inform all stakeholders and community members present of the intended construction and explain the design components so that the stakeholders would give feedback on their views for implementation. He urged all to follow the presentation keenly and inquire on all issues that were not clear or that needed discussion.

3. THE PRESENTATION S

1. Comments by the Katilu Location Chief Mr. Allan Lokeum Aleper

The Katilu Location Chief, Mr. Allan Lokeum introduced the Agenda of the day.

He requested all stakeholders to carefully listen to the proceedings and at the end of it, ask questions in an orderly fashion.

He explained that those who did not receive sodas had come late. He explained that the Environmental expert had come in expecting like 150 people, yet there were already too many. He urged them to pay attention till the end of the presentation .

2. Presentation by the Environment Lead Expert, Eng. Dr. Oonge

The Environmental Expert, (Dr. Oonge) took the opportunity to appreciate all present and explained the purpose of the meeting. He explained that the A1 road was the first road to be named in the country traversing from the south most part of the country at Isebania, to the North most part at Nadapal.

He explained that such consultations and disclosure had been carried out in June 2012 and that the day's meeting would mainly address the issues of likely impacts of the road on the bio-physical and social environment as well as the impacts of the environment on the road improvement and hopefully gain community 'buy-in' to the project.

He said the purpose of the meeting was to inform the community on aspects of proposed road development and of the expected project impacts, give the stakeholders opportunity and a forum to participate and ask questions, and air their views and suggestions.

He explained that the section of road covered under lot 2 would be split into two contracts ; Marich Pass – Lokichar, Lokichar – Lodwar with a width of 60m road reserve and that all assets within the road reserve would be affected.

He quoted and explained the various national laws, policy framework, World Bank Safeguard Policies and regulations that govern Environmental and Social Impact Assessment and such public consultation meetings. The Environmental Management and Co-ordination Act that requires an Environmental Impact assessment Study be carried out and that such a meeting to be held in order to involve all stakeholders and Project-Affected-Persons. He highlighted the role of public consultation and disclosure in an infrastructure project as well as the need for active participation from members of the public whose natural habitat, physical, cultural and others resources may be affected.

He presented the baseline data and explained that his presentation was formulated based on what was found on the ground during environmental and social survey. The consultant explained the environmental and social impacts expected.

For each stage he explained the impacts so far envisaged and proposed mitigation measures including the responsibility for implementing such mitigation. He explained that the adverse impacts as a result of proposed rehabilitation would be explained under four broad categories namely:

- Planning (current stage) - He made it clear that at the planning phase, a significant impact would be the direct land take of privately owned land as a result of road re-alignment occasioning relocation of mainly business premises. He explained that all affected assets have been identified and will be compensated according to the RAP carried out.
- Construction – He explained that there would be vegetation clearance to pave way for the construction, dust and noise generated during earthworks and from various other work sites like asphalt mixing plant and the hard stone crusher site, opening up of borrow areas that would scar the landscape and pose falling risk for livestock. He explained that mitigation for these was provided in the ESMP including water spraying for dust, regulated working hours for noise and use of PPE for construction workers.
- Operation - He also explained that there would be increased vehicle-human – livestock-interactions during the operation stage with more traffic at high speed and that this would cause collisions likely to result in fatalities or injuries. He explained that once opened up, the road would be a conduit for many business and travel opportunities in less time and improved comfort.

- Closure – he explained that the road was not likely to be decommissioned at the expiry of the design life but rather certain component would be restored back to pre-development status such as opened up borrow areas and project management offices.

He explained that the positive impacts (benefits) of the planned rehabilitation include the following among others-

- Decreased journey times
- Decreased cost of travel and transportation of commodities
- Hasten response to security or drought emergencies, more frequent in the area
- Direct employment of young people to the construction labour
- Ripple economic benefit from trade and commerce such as increased production of goods and services e.g. livestock inputs, access to better healthcare
- End isolation and remoteness in the area occasioned by poor access
- Boost national and international trade

Details and summary of the presentation are as per attached in Section 11.2

4. THE DISCUSSIONS

A question and answer session followed.

The Consultant invited the members present to air their views and ask questions and explained that owing to the high number of participants and the likelihood that same question might be repeated, five questions would be invited and answered in every run.

Q1 Mr. Duncan Simwa of Kalemng'orok inquired whether speed humps would be installed at schools and shopping centres, hospitals and churches

Q2 Mr. Hosea Tieko of Kalemng'orok sought to understand what livestock crossing measures would be installed between kalemng'orok and Lokichar, seeing that there are high numbers of livestock. What happens when accidents happen and livestock get injured?

Q3 Joseph Emanimani Munyes of Namakat village, Kalemng'orok thanked the Consultant for the information. He sought to understand whether the employment would be for a pre-determined number of people or for everyone willing to be recruited as opportunity arose. He added that the area suffered insecurity from banditry and wondered if local security personnel – the Kenya Police Reservists - would be employed to keep security during construction.

Q4 Mr. Jakalale Eregai of Kalemng'orok sought to understand what road safety measures would be installed, bumps?

Q5 Mr. Hezron, the assistant chief sought a clarification. He explained that a RAP had been carried out in 2012 in relation to this road and that again, another one was previously carried out. Ever since, new business owners and kiosks have come up and new business licenses issued. Who will be compensated?

A (1) The Lead Environmental Expert explained that experience has shown that speed humps so installed become points of road failure and they are therefore not highly recommended, however, discussions are on-going, and the humps may be installed. He further explained that where such important crossings happen and the crossing population is high, crossing overpasses are a better option.

A(2) The Lead Environmental Expert explained that the prevailing law in relation to compensation for livestock accidents are that the livestock owner pays for the damaged

vehicle. But when the accident involves a human knocked down by a vehicle, the motor vehicle insurance policy which is mandatory, compensates for the life. This is designed to encourage responsible livestock husbandry by herders, keeping livestock off the road. The law was enacted following cases of criminal gangs driving animals into the road to ensnare motorists for compensation, robbery or other such ill-conceived intentions

- A (3) The Lead Environmental Expert thanked Joseph Munyes for the acknowledgement. He further explained that two types of labour demand exist – for skilled and unskilled labour. He explained that skilled labour required documentary evidence in terms of testimonials whereas unskilled labour requires energy. Common practice is whereby all unskilled labour is locally sourced from within the vicinity while as skilled labour is scouted for more widely even country wide. He explained that the appointed contractor will be fully briefed of the security situation on this A1 road and advised to put up his own security measures. He urged them to explain if they needed the inclusion of the local KPR to let it be known for reporting purposes. To this they responded in the affirmative, that KPR be engaged at the local level.
- A (4) The Lead Environmental Expert explained that there'll be signage installed at all important crossings such as schools and hospitals.
- A (5) The Lead Environmental Expert explained that compensation for land, livelihood and property will be carried out in line with the Updated RAP undertaken.
- Q6 Mrs. Margaret Ekirimet of Kalemng'orok commented that, let the work come, and when it does, let all people be employed including women, where the only criteria for employment is the Identity Card (ID)*
- Q7 Rebecca Lokwang of Karemng'orok sought to know where those business operators whose kiosks are affected by the re-alignment, where would they relocate to? Is there a designated location set up for their relocation?*
- Q8 Elma Ekorot, also of Kalemng'orok commented that since the disabled, the widowed and the young will not be eligible for employment, they will be available to sit under the trees at the laghas and collect sand and pebbles for road construction at a pay. She said the whole community is willing to work in whatever capacity, to see the road work commence and carry on to completion.*
- Q9 Mariko Akal of Nakaboson in Kalemng'orok commented that, they alleagerly awaited for the commencement of the work so that everybody would be in gainful employment – women, men, the skilled and the unskilled. He also commented that the skilled out to be available to train the unskilled. He said that the old should also find employment since they had grown old waiting for the promise of the rehabilitation of this road.*
- Q10 Mr. Joel Emase sought clarification. He explained that the kiosk owner on the front row is not the land owner, who'll be paid?*
- A (6) The Lead Environmental Expert explained that the contractor is allocated a time frame within which to deliver completed construction and therefore would not find the time to allow for workers to train their counterparts. The contractor will want to put in only the skilled labour. He however asked the stakeholders to put across their request to the contractor for consideration when he comes.
- A (7) The Lead Environmental Expert explained that it is up to those relocated to offer suggestions on alternative relocation sites to which they suggested the Kalemng'orok market centre
- A (8) The Lead Environmental Expert explained that these suggestions would be incorporated in the Updated ESIA report
- A (9) The Lead Environmental Expert explained that it was up to the goodwill of the skilled labour to train the unskilled if they so wished. These suggestions would be incorporated in the Updated ESIA report.

-
- A (10) The Lead Environmental Expert explained that the land owner is compensated for land where as the kiosk owner will be compensated for the structure and the lost livelihood.
- Q11 Mr. Mark Kotor of Kalemng'orok sought to know what the exact location of livestock crossing at Kalemng'orok would be.*
- Q12 Rebecca once again revisited the issue of the impending relocation of business people of Kalemng'orok. She suggested that these traders would not move out of Kalemng'orok where they have an established customer base but rather, they would approach the County government to allocate them land, still within the same market centre.*
- Q13 Josphine Appo of Kalemng'orok commented that there are services like water pipes supplying the Kalemng'orok market centre that would be adversely disrupted by construction work. What will happen? She also sought to know if the contractor will employ directly or through a locally constituted committee.*
- A (11) The Lead Environmental Expert explained that this would be at the lagha location nearby.
- A (12) The Lead Environmental Expert explained that these suggestions would be incorporated in the Updated ESIA Report.
- A (13) The Lead Environmental Expert explained KeNHA will negotiate with the water supply company and come up with an agreement on service delivery disruption scheduling. He also explained that the contractor had not been identified so far, and that he was unlikely to hire the services of middlemen to carry out recruitment.

5. THE RESOLUTION

The recommendations arrived at was that all present were in favour of seeing the speedy commencement of the rehabilitation work on the A1 road.

6. AOB

The public consultation meeting ended and stakeholders left at their leisure.

7. CLOSING PRAYER

The meeting ended at 3.30 pm with a word of prayer by Pastor Julius Lopeyon.

11.8.2 List of Attendance – Scanned Copies

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		DISTRICT: TURKANA SOUTH:			
AT KALEMNG'OROK		LOCATION:	KATILU	DATE:	
VENUE:					
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	Diuren peelo	20609957		0700301956	
2	Cynthia Ekai frupe	26300336		0701193246	
3	Glady's Leng	4764367			
4	JOHN Lokai frupe	24519601		0703518909	
5	Martin Citong'9 Kaburir	23375443		0712409342	
6	Elizabeth Akoi	26445032		0714811313	
7	Julius Kiri	31764273		0702360692	
8	Elizabeth Napera Chegem	20843758		0707467639	
9	Namugs Lokureno Npingaluk	10987217		0715583339	
10	William Ekai Longor	31458635			
11	Otingaluk Lokit Mogale	1061898			
12	Moses Lokipkari	12907410		07060824560	
13	Rose Sogor	24303419		0729336773	

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		DISTRICT: TURKANA SOUTH:			
AT KALEMNG'OROK		LOCATION:	KATILU	DATE:	
VENUE:					
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	Benson Nadiko Ekimo	30009743	Kalemng'orok	0715531546	
2	Daniel ACHAKA Ewalon	31357059		0729534674	
3	Samsel Eiar Marunda	26492550			
4	Daniel Ejanac Lobwin	7673520			
5	Joseph Loyelei	10124037		0710704229	
6	Joseph Nyalowa	12908848			
7	Abdi Karm	26024010		0717467331	
8	Simon Lekwang Korodi	4798195			
9	Jackson Lokike Ekace	25871619	0	0700767308	
10	JOHN Lokhor Jome	10673471		0729385067	
11	Peter ffaat	20177922		0721146997	
12	Lokitela Lotukei	21466032		0721660483	
13	Michael fkitela	13425111		0718174659	

4

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KALEMNG'OROK LOCATION: KATILU DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature These people
1	Erukut Lotewony	25866203	Kareungjuck	0702637462	Cannot
2	Simon Komadi	31415689	"		Write,
3	Kenedy Samal	20108583	"	0716093882	They are
4	Peter Nyitira	29459142	"	0707193213	the
5	Jacob Licon	24519616	"	0716422337	elderly
6	Isaac frupe	27118202	"	0704146821 070674821	
7	JOHN Lkai Ariman	24716866	"	0715465885	
8	Susan Epunde	12773115	"	0701398299	
9	Susan Asungen Lkai		"		
10	Lkaiace Marara Lkal	7429470	"		
11	Jasper Lopai	12908943 127943	"		
12	Gabriel Lorat	12908616	"		
13	Margrate Nadice	26479214	"		

4

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KALEMNG'OROK LOCATION: KATILU DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	KIOT KWAN AUKTUSA	0144704	NABELUP		
2	LOPUN SAKAL		NANCHELOUP KASUROKORU		
3	JAMES LOTADIK		KASUROKORU		
4	MARK ETABO	205546795	NABUYE		
5	JOSEPHAT LOTANAN	12507442	KAPELO		
6	EDOMK LOKOLL		ABURUR		
7	LORDT LOWA		KASUROKORU		
8	JOHN ERUPC		IDPS		
9	ERUPC LOURIEN	4771496	NARO		
10	MARK KATLE	24300008	KASUROKORU		
11	JACKSON EMASE	07 ABURUR	ABURUR		
12	ERITELA LOCHAPAN		KAPUR		
13	ERIKA ACHILONGOR		IDPS		

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: KATILU DISTRICT: TURKANA SOUTH:			
AT KALEMNG'OROK		VENUE: DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
14	Emase Emonyang				
15	Emetto Amaler				
16	Etukoi Eboya				
17	petoo Lotui	21348372		0767062836	
18	Awoya Kiboli Emongo Erenyai	8592626			
19	Ewoton Aregae	2525			
20	Isidor Ebr				
21	Etakalo Etapali	0581319			
22	John Mangalinyang	9274045		0704929187	
23	ERICA Alenger	0141351			
24	Moses Louoi			0710678472	
25	Awoi Ester				
26	Ann Ayenae				

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: KATILU DISTRICT: TURKANA SOUTH:			
AT KALEMNG'OROK		VENUE: DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	Robore Fkaran	31448728			
2	Raphael Kooli	7672346		0714791179	
3	Emonkor Kamais Bolech	573337			
4	FRUKUDI A. MARK	81207805	Social Auditor Kiteonyonyo Community	0707664723	
5	James Nanyuki Apao	339927	Contractor	0713706458	
6	Peter Lowani' imaa	28172505	-	0703607478	
7	John Layo	27123515	-	0700296368	
8	Purity Emase	32465039		0708566540	
9	RAEL EMASE	25119194		0717074806	
10	Julius EKIRO	31526155		0708461586	
11	Lotelonyi Loket Lowas	29328530		071629604	
12	Lunice Nafeta Wathungu	29328530		070324908	
13	Alice Nasiru Kirecra	2465042		0702711027	

4

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KALEMNG'OROK LOCATION: KATILU DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	Bensiter EYAPIN	070243497	NARENDELUP	0702341497 070243497	
2	NAMUNON LOKUKIA	12908116	KASUROROBIO	0722306324	
3	JOSHUA ERUKODI	27126522	KALOBIRO	0706197743	
4	JOHN MERIKIRION	12911709	EKITELES		
5	NHIEL ELMIM	27557211	ADPS	0719199407	
6	PETER EKALE		KAPURA		
7	EKORI ETUOT		ABUVA		
8	SEZINA EKENO		NARENDELUP		
9	PHILIP ENASE	20786231	IDPS		
10	JANEFER NARCYOK	27306786	EKITELES	0714515450	
11	BICKSON LOKURUKA	12907231	KAPELBOK	0714204161	
12	JOSEPH EKITANDA	25239456	JULUR	0707631923	
13	ARUPE LOBUUN		NAPOROCET		

4

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KALEMNG'OROK LOCATION: KATILU DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	ACHUDI LONGKAN ECHWA		ICHAKUN VILLAGE		
2	ENOI ETANGAN		KALOBURBIO VILLAGE		
3	LOTO DI NADIKIO	8593440	ICHAKUN VILLAGE		
4	AKAAL LOKOLI		NAKABOSAN VILLAGE		
5	MICHAEL MARUDA		KALEMNGOROK VILLAGE		
6	KERIO EMERI		KALOBURBIO VILLAGE		
7	LOCHADAE LOKOPAK		NARENDELUP VILLAGE		
8	MARY LOROGEL ATOOT		NARENDELUP VILLAGE		
9	DAMARUS LOTIYAKAR		NABEYE VILLAGE		
10	ABEI AKALE		NARUMRUM		
11	LOKWA EIPETCH		NARENDELUP VILLAGE		
12	AKURE EKIDOR		NATLOT ERIS		
13	ESTHER KAROMUDE		KAPELO VILLAGE		

4

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KALEMNG'OROK LOCATION: KATILU DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	DAVID EBENON		IKOBA	0707234546	[Signature]
2	ELIM ELINDO	3321540	MWENARICH	0711787134	[Signature]
3	AITE ARIFON		APA LWA		[Signature]
4	LOKAZIEL LOKOT	12908616	NARANGELUP	0710942305	[Signature]
5	GIDEON ELUM	32326661	NAKWAKETE	0708203907	[Signature]
6	EKADELI ALIOKO	4770804	NARANGELUP	0704433767	[Signature]
7	LOTAPAN LOKAZEL		NARANGELUP	0754859780	[Signature]
8	JOHN LOWONLOKOT		KOMKOROL	0703637238	[Signature]
9	MARY LOKOT	26152102	Kalemng'orok	014838191	[Signature]
10	NATILWA NALGALOO	13968217	"		[Signature]
11	EKAI LOBUNA		LORENGELUP		[Signature]
12	GRUPE MATAUTI		LORENGELUP		[Signature]
13	REBECCA NAWOI		LORENGELUP		[Signature]

4












PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KALEMNG'OROK LOCATION: KATILU DISTRICT: TURKANA SOUTH:
 VENUE: DATE:








No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	CHUMAR BAZZ ERIDOR	29960457		0788952573	[Signature]
2	CHARLES ROKALI ERERAZ	4407337		0710920561	[Signature]
3	JOHN ERENG	26212738		0705838393	[Signature]
4	ROKAI EKAI	26443744		0724998423	[Signature]
5	LODUNGA MASES	9542667		0710567047	[Signature]
6	EWAOI IOKAMAR	-		0701269740	[Signature]
7	JOEL EMASE	6856798		070714515482	[Signature]
8	JAMES KAPUA	16124349 462459		0707676814	[Signature]
9	JOSEPH MANYOS	10977910		0701596412	[Signature]
10	LORONGEI AMATER	-			[Signature]
11	HENRY ETABO	7165864	Ass-chief	0727775621	[Signature]
12	WILLIAM ERIDOR	4774062		0726821781	[Signature]
13	LOMULEN LOWAR	4729276			[Signature]

4

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT KALEMNG'OROK LOCATION: KATILU DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1.	JOSEPH LOBEI	14448890	line moja	0708711096	
2.	JOSEPH KISIKE		line nne	0702432419	
3.	Semah ASIMAT	2831165	KAPELO	0708425200	
4.	HELLEN EKUTAN	24300348	KAPELO	0712037595	
5.	GUADYS LODUNG	-	KAPELO	071518935	
6.	RAEL ETELENGI	31360174	BETHLEEM	0708248349	
7.	CATHERINE LOWAIA	31360209	BETHLEEM	0716066146	
8.	Lomulen LOCHAWAN		KAOUROKORIO	-	
9.	REBECCA ARINTI	-	KALOBURO	-	
10.	JOSEPHINE APOD	4192380	KAPELO	0716023202	
11.	ANNE LACHWA	10987223	KAPELO	070354677	
12.	JANE IKNEEL				
13.	FELIX AMODOI KUPOYA	23502045	KALAWGOROK V	0711761312	









No.	Name	Kitale ID No	Telephone	Village	Signature
14	Asinyen moru	28596848		Narengelup.	
15	David Lorot.	20704673		Narengelup.	
16	Eyo Epakan	8597148		Narengelup.	
17	Elizabeth Ekata	4792137		Narengelup.	
18	Samson Nakuro	5956357	0717436095	Bethelcom.	
19	Ekunoi Enka.	4788952		Bethelcom	
20	Loyokan & Johnstone	27118832	0716193282	Achukule	
21	JAMES N' BEMRON	6677916	0704906671	IDP	
22	MARWA KAKOKE	21932200	0701282549	Kapelo	
23	PETER KIKIEM	2765241	0711325478	IDP	
24	Philip APUMIO. Longonkoti Kakoi	11512083 4799475		Nabeye- Echuchuka.	

