

Executive Summary

The Project

The Kenya National Highways Authority (KeNHA) on behalf of the Government of the Republic of Kenya issued an Invitation to Tender dated November 2011, for eligible Consultancy firms to submit both Technical and Financial Proposals for Consultancy Services for Preliminary and Detailed Engineering Design for the dualling of Mombasa – Mariakani (A109) Road. The A109 Mombasa-Mariakani road is situated in Mombasa and Kilifi Counties of Coastal Kenya. The project road is approximately 41km and forms part of the 500 km Mombasa-Nairobi highway. The project road starts at the junction of Kenyatta Avenue (A109) and Digo Road (A14) within Mombasa City. It runs in a northerly direction through Changamwe, Miritini, Mazeras, Mariakani, before terminating at Mariakani Weighbridge.

This section of A109 is faced with the challenge of rapid increase in traffic volumes including light vehicles and heavy trucks over the years, intensive land use changes and developments without matching maintenance and expansion of the road. For this reason, the current capacity of the road is overwhelmed leading to persistent traffic congestion with far reaching social inconveniences, economic losses, safety risks and environmental degradation to mention a few. It is for this reason that KeNHA has identified the road as deserving rehabilitation and expansion (details on the intervention are in the design drawings and associated notes). A feasibility study and detailed engineering design was required so as to rehabilitate and upgrade the road in order to increase the capacity and enhance the flow of traffic taking into consideration the proposed works.

The ESIA Study

Implementation of major projects in Kenya is preceded by the Environmental and Social Impact Assessment studies. It is a requirement to undertake the Environmental and Social Impact assessment according to the regulations stipulated in The Environmental Management and Coordination (EMCA) Act 1999 and the Environmental Impact Assessment and Audit Regulations 2003. To ensure that the above project is implemented in an environmentally and socially sustainable manner, Aquaclean Services Limited, an independent Firm of Experts, was sub-contracted to conduct an Environmental and Social Impact Assessment for the proposed project. The ESIA for the proposed project was undertaken simultaneously with the feasibility study of the proposed project before the project implementation so as to identify environmental and social impacts and offer mitigation measures to the anticipated impacts.

The ESIA was carried out in compliance with the Government of Kenya's Environmental Management and Co-ordination Act of 1999 and the Environmental (Impact Assessment & Audit) Regulations, June 2003, among other relevant laws, regulations and guidelines. The extent of involvements in respect of land acquisitions and compensation factors was determined through a Resettlement Action Plan (RAP) developed under the Feasibility Study process in accordance with the appropriate land acquisition procedures. Rehabilitation and expansion of A109 has notable potential social, economic and environmental parameters. The environmental and social impacts study was designed to identify these parameters and establish enhancement approaches for the positive aspects while developing adequate remedial measures for the negative impacts.

Key Observations

The project road is situated in Mombasa and Kilifi Districts of Coastal Kenya. It starts at the junction of Jomo Kenyatta Road with Digo Road (A14) within Mombasa City to Makupa area adjoining the Makupa Causeway into Changamwe at the Airport – Port and Nairobi Road roundabout. The road then traverses through the trading centres of Changamwe, Mikindani junction, Jomvu Kuu, Miritini, Mazeras before terminating at Mariakani Weighbridge area. It serves connections of the Mombasa mainland, Kilindini Harbour, Moi International Airport and a host of various other public and private premises. The existing single carriageway sections are narrow with poor conditions are therefore a big impedance to flow of the high traffic experienced between Mombasa and Mariakani. The sections are:

- ✓ Kenyatta Avenue/Digo road Roundabout (A14/A109 junction) to Changamwe 6 Km long and currently dual carriageway
- ✓ Changamwe to Miritini, 8.8 Km long and currently single carriageway
- ✓ Miritini to Mazeras, 4.9 Km long and currently dual carriageway

- ✓ Mazeras to Mariakani Weighbridge, 20.1 Km long and currently single carriageway

Mombasa – Mariakani road can be socially and economically divided into three sections as follows:

- ✓ Urban/Peri-urban sections covering Mombasa island from Digo road through Changamwe to Jomvu as well as the urban centers of Mariakani and Mazeras.
- ✓ The sections are characterized by commercial activities, small scale trading, heavy industries (steel makers, Doshi, Mabati Rolling Mills, Nyumba and Kaluworks among the many) and residential (Changamwe, Mikindani Jomvu and Bangladesh slum among others).
- ✓ Rural sections from Mazeras and all sections from the suburbs Mombasa city through Mazeras to Kokotoni to Mariakani,
- ✓ These are characterized with huge tracts of empty land, livestock keeping and scattered homesteads. However, observations show an emerging trend in land development along the corridor mainly commercial.

