



Republic of Uganda



Uganda National Roads Authority

PROPOSED UPGRADING OF THE 105-KM KOBOKO- YUMBE–MOYO ROAD

Environmental and Social Impact Assessment Report Executive Summary

The Project

The Government of Uganda has been promised a financing grant from the World Bank to support its refugee resettlement programme. For decades, Uganda has been hosting refugees and asylum seekers from many conflict-affected countries in its neighborhood such as Democratic Republic of Congo (DRC), Somalia, South Sudan, Rwanda, Eritrea, and Burundi. Refugees in Uganda are either self-settled or live in organized settlements set aside by the Government of Uganda. Currently, Uganda hosts up to about 1.5 million refugees originating from mostly South Sudan and the Democratic Republic of Congo. The Government of Uganda, through the Uganda National Roads Authority, to undertake a Detailed Engineering Design for the Upgrading to Bituminous standards of Koboko–Yumbe–Moyo road (approx. 105km) starting at Koboko near the Uganda–DRC international border linking Koboko, Yumbe, and Moyo districts to Moyo near the South Sudan Border.

This is a gravel road carrying medium traffic volume that originates from Koboko town (a town about 45 km from Arua town) traverses through Yumbe and Moyo districts to Moyo town, for about 105 Km. Currently the road is made of a 7.0m wide carriage way that snakes through a rolling terrain to Moyo. The road crosses a number of major rivers (4N^o.), one of which has recently been provided with a multi-span bridge. This road traverses a number of refugee camps settlements in Northern Uganda, that is, Imvepi, Bidibidi, Lobule, and Palorinya refugee settlement camps before reaching the end node in Moyo.

Project justification

The planned upgrading of this road segment is expected to alleviate the transport situation in this region. Currently, the road is a gravel carrying medium traffic volume and has a 7.0m wide carriageway that snakes through a rolling terrain to Moyo town. The road along its various sections has been subjected to varying degrees of damage due to rapid increase in big and heavy transportation vehicles serving the refugee settlements.

In addition, the transport infrastructure in the refugee hosting districts needs improvement. The gravel roads that provide critical connectivity to these areas are unable cope with the growing traffic. Often, heavy trucks laden with supplies are delayed because of the poor condition of the roads or inadequate bridges. There are several humanitarian initiatives that are being undertaken in these areas by the GoU and international organizations, but these need to be supported with an all-weather transport infrastructure. The GoU is therefore keen to improve transport connectivity in these refugee hosting areas starting with improvement of the main trunk road of Koboko-Yumbe-Moyo to enhance access, facilitate delivery of supplies, and benefit both refugees and host communities.

This road corridor is in the Northern part of the country where most of the refugee settlements are located. It traverses the Bidibidi (the biggest refugee settlement), the Lobule, and the Palorinya refugee settlements. This road will certainly directly alleviate a major portion of the transport challenges of this region. In addition, this road corridor also connects the countries of DRC and South Sudan through Republic of Uganda, and can provide an alternate route (redundant) to reach the northern part of the country (especially the Districts of Moyo and Yumbe which have a number of refugee settlements) from Kampala and many other parts of the country in case of non-operation of ferry services on the river Nile for any reason.

Road Design

Koboko-Yumbe-Moyo road has been designed to class II paved standards to achieve a high degree of mobility and harmony along the corridor. The project road is classified under Class A: International Trunk Roads. The horizontal and vertical alignments of the proposed road upgrade have been designed to be as close as possible to the existing yet remain in accordance with the Uganda Road Design Manual Specifications. Critical elements of road design include sight distances, Super-elevation, widening, grades, horizontal and vertical alignment features. The road has been designed with the following cross-sectional elements: 7.0m carriageway (2no x 3.5m lanes), 2no x 2.0m shoulders, 2no x 5.5m service and parking lanes, 2no x 2.5m raised paved walkways (including the covered drain) in the major towns of Koboko, Yumbe and Moyo; 7.0m carriageway (2no x 3.5m lanes), 2no x 3.0m parking lanes, 2no x 2.5m raised paved walkways (including the covered drain) in the minor towns of Ludonga and Kuru; 7.0m carriageway (2no x 3.5m lanes) and 2no x 2.0m paved shoulders in rural areas; and 2.5% normal cross fall for carriageway with maximum 4% and 7% super-elevation for urban/ peri-urban and rural areas respectively. The adopted slope values are enough for draining of surface runoffs. Bus lay bays have been designed in larger locations with high levels of public activity. Existing cross drainage structures on the road will certainly be replaced except for 2 new bridges one on R. Koch chainage 62+000 and another on R. Newa Chainage 75+726. Equipment to be used in road construction include but are not limited to dumper trucks, excavators, graders, compactors. Most of these are heavy equipment and some are vibratory (especially those used in compaction). Investigations for suitability of borrow materials have been carried out. These are tentative sources pending further confirmatory tests and site availability to the contractors.