No	Name	ID No.	Village	Telephone	Signature
	Samson Erupe	3246225		0706205371	
	Lobor Euloi Akayabus	#860884		0714140130	
	James Ekutan	23685951		0767646287	
	Augustine Ixirile	24965361		0711205932	
	Muya Charles	202679149		0726139423	
	Achuka Chila	2116356		0706362250	
	Dancan Amian	7030029		0721590783	
	Musa Ekai Eniem			074160	
	Lanfagapua Ewesio	3032			
	Bonyace Botol	22841913		0768266750	
	Fubi Peter	22861320		072536280	
	Edung Ebei	#730103		0724444001	
	Iliuan loupe Ixopu	#795287			
	Miriam kaite	#728370		0700404501	
	Marx longoli				
	Salva Sylvia Amuria	26911813			
	Luka Fitei	23840243			
	Iomulen Eleman				
	Ekemo M. Johnstone	3252230		0717395797	

No.	Name	ID No.	Village	Tel No.	Signature
	Sara Akuta	21230101		0704250323	
	Hellen Akai	25855652		0714391111	
	Jacob Akou	83433841		0716866001	
	Yohana Frenq		Nakwakitara	072757838	
	Anna Louyaxakwai		Nawakirang	0728830833	
	ngoroko Iopai	20644205	Nawakirang	0703645244	
	Martha Ekenyo		ID? Ichaikini		
	Elizabeth ERENION		IDPS Ichaikini		
	Epae Ngapo EKIMI	4799383	EKITALES	0706423331	
	Esther Eregae Ekimi	25233470		071821584	
	MARGARET ANANA	27704344	Kaloburo	0703645501	
	FELIS KOTEN	30009130	Kaloburo	0706110272	
	EYANAE LONGORIMUK	30009440	EKITALES		

No.	Name	ID No.	Kijiji	Telephone	Signature
14	JOSPHAT EKUNDIT	TELE-	LOKICHALUS	0717866116	
15	EKAT NAKARUN		KATILU VILLAGE		
16	KAPEM EPA		KATILU VILLAGE	0729676983	
17	EKODOR LOTUTAN		EKITELESI VILLAGE		
18	ARONGON AFOT		KALOBURUSO VILLAGE		
19	MART AKHONG	20978096	KATEMNGOROK VILLAGE		
20	SAHARA EKONON		KATEMNGOROK VILLAGE		
21	MERCY LOGILAE		NABURUR VILLAGE		
22	MOSES EMURIA		NARU VILLAGE		
23	EJINTEN LOKOPE		NAWOYARANGAE V		
24	RAPHAEL EDAAH	12907612	NAKABWAN VILLAGE		
25	JUSTUS LOLOT LOKIKIA		KALOBURUSO VILLAGE		
26	PHILIP ENYAMAN	9528516	EKITELES VILLAGE		
27	EMAN KOR KAMAI	5733537	KATEMNGOROK VILLAGE		
28	OTINGALU LOKITANGIDE	106848	KATEMNGOROK VILLAGE		
29	IKONE ACHILA		ICHTAKUN VILLAGE		
30	JULUS DOMINIK		KAPUR VILLAGE		
31	EURON KASEKONA		KATILU VILLAGE		
32	LOPEYOK LOKUAWUT		KATILU VILLAGE		
33	EKALACE EUST		Lomonjans VILLAGE		
34	MARITA BEKON		KALOBURUSO VILLAGE		
35	RENTEO ANIMAN	12647001	KALOBURUSO VILLAGE		

No	Name	ID No.	Village - Telephone	Signature
1	ELIM ALOLONG		ABURUR -	
2	IMANA EKEND	23717214	ABURUR -	
3	DECEL A. EPREYO	24170919	ABURUR -	
4	FELMA NAMUKUMY	32239569	IDPS -	
5	SAMUEL EKERETE	25051681	KAZOBIRO -	
6	EVOSTON		KOLOBIRO - 070230722	
7	SALOME	10125252	KOLOBIRO - 070230722	
8	MARKO E. NALAIN		ADAPAL - 0719611218	
9	NAMUNJALALA	13648279	NARENGENEUP - 070310508	
10	PAULINE EKAI	23814139	NARENGENEUP - 070766485	
11	JOHN EKOMWA		JULUR -	
12	JEDEMIAH LOMONYANG	4728267	KAPELO - 0705518918	
13	LOKONYOI LONYALAN	28451920	KAZOBIRO -	
14	IBHN EKIRIMET		IDPS -	
15	MIRIAM NAMAZWA	5294729	ABURUR -	
	DISMUS KOKWRE		KAZOBIRO -	

No	Name	ID NO.	Village	Telephone	Signature
1.	LOROT LOSIKARIA		KALOBIRO		
2.	ELEI ESPECH	9528996	NAKWAUKITELA		
3.	DICKSON EIPA	25119677	ABURU	0713932007	
4.	EYANDE KANCOMU		KALOBIRO		
5.	EKIRO AKILOI	29373074	NABEIYE		
6.	NATIBI LONANHAMBE	2675480	NARENKELUP	0704995022	
7.	CONSULTER EKUDON	23665787	KALOBIRO		
8.	SELINA AMONI	13145491	KALOBIRO	0716271441	

NO	Name	ID NO.	Village	Telephone	Signature
1	Louise Lokaka Konyola	4775287		0707339713	Signature
2	Elizabeth Harambwe	31340452		0704394259	(Signature)
3	Betrice Aina	26879335		070859817	
4	Ngath Ngala Kamnis	26879335		0724976419	
5	Joseph Natan Rongochi	26119742		0706027221	
6	Peter Ruvatan Kapetok	21093978		070371939	
7	Lokal Ngath	22036453		0712398572	
8	Peter Enzeto	31799569		018162372	
9	Peter Schwane	30927753		0727919420	
10	Eyeme Imoni	27530395		0711395972	
11	John Imuria	31328404			
12	Cleopatra Peter	26622875			
13	Simon Lutoo	22057200			
14	Elizabeth Konyola	30900841			
15	Paul Kalle				
16	Peter Laku	27652011			

NAME	ID	VILLAGE	CONTACTS	SIGN
MARGAET EKIRIMIET	3586326	Kalimungirook	0718499612	

11.8.3 List of Attendance –

The following is the List of Attendance for the Public Consultation Meeting for the Proposed Rehabilitation of Marich- Pass Lodwar Road Project held at Kalemng'orok Town, in Katilu Location of Turkana South District on 18th January 2015. 249 people registered as shown in Table 11-5.

Table 11-5: List of Attendance, Kalemng'orok Town, in Katilu Location on Sunday, 18th Jan. 2015

No.	Name	ID. No.	Village/ Organization	Institution/ Contact Address	Telephone No./
1	Diuren Peeto	20609951			0700301956
2	Cynthia Ekal Erupe	24300336			0701198246
3	Gladys Ereng	4764867			
4	John Lokol Erupe	24519601			0708518909
5	Martin Gitonga Kaburia	23375448			0712409862
6	Elizabeth Akai	26445082			0716811313
7	Julius Ekiru	30964273			07022600692
8	Elizabeth Napent Chegem	20743758			0707467689
9	Namuya Lokurono Nyangaluk	10987217			0715583389
10	William Ekai Longor	31458635			
11	Otingaluk Lokit Angale	1061848			
12	Moses Lokiyokori	12907410			0706082456
13	Rose Sagal	24300419			0729336773
14	Benson Nadiko Elimo	30009748	Kalemng'orok		0715581546
15	Daniel Achuka Ewalan	31357059			0729534674
16	Samwel Elar Marunda	26492550			
17	Daniel Eyanae Lobuin	9673520			
18	Joseph Loyelei	10124037			0710704229
19	Joseph Ngawaso	12908848			
20	Abdi Karim	26024010			0719467331
21	Simon Lokwang Korodi	4798195			
22	Jackson Losike Ekale	25871619			0700767308
23	John Lokhor Dome	10673471			0728385067
24	Peter Etool	20177922			0721146997
25	Lokitela Lotukoi	21466032			0721660063
26	Michael Ekitela	13425111			0718174659
27	Erukut Lotewony	25866248	Kalemng'orok		0708637462
28	Simon Lomadi	31415689	Kalemng'orok		
29	Kenedy Samal	20108583	Kalemng'orok		0716093882
30	Peter Ngitira	29454148	Kalemng'orok		0707193213
31	Jacob Elton	24519616	Kalemng'orok		0716482337
32	Isaac Erupe	27118802	Kalemng'orok		0706146821
33	John Ekai Areman	26716866	Kalemng'orok		0715465885
34	Susan Epundit	12873115	Kalemng'orok		0701394299

No.	Name	ID. No.	Village/ Organization	Institution/ Institution/	Telephone Contact	No./ Address
35	Susan Asunyen Ekai		Kalemng'orok			
36	Ekalale Maraka Ekal	7489470	Kalemng'orok			
37	James Lopai	12908943	Kalemng'orok			
38	Gabriel Lorat	12908616	Kalemng'orok			
39	Margaret Nadite	264779214	Kalemng'orok			
40	Atoot Kuwam Aupetukia	0144704	Narelup			
41	Lopuun Sangal		Narengelup			
42	James Lotadir		Kasorokoroa			
43	Mark Etabo	205546795	Nabeye			
44	Josephat Lotaan	12907442	Kapelo			
45	Edome Lokoel		Abobur			
46	Lorot Lowa		Kasurokorwo			
47	John Erupe		IDPS			
48	Erupe Lourien	4771496	Naro			
49	Mark Kaile	24300008	Kasurokorwo			
50	Jackson Emase		Aburur			
51	Ekitela Lochapan		Kaputir			
52	Erika Achilongor		IDPS			
53	Emase Emanyang					
54	Emeto Amaler					
55	EtukoiEboya					
56	Peter Lotui	21348372			0707603836	
57	Awoya Kooli Emongo Erengani	8592626				
58	Ewoton Aregae					
59	Lokidor Elor					
60	Ekalate Etapali	6581819				
61	John Mangalinyang	7274045			07044979187	
62	Erica Alengor	014351				
63	Moses Lowoi				0710678422	
64	Awoi Ester					
65	Ann Ayenae					
66	Robert Ekaran	31448728				
67	Raphael Kooli	9672346			0714791179	
68	Emonikor Kaais Belech	573337				
69	Erukudi A. Mark	31207805	Social Administrator Kalemng'orok Community		0707664723	
70	James Nanyuki Apao	339927	Contractor		07137664558	
71	Peter Lokwawi Imaa	28173505			0703607473	
72	John Layo	27123515			0700296368	
73	Purity Emase	32465039			0708566540	
74	Rael Emase	25119194			0717074806	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone Contact Address	No./ Address
75	Julius Ekiru	31524455		0708461586	
76	Lotelingi Lokol Lowas			0716129604	
77	Eunice Nafula Wahungu	293285530		0703821908	
78	Alice Nasiru Ekitela	24665042		0702711027	
79	Bensiter Eyapan		Narengelup	0707341497	
80	Namakat Lopukia	12908116	Kasurokorwo	0727306324	
81	Joshwa Erukudi	27126522	Kalobiro	0706197743	
82	John Merikirion	27126522	Ekiteles		
83	Nhiel Elimlim	12911709	IDPS	0719197407	
84	Peter Ekale	27557211	Kaputir		
85	Ekori Etoot		Aburur		
86	Selina Ekeno		Narengelup		
87	Philip Emase	20786031	IDPS		
88	Janefer Napeyok	27306786	Ekiteles	0714515450	
89	Dicksn Lokuruka	12907231	Kapelbok	0714244161	
90	Joseph Ekitanda	25239456	Juluk	0707631923	
91	Arupe Lobuun		Naporobei		
92	Achudi Longolan Echwa		Ichakun		
93	Ewoi Eyangon		Kaloburwo		
94	Lotodi Nadikio	8593440	Ichakun		
95	Akaal Lokoli		Nakabosan		
96	Michael Maruda		Kalemng'orok		
97	Kerio Emeri		Kaloburwo		
98	Lochadae Lokupok		Narengelup		
99	Mary Lorongoi Attt		Narengi		
100	Damaris Lotiyakar		Nabeye		
101	Abei Akaale		Narumrum		
102	Lokool Eipech		Narengelup		
103	Akuer Ekidor		Natoot		
104	Esther Karomwoe		Kapelo		
105	David Eremon		Ikoda	0707234546	
106	Elim Eliwo	3321540	Mwananchi	0711787154	
107	Aite Aripom		Apalima		
108	Gabriel Lorot	12908616	Narengelup	0714942305	
109	Gideon Elim	32326651	Nakwakitela	0708263907	
110	Ekadeli Alioko	4770804	Narengelup	0704433767	
111	Loyapan Lokalei		Narengelup	0754859780	
112	John Lowongorot		Lomokomol	0703337239	
113	Mary Loro	26157102	Kalemng'orok	0714839191	
114	Natinga Nalengo	13968717	Kalemng'orok		
115	Ekai Lobuin		Lorengelup		
116	Erupe Matauji		Lorengelup		

No.	Name	ID. No.	Village/ Organization	Institution/ Contact Address	Telephone No./
117	Rebecca Nawoi		Loirengelup		
118	Chumar Boaz Ekidor	29762457			0708952573
119	Charles Rokoli Eregae	4409337			0710920561
120	John Ereng	20812738			0708838393
121	Kotol ekai	20643714			0724998423
122	Lodunga Moses	9042607			0710567048
123	Ewoi Lokamar				0701209740
124	Joel Emase	6856798			0714515482
125	James Kapua	10124549			0707676814
126	Joseph Munyes	10987710			0701586412
127	Lorongoi Amater				
128	Henry Etabo	7169864	Assistant Chief		0727779621
129	William Ekidor	4774662			0726821781
130	Lomulen Lowar	4729276			
131	Joseph Lobei	14448890	Line Moja		0702711096
132	Joseph Kisike		Line nne		0702432419
133	Serah Asime	28311165	Kapelo		0708425200
134	Hellen Ekutan	24300348	Kapelo		0712037595
135	Gladys Lodung		Kapelo		0715513975
136	Rael Eteleng	31360174	Bethelam		0708433419
137	Catherine Lowasa	31360209	Bethelam		0716066146
138	Lomulen Lochakan		Kasurokorio		
139	Rebecca Arinyie		Kaloburo		
140	Josephine Apoo	4192380	Kapelo		0716023202
141	Anne Lochwa	10987223	Kapelo		070354679
142	Jane Ikweel				
143	Felex Amodoi Kupoya	23502045	Kalemng'orok		0711761312
144	Asinyen Moru	28596848	Narengelup		
145	David Lorot	20704673	Narengelup		
146	Ero Epakan	8597143	Narengelup		
147	Elizabeth Ekata	4798137	Narengelup		
148	Samson Nakuro	5956357	Bethelam		0717435095
149	Ekunoit Erika	4788952	Bethelam		
150	Loyokon E. Johnstone	27118832	Achukule		0716173282
151	James N. Asuron	6677916	IDP		0704906671
152	Marko Lokoel	21322500	Kapelo		0701282549
153	Peter Ekiru	27652011	IDP		0711395978
154	Philip Apunio	11512083	Nabeye		
155	Longorikiti Kakol	4799475	Echuchuka		
156	Samson Erupe	3240225			0706205371
157	Lobor Euloin Akiyapus	4800884			0714140130
158	James Ekutan	23685951			0707646287

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone Contact Address	No./ Address
159	Augustine Lokirie	24965361		0714205738	
160	Muya Charles	20167949		0700308250	
161	Achuka Chila	2110356		0721590783	
162	Dancan Amian	7030029			
163	Musa Ekai Enem	074160			
164	Lonyangapua Ewesio	3032			
165	Boniface Botol	22841913		0708206750	
166	Ewoi Peter	22801320		072536280	
167	Edung Ebei	4730103		0724444611	
168	Liwan Loupe Lokopu	4775287			
169	Miriam Kaile	4728370		0700404561	
170	Marx Longoli				
171	Sylvia Amurla	26711813			
172	Luka Eitol	23840243			
173	Lomulen Eleman				
174	Ekemo M. Johnstone	32522230		0717395797	
175	Sara Akuta	21230101		0704250323	
176	Hellen Akai	23855652		0714371111	
177	Jacob Alou	83433841		0716866001	
178	Yohana Ereng		Nakwakitela	0727571838	
179	Anna Lowoyatukoi				
180	Ngoroiko Lopai		Nakwakitela		
181	Martha Ebenyo	20644205	Nakwakitela	0728830833	
182	Elizabeth Eremon		IDP	0703645247	
183	Epae Napo Ekiru	4799383	IDP		
184	Esther Eregae lokeng	25233470	Ekiteles	0706423331	
185	Margaret Amana	27104344	Kaloburo	0718215504	
186	Felis Eoten	30009130	Kaloburo	0703645501	
187	Eyanae Longorimuk	30009440	Ekiteles	0706110272	
188	Josphat Ekunoit		Lokichalis	0717866116	
189	Ekai Nakarwun		Katilu		
190	Lopem Eipa		Katilu	0729676983	
191	Ekidor Lokupan		Ekiteles		
192	Abongon Atoot		Kaloburwo		
193	Mary Akohong	20978096	Kalemng'orok		
194	Sahara Ekonon		Kalemng'orok		
195	Mercy Logilae		Naruburwo		
196	Moses Emuria		Naro		
197	Esinyen Lokope		Naro		
198	Raphael Edan	12907612	Nakabosan		
199	Justus Lokot Losikiria		Kaloburwo		
200	Philip Emanyen	9528516	Ekiteles		

No.	Name	ID. No.	Village/ Organization	Institution/ Institution/	Telephone Contact	No./ Address
201	Emankor Kamais	5733537	Kalemng'orok			
202	Otingalopu Lokitangole	1061848	Kalemng'orok			
203	Ikone Achila		Ichakun			
204	Julus Dominic		Kaputir			
205	Ejuron Losekona		Katilu			
206	Lopeyok Lokwaut		Katilu			
207	Ekales Ewoi		Katilu			
208	Marita Esekun		Kaloburwo			
209	Benter Ajuma		Kaloburwo			
210	Elim Alolong		Aburur			
211	Imana Ekeno	23717214	Aburur			
212	Peelil A. Epeyo	24170919	Aburur			
213	Felma Namuruny		IDP			
214	Samuel Ekerete	32239569	Kaloburwo			
215	Salome Ewoton	25051681	Kaloburwo			0702307223
216	Marko E. Nakain	10125252	Adapal			0719611218
217	Namanja Lala	13648279	Narengelup			0703165618
218	Pauline Ekai		Narengelup			0707664695
219	John Ekomwa	23814139	Julur			
220	Jeremiah Lomonyang	4728267	Kapelo			0708518913
221	Lokonyoi Lonyalan	28451920	Kaloburwo			
222	John Ekirimet		IDP			
223	Miriam Namalwa		Aburur			
224	Dismas Lokure	8294729	Kaloburwo			
225	Lorot Losikiria		Kaloburwo			
226	Elis Epech	9528996	Nakwakitela			
227	Dickson Eipa	25119677	Aburur			0713932007
228	Eyanae Longormug		Kaloburwo			
229	Ekiru Akokoi	29373074	Nabeiye			
230	Nairobi Lonyangamuoe	26754250	Narengelup			0704995022
231	Consolata Ekidor	23665789	Kaloburwo			
232	Selina Amoni	13145491	Kaloburwo			0716271661
233	Loupe Lokoku Kangala	4775287				
234	Elizabeth Harambee					0707339713
235	Beatrice Ekira	31340452				
236	Noah Ngala Kamais	23877335				0701394299
237	Joseph Nayan Longech	25119742				
238	Peter Lokutan Lopeyok	21093978				0708598119
239	Lokai Isaac	32086453				
240	Pater Emeto	31799569				0724976419
241	Peter Echwaa	30009753				0706027221
242	Eyanae Emoni	27530375				0703911939

No.	Name	ID. No.	Village/ Organization	Institution/ Institution/	Telephone Contact Address	No./
243	John Emuria	30318404			0712398572	
244	Cephalenga Peter	26632895				
245	Simon Estoo	28057200			0718162378	
246	Ebenyo Longole	30900841			0727818420	
247	Paul Kaile				0711395978	
248	Petere Ekiru	27652011				
249	Margaret Ekirimet	8586326	Kalemng'orok		0718499612	

11.8.4 Photographs of the Meeting



Plate 11-33: Registration of Attendees



Plate 11-34: Refreshments



Plate 11-35: The Assistant Chief participating



Plate 11-36: Project presentation & translation



Plate 11-37: Meeting under the trees



Plate 11-38: Listening actively



Plate 11-39: question time



Plate 11-40: Views and comments

11.9 LOCHWAANG'KAMATAK VILLAGE IN LOCHWAANG'KAMATAK LOCATION ON MONDAY 19-1-2015 AT 11.00 AM

11.9.1 Minutes of Meeting

The Lochwaang'kamatak Location Chief is Yohana Ekitela. The Deputy County Commissioner for Turkana South County is Mr. Elijah Kodoh.