Mombasa – Mariakani Road (A109) running from Digo road junction constitutes the main link between Mombasa City Island to the upcountry including among other locations Voi, Nairobi City, Western Kenya, Uganda and other states. The road traverses the Mombasa County and is the boundary corridor between Kwale and Kilifi. The major highways crossing Mombasa Island have also attracted high population such as the Mombasa – Nairobi in Changamwe division, Mombasa – Malindi in Kisauni Division, Mombasa – Lunga lunga in Likoni division. Along the Mombasa Mariakani (A109) project road high population is found in the Island, Changamwe, Bahari and the Jomvu divisions.

According to the 2009 Kenya population census, the three counties traversed by the project road had a total population of 2,699,036 persons (Male 1,338,447 and Female 1,360,589). Most of the population in Mombasa County is concentrated in the urban areas while in Kwale and Kilifi, majority of the population is rural and concentrated in high potential areas.

Settlements patterns within the project area are mainly influenced by the infrastructure network; (roads, water availability, telecommunications and electricity), access to employment opportunities, land tenure as well as cheap housing and agricultural potential (dictated by nature of soils) and the coast line. High population densities are found in the Mombasa metropolitan areas of Island, Changamwe, Bahari and the Jomvu, as well as Mariakani and Mazeras towns including their neighbourhoods. Sparsely populated areas along the project road consist of Samburu division in Kwale and Bamba and Kaloleni division in Kilifi County. These areas are rangelands and less productive agriculturally. Mombasa is a cosmopolitan urban town well reflected by the diversity in ethnic composition from all parts of the country, tribes and races. The major ethnic groups are the Mijikenda, Taita, Pokomo, Orma, Akamba and the Swahili.

Land use in Mombasa County is diverse depending on the physical location. The major land use is residential development, industrial development, transport and communication, extractive, institutional and for commercial and service purposes among others. Most of the public land is mainly used for institutions development such as religious, health educational, military and the community facilities such as social halls, public gardens, show ground and sports ground.

The industrial land is not defined although Changamwe division is mainly considered as an industrial area which has several industries such as Kipevu power generation and the Kenya Oil refinery company. Other industrial set-ups are at the Bamburi cement factory and the Kalu works.

The commercial and services area is mainly within Mombasa island characterized by shops, open air markets, hotels, vehicle parking areas, commercial buildings (go downs, construction yards, show rooms) among others.

The project road traverses a diverse environmental and social setting featuring among others diverse social and economic activities and developments and land-titling regimes. The zones within the urbanized areas are characterized by aerial emissions noise, wastes generation, high traffic (human and vehicular), and potential safety risks. The semi-urban and rural areas are mainly be characterized with limited vegetation cover disruption soil erosion and safety risks and social disruptions. The following sections outline key areas of importance during the project implementation and post construction use of the road.

Anticipated Impacts

The environmental and social impacts study is designed to identify these linkages and establish enhancement approaches for the positive aspects while developing mitigation measures for the negative impacts. The key areas of interest would include:

Focal Areas	Parameters/Environmental and Social Considerations
Natural Resources (forests, vegetation/plant species, land, air, etc.)	<ul style="list-style-type: none"> • Land degradation through soil loosening and loss through erosion, • Siltation of sources of water e.g. springs, stream, rivers, wetlands, etc., • Water quality degradation from road construction and use related pollutants (oil, grease, paint and asphalt), • Permanent destruction of vegetation cover along routes, diversions, contractors camp sites, material holding area and/or borrow pit sites (quarries), • Disruption of wild life and general biodiversity. Effect may also be felt in nearby sanctuaries or sensitive habitats, • Emissions into the air of dust (during earth moving and machinery movement) and smoke/hydrocarbons from equipment during construction and increased traffic flow after commissioning, • Degradation of wetlands and other hydrological regimes along the route, • Soil contamination due to facilities requiring decommissioning owing to land use change, • Other aspects as may be identified in the field.
Physical Environment (topography, land, forms, geology, climate, etc.)	<ul style="list-style-type: none"> • Changes in micro-topographic patterns along the route, • Interferences with the hydrological trends and hence surface runoff, • Effects on the drainage systems and hydrological regimes, particularly with increased magnitude in surface runoff, • Creation of open quarries materials borrow site, effectively changes land forms in certain areas, • Effects on sub-surface geological formations as a result of earth moving and rock breaking activities, • Interference with sensitive features such as old trees, historical buildings, public amenities, cultural features, etc., • Tangible cultural heritage, • Other aspects to be identified in the field.
Social and economic environment (Populations trends, settlement, land use, infrastructure, economic activities, etc.)	<ul style="list-style-type: none"> • Population and settlement trends and projections upon commissioning of the road, • Migration of outsiders for construction, • Increased moral decay during construction, • Changes in land use and urban growth trends, • Changes in major economic activities e.g. settlements, trading, etc., • Benefits of the road to the communities, • Gender streamlining, • Accessibility and efficiency in transport of people and their goods, • Changes in socio-cultural practices due to external influence, • Potential displacement of persons and livelihoods, • Demographic profiling (incl. socio economic baseline), • Adverse impacts of road works on existing communities, • Intangible cultural heritage, • Cross cutting issues – poverty, youth, persons with disabilities, • Additional issues anticipated from social interactions.
Health, Safety and Security aspects (construction safety measures, role of road in security upon commissioning, etc.)	<ul style="list-style-type: none"> • Safety of the construction equipment to the workers general public and the wildlife, • Interaction with the construction workers may lead to high HIV/AIDS cases, • Noise to the residents living immediately along the road, • Signage to road users during construction, especially at night, • Increased traffic flow upon commissioning implying higher risks of road accidents to the people and wildlife, • Easy access by medical suppliers and security agents to the benefit of residents, • Sanitation from construction sites, • Handling of health risk sites and materials (graves, pit latrines, cattle dips, etc.), • Easing the persistent traffic congestion characteristics of the road section for many years.

Positive Impacts

The construction works will contribute towards poverty reduction in the affected areas through increased disposable incomes realized from employment of skilled and unskilled local labour, spending by the road contractor(s) as well as road users on purchase of supplies (consumables and road construction materials, e.g. gravel, etc.) and accommodation services. Upon completion of the dualling project, the following benefits area envisaged

- ✓ Travel time between Mombasa and Mariakani and vice versa (especially the section between Changamwe and Miritini (commonly famous for long traffic congestions) will be greatly reduced through improved traffic flow,
- ✓ Vehicle maintenance costs will be lower. This may effectively translate into direct and indirect costs,
- ✓ Security management
- ✓ Reduced environmental pollution from streamlined drains

Overall, the road will be an economic pillar for realization of the Kenya Vision 2030 by enhancing efficient transportation and movement of people and goods. Speedy movement and spurring economic development between Mombasa Port locally, the hinterland of Kenya as well as the neighbouring countries. The construction activities may, however, slow down local traffic movement especially on deviation sections, through that period.

The improved road also has a potential to enhance appreciation of land and property values in the road section and the immediate areas. Among the appreciation will include value addition to commercial and economic investments, potential for institutional development and attraction for residential housing development. This may not only reduce the congestion in the city centre but will also create manageable economic and social centres outside the CBD. Other Benefits will include;

- (i) Efficient transportation locally and regional,
- (ii) Improved road safety,
- (iii) Attractive environment for tourism,
- (iv) Reduced aerial emissions locally,
- (v) Opportunities for better life for the riparian communities through enhanced movements, trade, security, road safety etc.