The ESIA Process

It is a statutory requirement by Uganda Government laws (National Environment Act 2019) that development projects that are deemed to bear significant environmental and social risks and impacts undertake comprehensive Environmental and Social Impact Assessment (ESIA) (Sections 3 (5b), 5 (i), 110). The main objective of this study was to conduct an ESIA for the planned upgrading of Koboko-Yumbe-Moyo road with an aim of recommending mitigation measures for the negative impacts and enhancing the positive ones. The World Bank under its Environmental and Social Framework (ESF) and subsequent Environmental and Social Standards (ESS) and specifically under ESS1 requires that an ESIA is carried out to identify, analyse and mitigate (avoid, minimize, reduce, mitigate, compensate) potential environmental and social impacts associated with projects they support and deemed to carry significant environmental and social risks and impacts. The ESIA study included a desktop study, field investigations and data collection, stakeholder identification and engagement, impact assessment and mitigation measure development.

Key Baseline Features

The topography of the project area is characterized by extensive flat landscapes. The section from Koboko through Yumbe towards the border with Moyo is a very extensive flat plain with no significant contrasting feature while the section towards Moyo exhibits low-lying hills superimposed on an extensive rolling plain. Generally, the road runs on a ridge or catchment divide and therefore intercepts few small streams, rivers, or swamps

with its major water crossings being R. Kochi at Baringa, R. Newa and R. Ofua swamp. The streams are a mix of permanent and seasonal types whose shores are largely used for communal grazing areas and small-scale cultivation of paddy rice and some vegetables is done along some banks of the streams. The vegetation in the riverine ecosystems is typical of fire resistant type typified by short and shrubby trees of *Acacia hockii*, *Comberum* and *Piliostigma thonningii* and common grasses especially; *Hyparrhenia rufa*, *Bricharia brithazantha* (bread grass), *Sporobolus pyradimidalis* (Giant Rat's Tail Grass) and *Hyperrhenia* spp which are all not of key conservation concern i.e. not rare, threatened or vulnerable.

On air quality, trading centres and health centres close to the road registered relatively high values for particulate matter for both PM10 and PM2.5 due to the dust from the project road. At Mindrabe P/S, the particulate matter values ranged between 0.005 mg/m³ to 0.039 mg/m³ for PM2.5 and 0.014 mg/m³ to 0.438 mg/m³ for PM10. Kuru TC recorded an average PM10 of 0.039 mg/m³. Nitrogen Dioxide (NO₂) average values ranged from 0.070ppm to 0.079ppm, Sulphur Dioxide (SO₂) average values were 0.02ppm – 0.29ppm, Carbon Monoxide average values 0.34ppm – 1.31ppm and Volatile Organic Compounds (VOCs) average values were 0.02ppm–0.05ppm. The noise levels (equivalent continuous sound pressure level, LAeq) ranged from 42.5 dBA in villages away from the road to 65dBA for trading centers. The peak particle velocity (PPV) was measured for structures along the road and the average vibrations levels were below 1 mm/s. The results for water quality of streams crossed by the road indicate levels of turbidity. However, the dissolved oxygen levels are typical of natural systems. Siltation from soil erosion is one of the causes of high turbidity levels caused by soil erosion of the riverbanks.