Minutes of Environmental and Social Impact Assessment Public Consultation and Disclosure Meeting held on 19th January 2015 at the grounds next to Lochwaang'kamatak Location Chief's compound, on the roadside of A1 road, by the lagha.

1. GENERAL

The meeting started at 11:45 am with a word of prayer by Pastor *Elaal Esinyan Andrew*.

2. INTRODUCTION

The Assistant Chief Kalemng'orok Sub-Location, Mr. Henry Ezabo, welcomed all present and introduced the Environmental Impact Assessment Team comprising Eng. Dr. Oonge, Nancy Mukui and Timothy Koome.

In his introduction, the Environmental Expert, (Dr. Oonge) explained that development of roads in the country is mandated to Kenya National Highways Authority (KeNHA) for Class A, B & C roads, Kenya Urban Roads Authority (KURA) for town roads and Kenya Rural Roads Authority (KeRRA) for rural roads comprising of Class D and E Roads. He explained that the Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road is part of the Northern Corridor Roads

in an effort to improve access to Nadapal and South Sudan - the Northern Corridor links the Kenyan Port of Mombasa on the Indian Ocean to landlocked East African countries. He explained that the agenda of the meeting was to inform all stakeholders and community members present of the intended construction and explain the design components so that the stakeholders would give feedback on their views for implementation. He urged all to follow the presentation keenly and inquire on all issues that were not clear or that needed discussion.

3. THE PRESENTATION S

1. Comments by the Katilu Location Chief Mr. Yohana Ekitela.

The Lochwaang'kamatak Location Chief, Mr. Yohana Ekitela introduced the Agenda of the day. He expressed gratitude to the Government and the World Bank for dedicating funds towards the long due rehabilitation of this A1 road.

He stated that the poor status of the existing A1 road has impoverished the region e.g. a livestock herder who would want to sell his livestock in Kitale cannot. But with a good road, this trader will sell his livestock and even afford to invest in a vehicle to do more business.

On employment, he stated that the Lochwaang'kamatak people are schooled enough to find gainful employment, even to college and university levels. He explained that his prayer is for increased opportunities for the people to work and that they seek priority for such college trained persons, when such employment comes so that these people would be able to look after other members of their families well, even take them to school. He also pleaded that such people be remunerated commensurate to their skill level.

He explained that there is rock, sand and murram in the area, suitable for road construction and opportunity to sell such to the Contractor would highly benefit the Turkana.

He explained that the stakeholders understood the extent of the road reserve to be acquired as the surveyor had established beacons accordingly. He explained that those affected already knew so and had been requested to bring out their allotment letters and join the RAP committees. This will help in rapid analysis of the assets affected.

He decried the poor state of security at the border between the Turkana and the Pokot. He explained that travellers are frequently attacked at the Kainuk- Kalemng'orok stretch. He expressed anxiety that such banditry and internal security threats affecting motorists will affect progress of construction work and said that this highlight of issues was in the hope that the government would "hear" and do something about it.

He concluded by stating that they have waited for this road for far so long and their faith was starting to falter. He asked that so many groups had promised that this road would be done, but when?

He requested all stakeholders to carefully listen to the proceedings and at the end of it, ask questions in an orderly fashion.

2. Presentation by the Environment Lead Expert, Eng. Dr. Oonge

The Environmental Expert, (Dr. Oonge) took the opportunity to appreciate all present and explained the purpose of the meeting. He explained that the A1 road was the first road to be named in the

country traversing from the south most part of the country at Isebania, to the North most part at Nadapal.

He explained that such consultations and disclosure had been carried out in June 2012 and that the day's meeting would mainly address the issues of likely impacts of the road on the bio-physical and social environment as well as the impacts of the environment on the road improvement and hopefully gain community 'buy-in' to the project.

He said the purpose of the meeting was to inform the community on aspects of proposed road development and of the expected project impacts, give the stakeholders opportunity and a forum to participate and ask questions, and air their views and suggestions.

He explained that the section of road covered under lot 2 would be split into two contracts; Marich Pass – Lokichar, Lokichar – Lodwar with a width of 60m road reserve and that all assets within the road reserve would be affected.

He quoted and explained the various national laws, policy framework, World Bank Safeguard Policies and regulations that govern Environmental and Social Impact Assessment and such public consultation meetings. The Environmental Management and Co-ordination Act that requires an Environmental Impact assessment Study be carried out and that such a meeting to be held in order to involve all stakeholders and Project-Affected-Persons. He highlighted the role of public consultation and disclosure in an infrastructure project as well as the need for active participation from members of the public whose natural habitat, physical, cultural and others resources may be affected.

He presented the baseline data and explained that his presentation was formulated based on what was found on the ground during environmental and social survey. He explained that a 60 m wide road reserve is required. He explained that the intended width of the carriageway was approximately 15m to accommodate a 3.5 m wide lane, 1.5 m wide shoulders, and a drainage ditch on either side of the carriageway. He explained that the rest of the road reserve is acquired for future expansion in light of recently discovered potential for oil and other associated developments.

He explained that material for road construction such as sand, ballast, hard stone and water would be locally sourced and borrow sites established along the road. He also explained that, due to the pastoral nature of the people, livestock crossing points would be necessary, in order to avoid vehicle-livestock interactions.

The consultant explained the environmental and social impacts expected. For each stage he explained the impacts so far envisaged and proposed mitigation measures including the responsibility for implementing such mitigation. He explained that the adverse impacts as a result of proposed rehabilitation would be explained under four broad categories namely:

- Planning (current stage) - He made it clear that at the planning phase, a significant impact would be the direct land take of privately owned land as a result of road re-alignment occasioning relocation of mainly business premises. He explained that all affected assets have been identified and will be compensated according to the RAP carried out.
- Construction – He explained that there would be vegetation clearance to pave way for the construction, dust and noise generated during earthworks and from various other work sites like asphalt mixing plant and the hard stone crusher site, opening up of borrow areas that would scar the landscape and pose falling risk

for livestock. He explained that mitigation for these was provided in the ESMP including water spraying for dust, regulated working hours for noise and use of PPE for construction workers.

- Operation - He also explained that there would be increased vehicle-human – livestock-interactions during the operation stage with more traffic at high speed and that this would cause collisions likely to result in fatalities or injuries. He explained that once opened up, the road would be a conduit for many business and travel opportunities in less time and improved comfort.
- Closure – he explained that the road was not likely to be decommissioned at the expiry of the design life but rather certain component would be restored back to pre-development status such as opened up borrow areas and project management offices.

He explained that the positive impacts (benefits) of the planned rehabilitation include the following among others-

- Decreased journey times
- Decreased cost of travel and transportation of commodities
- Hasten response to security or drought emergencies, more frequent in the area
- Direct employment of young people to the construction labour
- Ripple economic benefit from trade and commerce such as increased production of goods and services e.g. livestock inputs, access to better healthcare
- End isolation and remoteness in the area occasioned by poor access
- Boost national and international trade

Details and summary of the presentation are as per attached in Section 11.2

4. THE DISCUSSIONS

A question and answer session followed.

The Consultant invited the members present to air their views and ask questions and explained that owing to the high number of participants and the likelihood that same question might be repeated, five questions would be invited and answered in every run.

- Q1 Mr. Sammy Lewaton, a youth from Lochwaa town sought to know that, his plot is next to the road, in the event that the road is widened and his house affected, where would he and his family go to? He also sought an explanation as to why recruitment for labour is carried out at night and wanted assurance that this time round, it would not happen same way.*
- Q2 Petro Enege, also a youth from Lochwaa commented that, while they have no objection to the rehabilitation of the road, the 60m wide road reserve would affect a borehole constructed for watering their livestock, just at a location near Lochwaa village. He explained that there was a likelihood of this borehole being collapsed as a result of excessive vibrations from construction plant. He explained that camels drink from this spring even at night. He wondered how such a great loss would be averted. He also observed that, while the destruction of trees on the corridor would be minimal, was there an environmental program in place to replace the destroyed trees?*
- Q3 Ekadeli Epungure Emase, an elder from Kanyungimoe sought to know if he'd be compensated of a ballast and murrum borrow area, if these were to be extracted from his farm. He explained that there are also trees there, which he would desire were*

spared as he uses them to feed the goats. He asked what would happen if his spring were to be covered in a spoil heap, would he be compensated?

Q4 Maria , Namoni Ingolan, a lady, commented that since they all live in villages by the road side, they'll know when construction commences. She therefore suggested that they stay ready to negotiate with the government then on the best way forward, on all issues relating to the intended construction. She added that, as Kenyans, the government of Kenya will be doing the road for them and therefore issues arising should have an amicable solution as they arise.

Q5 Area Chief, Mr. Yohana Ekitela. - how will the labour recruitment be carried out, how can it be ensured that the remunerations will be fair? Will the Contractor provide security during construction operations?

A (1) The Lead Environmental Expert explained that affected structures were already crossed "X" and therefore a person was in a position to know if their property was affected. He also explained that the concerns for labour recruitment were noted and hoped that it would not happen during the intended rehabilitation

A (2) The Lead Environmental Expert explained that from the area chief's explanation, it did appear that the borehole was unaffected. However, in the unlikely event that it will be affected by vibrations or other, it will be due for compensation, most preferably in kind, under the RAP carried out. The Consultant scheduled to visit the location after the meeting. Concerning a replanting program for affected trees, the Consultant explained that since these will be within the reserve mainly, a replanting program may not be necessary and the trees will be allowed time to re-grow by themselves.

A (3) The Lead Environmental Expert recommended that any person wishing to sell road construction materials for mining by the contractor ought to bring the contractor to the site initially for an assessment, upon which then he can enter into a written mining contract, stipulating conditions and terms of the extraction, remediation and closure measures. In cases where the owner of a material extraction site is not identified, the land will be deemed to be owned by the Turkana county Government.

A (4) The Lead Environmental Expert agreed with the comments given.

A (5) The Lead Environmental Expert explained that recruitment will be done according to the prevailing labour laws and that the remuneration will be that universally paid all workers of equal cadre. He explained that in some places e.g. in Kitui, only women are available to work at construction sites. He therefore explained that all women willing to work on the road construction should by no means be denied the opportunity if available. On the security status, the Contractor will be well briefed and besides, he'll make his own assessment once here. These concerns will be put down in the Updated ESIA for action and information.

Q6 Mr. Samuel Ekadeli – Sought a clarification, saying that he understood that bridges and box culverts would be installed only at laghas. He therefore wondered what livestock crossing mechanisms would be provided in areas devoid of laghas?

Q7 Nyilmolokope Ekale Egron sought to understand what would happen with all thye opened up borrow areas and improved speed and traffic, goats, camels and donkeys which walk unaccompanied, what would happen?

Q8 Pastor Elaal Esinyan Andrew commented that vehicles will be at high speed during operation, yet they live on either side of the road and therefore animals keep crossing the road many times over and over for drinking water. Little children sometimes look after the animals and may similarly jump onto the road without afore-thought. What happens, will there be compensation?

Q9 Silvester Elegayi Logiala, from Kabrae village, enquired, that for the plots marked "X" there are people who have allocation letters but have not built on the plots. He wondered if there will there be notice to demolish for those whose structures are marked.

-
- Q10 Mr. Joseph Kole from Jolok explained that the camel walks at night all the time. He was therefore concerned that exposed borrow pits would pose risk of the camels falling in and wanted to know what will be done about it.*
- A (6) Lead Environmental Expert explained that there are too many laghas on this road with more than 10 bridges designed and more than 100 box culvert crossings. These numbers were more and closely spaced towards the approaches to Lodwar, where Loturerei is located. However, he explained that effort will not be spared to install one or two more box culverts to accommodate the crossings where sufficient reason prevailed.
- A (9) Lead Environmental Expert explained that all building structures marked “X” would be demolished. He explained that the contractor is not the one who pays out compensation but rather the government through the Ministry of Lands, and any authentication of ownership is verified through the local administration of county government, chiefs, assistant chiefs and village elders. He however explained that if they wait for demolition by the contractor, they may not be in a position to salvage some of the salvageable materials.
- A (10) Lead Environmental Expert explained that there will be need to put up people to trail the camels at night when road rehabilitation work commences and during operation, for safety purposes. He posed the question that, “when you leave the camel to wander around alone and they get knocked dead by heavy trucks at night, where would you get the truck from?” He reiterated the case study along Waiyaki way which gave rise to the requirement that the livestock owner cannot be compensated if his livestock are involved in an accident with vehicles on the highway. He explained that in such circumstances, it would be difficult to tell if or not the animal had been deliberately pushed on to the road by criminals. He therefore explained that there would be no compensation for livestock falls into borrow pits.

5. THE RESOLUTION

The recommendations arrived at was that all present were in favour of seeing the speedy commencement of the rehabilitation work on the A1 road.

6. AOB

The public consultation meeting ended and stakeholders left at their leisure.

7. CLOSING PRAYER

The meeting ended at 1.50 pm with a word of prayer by the Pastor.

11.9.2 List of Attendance – Scanned Copies

PUBLIC CONSULTATION MEETING:		LIST OF ATTENDANCE			
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: LOCHAANG'IKAMATAK		DISTRICT: TURKANA SOUTH:	
AT LOCHAANG'IKAMATAK		VENUE:		DATE:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	LODINYANDU EPINGA	4765446	LOCHWAA	63 LODWAR	
	EWOTON LOKUPE AKUREYANG	4770939	"	63 LODWAR	
	EKARANAN LOKUCHA MARAKA	29016100	"	63 LODWAR	
	ETITOM LOKANE LOKALEI		LOCHWAA	63 LODWAR	
	NAKUATA INGOLAN		LOCHWAA	63 LODWAR	
	LOPETET LOKUCHA		LOCHWAA	63 LODWAR	
	EPETET EWDI	4765855	LOCHWAA	63 LODWAR	
	MARY ASINYEN CHARLES	0144165	LOCHWAA	63 LODWAR	
	ETETE MORU AKUREYANG	8592561	LOCHWAA	63 LODWAR	
	M-RENG NAWOCE TOPOL	12911675	LOCHWAA	" "	
	EYANAE EKOTE ETENMAN	7870806	LOCHWAA		
	E-LAAR EKINTEN	21320190			<i>[Signature]</i>
	LOIBACH LOKWAGO	27565790	0723812722 LOCHWAA	63 LODWAR	<i>[Signature]</i>

PUBLIC CONSULTATION MEETING:		LIST OF ATTENDANCE			
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: LOCHAANG'IKAMATAK		DISTRICT: TURKANA SOUTH:	
AT LOCHAANG'IKAMATAK		VENUE:		DATE:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	SWICE AKAMAS LOROT	21175452	LOCHWAA	0720565653 63 LODWAR	<i>[Signature]</i>
	PHILIP ETABO LOCHOI	8592557	LOCHWAA	0720627414	<i>[Signature]</i>
	ESTHER AWWANGER LOKAI	21264658	LOCHWAA		
	LOVAI LOKALEI ENANMAN	8738287	LOCHWAA		
	GRIFFIN LOKOR	21171283	LOLUPE	0700067293	<i>[Signature]</i>
	MYANAE LOKIMO	24161666	LOCHWAA		
	EKARAN NACHOO		KARORE		
	TEREZA ASUKURU		LOCHWAA		
	ERUKUDI LOCHODO		JULUK		
	LOGERANI ERUKUDI		JULUK		
	APATIO ETERI		JULUK		
	AWODIT ACHIKE	8593740	LOCHWAA		
	EKUNAM EKENO	11513798	LOCHWAA		
	LOKAMAR LONGORI	10127107	LOCHWAA		

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT LOCHAANG'IKAMATAK LOCATION: LOCHAANG'IKAMATAK DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	ALICE LOROT		KAROGGE		
	DAMARIS AKIRU		KAROGGE		
	NAMONI INGELAN	4765639	LOCHWAR		
	AM LONGOR EKUWAM	29255016	EKALALE REGION		
	AKALAPATAN ETANAE		KANASVAT		
	AYANAE LOPERITO		KANASVAT		
	NAUT NACHOO		KANASVAT		
	NAKORL LOARICHO		KANASVAT		
	EKUREU ROTAL R. NYE	24837730	LOCHWAR		
	ETETE MORU AKURENANG	8592561	LOCHWAR		
	ABONG LOCHOO KAFUA	8596566	KAROGGE		
	EDULON NOKAM LOKWANI	3012472	KAROGGE		
	AKAHARI LOKOGE	7070054	LOCHWAR		

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE

PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT LOCHAANG'IKAMATAK LOCATION: LOCHAANG'IKAMATAK DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
14	KAKALE LOWOS EDUKON	24703701	TOWN		
15	LOCHELER LOKURUKA		JULUK		
16	SELINA IMONI AKOROT	24112730	TOWN		
17	PAULINE MORU		TOWN	0718194036	
18	ILUKWEL MOITAN		LORENG		
19	KOKI EKALALE		LORENG		
20	LONGOR ATOKON		KAROGGE		
21	LOSOR EKABELI	9673595	NAKITOKOROR		
22	NICHOLAS EREGAE KEBO	24073472	TOWN		
23	KIIR ESEKON LOWOIO	26409746	LOLUPE		
24	LOPERIO NACHOO		KAROGGE		
25	AKALAPATAN EITON	2925371	NAKITOKOROR		
26	AMOLONA EKORIMOJONG	21452476	TOWN		

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: LOCHAANG'IKAMATAK		DISTRICT: TURKANA SOUTH:	
AT LOCHAANG'IKAMATAK		VENUE:		DATE:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	MICHAEL EKAI	21259800	TOWN	0712792498	<i>[Signature]</i>
2	KOONO NATABA LOKODA	25039359	LOLUPE		
3	JOHN EKOTAN ETORON	10125398	LOLUPE		
4	AKUTA INGOLAN LOCHIPO	8592902	LOLUPE		
5	SAMUEL AKURE LOBELES	4897662	LOLUPE	0710959167	
6	LEHAKAN LONA	24112679	EKALALE-EGIRON		
7	LONGLIO ACHARAR LODHARAK	4770442	KAROGYE		
8	NAKIKITO LOPESE TERU	32465049	KABURA		
9	EKAMAS EITON JALINAA		NAKIKITO-KOONOK		
10	NAIMANIMANIA LOCHELE		TOWN		
11	ARWAE JASON		KAROGYE		
12	JOSEPH KOLE	10124599	KANYUNGIMOE	0724808305	
13	EKAL MUTHIE	24371526		0718127316	

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE					
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: LOCHAANG'IKAMATAK		DISTRICT: TURKANA SOUTH:	
AT LOCHAANG'IKAMATAK		VENUE:		DATE:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	SELINA NAROT	4763317	LOCHWAA		
	PRISCILLA LOKOPS	12434265	LOCHWAA		
	LOCHOBDO KRUKUMI	31809374	NAKIKITOKOONOK		
	EKIRII LONKELAN		"		
	JOSEPHINE AMURIA	12907415	LOCHWAA		
	PIRAE KISIKE		NAKIKITOKOONOK		
	EDAPAL EMANMAN	32122634	LOCHWAA		
	LOKURU LONGOLI	25037432	LOCHWAA		
	LODUPUR KRUMU	21216098	LOCHWAA		
	IRENEWATH LONGOLI	24295879	LOCHWAA		
	JACENTA ACHARAR EITEN	31810525	LOCHWAA		
	A700T ACHARAR	10122139	LOCHWAA		
	EDUNGA AKENO	4770357	KAROGYE		
	LOBUIN AKANAPUDAN				

PUBLIC CONSULTATION MEETING:		LIST OF ATTENDANCE			
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: LOCHAANG'IKAMATAK		DISTRICT: TURKANA SOUTH:	
AT LOCHAANG'IKAMATAK		VENUE:		DATE:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
27	NAMVENI LOKAPEL LOKOH	4798435	TOWN		
28	EPEJETI ASIKUN		TOWN		
29	SAMMY LOWO TOWN		TOWN		
30	CHARLES EKATAPAN	24321697	TOWN		
31	EPEKETI EKADELI	7070053	LOKALE-ENGIROK		
32	EKIRU ADAPAL ABOI	25909929	TOWN		
33	HELEN LEMUTA NACHO	24112737	TOWN		
34	NAPUSIA AEMUN	8	TOWN		
35	LOTINA LOKURUKA	8599272	LORENG		
36	NAGULKI NAIPEYOK		JULUK		
37	ALBERT EKIRU	25039379	TOWN	0702857371	
38	JOHN EKIRU LWALAN		TOWN	0712037852	
39	TIDRO ASEKON EKAL	24108135	TOWN		