Negative Impacts

Due to the need for focused mitigation initiatives to the negative impacts, this report has identified the issues in detail, subsequently elaborated in the environmental and social management plan. Most of the impacts associated with the project implementation are expected from the construction phase and are the following:

- ✓ Environmental pollution from emissions (aerial and dust) into the air from work areas and construction equipment,
- ✓ Damages to land and soil arising from materials extraction, spoil disposal, waste disposal from camp sites and work areas as well as disposal of used oil and grease and the decommissioning of facilities on contaminated soil (e.g. petrol stations) owing to required land use change
- ✓ Loss of vegetation from material sites as well as limited removal from the road corridor,
- ✓ Disruption of drainage along the built-up areas. This is specifically noted along some areas including Changamwe – Jomvu – Miritini where natural drainage outfalls have already been compromised by residential and commercial development activities. Increased road surface and surface runoff may pose a challenge to the existing drainage capacity and hence to the adjacent premises as well as to the road itself,
- ✓ Noise and vibrations to the neighbouring premises arising from construction equipment, deviated traffic and other sources,
- ✓ Potential rise of infections associated with interactions between host communities and incoming construction labour force, including HIV/AIDS and other communicable diseases,
- ✓ Social and economic disruptions (disturbance of business) during the construction phase affecting business facilities, informal livelihoods activities, dwellings and social amenities,
- ✓ Potential relocation of businesses and residential dwellings situated on/alongside the road reserve, owing to the demand for expansion or realignment space of the road,

- ✓ Conflicts on access roads arising from deviated traffic during the construction phase and may include congestion, potential accidents, damages to the road following increased traffic loadings,
- ✓ Road safety aspects associated with the road usage upon completion, especially in the high populated areas.

Resettlement Issues

The overall objective of the resettlement plan is to identify the exact extent of the adverse impacts provoked by the project and develop a mitigation plan to ensure that all of them are exhaustively identified and duly remedied, so that the community as a whole is not harmed as a result of the project during and after construction of the road. The scope of the resettlement action plan will ensure that all guidelines of the various lenders are adhered to. Specifically, the African Development Bank's Policy on Involuntary Resettlement, i.e. Involuntary Resettlement Policy (2013); will be adhered to, complemented by specific provisions of the standards held by the European Investment Bank (EIB). The Policy requires the borrower to prepare a full resettlement action plan (RAP) for any project that involves the displacement of a significant number of people (200 or more persons) who would be displaced with loss of assets, loss of access to cultural assets or reduction in their livelihood. The project at hand falls within such category, necessitating the elaboration of a RAP.

The full replacement plan will be released as a supplement document to the Environmental and Social Impact Assessment (ESIA) summary for the Bank's financed projects involving involuntary resettlement issues, as well as on the EIB's Public Register. The resettlement action plan should be time specific with an appropriate budget incorporated as an integral part of the project design. The Plan shall give details of the compensation foreseen for loss of assets, livelihoods and infrastructure and restoration action expected for those losing their means of livelihoods or having these temporarily disturbed as a result of the project. The key components in the RAP's structure are;

Objectives of the RAP

The RAP aims to raise awareness of the project's consequences in terms of involuntary resettlement, both among the wider public and those directly affected by it. The RAP indicates how any adverse impacts will be mitigated, whether arising from loss of assets, or access to assets and/or restrictions of land use, whether temporary or permanent, direct or indirect, partial or in their totality, and to assist all displaced persons to improve, or at least restore, their former livelihoods and living standards and adequately compensate for incurred losses, regardless of the character of existing land tenure arrangements (including title holders and those without the title) or income-earning and subsistence strategies. The RAP also advises on consultation measures aiming to enable the participation of the project-affected people throughout the resettlement process, granting particular attention to vulnerable groups. The RAP defines clearly the project affected persons, their eligibility for compensation, the assets to be compensated and the cut-off date for eligibility; provides a socio-economic basis for identification of entitlements and strategies for minimising the impacts on the project affected persons; establishes rates for compensation on loss of assets and the methodology of determining the values; establishes land acquisition and compensation process and establish a dispute resolution mechanism to address any grievances arising from the displacement; and, identifies any gaps between Lenders' standards and the laws of Kenya on matters addressing issues of involuntary displacement and suggests how the gaps can be narrowed to meet the former.

Eligibility determination

The RAP identifies the following groups as entitled to compensation and/or assistance under its scope: Project Affected Persons (PAPs); Project Affected Families (PAFs) ; Significantly Project Affected Families (SPAFs); Displaced Family; Squatters. Particular attention is paid to vulnerable population groups who might suffer disproportionately from the effects of displacement, these potentially being ethnic minority, women and child-headed households, impoverished youth, the most poor (based on the poverty line), the disabled and elderly.