For Particulate Matter, the average readings recorded at all the sites except Likidobo Village were above the Draft National Air Quality standards and the WHO Air quality standards of 0.05 mg/m³ (24hr averaging) for PM10 and 0.025 mg/m³(24hr averaging) for PM2.5. The vibrations values for all measured locations were within the NEMA standards of 20mm/s²

The noise emission results for sites adjacent to the road project (Mindrabe P/S, Gborokolongo HC-III, Kuru TC, Yumbe HC-IV, Lokopoi TI) were all above the permissible noise limits as prescribed in the National Environment (Noise Standards and Control) Regulations, 2003, for Maximum Permissible Noise Levels (i.e.45dBA for schools and health centers and 60dB for mixed land use areas). However, the readings for villages distant from the road were within the permissible limits for rural settings i.e 50dB.

The road traverses through savanna mosaic of bush lands and thickets graduating into extensive woodlands in Moyo. For much of the project area, human activities have induced changes in vegetation especially in Koboko and Yumbe where population densities appear to be moderate. Existing land cover/land use zones reflect continuous or intermittent cultivation of mainly annual crops. Extensive fallow lands occupy the immediate zones of the alignment. The project road traverses through 3 Central Forest Reserves (CFRs); Lodonga CFR in Yumbe District and Eria and Lobajo CFRs in Moyo District. The 3 CFRs are modified habitats having been heavily degraded and converted into exotic tree species plantations (mainly *Eucalyptus camadulensis*, *Tectona grandis*, *Gmelina arborea*, *Pinus orcapa*). The impact on the standing wood volume is negligible given the fact that the CFR road sections (carriageway) are devoid of standing trees. From the biodiversity impact assessment undertaken in Section 8.4.9, there are no plants and/or

animals of conservation value in the listed CFRs. The current existing road alignment through the CFRs shall be maintained and therefore minimize the likely impact from the proposed upgrade works.

Open woodlands with Sheanut butter tree species and Acacia species occur in the project area. These are mainly common on the road section towards Moyo town. Woodlots have been raised along the alignment for different purposes. These are either individual woodlots privately owned by households that are mainly pine woodlots planted by individuals. Common species include the following: *Milicia excels*, *Eucalyptus camadulensis*, *Eucalyptus grandis*, *Gardenia imperialis*, *Gmelina arborea*, *Grevillea robusta*, *Tectona grandis*.

A total of 24 species of butterflies were recorded in the project area. The butterflies belong to 4 families Papilionidae, Pieridae, Lycaenidae, and Nymphalidae. Nymphalidae is the most diverse family represented by 6 sub-families, ten genus and nineteen species. None of the Amphibian species recorded is of conservation concern, all species are listed as Least Concern. Eleven reptile species were recorded during the field survey. They include 3 Lizards, 1 skink, 5 snakes and 2 chelonians. Except for the Brown House Snake *Lamprophis fuliginosus*, the IUCN Red List 2018 and the National Red List for Uganda 2016 indicates that none of the species recorded are of conservation concern. 59 bird species representing 50 genera were recorded in the project area. On the survey of mammals, 15 mammal species were recorded during the survey. Based on the study findings, much of the biodiversity has been lost due to anthropogenic activities in the project area.