PUBLIC CONSULTATION MEETING:		LIST OF ATTENDANCE			
PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LOCATION: LOCHAANG'IKAMATAK		DISTRICT: TURKANA SOUTH:	
AT LOCHAANG'IKAMATAK		VENUE:		DATE:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	DAVID EKADELI WARELE	726126	KABURA		
	LOKURICHANA LOKIMO	38093020	JULUK		
	EKADELI EPUNKURE	12908160	KANYUNGI MOE		
	NGILIMO LOKOPE CHIEF		EKALE-ENGIROK	0704529265	
	YOHANA KWITELA CHIEF	1056574	LOCHWAA LOCATION		
	MARY AMONI CHIEF	21835922	LOCHWAA S/LOC	0723417035	
	AKUADN LOKOPE		LOCHWAA		
	AYOKON ACHAKAR		KAROGI		
	AKONO NAKORO	10122150	EKALE-ENGIROK		
	MOSES LOKIMO	8664000	KANYUNGI MOE		
	ADORO ACHAKAR	24077685	NGAIK, TOKOONOK		
	EKERERU JOHN		LOCHWAA		
	NGIKAM LOKWAWI		NAPUSIMORU		

7

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT LOCHAANG'IKAMATAK LOCATION: LOCHAANG'IKAMATAK DISTRICT: TURKANA SOUTH:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	IRKIRU EKALALE	24814529	NGAKI TOKONOK		
	KSIKE LOJONGORIA		NGAKI TOKONOK		
	NAKWEI NITMANKO		JULUK		
	LOGEL TURKOD		NAGETETI		
	AYEN LINGANYANLA		NGAKI TOKONOK		
	ONE AYEN		NGAKI TOKONOK		
	CHORO KWOT		EKALALE EGIRON		
	NACHOD APUSKOU		LOLUPE		
	LOGEL LODILO		KAROGGE		
	EYANDGE KPEYONON		KAROGGE		
	SEMINA KUTAN		KAROGGE		
	IRINE EREGAE		KAROGGE		
	NANCY ATOTI		KAROGGE		

NO.	NAME	ID NO.	Village	Telephone	Signature
	EWAMBA IKARU	12 908 - 31	LOCHWAA		
	JOSPHINE EKENO	27 71 37 70	LOCHWAA		
	IKARU NAPIYO	21 39 68 04	LOCHWAA		
	MUYA ENGERENY	85 97 27 0	LOCHWAA		
	A GERON LOPOYO	85 93 63 1	LOCHWAA		
	LOKUCHA LOPYO	24 07 78 47	LOCHWAA		
	NACHUDI NAATAN	48 00 48 6	LOCHWAA		
	LOKAYO AKENO	24 84 63 32	LOCHWAA		
	LOOCHI EWEESIT	24 39 90 36	KANADJUA7		
	EYANDE LOCHFORD	47 70 80 3	KAROGGE		
	ARUPE EPEETE	47 74 12 5	KABURA		
	MOIT AHING'A	47 70 74 0	KABURA		
	LORUKIA AYOKON	24 35 46 57	KAROGGE		
	CICILIA AKAI	24 57 21 93	LOCHWAA		
	AYOKON TORUKIA	24 35 46 57	LOCHWAA		
	AMOJONGE EIYEN	12 90 82 15	LOCHWAA		
	AKIDOR LOHAMIA	85 93 12 0	LOCHWAA		
	ANAMLEM ESEKON	10 12 21 07	LOCHWAA		
	GELADTS ANYUMUK	28 17 27 53	KAROGGE		
	Egialan Longa wa	47 64 63 7	KANYUN ENOE.		
	Etanee Nauda	21 41 37 74	Ngakutokeonok		
	Achakar A-lob	29 61 49 9 8	Juluic		
	Ewoton Nasi KE	85 92 60 8	Ngakutokeonok		
	Kwobai D. W. T. ...		Kabura		

No	Name	ID NO.	Village	Telephone	Signature
1	LOTIR LOKARON	212045	Ngakitokoonok		
2	AKWAM ACHAL	4765104	Ngakitokoonok		
3	EBEI ACHAKAR LOPACHABOK	4970059	Ngakitokoonok		
4	ANAM ACHAAN	21316734	Ngakitokoonok		
5	SEREQAE EKWANG	21196209	Ngakitokoonok		
6	LOKURUKUNYOK LOKARON	21319142	Ngakitokoonok		
7	LONOLIO ACHAKAR	4770442	KAROGÉ		
8	ENIPONO EKALALE	21193631	EKALALE - EGARD		
9	EMICABETH KERIO	12434215	KAROGÉ		
10	LOMULEN LOKUNI	8589869	Ngakitokoonok		
11	JAMES NABOR	13648596	JULUK		
12	JOSEPH EKIRU	8587261	LOLUPE		
13	ISANE EPUR	26337885	JULUK		
14	DAVID NGURUKO EJAPAN	04616386	JULUK		
15	AKARAN EDAPAL	8562530	EKALALE - EGARD		
16	ALICE ASERON	27846950	LOLUPE		
17	LOKAPLE EKOROT	8589271	LOLUPE		
18	JULIUS EKADELI KULA	4762759	LOCHWAA		
19	CHEREM NGIMEKUA	4765078	LOCHWAA		
20	ABENYO LOTIALO NAPERON	4788621	LOCHWAA		
21	PHILIP LONERON EKIMANGORON	31918139	JULUK		
22	ADUWEL LORENCE	4728498	KABURA		
23	IKIMAT EYANAL NACHOO	24852678	KABURA		
24	ANDI LOTIKAPET LOTUK	8593437	LOCHWAA		
25	EMURIA NAKULEU KAPELO	9528524	LORENCE		

NO.	NAME	ID. No.	Village	Telephone	Signature
40	REBECCA EYANAE	24034347	TOWN	0704124512	
	JACKSON EKWEE		TOWN		
	JUBBY EYANAE		TOWN		
	ETIIR LOKUCHA		KAROGIE		
	LOKOL EKARAN	4765595	KAICHUPALUP	070025291	
	ADETET LOTWEL		KAROGIE		
	MARY NAPEYOK	4209233	LORENG	0702256628	
	LOKWANG ESIN NGASIKE	4770700	LORENG		
	PHILIP LONEKON	31918139	LORENG		
	MATEI OME LOBUNGA	12434246	LORENG		
	LORIKIN NAMURAI EKUTUI	4770367	LORENG		
	MARIAMAO LOKURUKA LOARICHO	12909235	KABURA		
	NARALEI LOMULEN	24076933	KABURA		
	LOTUKOI CHUMCHUM	26475246	TOWN		
	LOMULEN LOKUCHA	24077238	TOWN		

11.9.3 List of Attendance –

The following is the List of Attendance for the Public Consultation Meeting for the Proposed Rehabilitation of Marich- Pass Lodwar Road Project held at Lochwaang'kamatak Village, in Lochwaang'kamatak Location of Turkana South District on 19th January 2015. 220 people registered as shown in Table 11-6.

Table 11-6: List of Attendance, Lochwaang'kamatak Town, in Lochwaang'kamatak Location on Monday, 19th Jan. 2015

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
1	David Ekadeli Lochele	726126	Kabura	
2	Lourichana Lolimo	38093020	Juluk	
3	Ekadeli Epungure	12908160	Kanyungimoe	
4	Ngilimo Lokope		Ekale-Egiron	704529265
5	Yohana Ekitela	1056574	Lochwaa Location	
6	Mary Amoni	21835922	Lochwaa Sub Location	723417035
7	Akuron Lokope		Lochwaa	
8	Ayokon Achakar		Karoge	
9	Akono Nakoro	10122150	Ekale-Egiron	
10	Moses Lolimo	8664000	Kanyungimoe	
11	Adorio Achakar	24077685	Ngakitokoonok	
12	Ekereru John		Lochwaa	
13	Ngikam Lokwawi		Napusimoru	
14	John K. Musasia	4732117	National Reg Bureo	724064611
15	Ekiru Ekaale	24814529	Ngakitokoonok	
16	Kasike Lotodongoria		Ngakitokoonok	
17	Nakwei Ngimaniko		Juluk	
18	Logel Tukoo		Nagetei	
19	Ayen Linganyana		Ngakitokoonok	
20	Ome Ayen		Ngakitokoonok	
21	Chodo Ewoi		Ekale-Egiron	
22	Nachoo Apuskoi		Lolupe	
23	Logei Loolio		Karoge	
24	Eyanae Epeyonon		Karoge	
25	Selina Kutan		Karoge	
26	Irine Eregae		Karoge	
27	Nancy Atoot		Karoge	
28	Eunice Akamais Lorot	21175452	Lochwaa	
29	Philip Etabo Lochoi	8592557	Lochwaa	
30	Esther Akwanger Lokai	21264688	Lochwaa	
31	Lokai Lokalei Emaniman	8738287	Lochwaa	
32	Griffin Lokor	21171283	Lolupe	
33	Iyanae Lolimo	24161666	Lochwaa	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
34	Ekaran Nachoo		Karoge	
35	Tereza Asukuku		Lochwaa	
36	Erukudi Lochodo		Juluk	
37	Logelan Erukudi		Juluk	
38	Apatio Ebei		Juluk	
39	Awosit Achike	8593740	Lochwaa	
40	Ekuwam Ekeno	11513798	Lochwaa	
41	Lokamar Longori	10122152	Lochwaa	
42	Alice Lorot		Karoge	
43	Damaris Akiru		Karoge	
44	Namoni Ingolan	4765639	Lochwaa	
45	Longor Ekuwam	29255016	Ekale-Egiron	
46	Akalapatan Etanae		Kanasuat	
47	Ayanae Loperito		Kanasuat	
48	Naut Nachoo		Kanasuat	
49	Nakoel Loarichu		Kanasuat	
50	Ekuleu Edapal Esinye	24837730	Lochwaa	
51	Etete Moru Akurenyang	8592561	Lochwaa	
52	Adong Lochodo Kapua	8596566	Karoge	
53	Ebulon Ngikam Lokwawi	32122472	Karoge	
54	Akalale Lokope	7070054	Lochwaa	
55	Kalale Lowos Edukon	24703701	Town	
56	Locheler Lokuruka		Juluk	
57	Selina Imoni Akorot	24112730	Town	
58	Pauline Moru		Town	
59	Ilukwel Moitan		Loreng	
60	Kooli Ekalale		Loreng	
61	Longor Ayokon		Karoge	
62	Losidok Ekadeli	9673595	Ngakitokoonok	
63	Nicholas Eregae Kebo	28073472	Town	
64	Etiir Esekun Lowoto	26409746	Lolupe	
65	Loperito Nachoo		Karoge	
66	Akalapatan Eiton	29253071	Ngakitokoonok	
67	Amojong Ekorimojong	21452870	Town	
68	Michael Ekai	21259800	Town	712792498
69	Koono Nataba Lokoda	25039359	Lolupe	
70	John Ekoyan Eyoron	10125388	Lolupe	
71	Akuta Ingolan Lochipo	8592902	Lolupe	
72	Samuel Akure Lobeles	4897662	Lolupe	710959167
73	Echakan Lowa	24112679	Ekale-Egiron	
74	Lonolio Achakar Lopachabok	4770442	Karoge	
75	Nakokiyo Lopesa Teru	32465049	Kabura	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
76	Ekamais Eiton Jalinga		Ngakitokoonok	
77	Ngimaniania Lochele		Town	
78	Arwae Jason		Karoge	
79	Joseph Kole	10124599	Kaanyungimoe	724808305
80	Ekal Muthee	24371828		718127316
81	Selina Narot	4763317	Lochwaa	
82	Priscilla Lokope	12434265	Lochwaa	
83	Ekirii Longelan		Ngakitokoonok	
84	Josephina Amuria	12907115	Lochwaa	
85	Pirae Kisike		Ngakitokoonok	
86	Lokiru Longori	25037432	Lochwaa	
87	Lodupur Eruumu	21216098	Lochwaa	
88	Jeremiah Longori	24295879	Lochwaa	
89	Jacenta Achakar Eiyen	31810525	Lochwaa	
90	Atoot Achakar	10122139	Lochwaa	
91	Edung Akeno	4770357	Karoge	
92	Lobuin Akanyapudan	32112166	Juluk	
93	Edapal Emmaman	32122634	Lochwaa	
94	Lochodo Erukudi	31809374	Ngakitokoonok	
95	Namueni Lokapel Lokoli	47998435	Town	
96	Epetet Asilun		Town	
97	Sammy Lowoton		Town	
98	Charles Ekatanan	24321697	Town	
99	Epetet Ekadeli	7070053	Lokale-Egiron	
100	Ekiru Adapal Abot	25707929	Town	
101	Hellen Lemuya Machoo	24112737	Town	
102	Ngipusia Aemun		Town	
103	Lotiya Lokuruka	8589272	Loreng	
104	Nagulei Ngipeyok		Juluk	
105	Albert Ekiru	25039379	Town	
106	John Ekiru Lowalan		Town	
107	Tioko Asekow Ekal	24108135	Town	
108	Kamaret Lolim Nakuwa	32086156	Kaikol	
109	Illikwel Ekidor Apalo	28312129	Lobur-Aregan	
110	Lorukia Namuth Lokale	4774877	Kekoroe-Akwaan	
111	Selina Lokwawi Emeiwi	30036959	Kimiirik	
112	Akeru Lokale Ngiro	29769358	Lobur-Aregan	
113	Ewoi Eyawae Chumchum	20949349	Kasuroi	
114	Sarah Amodoi Liwan	24849458	Narionnomore	
115	Lokoriyeu Lorukwaa	30055365	Kimiirik	
116	Eregae Lokusi Ekitela	26351369	Kapoo	
117	Aporon Lokaale Ngiro	8596392	Kaikoi	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
118	Asinyen Eiton Lodipon	8593136	Kekoroe-Akwaan	
119	Asinyen Esuron Lokwasaposi	30030395	Kimiirik	
120	Arukoi Nakua Lomeleni	1936070	Kaikoi	
121	Losinyono Epong	4765446	Lochwaa	63 lodwar
122	Ewoton Lokupe Akureyan	4770939	Lochwaa	63 lodwar
123	Ekaraan Lokucha Maraka	29016100	Lochwaa	63 lodwar
124	Etitom Lokalei		Lochwaa	63 lodwar
125	Lopetet Lokucha		Lochwaa	63 lodwar
126	Epetet Ewoi	4765855	Lochwaa	63 lodwar
127	Mary Asinyen Charles	144165	Lochwaa	63 lodwar
128	Etete Moru Akurenyang	8592561	Lochwaa	63 lodwar
129	Areng Nakoel Topos	12911675	Lochwaa	63 lodwar
130	Eyawae Ekote Etengaw	7870806	Lochwaa	
131	Elaar Esinyen	21320190		
132	Loibach Leonard	27565290	Lochwaa	723812722
133	Nakuata Ingolan		Lochwaa	63 lodwar
134	Ekamais Ikaru	1290821	Lochwaa	
135	Josephine Ekenu	27713770	Lochwaa	
136	Muya Engereny	21396804	Lochwaa	
137	Ageron Lopoyo	8597270	Lochwaa	
138	Lokucha Lopuya	8593631	Lochwaa	
139	Nachudi Naayan	24077847	Lochwaa	
140	Lokaya Akeno	4800486	Lochwaa	
141	Loochi Ewesit	24846332	Kanasuat	
142	Eyanae Lochoro	24399036	Karoge	
143	Arupe Epetet	4770803	Kabura	
144	Moit Alinga	4774125	Kabura	
145	Lorukia Ayokow	4770740	Karoge	
146	Cicilia Akai	24572193	Lochwaa	
147	Ayokon Lorukia	24354657	Lochwaa	
148	Amojong Eiyen	12908215	Lochwaa	
149	Akidor Lohama	8593120	Lochwaa	
150	Anamlem Esekon	10122107	Karoge	
151	Gladys Anyuduk	28172753	Kanyungimoe	
152	Egalam Longacha	4764637	Ngakitokoonok	
153	Eyanae Nauda	21413774	Juluk	
154	Achakar Aloom	29614998	Ngakitokoonok	
155	Ewoton Nasike	8592608	Kabura	
156	Kwobei Reyitan	5737593	Lolupe	
157	Akitela Lokasukooi	21323485	Kekoroe-Akwaan	
158	Akimay Ekasoout	28288788	Kekoroe-Akwaan	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
159	Epungure Alany Lowoi	4771527	Karoge	
160	Christine Atomonyange	28783831	Narionnomore	
161	Margret Atabo Erongat	26361435	Narionnomore	
162	Eyoron Lotiir	21407817	Kekoroe-Akwaan	
163	Nasinyon Louma Murungole	24856236	Kekoroe-Akwaan	
164	Erongai Liwan Losekon	20185607	Kekoroe-Akwaan	
165	Lochua Lorukia Namulia	28539744	Kekoroe-Akwaan	
166	Selina Loyelei Akiru	26475309	Lobur-Aregan	
167	Alice Lokoel	26887196	Narionnomore	
168	Amoar Kanlole	4771249	Narionnomore	
169	Namuke Ewilar Lokoi	8592607	Tirkwel	
170	Lomulen Nakoro Lorod	25085589	Kekoroe-Akwaan	
171	Nakusi Loiyalim Ebei	143079	Tirkwel	
172	Maroret Isuket Lokwawi	30024945	Kimiirik	
173	Lobe Epungure Ematae	21408360	Kasuroi	
174	Regina Lokaiyo Kamaret	29678473	Narionnomore	
175	Margaret Aule Lokwawi	12443787	Narionnomore	
176	Aregae Lemoua Angialaw	852924	Kasuroi	
177	Natini Lihipaluk Maraka	8589260	Kekoroe-Akwaan	
178	Eyan Ngimekuya	21174490	Karoge	
179	Dorcias Naregae	29128664	Lobur-Aregan	
180	Ekusi Esekeli Ekaeli	8589890	Narionnomore	
181	Rebecca Eyanae		Town	
182	Jackson Ekwee	240034347	Town	
183	Juddy Eyanae		Town	
184	Etiir Lokucha		Karoge	
185	Lokul Ekanan	4765595	Kaichupaluo	
186	Adetet Lotwel		Karoge	
187	Mary Napeyok	4209233	Loreng	
188	Lokwang Esin Ngasike	4770700	Loreng	
189	Philip Lonekon	31918139	Loreng	
190	Natet Ome Lodunga	12434246	Loreng	
191	Lorikiti Namuriai Ektui	4770367	Loreng	
192	Nariamao Lokuruka Loaricho	12908235	Kabura	
193	Nakalei Lomulen	24076933	Kabura	
194	Lotukoi Chumchum	26475246	Town	
195	Lomolen Lokucha	24077238	Town	
196	Lotiir Lokaroon	2120450	Ngakitokoonok	
197	Akwam Achal	4765104	Ngakitokoonok	
198	Ebei Achakar	4770059	Ngakitokoonok	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
	Lopachabok			
199	Anam Achaan	21316734	Ngakitokoonok	
200	Eregae Ekwang	21196207	Ngakitokoonok	
201	Lokurokunyak Lokaruon	21319142	Ngakitokoonok	
202	Lonolio Achakar	4770442	Karoge	
203	Enipono Ekalale	21193631	Ekalale-Egiron	
204	Elizabeth Kerio	12434215	Karoge	
205	Lomulen Lokuwi	8589869	Ngakitokoonok	
206	James Nabor	13648596	Juluk	
207	Joseph Ekiru	8587261	Lolupe	
208	Jane Epur	26337885	Juluk	
209	David Nguruko Eyapan	24616386	Juluk	
210	Akaran Edapal	8562530	Ekalale-Egiron	
211	Alice Asekon	27846950	Lolupe	
212	Lokaale Ekorot	8589271	Lolupe	
213	Julius Ekadeli Kula	4762759	Lochwaa	
214	Chegem Ngimekua	4765098	Lochwaa	
215	Abenyo Loyialo Naperon	4788621	Lochwaa	
216	Philip Lonekon Ekwangorom	31918139	Juluk	
217	Adukwel Loreng	4728498	Kabura	
218	Ikimat Eyanae Nachoo	24852678	Kabura	
219	Awoi Lotikapet Lotuk	8593437	Lochwaa	
220	Emuria Nakuleu Kapelo	9528524	Loreng	

11.9.4 Photographs of the Meeting



Plate 11-41: the project presentation



Plate 11-42: the youths came



Plate 11-43: the men and elders



Plate 11-44: Registration of attendees



Plate 11-45: Question time



Plate 11-46: support for the project



Plate 11-47: More questions



Plate 11-48: the area chief consulting

11.10 LOTUREREI VILLAGE IN KANAMKEMER LOCATION ON TUESDAY 20-1-2015 AT 10.45 AM

11.10.1 Minutes of Meeting

The Kanamkemer Location Chief is Lucas Lotuko. The Deputy County Commissioner for Turkana Central County is Mr. Daudi Nyachuma.