Cut-off date

The general public were informed during public consultative meetings that the census exercise for project affected persons and the socio-economic survey completed in June 2014 contributed to the establishment of the cut-off date determining eligibility and inclusion under this RAP's list of PAPs. Anybody who had any interest within the road corridor was expected to have registered his/her interest

for inclusion in the exercise by 30th July 2014. Anyone who would not be captured by such cut-off date would be considered in a census verification exercise closer to the time of the RAP's implementation.

Asset Valuation

The detailed valuation of assets along the project roads has not been undertaken but an estimate has been made for the purpose. For a final valuation to be undertaken, it will be necessary for the land acquisition formalities to be completed in accordance with the provisions of the law governing compulsory acquisitions. This will entail the Gazetting of the affected properties, holding public inquiries to receive claims from the owners and any other interest holder. During the intervening period, an inspection will be carried out to ascertain the condition of the premises affected for assessment purposes.

Official searches would also be conducted to verify ownership and any encumbrances attached to the title. After the inquiries are held, an award is made to all affected persons recorded after comparison of individual claims and the official assessment by the government valuer. Option is provided to accept or reject the offer and recourse is provided to appeal on the quantum of the award for enhancement by the tribunal or the Environment and Land Court established by provisions of the Constitution of Kenya (2010).

Land Acquisition

The function of acquiring land compulsorily for public purposes is vested in the National Land Commission by the Constitution of Kenya (2010) and the Land Act. The Commission is responsible for arranging the Gazetting of the private land to give notice to the affected persons. It arranges for valuation inspections of the affected properties and issues the award after determining the claims submitted at the public inquiries. The act on behalf of the project proponent in arranging for taking possession of the affected land after making the compensation payment to the land-owners.

Compensation

The valuation process will provide compensation for loss of land, shelter and developments, loss of incomes or temporary disturbance of livelihoods to all affected persons, including lease-holders and tenants, as well as catering to the impacts borne by people lacking rightful titles. Payments will be made for restoration of loss or temporary disturbance of livelihoods and restitution of affected public institutions facilities that do not receive monetary payments. Other costs that will be considered for payment will include payment of transport costs to the displaced persons to the relocation sites. They will also be considered for assistance to be allocated any facilities developed to support their continued livelihoods, so that restoration of living standards to ex ante levels will be attained. A flat rate disturbance allowance will be payable to the property owners over and above the award for any inconvenience suffered as a result of the acquisition.

It is important to note that for purposes of the Resettlement Plan, individual land demarcation was not established and such will be done when carrying out final valuations for the project road after the land acquisition has been compiled. The estimate of the value given is based on calculation of compensation figures referenced to the diminution in the market value of the land. The effects of severance and injurious affection plus any disturbance element has also been included by the additional 15% of the market value of the properties affected.

It is also important to point out that the compensation budget for crops is expected to be fairly minimal as most of the affected land is under commercial use whilst indigenous trees and subsistence farming of maize, potatoes and beans will not be valued, as these subsistence crops are expected to be harvested within a short time. Perennial crops were also found within the parcels of affected parcels of land which had palm and coconut trees and will be duly compensated.

Environment and Social Management Plan

The guiding principles behind the road project are based on the national objective of enhancing environmental, social and economic benefits to the affected persons as well as sustainable national development and in compliance with the environmental laws (EMCA, 1999 and associated regulations as well as relevant sectorial statutes). To achieve these objectives, the project should be acceptable to the majority and ensure minimal effects to the physical environment through integrated stakeholder consultations, evaluations and review of the design aspects throughout the project route and a sustained monitoring of the road upon commissioning.

The Environment and Social Management Plan (ESMP) actions the key management objectives in terms of implementing remedial/mitigation measures for identified environmental and social impacts. Broad indications of the responsibilities have also been discussed along with the possible implementation constraints anticipated. It should also be noted that the ESMP is of a dynamic nature and continuous reviews would be necessary throughout the project implementation period.