The construction of the 105km road will pass through 36 villages (17 LHS and 19 RHS) in Koboko district, 110 villages (52 LHS and 58 RHS) in Yumbe district and 35 villages (18 LHS and 17 RHS) in Moyo district. Along the alignment from Koboko to Yumbe, most of the households were between the age-group of 26-35 years (27.5%), 36-45 years (23.4%) and 15.4%) for male headed households. The tribes are predominantly Lugbara of Aringa dialect (58.6%) followed by the Madi (29%) and Kakwa (11.4%). The Lugbara are mainly in the district of Yumbe (41.2%), Kakwa (10.4%) in Koboko and Madi (27.3%) in Moyo. Islam was the most common belief ((61.5%) and Christianity which denoted various religions such as Catholics (30.5%) Protestants (4.7%), Pentecostal (2.7%) and Seventh Day Adventist (0.6%). Islam is predominantly practiced in Yumbe (39.3%) and Koboko (15.6%). Catholicism is mainly practiced in Moyo district. In terms of livelihoods, majority are farmers (81%), formal employment (8%), trading (3.7%) and provision of casual labour (1.4%). Women dominate roadside vending and 10 women groups of roadside vendors were captured during the survey. 64.3% visit health center IIIs to access healthcare services. 17.1% go to referral hospitals while 8.7% go to Health center IIs. All the respondents (100%) interviewed knew how HIV/AIDs is contracted. Respondents acknowledged receiving information from multiple sources and radio (76.2%) was the most used communication channel in the project area. 79.2% access their water from communal boreholes and others from piped water in the house (9.7%) and protected springs (3.3%). Most respondents had attained primary education (46.7%), (22.5%) ordinary level and (13.6%) had never gone to school. When questioned about ownership of land, respondents indicated that men (80.6%) own and have full rights to it while a few (13.6%) women owned land while (5.6%) indicated co-ownership of land. From the project area respondents indicated that there are no cases of domestic/Gender Based Violence (88.8%) at household level. However, pockets of it are prevalent since 4.1% indicated fighting/aggression during disputes, other had witnessed other members of the household doing it

(4.1%) while in some cases, spouses (2.1%) had fought during disagreements. Analysis of issues related to early pregnancies for underage girls indicate that only 4.9% of the respondents had experienced such cases and 20% respondents had heard about cases of elopement or forced marriages. The vulnerable groups include: Households with orphans and other vulnerable children; Divorced, separated/widowed spouses without support; Female headed households; Old age/elderly/chronically ill headed PAP households; People with disabilities including PAP household heads with physical disabilities; Household head with visual impairments; Teenage Girls (12-18); Roadside Petty Traders and Refugees.

Key Impacts and Risks

Positive impacts associated with upgrading the road are significant and they include improved accessibility, reduced public transport costs, shorter travel times, and improved road safety, improved access to health services, improved local economies, regional cooperation and induced development. Livelihoods in refugee settlements are totally dependent on relief delivered by international agencies and their local counterparts. Where attempts have been made to encourage production, results are dismal. Accessibility therefore becomes the lifeline of all refugee settlements delivering much needed nutrition, medical, sanitary and indeed a myriad of other supplies that sustain life. Construction of the Koboko-Yumbe-Moyo road will reduce travel time and allow heavy delivery truck access the settlements. This project benefit also extends to the refugee hosting communities.

The Resettlement Action Plan prepared alongside this ESIA, sets out the extent of land to be acquired for the ROW and properties to be affected. Both commercial and residential structures will either be demolished or partially affected. Major areas affected will be growth centers spread along the road where structures exist within the ROW including Koboko Town Council, Yumbe TC, Aringa, Lefori, Moyo TC among others. The sensitivity of this impact is ranked as high on account of cost of replacement and attachment to properties. Given low population densities in the rural areas, land for resettlement is available and since compensation will be provided for lost land and affected properties. There are some burial grounds along the alignment some within the ROW. The state of these graves varies due to religious and cultural dictums. While relocation will be the most obvious mitigation, there are sites that are expansive requiring minor design deviations especially where religious attachments are very strong. When equitable compensation is provided to restore livelihoods and property of affected households, residual impacts of involuntary resettlement will be of low or moderate significance. It is equally important, the RAP to include provisions on GBV and sexual exploitation and abuse (SEA) risk mitigation as these relate to compensation and livelihoods, specific reporting lines for these issues.

Construction of the road will require gravel and rock for different purposes (aggregate, concrete products base material etc.). Some secondary impacts of stone blasting and quarrying such as injury or death caused by fly rock are irreversible. Damage to dwellings near quarries would be a considerable social impact in rural poor communities. Unless a firm contractual commitment is made by the contractor, sensitivity of this impact is taken to be High. All stone quarry sites will be subjected to a standalone ESIA by contractors while borrow pits will undertake an appropriate level of Environment and Social Assessment as required by the National Environment Act, No 5 of 2019. It should be a contractual requirement for the contractor to design material source area restoration plans in the Contractor's Environment and Social Management Plan. All potential

construction material source areas have been screened before hand and in all, they are not located in ecologically and socially sensitive settings i.e. not close to wetlands, cultural heritage areas, schools, health facilities and administrative centers. Contracts shall not be closed without borrow site restoration to the satisfaction of NEMA and District Local Governments.