Minutes of Environmental and Social Impact Assessment Public Consultation and Disclosure Meeting held on 20th January 2015 at the grounds next to the Chief's compound in Loturerei Village, on the roadside of A1 road.

1. GENERAL

The meeting started at 10:45 am with a word of prayer by Pastor *James Apaa*.

2. INTRODUCTION

The Chief Kanamkemer Location, Mr. Lucas Lotuko, welcomed all present and introduced the Environmental Impact Assessment Team comprising Eng. Dr. Oonge, Nancy Mukui and Timothy Koome.

In his introduction, the Environmental Expert, (Dr. Oonge) explained that development of roads in the country is mandated to Kenya National Highways Authority (KeNHA) for Class A, B & C roads, Kenya Urban Roads Authority (KURA) for town roads and Kenya Rural Roads Authority (KeRRA) for rural roads comprising of Class D and E Roads. He explained that the Proposed Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road is part of the Northern Corridor Roads in an effort to improve access to Nadapal and South Sudan - the Northern Corridor links the Kenyan Port of Mombasa on the Indian Ocean to landlocked East African countries. He explained that the agenda of the meeting was to inform all stakeholders and community members present of the intended construction and explain the design components so that the stakeholders would give feedback on their views for implementation. He urged all to follow the presentation keenly and inquire on all issues that were not clear or that needed discussion.

3. THE PRESENTATION S

1. Comments by the Katilu Location Chief Mr. Yohana Ekitela.

The Kanamkemer Location Chief, Mr. Lucas Lotuko introduced the Agenda of the day. He thanked the Consultant for being available to educate the stakeholders on the possible impacts of the road.

2. Presentation by the Environment Lead Expert, Eng. Dr. Oonge

The Environmental Expert, (Dr. Oonge) took the opportunity to appreciate all present and explained the purpose of the meeting. He explained that the A1 road was the first road to be named in the country traversing from the south most part of the country at Isebania, to the North most part at Nadapal.

He explained that such consultations and disclosure had been carried out in June 2012 and that the day's meeting would mainly address the issues of likely impacts of the road on the bio-physical and social environment as well as the impacts of the environment on the road improvement and hopefully gain community 'buy-in' to the project.

He said the purpose of the meeting was to inform the community on aspects of proposed road development and of the expected project impacts, give the stakeholders opportunity and a forum to participate and ask questions, and air their views and suggestions.

He explained that the project road commences at Lesseru and terminates at Nadapal. It is divided into three Packages namely; Package 1 - Lesseru - Marich Pass Road -164 km, Package 2 which is the subject of discussion starting at Marich Pass to Lodwar Road - 196 km and Package 3, Lodwar – Lokichogio – Nakodok Road - 240 km. He explained that the section of road covered under Package 2 would be split into two contracts; Marich Pass – Lokichar, Lokichar – Lodwar with a width of 60m road reserve and that all assets within the road reserve would be affected.

He quoted and explained the various national laws, policy framework, World Bank Safeguard Policies and regulations that govern Environmental and Social Impact Assessment and such public consultation meetings. The Environmental Management and Co-ordination Act that requires an Environmental Impact assessment Study be carried out and that such a meeting to be held in order

to involve all stakeholders and Project-Affected-Persons. He highlighted the role of public consultation and disclosure in an infrastructure project as well as the need for active participation from members of the public whose natural habitat, physical, cultural and others resources may be affected.

He presented the baseline data and explained that his presentation was formulated based on what was found on the ground during environmental and social survey. He explained that a 60 m wide road reserve is required. He explained that the intended width of the carriageway was approximately 15m to accommodate a 3.5 m wide lane, 1.5 m wide shoulders, and a drainage ditch on either side of the carriageway. He explained that the rest of the road reserve is acquired for future expansion in light of recently discovered potential for oil and other associated developments.

He explained that material for road construction such as sand, ballast, hard stone and water would be locally sourced and borrow sites established along the road. He also explained that, due to the pastoral nature of the people, livestock crossing points would be necessary, in order to avoid vehicle-livestock interactions.

The consultant explained the environmental and social impacts expected. For each stage he explained the impacts so far envisaged and proposed mitigation measures including the responsibility for implementing such mitigation. He explained that the adverse impacts as a result of proposed rehabilitation would be explained under four broad categories namely:

- Planning (current stage) - He made it clear that at the planning phase, a significant impact would be the direct land take of privately owned land as a result of road re-alignment occasioning relocation of mainly business premises. He explained that all affected assets have been identified and will be compensated according to the RAP carried out.
- Construction – He explained that there would be vegetation clearance to pave way for the construction, dust and noise generated during earthworks and from various other work sites like asphalt mixing plant and the hard stone crusher site, opening up of borrow areas that would scar the landscape and pose falling risk for livestock. He explained that mitigation for these was provided in the ESMP including water spraying for dust, regulated working hours for noise and use of PPE for construction workers.
- Operation - He also explained that there would be increased vehicle-human – livestock-interactions during the operation stage with more traffic at high speed and that this would cause collisions likely to result in fatalities or injuries. He explained that once opened up, the road would be a conduit for many business and travel opportunities in less time and improved comfort.
- Closure – he explained that the road was not likely to be decommissioned at the expiry of the design life but rather certain component would be restored back to pre-development status such as opened up borrow areas and project management offices.

He explained that the positive impacts (benefits) of the planned rehabilitation include the following among others-

- Decreased journey times
- Decreased cost of travel and transportation of commodities
- Hasten response to security or drought emergencies, more frequent in the area
- Direct employment of young people to the construction labour
- Ripple economic benefit from trade and commerce such as increased production of goods and services e.g. livestock inputs, access to better healthcare

- End isolation and remoteness in the area occasioned by poor access
- Boost national and international trade
- Some of the project road's development linkages include the facilitation of exploitation of the recently discovered oil in Lokichar and gold at Sekerr which has the potential to also attract an oil pipeline and a railway

Details and summary of the presentation are as per attached in Section 11.2

4. THE DISCUSSIONS

A question and answer session followed.

The Consultant invited the members present to air their views and ask questions and explained that owing to the high number of participants and the likelihood that same question might be repeated, five questions would be invited and answered in every run.

- Q1 Mr. Logoror Epiloye, an elder from Loturerei Town thanked the parties involved for bringing the road. He wanted confirmation on whether the project would start in September and if so if their children would be able to get employment from the said project. For him that was the other way he would benefit from the project since he does not own a car.*
- Q2 Mr. Lokales Ikale, a youth from Kangukus village commented that there was another group of people who had come earlier on in 2012 and measured the road up to 60m and also marked some buildings. He wanted to know if these were the same ones or if it was a different group. He also wanted to know what would happen to the people who had planted trees along the project boundary.*
- Q3 John Lokiriyoi Lochonde, an elder from Apatao asked how we would cater for the animals crossing the laghas on the proposed road, and gave an example of a lagha that was 15km from Loturerei village towards Lodwar at Nakwei. He also wanted to know what criteria the Contractor would use on the ground to employ people since there were about 15 villages in that area which were fragmented and had been peacefully coexisting*
- Q4 James Apaa, a Pastor from Nadipoe sought to know if box culverts would be provided. He commented that the envisaged growth would be such that settlements would sprout all over along the road hence taking over grazing lands. He therefore wondered where more grazing land would be found?*
- Q5 Pastor Paul Elotan of CMFI (Christian Mission Fellowship International) commented that skilled labour would be sourced locally, then countrywide and beyond in not found at the local level. He also said that, if employment would be equitably distributed in all villages, would that imply that drivers would only traverse through their village before handing over to those from the next villages? He also inquired on what the criteria for employment of unskilled labour would be.*

- A (1) The Lead Environmental Expert explained that it was okay not to have a car. He proposed that, when the road comes, one could sell two camels and buy a car. He advised the stakeholders to send their children to school so that they would be able to buy cars and make use of the road in future. He said that the road would bring about employment.
- A (2) The Lead Expert also explained that all the houses that had been marked would be taken down. Even in cases where they had uprooted the beacons, these beacons would be retraced. He advised them to remove all the trees that they had planted on the road reserve before the road rehabilitation works commenced since otherwise, they stood to lose them.
- A (3) The Lead Environmental expert said that in regards to animal crossings where there are no laghas, -the recommendation would be taken down in the report concerning animal

- crossings. In regards to the criteria for employment from the villages-the lead expert stated that the location had a chief who had sub chiefs and village elders all over the location the employment hence would be done through the chief's office for transparency. In regards to drivers-the lead expert went ahead to explain that drivers were like machine operators hence classified under skilled labour and all skilled labour was to be obtained from the county.
- A (4) in regards to the question of settlement along the road taking over all grazing land-The Lead Environmental Expert explained that if they chose to sell all their land to such people there was very little that they could do in that case. He went ahead to explain that lodwar also started as loturerei initially and told them that one could not really stop such growth. He told them that those were the developments people seeked. He recommended that they also look for such a piece of land and build on it.
- A (5) The Lead Environmental Expert explained that the funds that were available were dedicated to road construction and there was a body MENWR (ministry of environment and natural water resources) which dealt with water hence the question on piping would be best addressed by that body. He also clarified that road money could not be diverted to water.
- A (6) The lead expert explained that if the contractor had to extract material outside of the designated areas he would have to enter an extraction contract with them specifying the terms of extractions and that it was ok for the contractor to source materials from their area. Even at individual level the contractor would also have to enter into a contract with them. He also recommended that the contract and such details should be witnessed or known to the resident engineer so that in case of dispute there would be in a position to help them
- Q6 *Echwaa Ebei a villager from Lomeiyen brought to our notice that their bridge was spoilt and asked how we would be able to help them. He also brought up the issue of water pipes being spoilt and asked what engineering help rendered them to restore the water again.*
- Q7 *Mary Aknomo a villager from Loturerei commented that that she understod that in the near future, people in Lodwar will be living like Nairobi, i.e. in storeyed houses. As a all good things will be in Lodwar in Turkana. She enquired that then if Turkana would also be like Nairobi, where would they live as Turkanas? - Their land was being taken by the oil people, the road people, and even manufacturing companies such as omo manufacturing company, how the government would preserve their livelihood since she felt as though they were being invaded in all directions and their grazing lands being taken. Where would they feed their animals from?*
- Q8 *Pauline Nakhale from Turkana stated that at one point when she was sick and walking to Kitale hospital, at times falling on the way and sleeping on the side of the road, she just wondered, "the person who made this road – is he dead or alive?" She stated that every time children are going to school, she hears that a car has rolled and children have died. She felt cheated by her leaders in regards to the poor state of the road.*
- Q9 *Pastor Paul Ekal thanked the Consultant for holding the meeting here. He stated that they had never had a road development meeting here, this was the first of its kind, and wanted to encourage that more such meetings be held there in future. He also requested that meeting to discuss employment issues be held there in the future for transparency. He commented that he had arrived late hence only found soda crates but was satisfied that even if he hadn't got a sod, his brother had. He commented that he had had a lot of talk with operators and drivers, and he wanted to know if the drivers of small vehicles would have a chance at employment just like the plant operators.*
- Q10 *Lokales from Ekal (again) commented that they feed from the sand and ballast from the laghas, and wondered what would happen during the project implementation.*

-
- A (7) The Lead Expert went ahead and explained that they had been informed that there had been meetings held earlier in 2012 there and added that this was a follow up meeting on the same. In relation to the drivers- he clarified that all drivers were skilled labourers and their employment would be the same following suit, employment at local, county and countrywide level in that order.
- A (8) In regards to whether the road developer was dead or alive- the Lead Expert said that that was a big question.
- A (9) the Lead Expert also responded to Mary Aknomos question, saying that road improvement would lead to a more informed her, better able to trade when that day came. She was also advised to adjust accordingly when her place developed more. The Consultant commented that more people would be attracted, and with them, bring along increased wealth especially for people from outside the county. He explained that other ripple benefits would be such as development of irrigation, water supply and other improvements.

5. THE RESOLUTION

The recommendations arrived at was that all present were in favour of seeing the speedy commencement of the rehabilitation work on the A1 road.

6. AOB

The public consultation meeting ended and stakeholders left at their leisure.

7. CLOSING PRAYER

The meeting ended at 1.00 pm with a word of prayer by the Pastor Peter Lokurukal.

11.10.2 List of Attendance – Scanned Copies

PROJECT: AT LOTUREREI VENUE:		PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD LOCATION: KANAMKEMER		LIST OF ATTENDANCE DATE:		8
DISTRICT: TURKANA CENTRAL:						
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature	
	Ekiu E. Jagan	-	Timama	-		
	Lomuya Logiron	-	Akuruchamaif	-		
	Lopavito Afaro	-	Kaekoni	-		
	Dorcas Ekidor	30778667	Timama	0707985226		
	Binyan Kimat	2970698	Lomuyon			
	Grace Akai	2024579	Timama Kaekoni	0729512059		
	Akoni Lovuman	20355156	Lomuyon	0727650596		
	Efanga Kafir	2026445	Kaekoni	-		
	Lokavach Edonic	4771647	Kaekonyuk	-		
	Rebecca Akatorot	2522179	Kaekonyuk	0727738401		
	Zanab Angella	20216104	Timama	0712440702		
	Salina Ikone		Timama	0728114561		
	Dorcas Lokweel	31391683	Lomuyon	-		

PROJECT: AT LOTUREREI VENUE:		PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD LOCATION: KANAMKEMER		LIST OF ATTENDANCE DATE:		8
DISTRICT: TURKANA CENTRAL:						
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature	
	Charles Lokwuma	4780983	LOTUREREI	0720550337		
	John Lokwum Luchado		N. P. P. O.			
	Abel Eudo Etangan		Kangkukus	-		
	John Etabo Mattulei	24354467	Akuruchamaif	-		
	Akita Lokwaki		Lochov Ekelon	-		
	David Ebujo Iyanga	5506731	Kangkukus	-		
	Akai Lonyangkon	-	Lochov Ekelon	-		
	Lokwumait Ekidor Amukedo	21560202	Nakosimay	0703738430		
	Evelon Nakwasa Lotopis	20006309	Nakosimay	0704141556		
	Ewasit Luchado Kenja	628709	Kaekoni	0702214536		
	David Ikai Lokwaki	13648758	Kangkukus	0725037078		
	Lokwaki Lokiria		Lomuyon			
	Lokwam Tuko		Timama			

8

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT LOTUREREI LOCATION: KANAMKEMER DISTRICT: TURKANA CENTRAL:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	JAMES ESIMEN ATANGAN	32261877	VAKIA	0701208358	[Signature]
	NOZHAGAN NDUBOU	4781350	NADIPOE		[Signature]
	ETABO LAPOS		VAEKIR		[Signature]
	ETANGAN EREGAE		NADIPOE		[Signature]
	AMAKET ERIPOL		NADIPOE	0702090749	[Signature]
	LANYIKORI EBULON		NADIPOE		[Signature]
	NYAMAUU ZANA		NADIPOE		[Signature]
	NAMODING NASTIKI		LOMEYAN		[Signature]
	LOMOZONIA ESUROR		VAEKIR		[Signature]
	ETANGAN NATABA		NADIPOE		[Signature]
	NGIWO ABONG	0718428054	LOTUREREI		[Signature]
	LOMEIANA LOSURU		LOTUREREI		[Signature]
	EKIWEKA LORUMOS		LOCHORREBOLAN		[Signature]

8

PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 PROJECT: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 AT LOTUREREI LOCATION: KANAMKEMER DISTRICT: TURKANA CENTRAL:
 VENUE: DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
01	MOSES ACHILA LOJENY	25455560	LOTUREREI	0710228101	[Signature]
2	LOKIRIA LOKIRION	21874777	NAPETAO	0728168758	[Signature]
3	TULUKE ECHWAA	31391189	EMEYEN		[Signature]
4	EGELAN EKIRION	32253537	LOTUREREI		[Signature]
5	ANNA AKOSSAN	27869026	LOTUREREI		[Signature]
6	TWELETE EBEL		EMEYEN		[Signature]
7	SYLVIA AKAI	27559092	LOTUREREI	0715008346	[Signature]
8	SELINA LOKOL	25865420	LOTUREREI	0716862076	[Signature]
9	ANABEL ANNE KAMITO	29141640	LOTUREREI	0711221977	[Signature]
10	TEREZA ALIMLIM	21143838	LOTUREREI	0705638307	[Signature]
11	PAULO ERAT ANAM	23111954	LOTUREREI	0705215653	[Signature]
12	CHARLES NIGOLAN	07895700	YAKOSIMAE	070519804	[Signature]
13	JOHN LOTIANGA	32925935	NIAKOSIMAE	0727388334	[Signature]

PROJECT: AT LOTUREREI		PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LIST OF ATTENDANCE	
VENUE:		LOCATION:	KANAMKEMER	DATE:	DISTRICT: TURKANA CENTRAL:
8					
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	Fohn Erage	-	Nakosimae	-	[Signature]
	Nakool Ngingoma	-	Kaekari	-	[Signature]
	EKai Ngichompa	-	Napafao	-	[Signature]
	Afiken Edung	31695263	Kaekari	0702392276	[Signature]
	Pater EKai	22702106	Kaekari	0713794724	[Signature]
	Aurien Eyangon	0144541	Timina	-	[Signature]
	Nastin Eyangon	-	Nakosimae	-	[Signature]
	EKai Kirien	-	Lomayan	-	[Signature]
	Samson Lodi	4257305	Kaekari	0716204538	[Signature]
	Erago Kobo	0145746	Kaekari	-	[Signature]
	Muyao Lechubo	5993277	Timina	-	[Signature]
	Kamais Eyangon	0253504	Nadipo	-	[Signature]
	Nakaton Esin	32448298	Kaekari	-	[Signature]

PROJECT: AT LOTUREREI		PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LIST OF ATTENDANCE	
VENUE:		LOCATION:	KANAMKEMER	DATE:	DISTRICT: TURKANA CENTRAL:
8					
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	KDZOL LOKWAM	25125560	LOCHOROSOKON	-	[Signature]
	KITOLE EBHILAN	-	LOCHO NADIPOR	-	[Signature]
	EKWIEN ABONG	-	KAIKIR	-	[Signature]
	LOTIKAPET EREGAE	-	KAKOR	-	[Signature]
	EMORU EKARAN	-	LOTUREREI	-	[Signature]
	LOWOYA KELEA	-	LOTUREREI	-	[Signature]
	MOTAN EREGAE	-	Lomeyan	-	[Signature]
	EWOTAN LOTIKOU	-	Lomeyan	-	[Signature]
	PETER ELEPEIE	-	KAIKIR	-	[Signature]
	AMODOI KBEI	-	KAIKIR	-	[Signature]
	EREGAE PETER	-	LOTUREREI	-	[Signature]
	GASTIN Elin	-	LOTUREREI	-	[Signature]
	FRANCIS LOCHAN	-	LOTUREREI	-	[Signature]

PROJECT: AT LOTUREREI		PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LIST OF ATTENDANCE	
VENUE:		LOCATION:	DATE:	DISTRICT: TURKANA CENTRAL:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	LOHLOLO EGIRWAN	4256208	LOTUREREI		
	JAMES KUYOYI		LOTUREREI	0701320722	
	PETRO AMATAR	72368	LOTUREREI		
	FRUPE NAKUSAWI	20474155	TIMAMA	0728293190	
	CHARLES LOGIVE TIOLO	24826526	LOKADWARAN	-	
	ENGENI7 LONGOMB	24845579	LOKADWARAN	-	
	ELENYO LODIYA	4200536	NAKWEI	-	
	LOBUIN ENROR	2146995	LOKADWARAN	-	
	ELIM EYANGAN	-	NADIPOE	-	
	LOKWARAR KTIKOV	-	LOMFIAN	-	
	MARK ELIM	-	LOCHORSEKON	-	
	LOMWAR LORUKORUKON	LOCHORSEKON	LOCHORSEKON		