The scope of this environmental and social management plan (ESMP) is to guide all parties involved during construction, maintenance and utilization of the road towards fulfilment of environmental and social requirements. The management plan has a long-term objective to ensure that:

- ✓ Environmental management conditions and requirements are implemented during the construction and post-construction period;
- ✓ The social interests of the stakeholders are considered throughout the construction and post commissioning phases of the roads and all rights interfered with are duly remedied;
- ✓ Maximum economic benefits to the project road corridors and the whole country; and
- ✓ Precautions against damages to environment, biological diversity and sensitive habitats (where present).

Precautions to ensure that damages to the environment are minimized calls for a concerted effort from the project management, the Contractor(s) and all stakeholders. The Resident Engineer is expected to discuss and convey the contents of this management plan, recommended mitigation/interventions outlined under the impact, instructions from National Environment Management Authority (NEMA) as well as the wishes of the affected stakeholders to the Contractor and construction workers for integration in the construction process. The local NEMA Offices will also be involved to take advantage of this valuable information on the environmental trends in the area.

As the road construction works may impact upon and prove an inconvenience to the daily activities and safety of different stakeholders, all stakeholders will need to be involved in the project monitoring framework through on-going engagement and disclosure of timely information by KeNHA on the construction schedules, duration of construction works, potential interference with their daily activities and other issues arising. This will also help in resolving of problems related to construction and prevention of possible social conflicts associated with the project. Communication channels should always be open to ensure proper and timely responses to any complaints that may arise from the road project and a grievance mechanism will be established at project level to facilitate exactly this.

Monitoring of RAP and ESMP implementation

A monitoring and evaluation (M&E) program is required to be developed to provide feedback to project management which will help keep the programs on schedule and on track with the objectives they are expected to serve. Monitoring provides both a working system for effective implementation of the RAP by the project managers, and an information channel for the PAPs to assess how their needs are being met. RAP monitoring shall be conducted in two ways namely Advisory Committee and internally by Redress Committee.

A monitoring and Evaluation mechanism need to be factored into the project implementation to ensure that the objectives of mitigating the negative impacts in the project are served in a timely and effective manner. The process will ensure that the RAP delivers on the entitlement benefits. Monitoring and Evaluation will provide a link between the project affected persons/community and the implementers and facilitate the field operatives to take remedial measures with a view to achieve the targets within schedule. The Monitoring and Evaluation process will enhance the delivery capacity of KeNHA and maximize the benefits of the RAP package to the affected persons/communities.

The process will be monitored both internally and externally with the project field staff dealing with the day-to-day operational issues. This will include payment of compensation, physical identification of project affected persons and arrangement for their payments, relocation and resettlement.

Project Implementation Schedule

It is envisaged that the detailed design reports and tender documents will be completed by the end of year 2014. Procurement of the Contractor(s) will take approximately 12 months. This implies the

construction could begin in early 2016 on the earliest. The construction period is estimated at 36 months (3 years) up to the end of 2019.

Project Costs Estimates

Four Alternatives were considered for the design of the project road (the Alternatives with coats are in annex). Alternative 3 including construction of concrete pavement on the heavily loaded road sections (mainly Changamwe – Miritini areas and sections of the slopes towards Mazeras) and asphalt concrete applied for the rest of the road section (Miritini area to the end of the project at Mariakani weighbridge) including the service roads and NMT sections. Alternative 3 as the considered option has been estimated to cost **KShs. 24,537,000,000.00 (USD 315.522M)**. Compensation Costs are estimated as **KShs. 647.5M**

Conclusions

The proposed rehabilitation and expansion of Mombasa – Mariakani Road is a national flagship under the Kenya Vision 2030 and has economic benefits to the country as well as the immediate neighbouring states (Uganda, Sudan, Rwanda and to some extent Burundi). At the local level, the road expansion will address the persistent traffic congestion between Miritini and the City Centre (where at time it runs into hours) through streamlining the flow of heavy traffic. It is worth noting that the road is the only gateway into the City of Mombasa from the western mainland.

While appreciating the benefits and positive impact associated with the project, there are negative impacts that need to be addressed and mitigated during the construction and post-construction phases. For this reason, a comprehensive environmental and social impact assessment (ESIA) study will be necessary. Equally important will be a comprehensive resettlement action plan (RAP) considering the extent of potential displacements and disruptions along the corridor during the construction.