Dust nuisance will mainly become topical in very dry periods and wherever clearance, earthworks, material transport or construction takes place in the vicinity of settlements. Dust generation can adversely affect the health and safety of construction workers at the site. The impact will be moderate. The pollution in localized places and working zones may affect the health of workers and any nearby people or sensitive receptors within 50m. Overall, the impact of air pollution during construction will be moderate for receptors within 200-300m and low for receptors located more than 500m from the road. Dust reduction is anticipated to be addressed by routinely sprinkling water during construction. Some of the measures include speed control by having in place such as humps, dust screens at areas across sections with schools, sensitization of both communities and workers, use of appropriate PPE (e.g. respirators) etc. The Contractor will undertake monitoring of particulate matter both at the major sources (blasting areas and crusher units etc.) as well as at the receptors especially homes and schools etc. This is critical to check on the levels to which the workers and public are exposed to.

The potential noise related issues during construction of the project is disturbance to sensitive receptors like schools, health centers and residential areas. The level of noise exposure and associated risks for the health and well-being of the workforce will depend on the individual workplace and type of equipment used. The noise level will be major for construction workers and those receptors within less than 50m from the construction site and moderate for those living 100-200m away. Due to the high noise levels of construction machinery, the personnel operating the machines and the workers stationed close to the machines will be prone to exposure of high levels of noise. Workers at risk are those who will be exposed to it for up to 8-10 hours daily at work.

In the major commercial centers (Koboko, Yumbe, Moyo, Lefori, Aringa) and a few settlement clusters, power lines, underground telecommunication cables and networks of water pipes exist. Widening the carriageway will necessitate relocation of service lines causing temporary disruption of service delivery to clients including commercial enterprises. This could translate into financial losses to utility companies and their clients depending on when the services are reconnected. It is established that, there are about 14 boreholes and 5 water standpipes in sections in urban areas as well as electricity distribution poles along the road alignment within the project area. These will involve relocation and it is suggested that, UNRA will engage a sub-contractor to undertake relocation of these facilities. However, the respective utility operator(s) will be consulted on relocation requirements/process including the costs that are likely to be involved, who pays for such and the timing for such process. Timely execution of relocation programs will eliminate inherent delays likely to be caused from such processes if not well executed. These are important sources of domestic water serving communities in this water stressed region especially during the dry season. Project actions may require the relocation of pipe networks, community shallow wells or shifting of boreholes. The sensitivity of this impact is ranked as high and magnitude is also high on account of the multiplier effect associated with lack of access to portable water. Loss of water sources will lead to spread of waterborne diseases that may increase mortality especially of infants. Impact on water sources hence is of major significance.

The road crosses 3 CFRs that are currently plantation forests holding mainly exotic tree species, namely Teak trees and Eucalyptus. Expansion of the carriageway may lead to loss of roadside trees across CFRs, but which will only be limited to a few meters since the plantations have been established out of the current ROW in most sections. The overall vegetation impact will be on loss of planted exotic timber and carbon sequestration value of the affected trees. Carbon sequestration attributed to the strip that will be lost can be greatly mitigated through compensatory planting. In addition, the existing alignment has woodlots within the Right of Way that may either directly or indirectly be affected by bush clearance during earth works.

The influx of male workers into the project area may increase the risk of HIV/AIDS transmission. The concentration of young males in worker's camps may lead to illicit and unsafe sexual behavior that may push up infection rates in the local areas. However, since most of the labour force will be below 40 years and residents, it is expected that behavioral change will help stabilize the infection rate. However, should infections occur due to lapses in awareness, impact magnitude is high. It is equally noted that, there will likely be risks of SEA, sexually harassment (SH) and GBV that are bound to happen as a result of the labor influx. For example and like any other project with significant recruitment, the influx of labour heightens the risks associated with sexual exploitation and abuse of community members by project workers, gender-based violence at the community level and sexual harassment between project workers. In addition, labour influx into this project area could be Thus, a potential source of conflict between workers and the local population. This is therefore an impact of Major significance.