PROJECT: AT LOTUREREI		PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LIST OF ATTENDANCE	
VENUE:		LOCATION:	DATE:	DISTRICT: TURKANA CENTRAL:	
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	JOSPH MOBU	2522229	NAKURICHANAT	0713177571	
2	IKALEROY	28146927	NADIPOE	-	
3	DOMIC EKATOROT	23946334	NADIPOE	-	
4	ESINYON KIVEN	6567392	LOMONYON	-	
5	ESELEON EKIRION	3225353	LOTUREREI	-	
6	NAKATION NASIKI		NADIPOE	-	
7	JAMES APAK	22702012	NADIPOE	-	
8	SAMON PACHOH	22702138	NAPETAO	0710747790	
9	ANNA ANKOK	20851662	LOTUREREI		
10	ISAAC IKAL	12647442	TIMAMA	0715708087	
11	SAMLOUL EKARU	29783514	NAKOSAMAE	0717434380	
12	ANAM LOKOLOPYOI	4770326	NAKOSAMAE	-	
13	IKIMAT EPUKON		NADIPOE		









PROJECT: AT LOTUREREI VENUE:		PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD LOCATION: KANAMKEMER		LIST OF ATTENDANCE DATE:		8
				DISTRICT: TURKANA CENTRAL:		
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature	
1	JAMES EYANEA		KEIKORI			
2	TATI IKARU		KEIKORI			
3	KILADIS EKAL	23197675	TIMQMA	0720122557		
4	ARIONG APUN	31269974	NADIPOE	0714527455		
5	JAMES AURIEN	27888432	Lomenyan	-		
6	IMOJONG URIEN	31951745	Locherisekon			
7	EKUSI MOJIAN	239465492	Lomenyan	072759047		
8	ATAO ASHAMU		Lomenyan			
9	KONGIK NGIMACHI	28099101	Nakuyichamu			
10	PALO KULA		NADIPOE			
11	EKALOKEN KOKOLAPI		NADIPOE			
12	JACKSON EWOTON	2074177	Lomenyan	0726012231		
13	SPORON PETER		Locherisekon			



PROJECT: AT LOTUREREI VENUE:		PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD LOCATION: KANAMKEMER		LIST OF ATTENDANCE DATE:		8
				DISTRICT: TURKANA CENTRAL:		
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature	
	TIOKO ILENY		NADIPOE			
	LOKUWAM ANAM		LOTUREREI			
	JACKSON LOBONGO		LOTUREREI			
	LEPO ILENY		LOTUREREI			
	NAKALE BURU	239418996	TIMAMA			
	JOYCE MARIKA		NADIPOE			
	ALICE ACHUKA	0712103460	TIMAMA			
	ESTHER AKHAPAZAN	25623652	TIMAMA	0707670853 0746608		
	EKEPON ADONG	5231760	TIMAMA			
	MARY NANIKAN		TIMAMA			
	LEAH TIOKO		LOTUREREI			
	MARY ILENY		LOTUREREI			
	NGIKASUKOU KAMAIK		Lomenyan			

PROJECT: AT LOTUREREI		PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD		LIST OF ATTENDANCE	
VENUE:		LOCATION: KANAMKEMER		DISTRICT: TURKANA CENTRAL:	
		DATE:			
No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	MARY NATIR EKENO	8738845	LOTUREREI	0700110219	<i>[Signature]</i>
2	SARAH AKAI ERNG	29847025	LOTUREREI	0726831394	<i>[Signature]</i>
3	ESTHER NANGORKOU	27852254	LOTUREREI		<i>[Signature]</i>
4	NACHOMIN ALENYO	8595848	LOTUREREI		<i>[Signature]</i>
5	NACHAO AKETEI	3323890	LOTUREREI		<i>[Signature]</i>
6	DIDYMAS LOKOMWA		LOTUREREI	070555578	
7	EKAI LOPERITO	25424567		0707891556	<i>[Signature]</i>
8	LOGILAN LOPERITO	25239593	KAKORI		<i>[Signature]</i>
9	LOTINI NAKUWA		TIMAMA		<i>[Signature]</i>
10	EWOI LOVAIKEN	8595372	EMEYEN	0708396178	<i>[Signature]</i>
11	MAGRET RBULON		KAKORI		<i>[Signature]</i>
12	ECKEMEE ILEM		KAKORI		<i>[Signature]</i>
13	REBECCA ESIRITE		NAIKOSIMAE	0700725681	<i>[Signature]</i>

8













No	Name	ID No.	Village	Telephone	Signature
1	Amekei Isaboke	-	Kaekoni	-	[Signature]
2	Ekara	-	Nadipe	-	[Signature]
3	Bepete	-	Kingidikus	-	[Signature]
4	Selima Akai	-	Kingidikus	-	[Signature]
5	Elan Nani Elizabeth	30474043	Kingidikus	-	[Signature]
6	lobelia Akony	-	Turwama	-	[Signature]
7	Charles Nakerith	-	Konyen	-	[Signature]
8	Hane Akulwison	32261907	Kaekonyuk	-	[Signature]
9	Pamira E Poi	-	Kaekonyuk	-	[Signature]
10	Ikoi Mungu	-	Kaekonyuk	-	[Signature]
11	Konyolan Samuel	-	Kaekonyuk	-	[Signature]
12	Kadit Akikon	-	Kaekonyuk	-	[Signature]
13	George Ekhwa	-	Kaekonyuk	-	[Signature]
14	Alant Lajoo	-	Kaekonyuk	-	[Signature]
15	Lafaa Binka	-	Nadi Poi	-	[Signature]
		-	Nadi Poi	-	[Signature]

No	Name	ID NO.	Village	Telephone	Signature
	SÉLINA AKHMAIS	27838547	Lomayan		
	AKWEE ACHAME	-	KAIKIR		
	PAULO TIOKO FREGAE	80769970	KAIKIR		
	FREGAE TIOKO	23149277	KAIKIR		
	ALUYEN ABONIS	9673147	KAIKIR	0700572465	
	ELAPAN Londonyoi				
	KERIO Kholokol	27845478	Lomayan		
			Lokosima		

No	Name	ID No	Village	Religion	Signature
1	ECHUMAN LAGA	—	KAKORI	—	
2	NAKARU LAGA	—	KAKORI	—	
3	ACHUKA ESURON	—	KAKIR	—	
4	ALICE AYEPIO	—	KAKIR	—	
5	AKWEE ECHEME	—	KAKIR	—	
6	TYANAE LOMITIR	—	Timama	—	
7	LONGOR NGIBEYO	20225089	KAKIR	—	

NO	Name	ID NO.	Village	Telephone	Signature
1	Ahauham Laga		Kaakon	0718947116	[Signature]
2	Ahase Laga	20233001	Akumchamait		[Signature]
3	Isana Logron	21421360	Akumchamait		[Signature]
4	Nawaga Bekiring	0144196	Kaakon	0703662485	[Signature]
5	Ikam Kelokaf		Nakosmae		[Signature]
6	Itupa Eupon		Akumchamait		[Signature]
7	Akai Lemar		Kaakon		[Signature]
8	Itan Eragae		Kaakon	0700574089	[Signature]
9	Bongiv Laga		Kaakon	0727809531	[Signature]
10	Lovogpi Laga		Kaakon		[Signature]
11	Lokales Itaga		Kaakon		[Signature]
12	Mamy Akuliam		Kaakon	0710179733	[Signature]
13	Namoni Nakool		Kaakon	0716807171	[Signature]
14	Cornelius Kovoke		Kaakon	0726031325	[Signature]
15	Peter Efame Nakool		Kaakon	0708765004	[Signature]
16	Michael Akwei		Kaakon	0714408257	[Signature]
17	Enase Ngisanyam	27866831	Kaakon		[Signature]
18	Efangam Kekiriin	278893400	Kaakon		[Signature]
19	Apudam Kshiket		Kaakon	0717782227	[Signature]
20	Ita Logron	231110964	Kaakon		[Signature]

No.	Name.	ID No.	Village	Telephone	Signature
1	Kwas Kibuko (Chief)	0142979	KAKUMBEK	0701270908	[Signature]
2	Nancy Muki	11481344	Kenha	0722698674	[Signature]
3	Isidam Nariogokan	-	Nakosimae	-	[Signature]
4	Dorcas Ikumof	31326501	Someyem	-	[Signature]
5	Agas Ekaran Erukon	22702109	Timmas	-	[Signature]
6	Logiel Kovales Kinyan	10124116	Kaakon	-	[Signature]
7	Napuse Kopeno	20224009	Kaakon	-	[Signature]
8	Napak Adukon	10124102	Kaakon	-	[Signature]
9	Eveli Kourien	8555372	Kaakon	-	[Signature]
10	Mary Korut	24322749	Kaakumuk	0716396069	[Signature]
11	Sama Nachukon	37845495	Kaakon	-	[Signature]
12	Letwoci NgiSaja	-	Nakosimae	-	[Signature]
13	Arukudi Elin	-	Kaakon	-	[Signature]
14	Ekutan Ataan	24870428	Kaakumuk	-	[Signature]
15	Nakony Ataan	-	Kaakon	-	[Signature]
16	Glale Ekutan	-	Kaakon	-	[Signature]
17	Ana Abai Ekori	-	Kaakon	-	[Signature]
18	Muelao Ekutan	-	Kaakon	-	[Signature]
19	Abelia Ngingomano	8593317	Kaakon	-	[Signature]
20	Nakumuk Kottlerin	065225	Kaakumuk Nakosimae	-	[Signature]

NO	NAME	IP. NO.	VILLAGE	TELEPHONE	SIGNATURE
1	Kochwansa Ebei	20411537	KAKIRI	0706832007	
	Ekero Tioko	21435648	KAKIRI		
	Lopelimu Lomongin	2280159077	KEKORI	0702521365	
	LOTIN EYEN		Lomongan	0700417908	
	Ebilon Emongong	25049472	Nakuvichapit	0700930075	
	Wakero Charles		FRAMA	0719864115	
	Salmon Esinyan		TIMATIMA	0707672551	
	JAMES ENYANGA		KEKORI	07822454	
	EMURON KABZI	25470733	KEKORI	0700889117	
	KORUCHA WANSIRO	12908184	TIMATIMA	0710567530	
	KEMUYAN KOPUWA		NADIPAO		
	SIKAL KOTIKAPET		TIMATIMA	07174786	

No	Name	ID No.	Village	Telephone	Signature
	ADOME EGILAN	5731647	TIMAMA	-	
	PETER LODENT	-	NAKOSIMAT	-	
	SAMWELI EMORIA	13648318	LOTUREREI	0709211858	
	EPORON PETER	27126973	LOTUREREI	6715305156	
	EGILAN ROBERT	23182427	LOTUREREI	0707648925	
	PAUL EKAT	20573564	TIMAMA	0727385853	
	JAMES EWOT	25125786	TIMAMA	0715052001	
	LOKOLIO EKULAN	8564784	TIMAMA	-	
	LOTULERO APONG	7275872	KAKKIR	-	
	KOLOLAL LOTULERO	10986158	LOTUREREI	-	
	REBECCA MIYAO	13 32142136	LOTUREREI	-	
	EROT LOPERITO	-	LOTUREREI	0715881774	
	DOY CAS ATAGO	-	KAKKOR	0706571988	
	WILLY EKUSI	-	Timama LOTUREREI	-	
	JON MARK PITE	27559184	TIMAMA	-	
	CHRISTINE NAKIRU	-	LOTUREREI	0715056825	
	MARGARET EKARAN	2	LOTUREREI	-	
	MARIAM AKENO	22971373	LOTUREREI	-	
	KAMAS LOTIKOU	26832248	LOTUREREI	-	
	ALICE ATAGO	-	LOTUREREI	07267011	
		31378194	LOMEIWA	-	

NO	Name	ID NO.	Village	Telephone	Signature
	SELINA AVUDOR	31416064	TIMAMA		[Signature]
	REBECCA ASINTEN	20778785	LOTUREREI		[Signature]
	REBECCA AGIRON	-	LOTUREREI		[Signature]
	ANNA FURU	-	LOTUREREI		[Signature]
	MARGARET AVURE	-	KNEKIR		[Signature]
	NGIKALE AGONG	-	Timama		[Signature]
	NAGENYIT NAPUSIE	-	NAKOSIMBE		[Signature]
	KMODOT EGIALAD	20223476	Timama		[Signature]
	NAKUREI EKARAN	-	LOMEYAN		[Signature]
	LOKOKORON EYANGAN	9245277	LOTUREREI		[Signature]
	FUOT NABWEK	-	LOMEYAN		[Signature]
	ATABO LOKALES	-	NADIPOE		[Signature]
	LOKIRIA AMURON	21331590	NADIPOE		[Signature]
	VEROCCA AKAI	-	LOTUREREI		[Signature]
	MARY NAKARIWON	-	LOTUREREI		[Signature]
	CHRISTINE EBEI	-	NAKOSIMBE		[Signature]
	SYLVIA NAPORON	278320	-		[Signature]

NO	Name	ID No.	Village	Telephone	Signature
1	MNOYAKWAN KATOB	12911493	TIMAMA	0705601677	
2	MARY CHUROKOL	22985960	TIMAMA	—	
3	AKABELI NASIKG	20228745	NGADIPOE	—	
4	REBECCA AYANAE	—	TIMAMA	0711702522	
5	DORCAS EKITELA	30772684	NAKOSIMAE	0728218380	
6	REBECCA LOKUSI	—	LOTUREREI	0703489262	
7	MAGREKT LUOBI	—	LOTUREREI	—	
8	AKUWOM CHOROK	27837858	LOTUREREI	0700705160	
9	PETER LOWOYANGOL	25146530	LOTUREREI	0700725622	
10	NGISANYANA EYANGUN	28141209	KAIKORI	—	
11	AKOEL NGINGEMO	4765139	KAIKORI	—	
12	PEYA LOKAYO	31983719	KAIKORI	—	
13	DOMINIC KAITUKG	31359762	KAIKORI	—	
14	AYANAE LOTUKAPET	—	KAIKORI	071455287	
15	ERIS EKARATV	—	NAKOSIMAE	—	
16	LOTIR DELI	8562191	TIMAMA	0724379943	
17	AKWAMU LAGA	8564821	KAIKORI	—	
18	AKAI KALIBAN	—	NAKOSIMAE	—	
19	KAMAIIS NGILIMO	24612712	KAIKORI	0711079908	

11.10.3 List of Attendance –

The following is the List of Attendance for the Public Consultation Meeting for the Proposed Rehabilitation of Marich- Pass Lodwar Road Project held at Loturerei Village, in Kanamkemer Location of Turkana Central District on 20th January 2015. 266 people registered as shown in Table 11-7.

Table 11-7: List of Attendance, Loturerei Village, in Kanamkemer Location on Tuesday, 20th Jan. 2015