The ultimate goal of this ESIA study was to identify impacts resulting from the proposed project that were determined on the basis of the baseline conditions to be established during the field work and information obtained from the documents reviewed. The environmental and social impact assessment study process was designed to provide a view of the environmental and social status and establishment of the diversity on physical environment, social and ecological status in the area.

Following on the above observations, the conclusions below were arrived at;

(i) There is general appreciation of the road improvement by a majority of the residents and stakeholders. This arises from the frequent traffic congestion along the project road leading to high travel times and loss of man-hours and associated social and economic implications. Benefits established under this study ranges from regional and national (goods transit to other parts of the country and the neighbouring states) and local (travel time reduction, road safety enhancement, environmental pollution control, security response improvement, etc.)

(ii) Following previous experiences in road construction where encroachments have been the key focus, there is concern among the communities including landowners and business people adjacent to the road reserve who are anxious to know the extent of the road and level of land acquisition early in advance to enable appropriate agreements and compensations to avoid potential conflicts.

(iii) Encroachments into the road reserve is limited to commercial and small scale traders, mostly with temporary structures and limited permanent structures (there are no notable residential features within the road reserve). The affected persons are to be identified through a RAP process for appropriate relocation mechanisms,

(iv) The road expansion from 36.5m to 40m will need appropriate land acquisition ranging between 3 – 4m to meet the space requirements. Land acquisition on areas with interchanges and major junctions may have a higher demand for land space. Again, the RAP process is to provide guidance on the land acquisition and mechanisms of acquiring the same.

(v) The road section harbours public amenities including water pipelines, power lines (underground and above ground), sewer systems, communication lines, drainage systems, etc. it is expected that some of the service lines are likely to be affected during the construction phase. However, a Service Providers forum will be established under KeNHA with a view to identifying collaborative mechanisms of dealing with the services relocation.

(vi) Environmental issues are mainly on environmental health and environmental pollution as opposed to physical environmental destruction due to the urban nature of a larger part of the road. Aerial emissions, noise and vibrations, waste management and safety are the key environmental concerns during the project implementation. Appropriate mitigation measures have been provided under the EMP for integration during the construction period,

(vii) Due to the location of the project road, construction materials will be sourced outside the project areas. The potential sources have been identified through the design process; the Contractor(s) still have an obligation to identify specific sources. In this regard, it is noted that comprehensive ESIA studies will still be required for approval of the material sites chosen by the Contractor(s),

(viii) In view of the above observations, the level of environmental assessment has been placed under Category 1 in accordance with AfBD Integrated Safeguards System (ISS) considerations. For a Category 1 project, a Full ESIA Study and Full RAP would be required.

(ix) This Resettlement and Action Plan will be implemented by compensating the individuals affected by the proposed road activities. The compensation and assistance allowances will enable the PAPs to relocate and pave way for the road construction.

Recommendations

(i) A comprehensive Resettlement Action Plan will be necessary for the road to address the potential social and economic displacements during the project implementation.

(ii) The meaningful engagement of the stakeholders and public during the project implementation, and particularly during the construction and early stages of the road use would be necessary to ensure minimized social impacts. Access to recourse will be guaranteed by the establishment of a grievance mechanism.

(iii) The Contractor(s) will be expected to develop detailed and tailored construction environment and social management plan(s) in line with the one developed under this report for purposes of supervision and continuous monitoring.

(iv) All material sites and selected decommissioning of existing facilities on contaminated soil will have comprehensive ESIA undertaken and management plans developed such as to include extraction practices, haulage and materials management rehabilitation plans.

(v) As part of the beautification of the road, a comprehensive landscaping component should be integrated into the project implementation.

(vi) Appropriate safety audit should be undertaken for the road to guide on the implementation and usage of the road thereafter.

(vii) Continuous engagement of the road users and community members on safety will be necessary on the long term management of the road section.

(viii) It is recommended that any planned of the project affected persons precede the construction activities and where cash

The NTS is based on 'Environmental and Social Impact Assessment (ESIA) Study Report' (August 2014) prepared by AECOM RoA (PYT) Ltd. and CAPE CONSULT, Aquaclean Services Limited (NEMA Reg. No. 1899), with minor adjustments by EIB.