Occupational health and safety risks in the project can be high largely because of the number of workers expected on the road project coupled with a common reluctance of contractors to enforce health and safety compliance as well, their reluctance to commit resources towards safety at work. If not well addressed, sometimes, instances of fatalities arise in the sites.

The road traverses through a rural countryside and traverses near 28 schools comprising of infant, primary and secondary schools. Heavy earth moving equipment might attract inquisitive children to construction sites. Besides being a safety risk, noise and dust from road construction activities and equipment might temporarily disrupt school activities. If due caution is not taken by drivers, haulage trucks and road construction equipment might be an accident risk to school children and further cause distraction. Overall impact significance is moderate subject to implementation of a robust traffic management plan and a road safety program.

New opportunities may to generate a wave of excitement leading to multiple gender induced discrimination and gender-based violence putting women in more vulnerable situations. Men could abandon homes on receipt of compensation packages preferring to settle with new partners in urban areas. Even women who may gain employment by the project, gender stereotyping may affect their self-esteem and performance and may prefer to stay out of employment not because they lack skills but due to gender harassment. The sensitivity of this impact is Very High on account of the many polygamous unions and existing asset poverty levels. Impact magnitude ranks medium since cultural mechanisms for family dispute resolution exist. However, it remains a Major impact.

Baseline conditions reveal the existence of vulnerable individuals, families, households and groups of people. This is a generic category of people whose ability to harness their entitlements has been encumbered. Road construction may entrench their vulnerability through further exclusion from decisions that affect their livelihoods and welfare. Included in this category are the elderly, children, women in polygamous marriages and the terminally sick. Road construction could result into constrained access to homes, gardens, water sources, places of worship and schools, especially for women, children, elderly and disabled people. Temporary “bridges” improvised to abate this impact are often inadequate and unsafe for use by vulnerable people. Access to compensation is also fraught with bottlenecks due to gender and social stigmatization. Children under 18 years could be attracted to work on roads abandoning school. The girl child will be more vulnerable to male construction workers while young males could develop drug abuse tendencies resulting from fraternization with adult construction labour. Sexual harassment along the project road can derail individuals affected and consequently deter other livelihood activities hence affecting women and their entire households. Sexual harassment could generally affect an individual mental health and productivity at work place. Sensitivity of this impact has been ranked as likely to be substantial, hence of moderate significance.

The key post-construction risk are drivers and riders on newly improved roads that usually get excitedly to drive faster than is often safe. This risky behavior (“new road effect”) is common on new roads in Uganda. This usually happens in the first few months of commissioning a new road and is associated with frequent road accidents, especially at pedestrian crossings, sharp curves and blind spots, often leading to loss of life or commercial goods. Most common, are accidents involving motor bikes whose riders lack formal training in road use. This impact is reversible with safe road use sensitization campaigns for 1-2 months before road commissioning.

The project area once experienced armed conflict and no doubt, it was confronted with the threat posed by landmines and explosive hazards, which include unexploded or abandoned ordnance including Explosive Remains of War (ERW) as well as Improvised Explosive Devices (IEDs). Specifically, with reference to unexploded ordinances (UXOs), the region went through UNDP De-mining programme which was started in 2006 up to 2012 and the areas were cleared of landmines to the extent possible, as revealed during consultative meetings with Uganda Peoples’ Defense Forces and the District Security Committees (DSC) meetings held on 13th November 2019 with Moyo DSC, 3rd December with Koboko DSC and 4th December 2019 with Yumbe DSC¹. By comparison, West Nile Region did not have many issues of UXOs as compared to Gulu and wider Acholi region, so the risks was lower. In addition, for the last 15 years Koboko-Yumbe-Moyo road has undergone routine and periodic mechanized maintenance using heavy equipment and there have been no incidents of UXOs encountered. There are Specialized Engineering Units within the Uganda Peoples’ Defense Forces (UPDF) at the Battalion levels in the Districts who are well equipped to handle any instances of UXOs during road project implementation. Security Agencies expressed the need for them to be brought on board early right from the commencement of the project.