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
1	Ekiru Eyapam		Timama	
2	Lemunya Logiron		Akuruchanait	
3	Lopevito Apavo		Kaekori	
4	Dorcias Ekidor	30778667	Timama	0707985226
5	Ekuyen Kimat	22970698	Lomeyan	
6	Grace Akai	202224574	Kaekori	0729512059
7	Eyangun Kospir	24326442	Kaekori	
8	Lokarach Edome	4771647	Kaekunyuk	
9	Rebeca Akatorot	25222179	Kaekunyuk	0727738401
10	Zainab Angella	20216104	Timama	0712440702
11	Selina Ikone		Timama	0728114561
12	Dorcias Lokweel	31391683	Lomeyan	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
13	Charles Lokuvuka	4780983	Loturerei	0720550337
14	John Lokirion Lochedo		Napetao	
15	Peter Ekudo Eyangang		Kangkukus	
16	John Etabo Mathula	24354467	Akuruchanait	
17	Akuta Lokaala		Locholosekon	
18	Lokomwait Ekidor	21860202	Nakosimae	0703738430
19	Esekon Nakuwa Lotopos	20008309	Nakosimae	0704141556
20	Ewesit Lochode Esiyen	6787019	Kaikir	0702214336
21	David Ekar Lokals	1368788	Kangkukus	0725037078
22	Loholel Lokiria		Lomeyan	
23	Lokaru Luko		Timama	
24	James Esinyan Ayangan	82261877	Kaikir	0701208356
25	Nothangan Notubou	4781330	Nadopoe	
26	Etabo Tapos		Kaikir	
27	Eyangang Eregae		Nadipoe	
28	Amakat Eripon		Nadipoe	
29	Lanyirori Ebulon		Nadipoe	
30	Nyamauru Tana		Nadipoe	
31	Lomotonga Eburon		Nadipoe	
32	Ngikiyo Abong		Loturerei	0718428054
33	Lomeyana Losuru		Loturerei	
34	Ekiyela Lorumoe		Locholosekon	
35	Moses Achila Lodeny	25455560	Loturerei	0710228101
36	Lokiria Lokirion	21874777	Napetao	0728168758
37	Tuluke Echwaa	31391189	Emeyen	
38	Egelan Ekirion	32253537	Loturerei	
39	Anna Akoson	27869026	Loturerei	
40	Twelete Eboi		Emeyen	
41	Sylvia Akai	27559092	Loturerei	0715008346
42	Selina Lokol	25865420	Loturerei	0716862076
43	Akadeli Anne Ngikito	29141640	Loturerei	0711221977
44	Tereza Alimlim	21143838	Loturerei	0705638307
45	Paulo Erot Anam	23111954	Loturerei	0705215653
46	Charles Ingolan	27895700	Nakosimae	0705198201
47	John Lotianga	32925535	Nakosimae	0727738334
48	John Eragae		Nakosimae	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
49	Nakoel Ngingomo		Kaikir	
50	Ekai Ngichempa		Napetao	
51	Ayokon Edung	31695263	Kaekori	0702392276
52	Peter Ekai	22702106	Kaekunyuk	0713794724
53	Aurien Eyangun	0144541	Timama	
54	Naotin Eyangun		Nakosimae	
55	Ekali Kirien		Lomeyan	
56	Samson Lodio	4257305	Kaekunyuk	0716204838
57	Eveghe Kebo	0145746	Kaekori	
58	Munyao Lochibo	5993277	Timama	
59	Kamais Eyangun	0282804	Nadipoe	
60	Nakudon Esin	32448798	Kaekori	
61	Koyol Lokuwam	25125560	Locholosekon	
62	Kiyole Engielan		Nadipoe	
63	Ekuyen Abong		Kaikir	
64	Lotikapet Eregae		Kaekor	
65	Emoru Ekaran		Loturerei	
66	Lowoya Lelea		Loturerei	
67	Moiyan Eregae		Lomeyan	
68	Ewoyan Loyikou		Lomeyan	
69	Peter Elepeye		Kaikir	
70	Amodoi Ebei		Kaikir	
71	Eregae Peter		Loturerei	
72	Gashin Elim		Loturerei	
73	Francis Locham		Loturerei	
74	Longolo Egirwon	4256208	Loturerei	
75	James Lougoyi		Loturerei	0701320722
76	Petro Amastar	72368	Loturerei	
77	Erupe Nakwani	20474155	Timama	0728293190
78	Charles Losive Tioko	24326526	Lokadwaran	
79	Engemy Longomo	24326526	Lokadwaran	
80	Elenyo Lodiya	4800536	Nakwei	
81	Lobwin Engor	21416995	Lokadwaran	
82	Elim Eyangun		Nadipoe	
83	Lokwarkar Lotikou		Lomeyan	
84	Mark Elim		Locholosekon	
85	Lomwae Lorukeny		Locholosekon	
86	Joseph Moru	25222129	Nakurichanat	0713197571
87	Ikaileny	28146927	Nadipoe	
88	Domic Ekatorot	23946334	Nadipoe	
89	Esinyan Kiren	8567392	Lomeyan	
90	Nakarion Nasike		Nadipoe	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
91	James Apak	22702068	Nadipoe	
92	Saimon Pacholi	22702138	Napetao	0710747790
93	Anna Annok	20851853	Loturerei	
94	Isaac Ikal	13647443	Timama	0715708087
95	Samwel Ekaru	29783514	Nakosimae	0717434380
96	Ikimat Epokon		Nadipoe	
97	Mnoyakwan Katod	12911493	Timama	0705601677
98	Mary Chirokol	22985960	Timama	
99	Akadeli Nasike	20228745	Nadipoe	
100	Rebeca Ayanae		Timama	0711702522
101	Dorcas Ekittela	30772684	Nakosimae	0728218280
102	Rebecca Lokusi		Loturerei	0703489262
103	Margaret Ewosi		Loturerei	
104	Akuwom Chorok	27837858	Loturerei	0700070560
105	Peter Lowoyangol	25146530	Loturerei	0700725622
106	Ngisanyana Eyangana	28141209	Kakori	
107	Akoel Ngingomo	4765139	Kakori	
108	Peya Lokayo	31983719	Kakori	
109	Dominic Kaituko	31359762	Kakori	
110	Yanae Lotukapet		Kakori	0714552879
111	Eris Ekaren		Nakosimae	
112	Lotir Oeli	8562191	Timama	0724379943
113	Akwamu Laga	8564821	Kakori	
114	Akai Kaliban		Nakosimae	
115	Kamais Ngilimo	24612712	Kakori	0714278948
116	James Eyanea		Kakori	
117	Tati Ikaru		Kakori	
118	Kiladis Ekali	23197675	Timama	0701225807
119	Ariong Apun	31469974	Nadipoe	0714527485
120	James Aurien	27888432	Lomenyan	
121	Ekusi Moitan	2394654193	Lomenyan	0727540476
122	Iomjong Urien	31951745	Locherisekon	
123	Ato Asham		Lomenyan	
124	Paulo Kula		Nadipoe	
125	Ekalokon Lokolonyoi		Nadipoe	
126	Jackson Ewoton	20741977	Lomenyan	0726012231
127	Eporon Peter		Locherisekon	
128	Mary Natir Ekeno	8738845	Loturerei	0700110219
129	Sarah Akai Erng	27847025	Loturerei	0726831394
130	Esther Nangorkou	27852254	Loturerei	
131	Nachomin Alenyo	8595848	Loturerei	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
132	Nachamin	3323890	Loturerei	
133	Didymas Lokomwa		Loturerei	070555758
134	Ekai Loperito	25424567	Kakori	
135	Logialan Loperito	25239593	Kakori	
136	Lotini Nakuwa		Timama	
137	Ewoi Louren	8595372	Emeyen	0708396178
138	Margaret Ebulon		Kakori	
139	Echemee Ilem		Kakori	
140	Rebecca Esirite		Nakosimae	0700725681
141	Tioko Ileny		Nadipoe	
142	Lokuwam Anam		Loturerei	
143	Jackson Lobongo		Loturerei	
144	Lepo Ileny		Loturerei	
145	Navale Bwoi	239418996	Timama	
146	Joyce Makaka		Nadipoe	
147	Alice Achuka		Timama	0712103460
148	Esther Akhalapayan	25673652	Timama	0707670853
149	Erepon Adome	5731760	Timama	
150	Mary Nanikan		Timama	
151	Leah Tioko		Timama	
152	Mary Ikeny		Loturerei	
153	Ngikasukou Kamais		Lomeyan	
154	Amekili Lochuch		Kaekori	
155	Ekeran Eyangan		Nadipoe	
156	Elepete Eholel		Kangkukus	
157	Selina Akai		Kangkukus	
158	Emanman Elizabeth	30474043	Kangkukus	
159	Lobolio Abong		Lomenyan	
160	Charles Nakarion	32261907	Lomenyan	
161	Jane Akuwam		Kaekunyuk	
162	Paulina Epur		Kaekunyuk	
163	Lekoi Muny		Kaekunyuk	
164	Longolan Samwel		Kaekunyuk	
165	Kodet Asekon		Kaekunyuk	
166	George Ediwa		Kaekunyuk	
167	Apeny Lojao		Nadipoe	
168	Lojao Epukon		Nadipoe	
169	Selina Akamais	27838547	Lomenyan	
170	Akwee Achame		Kaikir	
171	Paulo Tioko	23149277	Kaikir	
172	Elapan Lokolonyoi	27845478	Lomenyan	
173	Kerio Kalokol		Lokosimae	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
174	Echuman Laga		Kakori	
175	Nakuru Laga		Kakori	
176	Achuka Esuron		Kaikir	
177	Alice Ayepio		Kaikir	
178	Iyanae Lomitir		Timama	
179	Longor Ngibeyo	20225089	Kaikir	
180	Akuwam Laga		Kaekir	
181	Amase Laga		Akuruchanait	0718947116
182	Lopua Logwon	20253001	Akuruchanait	
183	Nowegae Lokiring	21421360	Kaekori	
184	Ikaru Kalokol	144196	Akuruchanait	
185	Arupon Eripon		Kaekunyuk	
186	Akai Lomor		Kaekunyuk	
187	Ikon Eregae		Nadipoe	0700574089
188	Longor Laga		Kaekori	0727809531
189	Lovogoi Love		Kaekunyuk	
190	Lokales Laga		Kaekunyuk	
191	Mary Akuwam		Kaekiri	0710179733
192	Namonu Nakoel		Kaekunyuk	0716807171
193	Corneliu Korobe		Kaekiri	0726031325
194	Peter Eyange Nakod		Kaekori	0708755004
195	Michael Akweei		Kaekori	0714408237
196	Emase Ngisanyam		Kaekori	
197	Eyangan Lokirion	27868831	Kaekori	0717782727
198	Apudan Loholel	278893400	Kaekori	
199	Ipa Logiron		Kaekunyuk	
200	Ayumae Evelyne	234010964	Kaekori	
201	Lucas Lohiko	1429979	Kanamremar	0701270908
202	Nancy Mukui	11481344	Kenha	0722698674
203	Lodeny Narogokan		Nakosimae	
204	Dorcas Ikimat	31336501	Lomenyan	
205	Eregae Ekanan	22702109	Timama	
206	Logiel Lokales Eyangan	101244116	Kaekori	
207	Napusie Loperito	20224009	Kaekori	
208	Napuk Adukon	10124102	Kaekori	
209	Mary Lorot	24322749	Kaekunyuk	0716396069
210	Selina Nachokan	27845495	Kaekori	
211	Lotukoi Ngisaja		Nakosimae	
212	Arukudi Elim	24870428	Kaekunyuk	
213	Ekitan Ataan		Kaekori	
214	Nakong Ataan		Kaekori	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
215	Silate Ekutan		Kaekori	
216	Anna Abei		Kaekori	
217	Muyao Ekutan		Kaekoiri	
218	Atelia Ngingomo	8593317	Kaekunyuk	
219	Nakuruk Lotilemu	8595325	Nakosimae	
220	Lochwanga Ebei	20411537	Kakori	07066832007
221	Ekeno Tioko	21435648	Kakori	
222	Lopelimo Lomongin	2280159077	Kekori	0702821365
223	Lotir Eyaen		Lomenyan	0700417908
224	Ebulon Emojong	25049472	Nakurichanat	0700930075
225	Nakero Charles		Timama	0719864115
226	Saimon Esinyan		Timama	0707672551
227	James Enyange		Kekori	071822454
228	Emuron Kaabei	28470733	Kekori	0700889117
229	Lorucha Nangiro	12908184	Timama	0710867530
230	Lemunyan Lopuwa		Nadipoe	
231	Ekal Lotikapet		Timama	0717747866
232	Adome Egialan	5731647	Timama	
233	Peter Lodeny		Nakosimae	
234	Samwel Emoria	13648318	Loturerei	0701211858
235	Epuron Peter	27126973	Loturerei	0715305156
236	Egialan Robert	23182427	Loturerei	0707643925
237	Paul Ekal	20518564	Timama	0727385853
238	James Ewoi	25125786	Timama	0715056001
239	Lokolio Ekulan	8564784	Kaekir	
240	Kolokal Lotuleru	10986158	Loturerei	
241	Rebecca Miyao	32142136	Loturerei	
242	Erot Loperito		Loturerei	0715861774
243	Dorcas Atabo		Kaekiri	0706571988
244	Willy Ekusi		Loturerei	
245	Johnmark Piyee	27559184	Timama	0715056825
246	Christine Nakiru		Loturerei	
247	Margaret Ekaran	22971373	Loturerei	
248	Mariam Akeno	26832648	Loturerei	
249	Kamais Lotikou		Loturerei	
250	Alice Atabo	31378194	Lomenyan	
251	Selina Akidor	31416064	Timama	
252	Rebecca Agiron		Loturerei	
253	Rebecca Asinyen	30778785	Loturerei	
254	Margaret Akure		Loturerei	
255	Ngikalia Abong		Timama	
256	Nanenyit Napusie		Nakosimae	

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
257	Amadoi Egialan	20223476	Timama	
258	Nakorei Ekarani		Lomenyan	
259	Lokokoroi Eyangani	9245277	Loturerei	
260	Ewoi Nabwel		Lomenyan	
261	Atabo Lokales		Nadipoe	
262	Lokiria Amuron	21331590	Nadipoe	
263	Verocca Akai		Loturerei	
264	Mary Nakariwon		Loturerei	
265	Christine Ebei		Nakosimae	
266	Slyvia Naporon	27837802	Lomenyan	

11.10.4 Photographs of the Meeting



Plate 11-49: Opening prayers



Plate 11-50: area chief conducts introductions



Plate 11-51: registration and refreshments



Plate 11-52: Project presentation



Plate 11-53: listening keenly, the men



Plate 11-54: listening keenly, women and children



Plate 11-55: Questions



Plate 11-56: We want the project

11.11 LODWAR TOWN IN LODWAR LOCATION ON WEDNESDAY 20-1-2015 AT 11.00 AM

11.11.1 Minutes of Meeting

The Lodwar Town Location Chief is Margaret Alima Lomosingo. The assistant chief is Mr. Christopher Lokuchi. The Deputy County Commissioner for Turkana Central County is Mr. Daudi Nyachuma.

Minutes of Environmental and Social Impact Assessment Public Consultation and Disclosure Meeting held on 21st January 2015 at the Mkeka Market Grounds in Lodwar Town.

1. GENERAL

The meeting started at 10:45 am with a word of prayer by Pastor *Enock Kamar*.

2. INTRODUCTION

The Assistant Chief, Mr. Christopher Lokuchi, welcomed all present and introduced the Environmental Impact Assessment Team comprising Eng. Dr. Oonge, Nancy Mukui and Timothy Koome.

In his introduction, the Environmental Expert, (Dr. Oonge) explained that development of roads in the country is mandated to Kenya National Highways Authority (KeNHA) for Class A, B & C roads, Kenya Urban Roads Authority (KURA) for town roads and Kenya Rural Roads Authority (KeRRA) for rural roads comprising of Class D and E Roads. He explained that the Proposed

Rehabilitation of Marich Pass - Lodwar 196 km (A1) Road is part of the Northern Corridor Roads in an effort to improve access to Nadapal and South Sudan - the Northern Corridor links the Kenyan Port of Mombasa on the Indian Ocean to landlocked East African countries. He explained that the agenda of the meeting was to inform all stakeholders and community members present of the intended construction and explain the design components so that the stakeholders would give feedback on their views for implementation. He urged all to follow the presentation keenly and inquire on all issues that were not clear or that needed discussion.

3. THE PRESENTATION S

1. Comments by the area Assistant Chief, Mr. Christopher Lokuchi

The Lodwar Town sub-Location Assistant Chief, Mr. Christopher Lokuchi introduced the Agenda of the day. He thanked the Consultant for being available to educate the stakeholders on the possible impacts of the road.

2. Presentation by the Environment Lead Expert, Eng. Dr. Oonge

The Environmental Expert, (Dr. Oonge) took the opportunity to appreciate all present and explained the purpose of the meeting. He explained that the A1 road was the first road to be named in the country traversing from the south most part of the country at Isebania, to the North most part at Nadapal.

He explained that such consultations and disclosure had been carried out in June 2012 and that the day's meeting would mainly address the issues of likely impacts of the road on the bio-physical and social environment as well as the impacts of the environment on the road improvement and hopefully gain community 'buy-in' to the project.

He said the purpose of the meeting was to inform the community on aspects of proposed road development and of the expected project impacts, give the stakeholders opportunity and a forum to participate and ask questions, and air their views and suggestions.

He explained that the project road commences at Lesseru and terminates at Nadapal. It is divided into three Packages namely; Package 1 - Lesseru - Marich Pass Road -164 km, Package 2 which is the subject of discussion starting at Marich Pass to Lodwar Road - 196 km and Package 3, Lodwar – Lokichogio – Nakodok Road - 240 km. He explained that the section of road covered under Package 2 would be split into two contracts; Marich Pass – Lokichar, Lokichar – Lodwar with a width of 60m road reserve and that all assets within the road reserve would be affected.

He quoted and explained the various national laws, policy framework, World Bank Safeguard Policies and regulations that govern Environmental and Social Impact Assessment and such public consultation meetings. The Environmental Management and Co-ordination Act that requires an Environmental Impact assessment Study be carried out and that such a meeting to be held in order to involve all stakeholders and Project-Affected-Persons. He highlighted the role of public consultation and disclosure in an infrastructure project as well as the need for active participation from members of the public whose natural habitat, physical, cultural and others resources may be affected.

He presented the baseline data and explained that his presentation was formulated based on what was found on the ground during environmental and social survey. He explained that a 60 m wide road reserve is required. He explained that the intended width of the carriageway was approximately 15m to accommodate a 3.5 m wide lane, 1.5 m wide shoulders, and a drainage ditch

on either side of the carriageway. He explained that the rest of the road reserve is acquired for future expansion in light of recently discovered potential for oil and other associated developments.

He explained that material for road construction such as sand, ballast, hard stone and water would be locally sourced and borrow sites established along the road. He also explained that, due to the pastoral nature of the people, livestock crossing points would be necessary, in order to avoid vehicle-livestock interactions.

The consultant explained the environmental and social impacts expected. For each stage he explained the impacts so far envisaged and proposed mitigation measures including the responsibility for implementing such mitigation. He explained that the adverse impacts as a result of proposed rehabilitation would be explained under four broad categories namely:

- Planning (current stage) - He made it clear that at the planning phase, a significant impact would be the direct land take of privately owned land as a result of road re-alignment occasioning relocation of mainly business premises. He explained that all affected assets have been identified and will be compensated according to the RAP carried out.
- Construction – He explained that there would be vegetation clearance to pave way for the construction, dust and noise generated during earthworks and from various other work sites like asphalt mixing plant and the hard stone crusher site, opening up of borrow areas that would scar the landscape and pose falling risk for livestock. He explained that mitigation for these was provided in the ESMP including water spraying for dust, regulated working hours for noise and use of PPE for construction workers.
- Operation - He also explained that there would be increased vehicle-human – livestock-interactions during the operation stage with more traffic at high speed and that this would cause collisions likely to result in fatalities or injuries. He explained that once opened up, the road would be a conduit for many business and travel opportunities in less time and improved comfort.
- Closure – he explained that the road was not likely to be decommissioned at the expiry of the design life but rather certain component would be restored back to pre-development status such as opened up borrow areas and project management offices.

He explained that the positive impacts (benefits) of the planned rehabilitation include the following among others-

- Decreased journey times
- Decreased cost of travel and transportation of commodities
- Hasten response to security or drought emergencies, more frequent in the area
- Direct employment of young people to the construction labour
- Ripple economic benefit from trade and commerce such as increased production of goods and services e.g. livestock inputs, access to better healthcare
- End isolation and remoteness in the area occasioned by poor access
- Boost national and international trade
- Some of the project road's development linkages include the facilitation of exploitation of the recently discovered oil in Lokichar and gold at Sekerr which has the potential to also attract an oil pipeline and a railway

Details and summary of the presentation are as per attached in Section 11.2

4. *THE DISCUSSIONS*

A question and answer session followed.

The Consultant invited the members present to air their views and ask questions and explained that owing to the high number of participants and the likelihood that same question might be repeated, five questions would be invited and answered in every run.

- Q1 Mr. Enock Kamar, a local church Pastor (who also prayed for the meeting) rightly noted that there are several access roads within the area. Having heard that the proposed road reserve will be 60m, Pr. Kamar sought to know the size of the said urban rural access roads.*
- Q2 Mr John Lokol from Kanamkemer Village, and Organizing Secretary to Turkana County Drivers and Transport Association sought (on behalf of the association) to know the fate of their office that lies in the vicinity of the road reserve. He further strongly sought to be assured that this time around; the road project will be actualized, given that they have been allegedly “cheated” twice in the past.*
- Q3 Mr Suleiman Ali Erot, a resident of Kawalase Village, sought to know what’s being done concerning the proposed bridge at Kawalase Lagha, which has been a dangerous black spot before and has adversely affected them. He asked whether the bridge will deter road carnage.*
- Q4 Mr John Lokopu, a youth from Kanamkemer Village, reiterated an earlier concern by one of the villagers, seeking for specific timelines as an assurance of government’s commitment to build the road this time. “The road has been discussed for the past 20 years”, John noted. Mr John further expressed concerns that the Authority had decided only to compensate for houses affected by the proposed construction. He wanted to know, “what happens to businesses affected?” given that while a house may cost Ksh. 2m (for instance), businesses therein may be worth 3m.*
- Q5 Mr Joseph Lopeiyo, a resident of Soweto Village sought to know the fate of contractors if they happen to do shoddy work on the road, such that two-three months later, the road layers would start peeling off.*
- Q6 Mr Paul Ole Kiyamat, a resident of Loiyo Village and a prospective candidate for the 2017 Baringo Gubernatorial election, inquired if there is a way in which they could join hands with concerned authorities to make the road project a success sooner than planned. “September 2015 is too far and elections are nearby again”, “Are you waiting for this money to accrue interest again?” he further asked.*

A (1) The Consultant clarified the road reserve sizes are as follows: Class A – 60m; B – 60m; C – 40m; D – 40m; and E – 36/24/18m. He further explained that in case of a change in road classification, a corresponding addition to the road width would be done. He noted that for town roads, there is no classification and for such, the minimum road width is 12m.

A (2 and 6) “You have been cheated many times. Even now, I would not know if am cheating because I have been sent here by the Authority,” the Consultant remarked. However, the Consultant expressed optimism that KeNHA would manage to secure funding for the project from the World Bank (WB), to a tune of K. Shs. 100 billion. He explained that at the moment, KeNHA was undergoing the procurement of Contractors for the construction works. The Consultant appealed to the residents to be patient with the Authority since there are government procurement procedures which must be strictly adhered to.

As for the said association’s office, the consultant advised the members of the association to go into agreement with the contractor or chief to see how that happens. In the meantime, however, the consultant promised to report on the matter.

- A (3) Concerning the Lagha Bridge on Lodwar-Kakuma road, the consultant assured the concerned residents that the bridge will be properly constructed to allow for two lanes of traffic. He further noted that a series of realignments had been done at the same location to take care of the concerns of the public.
- A (4) As for exact timelines for commencement and completion of the project, the consultant noted that due to the large size of the project (90-120km), the contract is not likely to take less than 48 months. Concerning business compensation, the consultant clarified as follows:
- Land – No compensation
 - Structures – Will be duly compensated
 - Livelihood costs – The compensation scheme will cater only for disturbance, but NOT stocks.
- A (5) Concerning residents' concerns of possible shoddy job by contractors, the consultant noted that while it is true that some contractors do shoddy work, this project will be an international job that will attract a minimum of six competing contractors. Out of these, only two can be Kenyan, with the rest being foreigners. This is likely to ensure quality. The consultant further added that this is the more reason the needed to be patient with the procurement process for the road, since "a quick process may yield a shoddy job".
- Q6 Mr Samuel Muya, Chairman TCDTA made the following comments:
- ✓ *KeNHA should not have sent you (the consultant) here before the procurement is complete. It would be god if the president intervened to put pressure to hasten this project.*
 - ✓ *(Concerning shoddy work) You buy a vehicle, two months down the line, the vehicle is broken down.*
 - ✓ *This procurement should take two months*
 - ✓ *If the contract does not benefit us as Kenyans, we should even work with one contract that brings benefits to us.*
 - ✓ *(On Compensation) It's the same government that issued allotment letters to people on road reserves. If you compensate only for the structures, you will have greatly inconvenienced the people.*
- Q7 Pastor William Ekai (TCDTA) made/asked the following comments/questions:
- ✓ *Turkanas are tired of much hearsay about this road, it is like a dreamSeeing is believing*
 - ✓ *This road is the lifeline of Turkana, South Sudan, Ethiopia and Lodwar. The economy depends on this road.*
 - ✓ *Drivers encounter a lot of vehicle breakdowns on this road.*
 - ✓ *Ruto (referring to the Deputy President) told us that road construction would begin in September 2014. Now you are talking of September again. Are you referring to September 2014 or September 2015?*
 - ✓ *Let the contractors come, but the sub-contracts should go to Turkanas so that money trickles down the economy.*
 - ✓ *Thika Road (referring to the Nairobi-Thika Superhighway) was done in less than one year. Let this road be done fast.*
 - ✓ *Engineer, (referring to the consultant), ask the national government to stop ignoring us in Turkana. We want to receive services the same way as in Nairobi.*
 - ✓ *We will be happy to see the contractor*
 - ✓ *Laghas should have bridges, not drifts anymore.*
- A (7;8) In response to the comments and/or questions raised in Q7 and Q8 above, the consultant made the following statements:

-
- ✓ *We do not know how to get to the president, but we will try to have your concerns forwarded.*
 - ✓ *Procurement is largely a choice of Kenyans. When asked to give a bank guarantee of Ksh. 15 billion (for such a big contract), how many Kenyan companies will manage?*
 - ✓ *On compensation, the right hand does not know what the left hand does. These are subject to RAP and will be adequately looked into.*
 - ✓ *I understand your concerns about “lies”, “even Hon. Ruto was here to promise us”, “now what next?”... My message is that the money for the contract has now been secured.*
 - ✓ *Concerning sub-contracts, that’s very Okay. Please negotiate with the contractor accordingly.*
 - ✓ *Thika Superhighway took three years to design and six years to build (NOT less than one year as alleged by one of you) with three lots of 12, 13 and 15 Km sections.*
 - ✓ *Please note that there are very many Laghas on this road and the road section is very long. Thus, this project will not take less than four years to complete.*
 - ✓ *Also note that Turkana is not isolated as you think by the national government. In fact, you are second in terms of budgetary allocations.*

5. *THE RESOLUTION*

The recommendations arrived at was that all present were in favour of seeing the speedy commencement of the rehabilitation work on the A1 road.