Management and Monitoring of Impacts and Risks

The ESMP provides a summary of activities, their related potential impacts and the corresponding recommended mitigation measures to be carried out during the pre-construction, construction,

¹ <https://www.monitor.co.ug/News/National/Uganda-declared-landmine-free/688334-1649922-2kirma/index.html>

operation and decommissioning phases of the Project. It details active remedial and mitigation measures to be continuously carried out to prevent or minimize impacts on the bio-physical and socio-cultural environments as well as to promote occupational safety and health of employees. It also seeks to identify the various institutional responsibilities to manage the environmental aspect of the Project as well as the cost involved.

The Contractor will be required to prepare standalone safeguards management plans as part of the Contractor's Environment and Social Management Plan. Reference should always be made to the Contractor's Environmental and Social Management Plan as the overarching document that contains general Control Statements for management of various impacts such as air quality, solid waste, and hazardous materials, water quality and ecosystems, noise and vibration control, erosion control, waste excavation and disposal and occupational health and safety, sexual exploitation and abuse, sexual harassment, traffic, labour force, grievance redress and so on. In addition to the Management Plans, the Contractor should prepare Method Statements for specific activities such as earthworks and submit for the Supervision Engineer's review and comments before commencement of works. If the Engineer notifies the Contractor that a specific method statement has failed to provide adequate mitigations, such a statement should be revised and approved by the Client/UNRA/or their representative – Supervision Consultant.

Several statutory and contractual approvals and licenses will be required before commencement of certain construction activities. Securing of approvals requires preparation of the relevant documentation and/or payment of fees. This needs to be done during mobilization to ensure that all approvals are secured in a timely manner to avoid construction delays. It is important to ensure that all materials (sand and aggregates) are sourced from quarries, borrow pits and sand mines approved by NEMA and compliant with environmental laws. Permits for water abstraction and construction on surface water will be obtained during the mobilization period. Where relocation of utilities is to occur, the contractor will obtain permission from relevant service providers during the mobilization period to avoid delays. For all new materials sites to be opened up and operated by the Project, NEMA approval must be secured while all existing sites should undertake/provide proof of having valid approvals and/or having environmental compliance agreements with NEMA.

Routine inspections will be carried out to cover all aspects of environmental and social management on the site. Either a standalone Monthly Environment Report shall be prepared, or safeguards shall be sufficiently covered in the Contractor's Monthly Progress Report in fulfilment of the Contractor's contractual reporting obligations. The report will highlight different activities undertaken to manage environmental and social aspects of the project in line with contract specifications, laws, standards, policies, and plans of Uganda and World Bank ESF. UNRA will take the responsibility to fulfil the requirements for conduct of periodic environmental and social audit in line with the National Environment Act 2019. Implementation of ESMP activities will be approved by UNRA and safeguards compliance will be one of the bases for payment. Final payment for the contractor shall be tagged to successful restoration of all disturbed areas and clean-up of all construction sites.

The Uganda National Roads Authority has on behalf of Government of Uganda committed to provide human and financial resources to implement several safeguards issues as detailed in the Environment and Social Commitment Plan (ESCP). UNRA will hold all project implementers

accountable for putting in place adequate material measures and actions to mitigate the Project's potential environmental and social risks and impacts. It is strongly recommended that UNRA reviews and updates its Environmental and Social Management System (ESMS) before commencement of the civil works preferably by June 2020.

The overall implementation and monitoring of the ESIA/ESMP for the road project is the responsibility of UNRA through its Directorate of Network Planning and Engineering and specifically, the Department of Environmental and Social Safeguards (DESS). DESS is headed by a Manager whose other staff include 5 Specialists (3N^o. Social Development Specialists and 2N^o. Environmental Specialists). In addition, there is a pool of six Technical Assistants (3N^o. Environmental Specialists and 3N^o. Social Development Specialists) and these are provided through technical assistance programmes by the World Bank and African Development Bank financed projects. Furthermore, DESS has 5N^o. Junior Safeguards officers and 6No. Environmental and Social Safeguards Trainees.

UNRA currently faces some operational constraints that require attention to adequately manage the growing number of roads projects. From discussions with DESS, as of December 2019, there were 63 road projects (including bridges) under preparation and 42 under implementation and spread through out the country all requiring environmental and social safeguards support from existing 5 specialists and 6 technical assistants.

Staffing – The human resource equation for the delivery of environmental and social safeguards compliance over-sight by DESS is wanting in view of the growing number of road projects under preparation and implementation by UNRA. More so, some of the projects have tight preparation timelines as well as stringent safeguards requirements demanded by financing agencies including national requirements as contained in the amended National Environment Act 2019. No doubt, available personnel in the Department is being stretched despite effort they put towards the requirements by the projects. In addition, the Technical Assistants hired present two challenges in that, the duration of their contracts will end by July 2020 without indication of extension and they get involved in specific projects which assistance they were procured than offer capacity building, which would create sustainability. These indicate the human resource challenge at hand.

Equipment – In execution of supervisory and monitoring role, DESS relies largely on physical site inspections, interviews and review of records without going into some in situ measurements of some physical and ecological parameters. The approach can be exploited by fraudulent contractors since they will have known that, there will be measures for on-site physical verifications. DESS shall have in-house equipment for rapid verification of noise, air quality, vibrations and water, and the results may be used to inform resolution of related complaints. In the same vein, there should be readily available logistics in terms of vehicles for the Department to rapidly respond to environmental and social safeguards emergencies in the projects as they happen.

Conclusion and Recommendations

Conclusions

The Koboko-Yumbe-Moyo road is existing as such, its alignment will to the extent possible, be restricted to right of way with minimum deviations aimed at improving sight distance, reduce

impacts on road developments and installations amongst others. Furthermore, its sections through the 3 CFRs will largely follow existing alignment implying there be minimal negative impacts on these protected areas in terms of loss of habitat and biodiversity. Therefore, the planned upgrade of Koboko-Yumbe-Moyo road will not only have a positive and profound impact on their lives and livelihood of the communities in its 3 beneficiary districts but in the wider West Nile Region through tiers of multiplier effects including inducing rapid socio-economic development which has lagged behind for long. In addition, having in place, a sound road network and transport infrastructure in this region will in itself, spur sectors developments in agriculture, industry and commerce beyond the Region at large. Once paved, the road will greatly reduce travel time between the three districts, which now takes close to 4-5 hours due to the bad nature of road. Above all, the road will enhance delivery of goods and services as well as emergency assistance to the vulnerable refugee communities in the hosting areas.

Despite the above, upgrading works will trigger negative effects such as land take, loss of vegetation, loss of livelihoods, disrupt public utilities such as electricity and water supply lines, dust nuisance, noise, occupational health and safety amongst others. The Koboko-Yumbe-Moyo road that is proposed for upgrading is in existence. The behavioral and ecological impacts or stress on the fauna has been happening. Secondly, the extent of space that will be affected by the construction to measure up to the required width of road corridor will be small. Impacts on fauna species and population will therefore be low. Most of the species recorded are of least concern and are widely distributed at the local level in the project areas and nationally in other parts of Uganda. The overall negative impacts of the project on fauna will therefore be minimal. On that basis, the proposed project will have minimal or no impact at all on the fauna species diversity and populations in the project area.

It is clear, the socio-economic surveys in the study has focused more on issues of domestic violence with limited analysis on what the project activities might produce in the context of the wider GBV risk as well subsequent description of appropriate mitigation measures. In this case, there is need for a focused study on assessment of GBV landscape/mapping in the project outcome of which, will inform the need for inclusion of a GBV Service Provider and clear capacity assessment requirements and the development of a referral pathway. This aspect of a GBV assessment is required for all risk level projects.

From the assessment, it is established that, most the anticipated negative impacts will be of reversible nature, short-term and can be mitigated through implementation of an Environmental and Social Management and Monitoring Plans in place whose implementation will rest largely with the Contractor under the supervision of Supervising Engineer who, in close collaboration with UNRA, will have responsibility for monitoring.