6. *AOB*

The public consultation meeting ended and stakeholders left at their leisure.

7. *CLOSING PRAYER*

The meeting ended at 12.30 pm with a word of prayer by the Pastor Peter Lokurukal.

11.11.2 List of Attendance – Scanned Copies

9

PROJECT: AT LODWAR VENUE: PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD LOCATION: LODWAR TOWN LOCATION DATE: LIST OF ATTENDANCE DISTRICT: TURKANA CENTRAL:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	SHADRACK EKARAN	22649264	LOUISIANA	0720-924230	[Signature]
	PHILIP MASIKA	0712570522	16 CALIFORNIA	0711670304	[Signature]
	JOHN KOLE	7870357	KANAM	0723044294	[Signature]
	PHANICE JEMAYO FIARO	13857522	KANAM	0710104894	[Signature]
	VERONICA SEKON MANGATHI	10124385	KANAM	0713127354	[Signature]
	LOKSEL AKOJ NAKULHO	26033208	NADAPAL	0700677775	[Signature]
	EKARE EKUNIA	24849641	NADAPAL	0700677775	[Signature]
	NABONG EKENO EKAL	0611211	NAKWAMEKWI	0714249378	[Signature]
	FREGAE LOLLINS	31943043	LORENHAPI	0706-917868	[Signature]
	KAMAN EKUMONUR EKEGH	20324587	NAKWAMEKWI	0718654843	[Signature]
	STREETER NANGE NERET	23481604	LORENHAPI	0708552837	[Signature]
	MERI AGAMARA LUMASIS	29632025	LOJO	0724651396	[Signature]
	ALFRED JAKUSAI	26324782	LODWAR	0711507506	[Signature]

9

PROJECT: AT LODWAR VENUE: PUBLIC CONSULTATION MEETING: PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD LOCATION: LODWAR TOWN LOCATION DATE: LIST OF ATTENDANCE DISTRICT: TURKANA CENTRAL:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	JOSPHAT TABAN ELOLOI	29707095 29707095	NADAPAL	0702225131	[Signature]
	TERESA NAMALWA WANANA	9838943	SOETO	0703711378	[Signature]
	MARIONE AIKAI	29747824	MAKUTI	0710458225	[Signature]
	NABONG WADALA	-	KANAMICEMER	0708177444	[Signature]
	KELVIN KHISA	3080116	DC	0719109048	[Signature]
	FERDINAND MARIJI	27291152	DC	0729167777	[Signature]
	WITCHIFFE WAFUNASU	26078170	KANAMKWA	0708128463	[Signature]
	ERIC MIONGESP	22408565	LODWAR	0725902448	[Signature]
	ALFATO SITHI	23822769	DC	0717937901 0717937901	[Signature]
	JACOB NAKONE	26969117	KANAM	0704135025	[Signature]
	SAMUEL LOMEE	136480024	ROADSIDE	0724968761	[Signature]
	ASMAN EMASE EKTELA	28833476	KAWALASE	0701850106 0702810182	[Signature]
	JOFREI SOTAR	22388689	KANAM	0705661016	[Signature]

9

PROJECT: PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 AT LODWAR PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 VENUE: LOCATION: LODWAR TOWN LOCATION DISTRICT: TURKANA CENTRAL:
 DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	LOKONENI ZINYEN FRANKO	32418240	Karamkemer	0788417582	
	HASSAN ISRAHIL	29816650	WAWAKEMER	0703853360	
	MADSES ENACHE EKAL	5644090	KINWALLASE	0707604205	
	MARTIN S. 983820	9838980 0705944022	Kwullase	0705951026	
	Fekumari Leyekou	4723597	NAKWAMBI	0704899520	
	JOSEPH KOROSI		SOWETO	0713928594	
	PATRICK LOKOYO		KAMBI MAKUSI	0710886954	
	SIMON ESEKON	25869767	NAPCIEI	0705837700	
	EKAI PANONRA	25498762	KALPANIA		
	MUTA DAVID	31408401	KALEMNGOROK		
	JOHN ELIMIM	11512234	LOITAKITO		
	ABEL MOSIUMA	9763601	NAKWAMBI	0727485963	
	JESCAH AKUDUNYANG			0705466581	

9

PROJECT: PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 AT LODWAR PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 VENUE: LOCATION: LODWAR TOWN LOCATION DISTRICT: TURKANA CENTRAL:
 DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	MICHAEL ELOJAN	25689135	LODWAR	0714911175	
	JOSEPH LOBOLIA	10125436	NAKWAMBI	0702087986	
	SERPHESTER MARIAN	12911403	NAKWAMBI	0712520671	
	JOSEPH EKALELE	24038381	NAKWAMBI	0704057820	
	JACKSON KOOLI	08260439	KAPIR	0728006895	
	TOPOS LINUS	29318700	T. EAST	0707894894	
	LOKADID CHRISTOPHER	29520967	T. EAST	0708898964	
	ABEL KEMBOI	30138808	T. SOUTH	0722447612	
	ROBERT EIARI	18410936 1761766	LODWAR	0717061766	
	JAPHETH AREMOTOT	23886218	L. TOWN	0717577638	
	MORRIS LOKWEE	25882801	LODWAR	07129122411	
	JACKSON KICHUMCHUM	24408290	L. TOWN	0722827631	
	MUGO MAWIRA MFWOT	32148806	L. TOWN	0724873272	

9

PROJECT: PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 AT LODWAR PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 VENUE: LOCATION: LODWAR TOWN LOCATION DISTRICT: TURKANA CENTRAL:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1	EVANS LOCHOMEN	29239206	KANWAGISEN	0706521968	[Signature]
	DANIEL EYANAE	29778527	KANWAZE	0718166378	[Signature]
	OTEN ERUKON		TURKHEL	0717561139	[Signature]
	COLLINCE LOKURE	25125031	KANAM	0709805041	[Signature]
	ILARRI MUTA	20114581	LOIMA	0717035499	[Signature]
	MOSES ETOMO		KANAM	0720212619	[Signature]
	PETER EKAI		LOKICHAR	0702571018	[Signature]
	DAVID EKEND	89326068	KANAM	0710473173	[Signature]
	ENOCH KAMARIO	9714081	NARWAMOKKI	0728052877	[Signature]
	GREGORY EWOL	32772213	KANAM	0705060856	[Signature]
	WALTER KIONDA	27115437	LODWAR TOWN	0718482555	[Signature]
	LOGOLE WA LOPODO	30474182	LODWAR TOWN	0711215916	[Signature]
	PATRIK KARIOKI	25932798	LODWAR TOWN	0717086372	[Signature]

9

PROJECT: PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 AT LODWAR PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 VENUE: LOCATION: LODWAR TOWN LOCATION DISTRICT: TURKANA CENTRAL:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
1.	PETER EBELI	27845586	LOTUREREI	0726146586	[Signature]
2.	PAUL OHE KIPTAMAI	23038107	LOYOO	0707359666	[Signature]
3.	DANSON LOTIK	27845736	LOYOO	0724850792	[Signature]
4.	JAMES LOPEYOK	31480811	KANAMKEMER	0705467046	[Signature]
5.	SAMON EWOL	24028696	KANAMKEMER	0718547287	[Signature]
6.	PAUL TIOKO	20015596	KANAM KEMER		[Signature]
7.	DARWIN ASKON	22830823	TOWN		[Signature]
8.	PHILIP KOKO	2407490	TOIKI		[Signature]
9.	PAUL NAKOBI	28473780	LOTUREREI	0714315449	[Signature]
10.	HESIEXIL LOICBA	28351677	TOWN	0715011987	[Signature]
11.	ANDREW LOKOPU	22709943	KANAMKEMER	0719196162	[Signature]
12.	ASTING BETEL	20060192	KANAMKEMER	0700176884 0719196162	[Signature]
13.	SIMON LOMULEN	273145612	KANAMKEMER	0714046819	[Signature]

9

PROJECT: PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 AT LODWAR PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 VENUE: LOCATION: LODWAR TOWN LOCATION DISTRICT: TURKANA CENTRAL:
 DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	DENNIS ERUCUDI ECHUMAN	21501308	KANAMKEMER	0728127983	
	NELSON EKIRU LOCHOKON	25636078	KAWALASE	0724593103	
	ALI EMORI EKAL	24297880	KANAMKEMER	0720266071	
	DAVID LOCHUCH	24068727	NAPUSMORU	0703833828	
	ISAAC R. KOMUSIA	23696667	NABIGOR	0716684772	
	JACKSON CHUKDAI	24501259	NAPETET	0701879779	
	EKIRU EMASE	4721881	KANAM	0722894500	
	JULIUS EMURIA	-	NAKWAMENWI	0729589332	
	ANTONG EMASE LOKRU	LOKRU	KANAM	0727408958 0704612900	
	JOHN AMOIT	23682814	KANAM	0704612800	
	JOSEP EKIRU	23397444	KANAM	0726900504	
	DAVID ERAT	20116896	KODOPA	0711925647	
	JAMES LOPEYOK	31480811	KANAM	0705467046	

9

PROJECT: PUBLIC CONSULTATION MEETING: LIST OF ATTENDANCE
 AT LODWAR PROPOSED REHABILITATION OF MARICH PASS-LODWAR ROAD
 VENUE: LOCATION: LODWAR TOWN LOCATION DISTRICT: TURKANA CENTRAL:
 DATE:

No.	Name	ID No.	Village/ Institution/ Organization	Telephone No./ Contact Address	Signature
	Nancy Wang'ila	11481344	Kenha	0722698674	
	Zablon Oonge	6412436	KenHA	0733750231	
	Patrick F. Korobor	8738930	CHIEF	0717580286	
	LOCHUCH & CHRISTOPHER	12910335	ALCHIEF	0729411104	
	AKIRIMETI S. SILVIA	30024191	OFFICE ASSIANT (ILLMO)	0708256339	
	EUNICE ETANAE	23566887	NAPEIT	0716688493	
	WILLIAM E. KAPUS	25064098	KANAMKEMER	0729269171	
	JOSEPH LOPOYOK	22668378	SALWETO	0727292614	
	MUNANGI, TON EKALC	28452744	KANAM	0721694970	
	STANWAL EKING	22150359	KANAM	0718610971	
	STEPHEN ERWI	22595941	NAKWAMENWI	0700250756	
	JOHN OCHINGO	12907511	KANAM	0717309028	
	SAMSON LOTOOI	02412513	NADAPAL	07275244013	

11.11.3 List of Attendance –

The following is the List of Attendance for the Public Consultation Meeting for the Proposed Rehabilitation of Marich- Pass Lodwar Road Project held at Mkeka Market in Lodwar Town, Lodwar Town Location of Turkana Central District on 21st January 2015. 124 people registered as shown in Table 11-8

Table 11-8: List of Attendance, Mkeka Market in Lodwar Town. Lodwar Town Location on Wednesday, 21st January 2015

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
1	Samwel Lopeyok	28189158	Kanankemer	0712605108
2	Luca Ekunyuk	31480916	Kanankemer	0714912191
3	Josphat Lokor	29781313	Kanankemer	0705661714
4	Peter Ebei	31975041	Kanankemer	0708475991
5	Fredrick Esiya	28470818	Nakwamz	0700913098
6	Shadrack Ekarani	23609264	Lokiriana	0720924230
7	Philip Masika	25718772	California	0711690304
8	John Kole	1870357	Kanan	0728044294
9	Phanice Jemaiyo Etabo	13857522	Kanam	0710104894
10	Veronica Sekon Nyangatim	10124385	Kanan	0713127354
11	Lokoel Akou Nakucho	26033208	Nadapal	0700677775
12	Ekare Ekunia	24849641	Nadapal	0700677775
13	Nabong Ekeno Ekal	0611211	Nakwamekwi	0719289378
14	Eregae Collins	31948043	Lorengyipi	0706917868
15	Kaman Ekumomur Esekoni	20329587	Nakwamekwi	0718654843
16	Sylvester Namoe Nieroy	23481504	Lorengyipi	0700852839
17	Mery Agamara Lumbasio	29632025	Loyo	0724651396
18	Alfred Jackson	26534782	Lodwar	0711502506
19	David Ngimoloi	22223317	Napetet	
20	Josphat Tarban Eloilo	28707095	Nadapal	0702225139
21	Teresa Namalwa Wangala	9838943	Soweto	0703711398
22	Marione Akai	29747828	Makuti	0710858225
23	Nadals Wanjala		Kanamkemer	0708112144
24	Kelvin Khisa	30510116	DC	0719109048
25	Ferdinand Maruti	27291452	DC	0729167777
26	Wycliffe Wafunafu	26078176	Kanamkemer	0708128463
27	Eric Nyongesa	22409565	Lodwar	0725902448
28	Alfayo Sitati	28822769	DC	0717937901
29	Jacob Nakone	26969117	Kanam	0704135025
30	Samuel Lomee	136480024	Roadside	0724968761
31	Aswan Emase Ekitela	28833476	Kawalase	0701350106
32	Jofri Soitar	22388689	Kanam	0705661016
33	Lokolonyoi Esinyen Franco	32418240	Kanamkemer	0728417582
34	Hassan Israfil	29816650	Kanamkemer	0703853360

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
35	Moses Emase Ekal	5644090	Kawalase	0702604202
36	Martin S.	9838920	Kawalase	0705951026
37	Echumani Lokoyou	4773597	Nakwamekwi	0704899520
38	Joseph korodi		Soweto	0713928594
39	Patrick Lokoyo		Kambi Makut	0710880954
40	Simon Esekon	25869767	Napetet	0705837710
41	Ekai Pangara	25498762	Kalponia	
42	Muya David	31408401	Kalemngorok	
43	John Elimlim	11512234	Loitakito	
44	Abel Mosioma	9763601	Nakwamz	0727485963
45	Jescah Akudunyang			0705466581
46	David Ekitala	26527837	Lodwar	0710292486
47	Michael Ewuoton	25689135	Lodwar	0714911175
48	Joseph Labolia	10125436	Nakwamz	0702087926
49	Selphester Mariaio	12911407	Nakwamz	0712520671
50	Joseph Ekalele	24038881	Nakwamz	0704057820
51	Jackson Kooli	28260439	Kaptir	0728006895
52	Topos linus	29318700	Turkana East	0707789494
53	Lokadio Chritopher	29520967	Turkana East	0708898964
54	Abel Kemboi	30152808	Turkana South	0722447612
55	Robert Elari	12410936	Loyoo	0717061766
56	Japheth Aremtowot	23886218	Lodwar Town	0717577638
57	Moris Lokwee	25882801	Loyoo	0712922411
58	Jackson Kichumchum	24408290	Lodwar Town	0722827631
59	Mugo Mawira Newton	32148806	Lodwar Town	0724873272
60	Evans Lokochon	29239206	Kawalase	0706521968
61	Danie Eyanae	29778527	Kawalase	0718166878
62	Oyen Erukon		Turkwel	0717561139
63	Collince Lokure	25125031	Kanam	0729805241
64	Illary Muya	20114581	Loima	0717035499
65	Moses Eyomo		Kanam	0720212619
66	Peter Ekai		Lokichar	0708571018
67	David Okeno	29326068	Kanam	0710473173
68	Enock Kamario	9714081	Nakwamekwi	0728054879
69	Gregory Ewoi	32972213	Kanam	0705060856
70	Walter Kiong'a	27115979	Lodwar Town	0718482839
71	Lohule Wa Lopodo	30474183	Lodwar Town	0711215916
72	Patrik Kariuki	25932798	Lodwar Town	0717086392
73	Peter Ebei	27845586	Loturerei	0726146586
74	Paul Ole Kipyamai	23038109	Loyoo	0707735966
75	Danson Lotik	27846736	Loyoo	0724850792
76	James Lopeyok	31480811	Kanamkemer	0705467046

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
77	Samson Ewoi	24623686	Kanamkemer	0718547287
78	Paul Tioko	20015596	Kanan/Kasarani	
79	Darwin Esekon	22835613	Lodwar Town	
80	Philip Lokwawi	24757490	Lodwar Town	
81	Paul Nakoel	28473780	Loturerei	0714315149
82	Hesiekil Lokea	28331679	Lodwar Town	0715011987
83	Andrew Lokopu	22709943	Kanamkemer	0719196162
84	Asting Betel	26860193	Kanamkemer	0700176884
85	Simon Lomulen	2731456128	Kanamkemer	0714046819
86	Dennis Erukudi Echuman	21501308	Kanamkemer	0728127983
87	Nelson Ekiru Lochokon	25636078	Kawalase	0724573103
88	Ali Emoni Ekar	24297882	Kanamkemer	0720266071
89	David Lochuch	29068727	Napusmoru	0703833828
90	Isaac E Komusia	23696467	Naisger	0716689772
91	Jackson Chukdai	24501259	Napetet	0701879779
92	Ekiru Emase	4721887	Kanan	0722894500
93	Julius Emuria		Nakwamekwi	0729589332
94	Antone Emase Lokiru		Kanan	0727401958
95	John Amoit	23682814	Kanam	0704612900
96	Josep Ekiru	23397444	Kanam	0726900504
97	David Erot	20116896	Kodopa	0711925647
98	James Lopeyok	31480811	Kanam	0705467046
99	Nancy Wanjiku	11481344	KeNHA	0722698674
100	Zablon Oonge	6412436	KeNHA	0733750231
101	Patrick E. Lorogot	8738730	Chief	0717580286
102	Lochuch E. Chrisopher	129190335	A/Chief	0729411104
103	Akirimet S. Sylvia	32024191	ILLIMIO	0708256339
104	Eunice Eyanae	23566267	Napetet	0716688493
105	William E. Kapos	28064098	Kanamkemer	0729269171
106	Joseph Lopeyok	22668378	Soweto	0727292614
107	Hunningtone Ekale	28452749	Soweto	0727292614
108	Samwel Ekiru	22150359	Kanam	0721694970
109	Stephen Ewoi	225959441	Nakwamekwi	0706250756
110	John Ochieng	12907511	Kanam	0717319048
111	Samson Latoot	22412513	Nadapal	0727544013
112	Bonface Wekesa	26079163	Lodwar	0717737071
113	Simon Lokoel Epetet	233347332	Lodwar	0715097624
114	Timama Akol	7565281	Kanamkemer	0704702885
115	Ekitela Kalale	4799318	Kanamkemer	0710473112
116	Nanok Lukureng	32324678	Lodwar	0714466122
117	Simon Kepenei	0723390	Lodwar	0726799024
118	Antony Emase	23848311	Kanamkemer	0727401958

No.	Name	ID. No.	Village/ Institution/ Organization	Telephone No./ Contact Address
119	Lucas Ejikon	25686349	Nakwamekwi	0716102092
120	Mark Lomilio	27069262	Nakwamekwi	0716896913
121	Bonface Kimongo	32694557	Kanamkemer	0715563085
122	David Ekai	23886218	Lodwar Town	0717577638
123	Eliya Nateleng Nabuni	22893339	Kanamkemer	0736785326
124	Paul E.	27658588	Lodwar Town	0712808546

11.11.4 Photographs of the Meeting



Plate 11-57: the presentation



Plate 11-58: Attendees listening



Plate 11-59: Listening



Plate 11-60: attendees sheltering under a tree



Plate 11-61: Questions



Plate 11-62: Answers



Plate 11-63: Consultations



Plate 11-64: The assistant chief, thanks